SECRET

TM-E9-1984

WAR DEPARTMENT

TECHNICAL MANUAL

DISPOSAL METHODS FOR ENEMY BOMBS AND FUSES

November 12, 1942

ENEMY

BOMBS AND FUZES

RESTRICTED

SECTION VII

JAPANESE FUZES

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ENEMY BOMBS AND FUZES
JAPANESE FUZES - SECTION 7

INDEX TO ENEMY BOMBS AND FUZES (Continued)

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D-1(a)	2522.N10	Army Electrical Aerial Burst Nose Fuze.
D-1(b)	2522.N11	Army Electrical Aerial Burst Nose Fuze.
D-2(a)	2542.T20	Navy Clockwork Aerial Burst Tail Fuze.
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D-2(c)	2542.T22	Navy Clockwork Aerial Burst Tail Fuze.
D-3(a)	2512.N30	Navy Mechanical Aerial Burst Nose Fuze.
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D-5(a)	2512.N50	Army Mechanical Aerial Burst Nose Fuze.
D-5(b)	2512.N51	Army Mechanical Aerial Burst Nose Fuze.
	2512.N90	Army Mechanical Aerial Burst Nose Fuze.
E-1(a)	2516.T10	Mechanical Impact Anti-Withdrawal Tail Fuze.

NATIONALITY: JAPANESE	INFORMATION DATE: October 1943

INTRODUCTION

I. GENERAL

A. TYPES OF FUZES:

The Japanese fuzes are of two distinctive types. The Army uses one type while the Navy uses the other type. Army fuzes are found only in Army bombs. Navy fuzes are found only in Navy bombs.

B. NOMENCLATURE:

The designation of Japanese fuzes is by letter and number. These designations are made by Allied Forces in the South-West Pacific. The "A" series of fuzes lists mechanical impact nose fuzes. The "B" series of fuzes lists mechanical impact tail fuzes. The "C" series of fuzes lists chemical fuzes. The "D" series of fuzes lists aerial burst fuzes.

The U.S. system of classification includes the alphabetical-numerical designation and a file number. The system used for arriving at these numbers is explained in the preface of TM E9-1983.

1. Army Fuzes.

Army fuzes have the following characteristics:

a. There are holes in the arming vanes for an arming wire.

b. Safety pins are never used.

c. Most fuzes have primer flash cap as part of the fuze.

2. Navy Fuzes.

Navy fuzes have the following characteristics:

a. There are no holes in the arming vanes.

b. Safety pins are sometimes used.

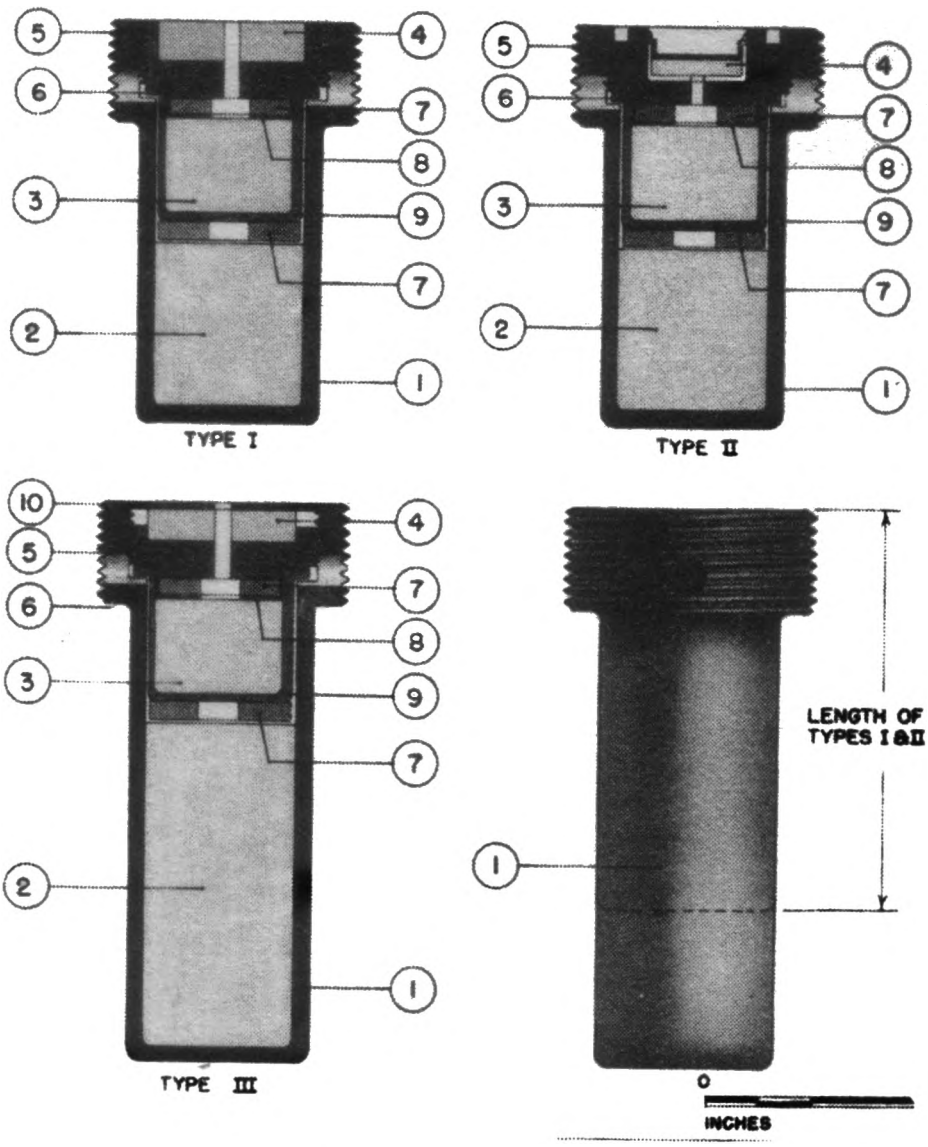
c. The fuzes seldom have the primer flash cap as an integral part of the fuze.

GAINES: FILE NO.: 2500.10

NATIONALITY: JAPANESE INFORMATION DATE: October 1943

GAINES FOR ARMY FUZES

ARMY fuzes employ different gaines from those used in NAVY fuzes. All ARMY fuzes use one of the three types shown below. Types I and II are used in nose fuzes only, while type III is used only in the tail fuzes. The latter type is approximately twice as long as types I and II (see scale). Types I and III are ignited by a flash from a primer cap in the fuze, while type II is pierced by the striker. Type I is used in all ARMY nose fuzes except A-2(b). This fuze uses type II, and is used only in bombs which do not have H.E. as the main charge (15 Kg. anti-personnel is an exception, and employs the A-2(b) fuze). Type III only is used in all ARMY tail fuzes. These gaines are usually surrounded by a booster (see A-4(a), B-1(a) and C-3(a) as examples).



LEGEND		
TYPE I	TYPE II	TYPE III
1. CONTAINER.	1. CONTAINER.	1. CONTAINER.
2. TETRYL.	2. TETRYL.	2. TETRYL.
3. FULMINATE OF MERCURY (.6 GR.)	3. FULMINATE OF MERCURY (.6 GR.)	3. FULMINATE OF MERCURY (GR).
4. BLACK POWDER MIXTURE.	4. CAP.	4. BLACK POWDER MIXTURE.
5. COPPER PLUG.	5. COPPER PLUG.	5. COPPER PLUG.
6. COPPER CUP COVER.	6. COPPER CUP COVER.	6. COPPER CUP COVER.
7. FELT WASHER.	7. FELT WASHER.	7. FELT WASHER.
8. TIN FOIL STRIP.	8. TIN FOIL STRIP.	8. TIN FOIL STRIP.
9. COPPER CUP.	9. COPPER CUP.	9. COPPER CUP.
		10. METAL WASHER COVER.

NATIONALITY: JAPANESE INFORMATION DATE: October 1943

COMPONENT PARTS OF NAVY GAINES AND MAGAZINES

The component parts of the standard Japanese NAVY gaines and magazines are as follows:-

a - Primer Plugs.
These primer plugs have been found in four variations:-

a1 - Used in Type A gaines (may be in two parts) and in magazines.

a2 - Used in Type B gaines.
a3 - Used in Type C gaines and magazines.
a4 - Used in Type D gaines.

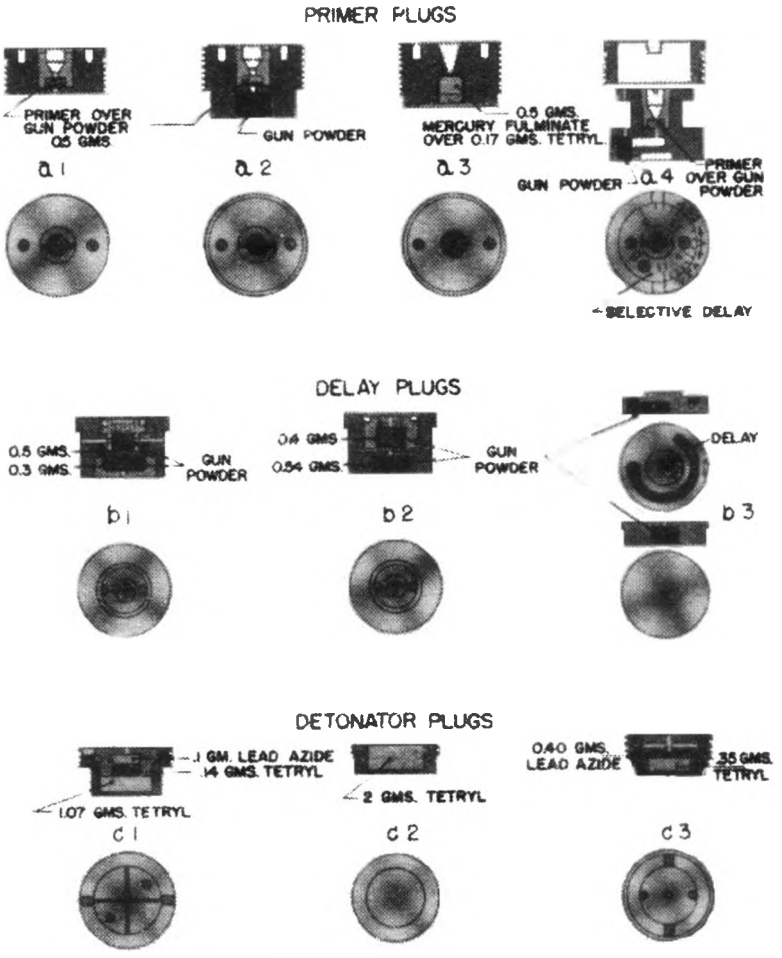
The striker of the fuze pierces the primer and sets off the explosive in the next plug.

b - Delay Plugs.
These delay plugs have been found in three variations:-

b1 - Used in Type A gaines and magazines.
b2 - Used in Type A gaines.
b3 - Used in Type D gaines.

c - Detonator Plugs.
These detonator plugs have been found in three variations:-

c1 - Used in Type A and B gaines.
c2 - Used in Type C gaines.
c3 - Used in Type D gaines.



COMPONENTS OF NAVY GAINES AND MAGAZINES

NAVY GAINES AND THEIR USE

There are four types of gaines used by the Japanese Navy. Types A and D are used for delay action while types B and C are used for instantaneous action. The components of each gaine are illustrated. Type A gaine has been found with different delay plugs (b-1 or b-2). The detonator plug a-1 may be found in two pieces or as a single piece.

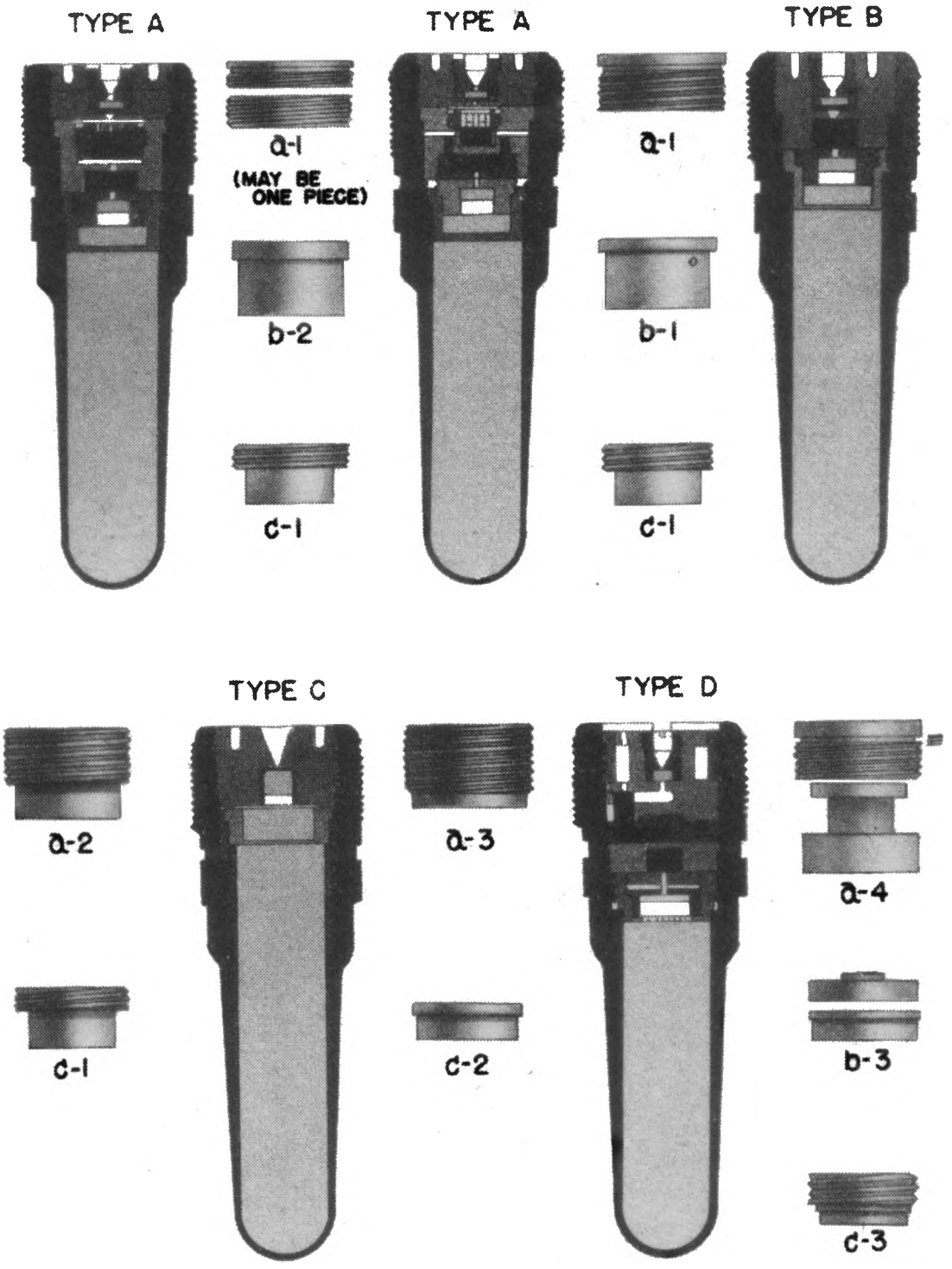
The most recent detonator plug is the a-3 which has been found in the type C gaine. This is a super-quick gaine used in the 60 Kg. G.P.H.E. Navy bomb Type 97 with the A-3(a) fuze. Type B employs the ordinary instantaneous plug, a-2.

Any gaine will fit any Navy fuze which takes a standard gaine. The markings on the various gaines refer to the type, date of manufacture and use.

Type A has been found with the bottom of the gaine painted red, brown, or green on the outside. These colors have been observed only on type A gaines which always employ a delay. When the b-2 delay plug is used, the tip is red or brown. If a b-1 plug is used, the tip is painted green. The b-2 plug is believed to be of longer delay than the b-1 plug which has a delay of 0.034 seconds. In the b-3 plug, the delay may be set for 0.5 seconds, 1.0 seconds or 1.5 seconds.

It is of interest to note that the c-2 detonator plug can be initiated by detonation only, since its explosive charge is entirely tetryl. Therefore, only the a-3 primer-detonator plug can be used with the c-2 detonator plug. This may be the reason for the superquick action which gives the "daisy-cutter" effect when used in the 60 Kg. Type '97 Navy bomb.

Navy gaines house all the necessary explosive to initiate a normal H.E. filling. They are made of brass, cadmium plated, and finished with a dull lacquer. Although all are equipped with spanner flats, they have been recovered from bombs in which they were screwed hand tight.


TYPE A
a-1
(MAY BE ONE PIECE)
b-2
c-1
TYPE A
a-1
b-1
c-1
TYPE B
TYPE C
a-2
c-1
a-3
c-2
TYPE D
a-4
b-3
c-3

NATIONALITY: JAPANESE INFORMATION DATE: October 1943

TYPES OF NAVY GAINES

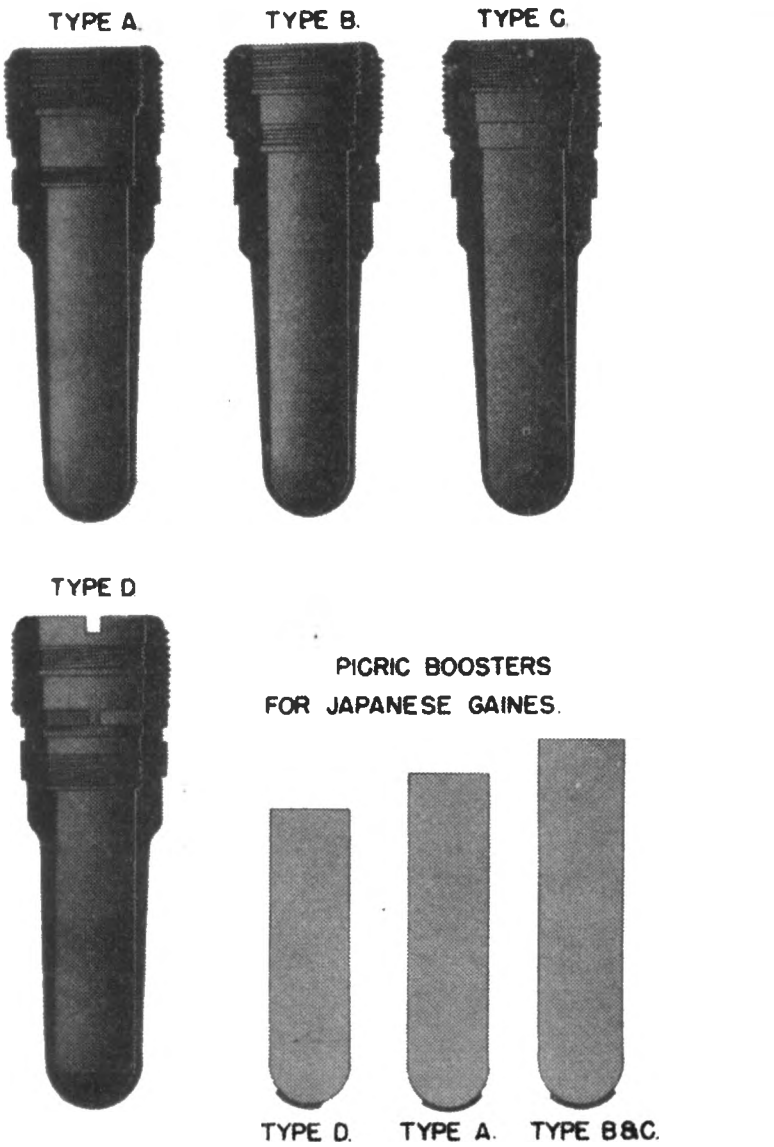
There are four common types of Japanese gaines used in conjunction with NAVAL fuzes. All are interchangeable and differ only in internal construction, as may be required to fit the various components of the exploder assembly. The various gaines are partially filled by a picric acid plug which acts as the booster element, although the larger bombs will have an additional booster charge surrounding these gaines. The weights of these boosters are:-

Booster for Type A	gaine	- 30 grams.
Booster for Type B & C	gaine	- 36 grams.
Booster for Type D	gaine	- 27 grams.

Type A gaine is used only for delay action while Type B gaine is for ordinary instantaneous action. Type C is used to give the so-called "daisy-cutter" effect and Type D is used for a slightly longer delay than is given by Type A. These gaines are used with the following fuzes:-

A-1(a)	B-2(a)	C-1(a)	D-2(a)
A-3(a)	B-3(a)	C-2(a)	D-2(b)
A-3(b)			

White or red squares of silk are found in the bottom of each gaine. Their meanings are not known.

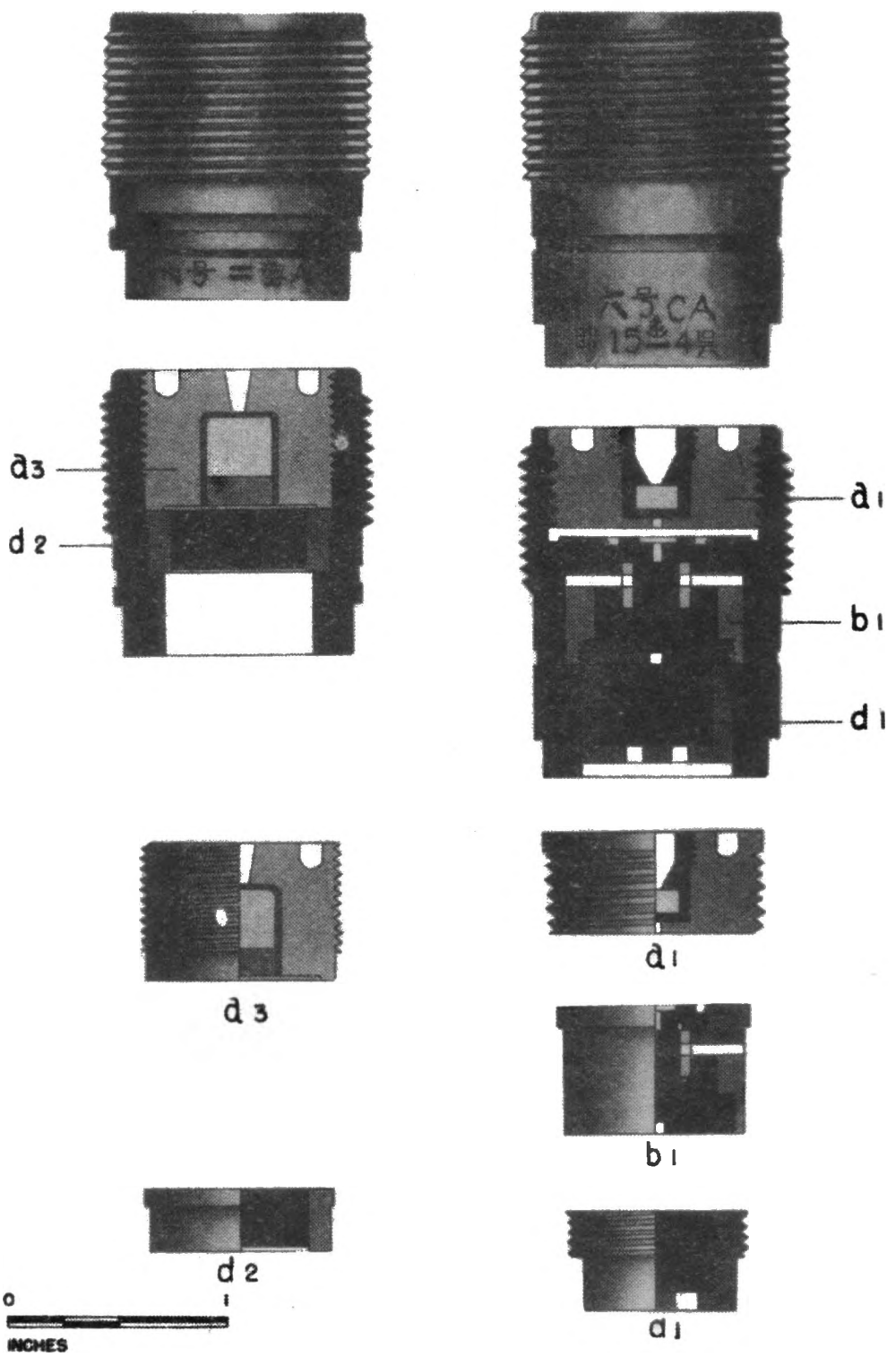


GAINES FOR JAPANESE NAVY FUZES.

NATIONALITY: JAPANESE	INFORMATION DATE: October 1943

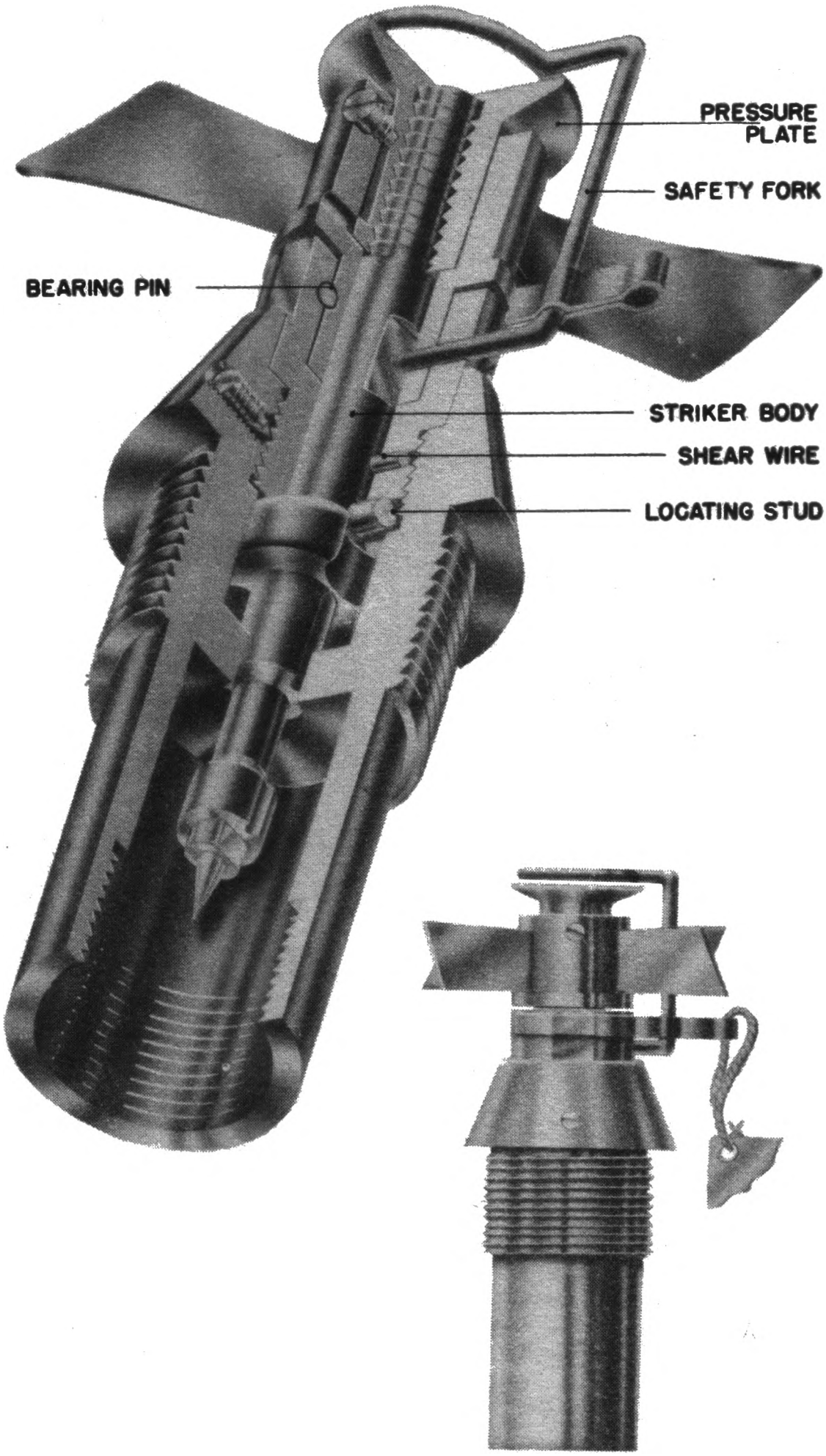
MAGAZINES FOR NAVY FUZES

Magazines are used only in NAVY fuzes, used to initiate Low Explosives such as black powder. They are never used with H.E.-filled bombs. Magazines can be fitted to any fuze which takes a standard NAVY gaine. Up till now, however, only A-3(a) and A-3(b) have been used with magazines. Only an instantaneous magazine with two plugs and a slight delay magazine with three plugs have been found to date. The "d" type plugs contain a large amount of gun powder and are not used in gaines. Plugs "a" and "b" are used in gaines as well as magazines. The magazine explosive is initiated by the fuze striker piercing plug "a 1" or "a 3". Magazines are generally used in incendiary bombs.



MAGAZINES FOR JAPAESE NAVY FUZES.

JAPANESE NAVY NOSE FUZE A-1(a)



Classification	-	Mechanical impact nose fuze.
Bombs used in	-	Probably interchangeable with A-3(a).
Companion fuzes	-	Any Naval tail fuze except C-1(a).
Overall length	-	6.0 inches.
Overall width	-	2.25 inches.
Material of construction	-	Brass.
Threads	-	10 threads per inch. 1-7/8 inches diameter.
Explosive train	-	Standard Navy gaine.
Delay times	-	Probably none.
Color and markings	-	Natural brass.

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CONSTRUCTION:

The upper portion of the body houses the vane hub, which is secured by bearing pins, and is threaded into the lower body and held by a grub screw. The striker body, threaded into the pressure plate, is prevented from rotating during the arming time by a shear wire and a locating stud. Two grub screws engage the keyway in the vane hub and allows the pressure plate to rotate with the vane hub.

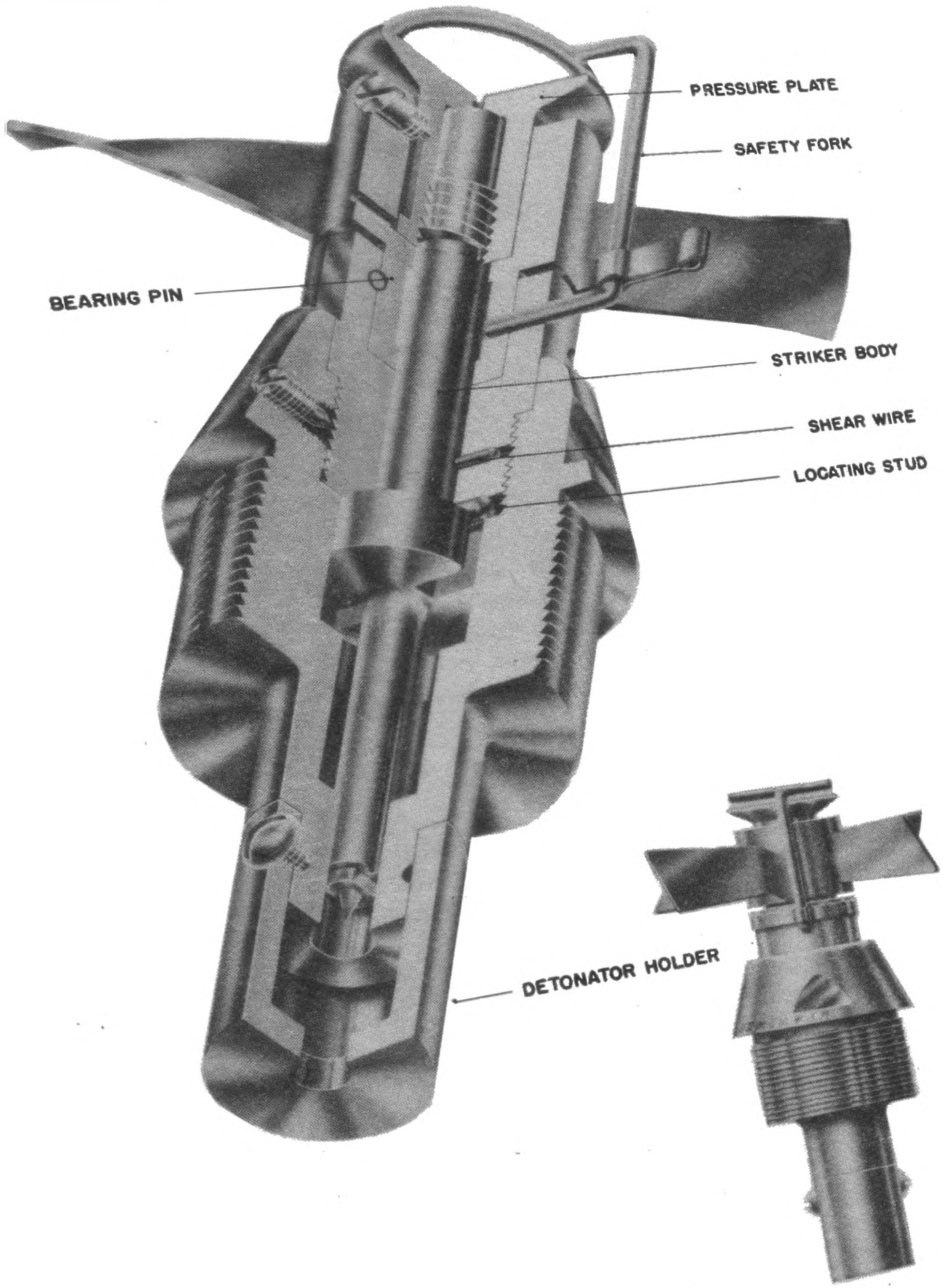
OPERATION:

On release, the safety pins are removed, the vanes rotate and the pressure plate moves upward and away from the fuze (due to the left-hand threads). The vanes do not move vertically because the hub to which they are attached, turns also--being held by the bearing pins. The pressure plate is stopped by the grub screws when it reaches the limit of its keyway. Impact pushes the pressure plate inward. The striker body is forced downward, shear wire is broken, and the striker hits the primer.

REMARKS:

Appears designed for use with a standard gaine in Japanese designated Nos. 3, 6, and 25 Land and Ordinary bombs. With a standard gaine or magazine it is also suitable for the same sizes of Mark bombs where nose impact fuzing is employed. Its use has been rare. May arm in 5 revolutions of the arming vanes.

JAPANESE NAVY NOSE FUZE A-1(b)



FILE NO.: 2511.N11

JAPANESE NAVY NOSE FUZE A-1(b)
(Type 2 Nose Priming Mechanism, Model 2)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	32 Kg. Incendiary Bomb.
Companion fuzes	-	Possibly D-2(b).
Overall length	-	6.0 inches.
Overall width	-	2.25 inches.
Material of construction	-	Brass.
Threads	-	10 threads per inch. 1-7/8 threads per inch.
Explosive train	-	Primer and detonator.
Delay times	-	Probably none.
Color and markings	-	Natural brass.

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CONSTRUCTION:

The upper portion of the body houses the vane hub, which is secured by bearing pins, and is threaded into the lower body and held by a grub screw. The striker body, threaded into the pressure plate, is prevented from rotating during the arming time by a shear wire and a locating stud. Two grub screws engage the keyway in the vane hub and allows the pressure plate to rotate with the vane hub. Two screws hold the detonator holder to the lower fuze body.

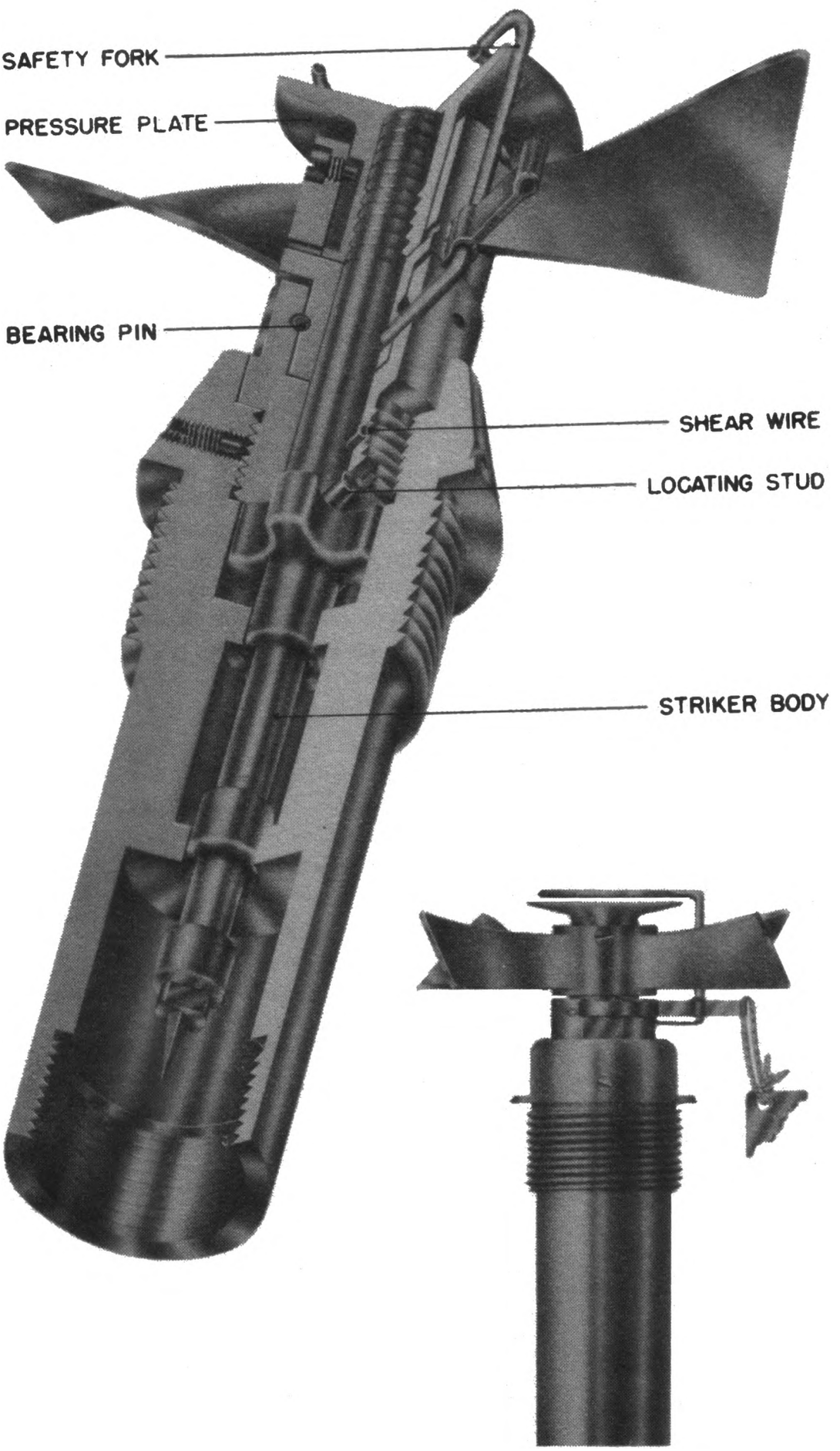
OPERATION:

On release, the safety pins are removed, the vanes rotate and the pressure plate moves upward and away from the fuze (due to the left-hand threads). The vanes do not move vertically because the hub to which they are attached, turns also--being held by the bearing pins. The pressure plate is stopped by the grub screws when it reaches the limit of its keyway. Impact pushes the pressure plate inward. The striker body is forced downward, shear wire is broken, and the striker point hits the detonator.

REMARKS:

Is used with a practice bomb gaine to detonate the burster charge in the 32 Kg. incendiary bomb. About 540 pounds pressure is required to break the shear wire in bombs used as land mines.

JAPANESE NAVY NOSE FUZE A-1(c)



FILE NO.: 2511.N12

JAPANESE NAVY NOSE FUZE A-1(c)
(Type 2 Bomb Nose Fuze Model 1 Mod. 3)

DESCRIPTION:

Classification	-	Mechanical Impact Nose Fuze.
Bombs used in	-	800 Kg. G.P.H.E., 800 Kg. S.A.P.
Companion fuzes	-	B-3(b) or possibly B-2 series.
Overall length	-	7.6 inches.
Overall width	-	2.3 inches.
Material of construction	-	Brass throughout except steel set screw, striker point, and locating stud.
Explosive train	-	Standard Navy gaine.
Delay times	-	Probably none.
Threads	-	1.875 inches diameter; 10 threads per inch.
Color and markings	-	Natural brass upper body, lacquered lower body. ⓡ ⚓ 334 丹 大

CONSTRUCTION:

Upper portion of body houses the vane hub, which is secured by bearing pins, and is threaded into the lower body and held by a grub screw. The striker body, threaded into the pressure plate, is prevented from rotating during the arming time by a shear wire and a locating stud. Two grub screws engage the keyway in the vane hub and allows the pressure plate to rotate with the vane hub.

OPERATION:

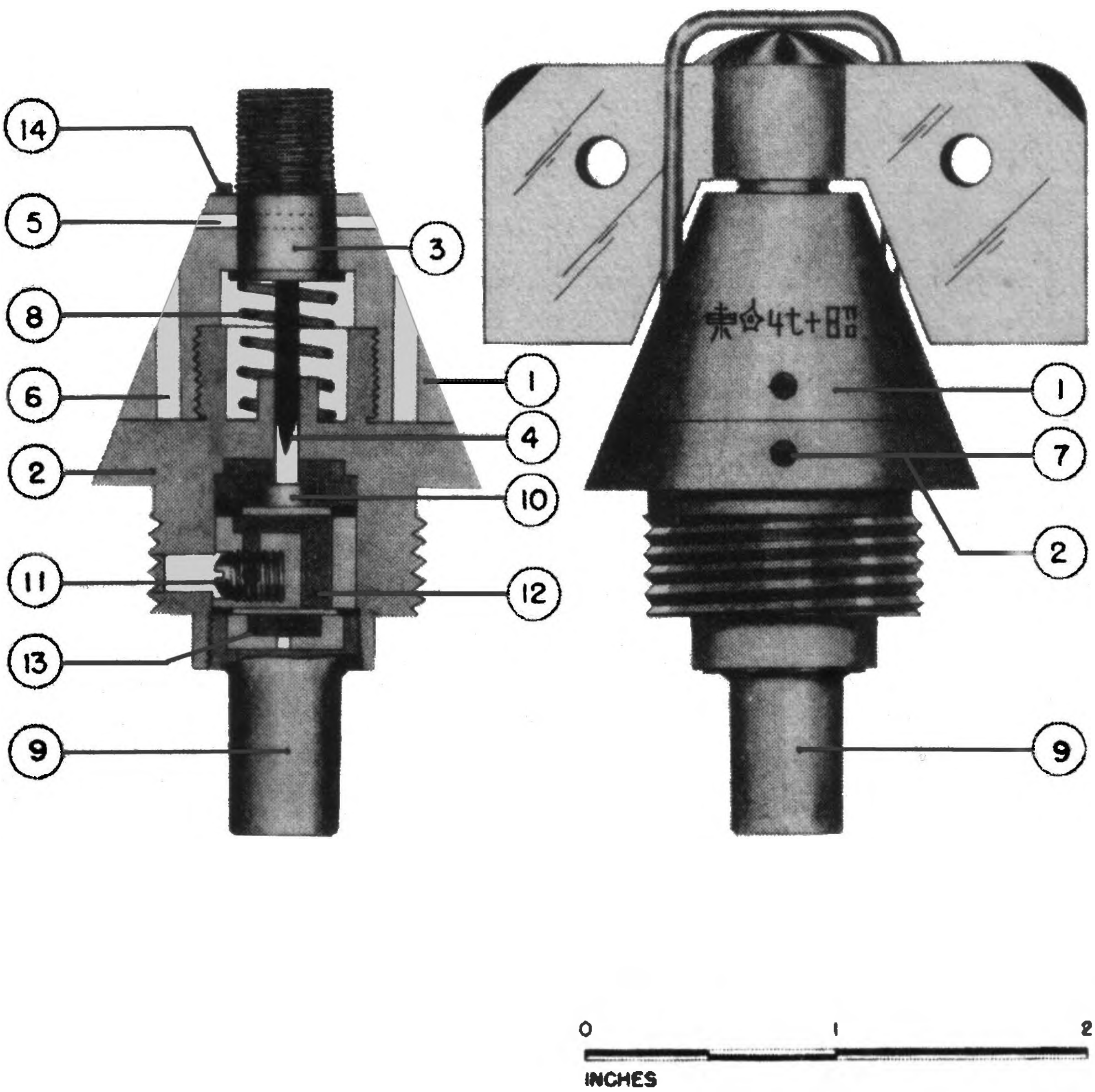
On release, the safety fork is removed, the vanes rotate and the pressure plate moves upward and away from the fuze (due to the left-hand threads). The vanes do not move vertically because the vane hub to which they are attached, turns also---being held by the bearing pins. The pressure plate is stopped by screws when it reaches the limit of its keyway. Impact pushes the pressure plate inward. The striker body is forced downward, the shear wire is sheared, and the striker point hits the primer.

REMARKS:

The A-1(c) is used with a standard gaine in Japanese Navy designated Nos. 50 & 80 Land and Ordinary bombs. Operation is the same as the A-1(a). It differs in that the fuze body below the thread is substantially longer while the fuze body above the threads is only slightly longer than that of the A-1(a). The striker body is longer, the diameter of the pressure plate is larger, and the arming vanes are longer. The safety device is somewhat similar to the fork used for the A-3(a).

FUZE DATA: FILE NO.: 2511.N20

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943	
DESIGNATION A-2(a)	CLASSIFICATION	Army Mechanical Impact Nose Fuze	
	TYPE OF MISSILE	Army G.P.H.E. Bombs	
MARKINGS: 東★4t+8[illegible] (TOKYO - April, 1942.)		BOMBS USED IN: 30 Kg. G.P.H.E. 50 Kg. G.P.H.E. 100 Kg. G.P.H.E.	



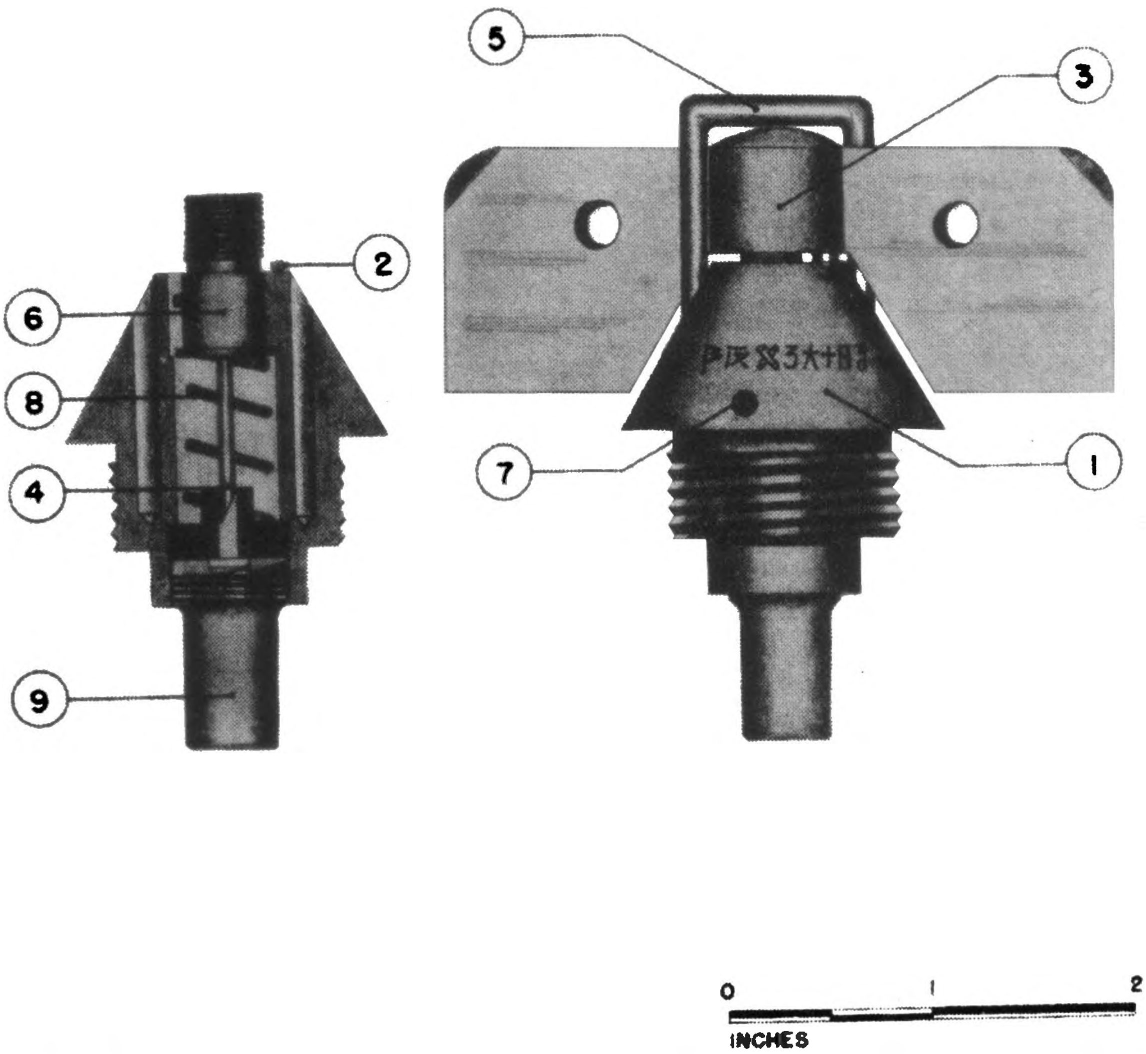
LEGEND	
1. UPPER BODY.	8. CREEP SPRING.
2. LOWER BODY.	9. GAINE.
3. STRIKER BODY.	10. PRIMER.
4. STRIKER.	11. SELECTOR SCREW.
5. SHEAR WIRE.	12. PYROTECHNIC DELAY.
6. SAFETY PIN HOLES.	13. RELAY.
7. SPANNER HOLES.	14. STOP STUD.

FUZE DATA:		FILE NO.: 2511.N20
NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION A-2(a)	CLASSIFICATION	Army Mechanical Impact Nose Fuze
	TYPE OF MISSILE	Army G.P.H.E. Bombs
MARKINGS: 東 ✪ 4 t + 8 z (TOKYO - April, 1942.)		BOMBS USED IN: 30 Kg. G.P.H.E. 50 Kg. G.P.H.E. 100 Kg. G.P.H.E.

DATA	A-2(a)
COLOR	Natural brass.
OVERALL LENGTH	2.75 inches.
OVERALL WIDTH	1.65 inches.
MATERIAL OF CONSTRUCTION	Brass except steel spring and steel firing pin.
DESCRIPTION	The upper body portion (1) houses the striker (4) and arming spindle (3) while the lower body portion (2) contains the selector mechanism for instantaneous or short delay. A shear wire (5) and creep spring (8) hold the arming spindle after vanes fall away. A U-shaped safety wire fits over the vanes into the holes (6). A selector screw (11) is fitted in the fuze body and can not be changed while the fuze is fitted within the bomb. A stop/stud (14) on the body and one on the vane cap prevent the arming vane assembly from jamming too tightly. The regular Army gaine (9) is fitted to the fuze.
OPERATION	The arming wire is withdrawn from the vanes upon release of the bomb and after 10 revolutions, the vanes fall free. On impact, the wire (5) is sheared and the striker is forced inward against the action of the creep spring (8). If the selector screw is set for instantaneous action, the flash from the primer (10) passes directly through a hole in the selector screw (11) to fire a relay (13) which fires the gaine (9). If set for delay action, the flash from the primer (10) ignites the delay (12) in the selector screw and this delay fires a relay (13) which in turn fires the gaine.
POSITION & METHOD OF FIXING IN BOMB	Nose fuze screwed in by hand and tightened by spanner wrench.
COMPONENTS OF EXPLOSIVE TRAIN	Primer flash cap (10) ignites a short delay train (12), or passes through the selector (11), to give instantaneous action by igniting a relay (14) which sets off the gaine (9).
FUZES LIKELY TO BE FOUND WITH	B-1(a) Tail fuze.
DELAY TIMES	Short delay time (unknown).
REMARKS	If the fuze is found with the arming spindle (3) depressed, the striker is probably imbedded in the primer and a slight movement may free it, and the creep spring will force the striker back. This friction may be sufficient to set off the primer, thereby igniting the exploder system.

FUZE DATA: **FILE NO.:** 2511.N21

NATIONALITY: JAPANESE		**INFORMATION DATE:** October 1943	
DESIGNATION A-2(b)	**CLASSIFICATION**	Army Mechanical Impact Nose Fuze	
	TYPE OF MISSILE	Incendiary and Fragmentation bombs	
MARKINGS: 阝反 ✖ 2 大 + 8 [illegible] (OSAKA - February, 1941.)		**BOMBS USED IN:** 15 Kg. Anti-Personnel 50 Kg. Incendiary (Phosphorus) 50 Kg. Gas Bomb	



LEGEND	
1. BODY	6. ARMING SPINDLE.
2. STOP STUD.	7. SPANNER HOLES.
3. ARMING VANE ASSEMBLY.	8. CREEP SPRING.
4. STRIKER.	9. ARMY GAINE.
5. U-SHAPED SAFETY WIRE.	

FILE NO.: 2511.N21

JAPANESE ARMY NOSE FUZE A-2(b)
(12th Year Type, Instantaneous Fuze)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	15 Kg. Anti-personnel. 30 Kg., 50 Kg., 100 Kg. G.P.H.E. 50 Kg. Incendiary. 15 Kg. and 50 Kg. Chemical bombs.
Companion fuzes	-	Probably none; may be fitted to bomb with Army tail fuze.
Overall length	-	2.25 inches (less gaine).
Overall width	-	1.67 inches.
Material of construction	-	Brass except steel spring and steel firing pin.
Threads	-	13 threads per inch. 1-5/32 inches diameter.
Explosive train	-	Army gaine with primer contained in the gaine.
Delay time	-	None.
Color and markings	-	Natural brass. B反 ※2大十8□

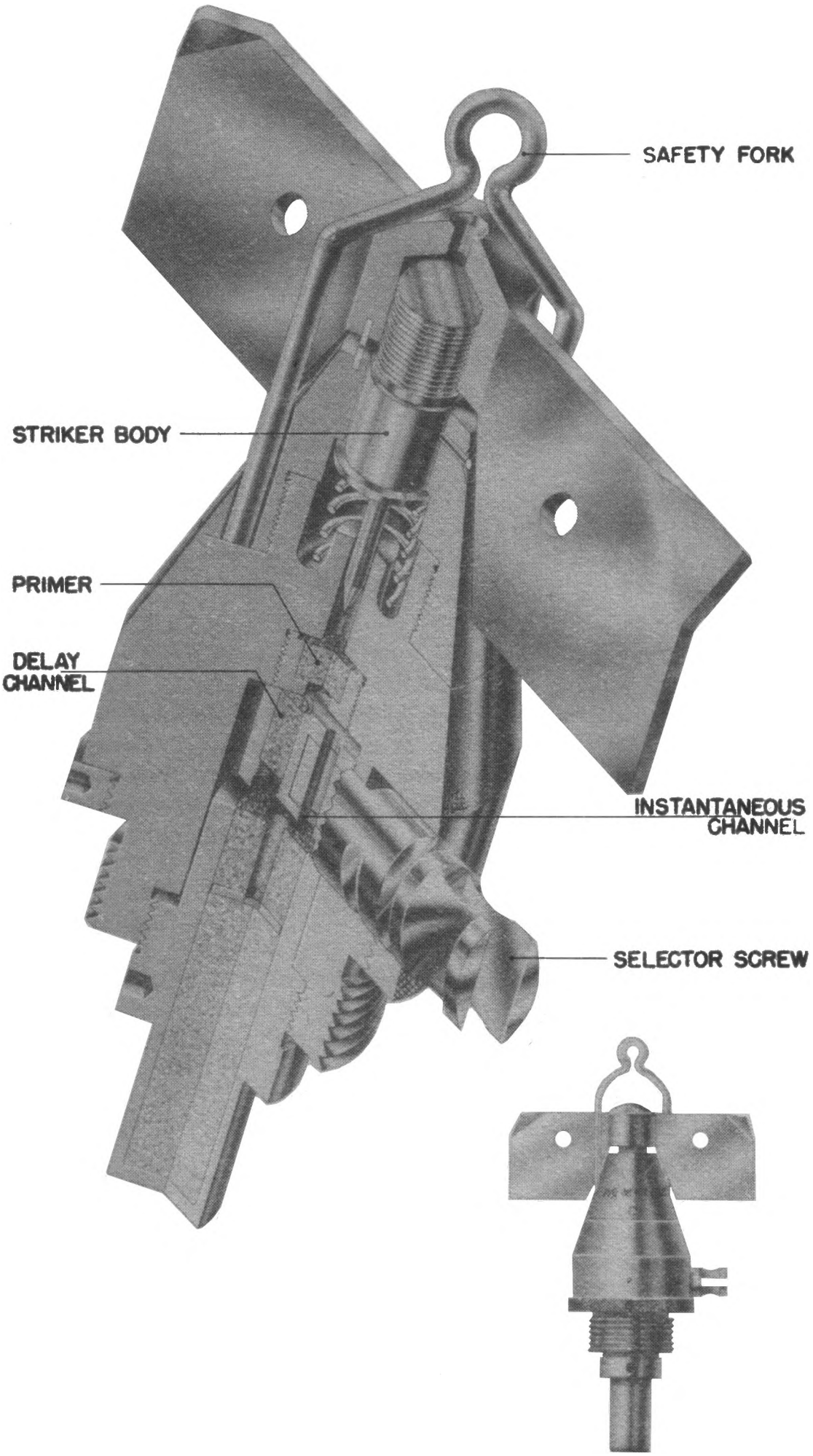
CONSTRUCTION:

The fuze body houses the striker body to which the arming vane assembly is threaded. A locating stud prevents rotational movement of the striker body during arming and after arming, the striker body is held away from the primer by means of a creep spring. No shear wire is used in this fuze. A U-shaped safety fork secures the vanes during transit. A stop-stud on the body and on the vane cap prevents the vanes from being jammed against the fuze body.

OPERATION:

Upon release from the plane, an arming wire is withdrawn from the holes in the arming vanes and the latter rotate and fall free. Upon impact, the striker body overcomes the resistance of the creep spring and the striker pierces the primer located in the gaine.

JAPANESE ARMY NOSE FUZE A2(c)



FILE NO.: 2511.N22

JAPANESE ARMY NOSE FUZE A-2(c)
(Type 99 Inst. Short Delay Fuze)

DESCRIPTION:

Classification	-	Mechanical Impact Nose Fuze.
Bombs used in	-	30 Kg., 50 Kg., 100 Kg. G.P.H.E. Bombs. 50 Kg. Army Incendiary and Gas Bombs.
Companion fuzes	-	B-1(a), B-1(b).
Overall length	-	3.38 inches (less booster).
Overall width	-	1.60 inches.
Material of construction	-	1) Brass throughout. 2) Steel upper fuze body. 3) Steel throughout; with steel striker, steel creep spring and copper shear wire.
Arming time	-	Arms after six rotations of vanes, vanes fall off after ten rotations.
Threads	-	1.156 inches diameter 13 Threads per inch.
Delay setting	-	Instantaneous or short delay.
Color and markings	-	Natural brass coated with lacquer or unplated steel. 阪 [illegible] 9七十昭 瞬 延

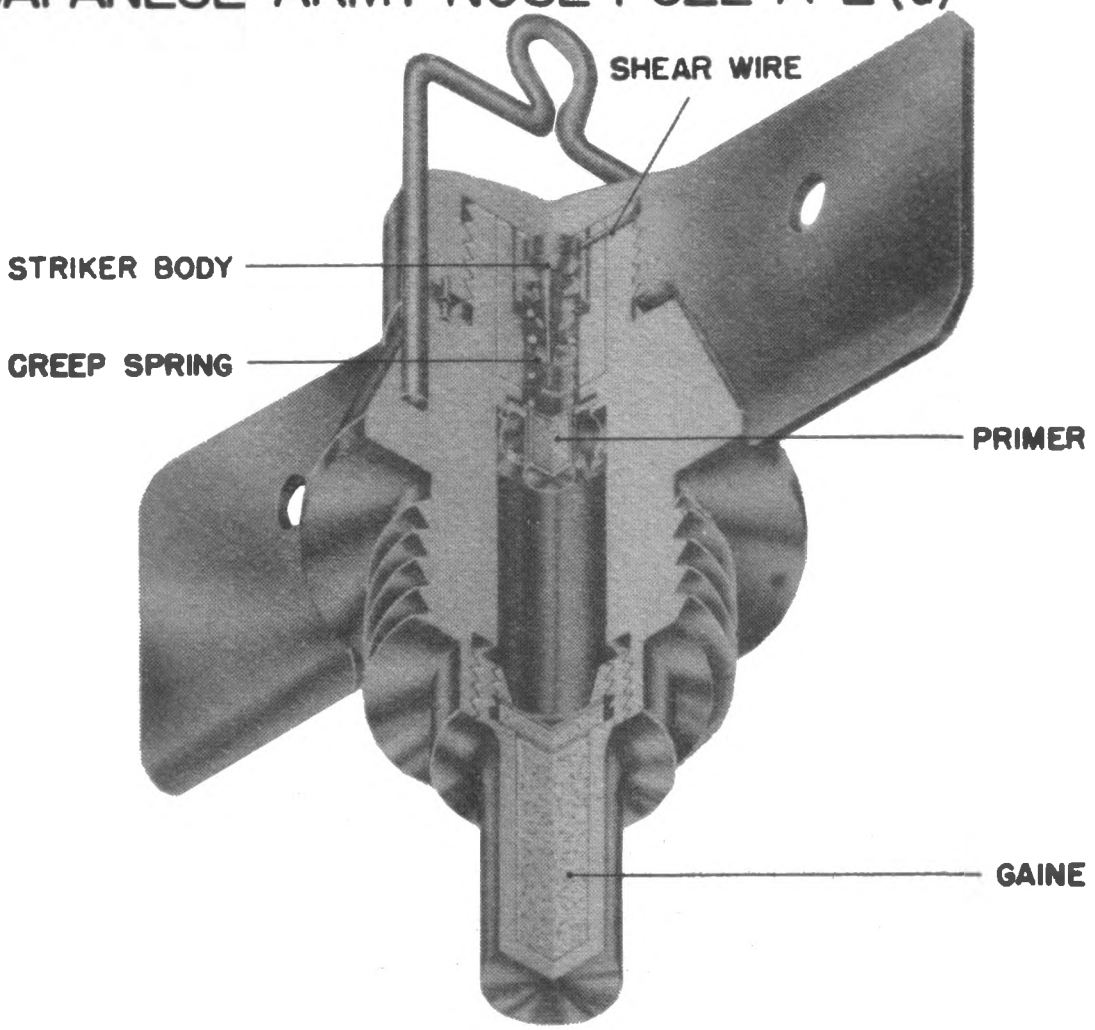
CONSTRUCTION:

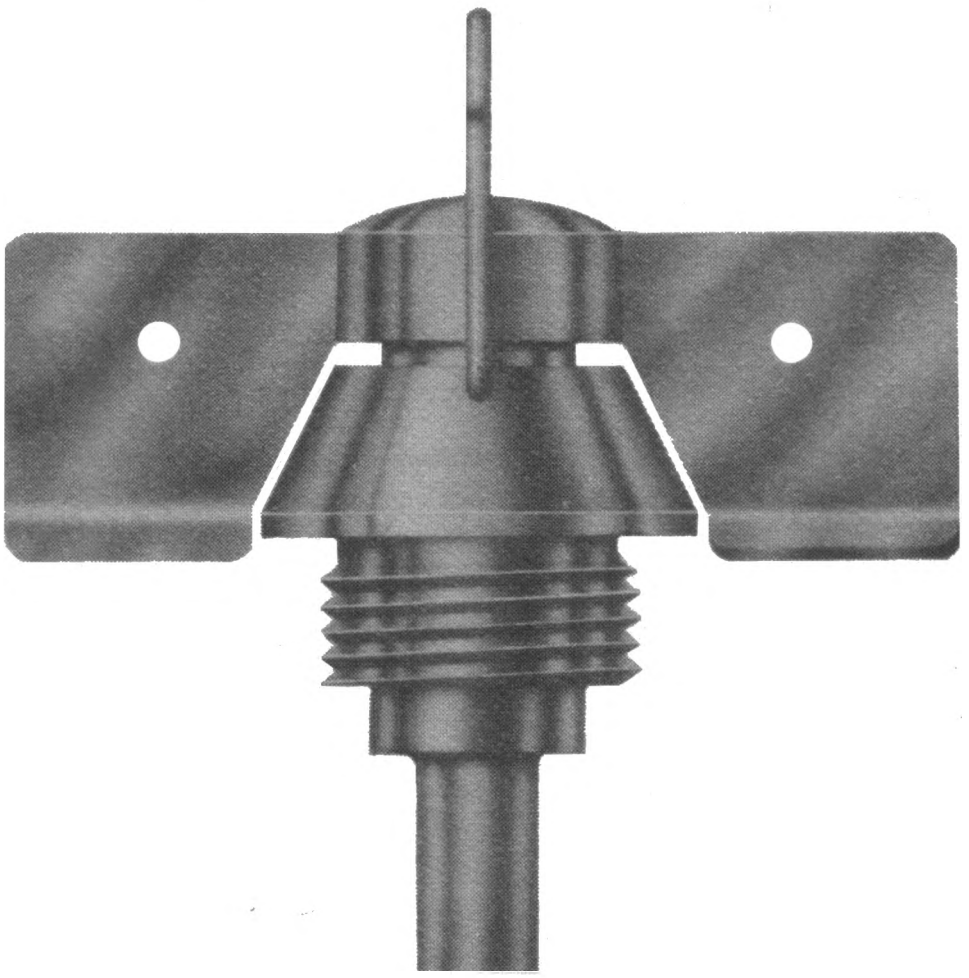
Fuze body in two halves: Upper half houses the striker body, striker, creep spring, and copper shear wire. The lower part contains the exploder system consisting of a detonator cap, a selective pyrotechnic assembly, and a gaine. The selective pyrotechnic assembly consists of two channels - one containing a pyrotechnic train for short delay action and the other an instantaneous flash port for instantaneous action. Choice of instantaneous or delay action is made by turning the selective screw to the vertical position for instantaneous and horizontally for delay. Japanese characters and a red arrow indicate the settings. The grub screw bearing on the channeled selector screw must be loosened to change the setting and tightened to secure it. The flash from either channel fires the gaine which is threaded into the base of the body.

OPERATION:

The U-shaped safety pin is withdrawn and the vanes are free to rotate, falling off after ten revolutions. On impact, the striker is forced inward, breaking the shear wire and overcoming the creep spring. The primer flash cap is thus detonated and initiates the delay train. If the instantaneous flash port is open (fuze set for instantaneous action) the flash will reach the gaine before the delay train burns through.

JAPANESE ARMY NOSE FUZE A-2(d)





FILE NO.: 2511.N23

JAPANESE ARMY NOSE FUZE A-2(d) (Type 1 Instantaneous Fuze)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	15 Kg., 30 Kg., 50 Kg., 100 Kg. G.P.H.E. 50 Kg. Incendiary; 15 Kg., 50 Kg. Chemical bombs.
Companion fuzes	-	B-1(a)
Overall length	-	2.6 inches.
Overall width	-	1.6 inches.
Material of construction	-	Brass except aluminum striker body, and primer holder.
Threads	-	13 threads per inch. 1-5/32 inches diameter.
Explosive train	-	Mercury fulminate primer, black powder relay, gaine.
Delay time	-	Instantaneous.
Color and markings	-	Natural brass.

CONSTRUCTION:

The arming vane assembly threads onto the fuze body and a safety fork prevents premature rotation of the arming vanes. The striker-primer assembly consists of a primer holder in which the primer rides loosely, a creep spring, a "thumb-tack" striker which is fixed in place by the striker body in the shape of an inverted hollow piston. The entire assembly is held in position by a thin steel shear wire and a lock washer which fits through a slot in a protruding shoulder in the central channel of the fuze body and is turned 90° to lock. Into the base of the fuze body is screwed the gaine. A U-shaped safety fork fits over the vanes into the fuze body to prevent rotation of the vanes.

OPERATION:

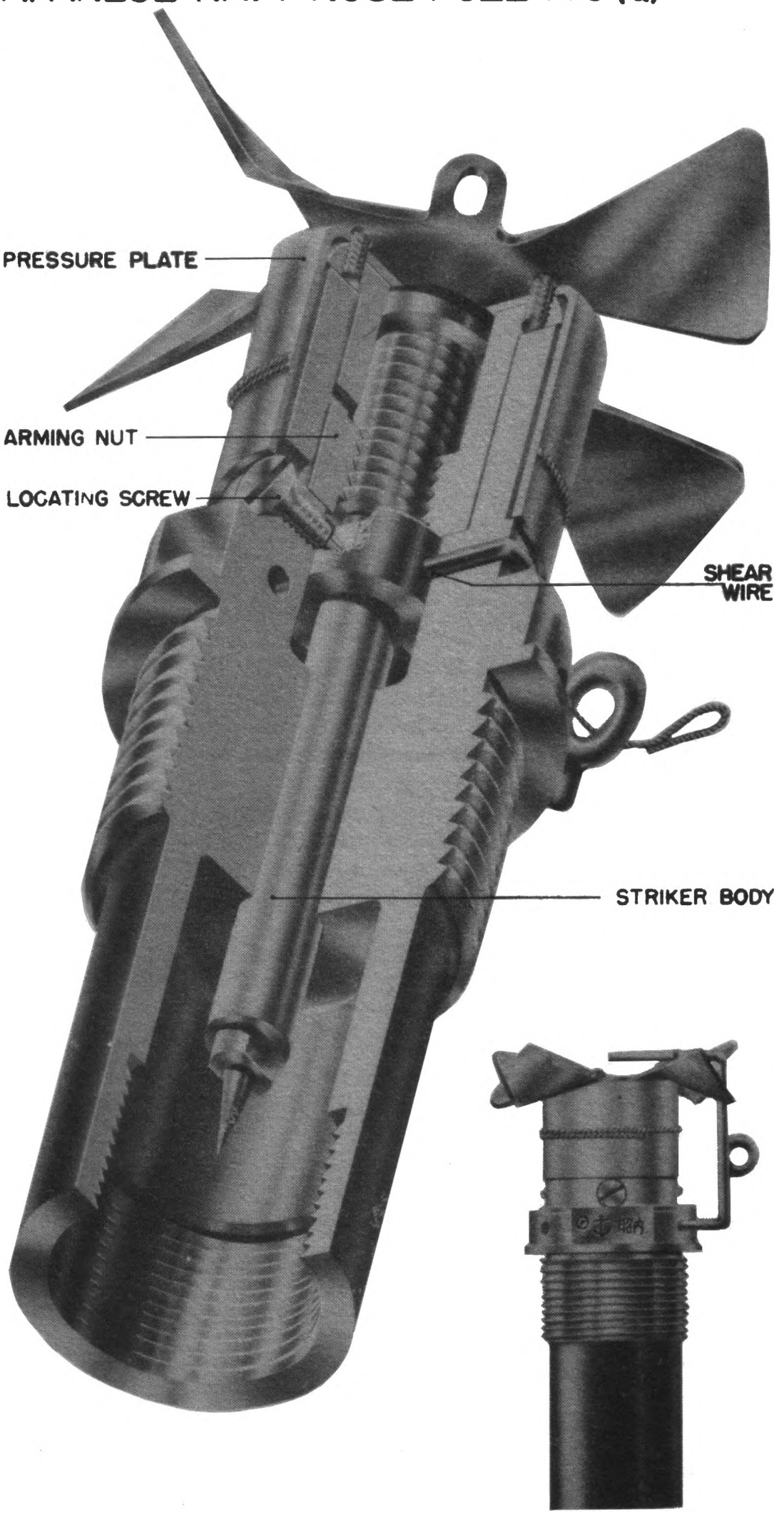
As the bomb is dropped, the safety pin is pulled allowing the arming vanes to rotate. After seven turns they fall completely off, exposing the thin metal head of the striker-primer assembly, which is flush with the top of the fuze body. On impact, the pressure of the earth against the striker body head drives the entire assembly to the rear, shearing the shear wire, except for the primer, which, being free to move forward against the creep spring by its own inertia, stabs itself against the striker and initiates the explosive train.

REMARKS:

If the striker body is flush with the top of the fuze body, the fuze is relatively safe to handle. If the striker body is driven down more than 1/8 inch, the fuze may be in a very sensitive condition.

The above information and drawing on preceding page is provisional information received.

JAPANESE NAVY NOSE FUZE A 3(a)



FILE NO.: 2511.N30

JAPANESE NAVY NOSE FUZE A-3(a)
(Type 97 Mk 2 Bomb Nose Fuze Model 2)

DESCRIPTION:

Classification	- Mechanical impact nose fuze.
Bombs used in	- 70 Kg. incendiary bombs. 250 Kg. incendiary bombs. 60 Kg. and 250 Kg. G.P.H.E. 63 Kg. and 250 Kg. S.A.P. 60 Kg. and 250 Kg. Anti-submarine bombs.
Companion fuzes	- B-2(a), B-3(a), D-2 series.
Overall length	- 5.5 inches.
Overall width	- 2.187 inches.
Vane span	- 3.5 inches.
Material of construction	- Brass except steel arming vanes and striker point.
Explosive train	- Standard Navy gaine or magazine.
Delay times	- Incorporated in Navy gaine.
Threads	- 10 threads per inch. 1-13/16 inches diameter.
Color and markings	- Natural brass, maroon lacquered lower body.

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CONSTRUCTION:

Fuze consists of three main parts: the body, the striker body, and the arming vane assembly. The lower end of the fuze body is threaded to take the standard Navy gaine or magazine. The striker body is held in the fuze body by means of a locating screw and a shear wire which prevents the striker body from rotating or moving forward until impact. A steel striker screws into the lower end of the striker body while the upper portion is threaded. The arming vane assembly consists of the arming vanes, the pressure plate, and arming nut. The internally threaded arming nut screws onto the striker body, its length of travel being limited by a retaining screw threaded into the top of the striker body. The arming vanes and pressure plate are secured to the arming nut by four small screws. An arming wire guide is attached to the side of the fuze body to aid the arming wire in giving an initial turn to the arming assembly when the bomb is dropped. A safety fork extending through eyelets of the arming vane assembly and into the fuze body prevents premature vane rotation.

OPERATION:

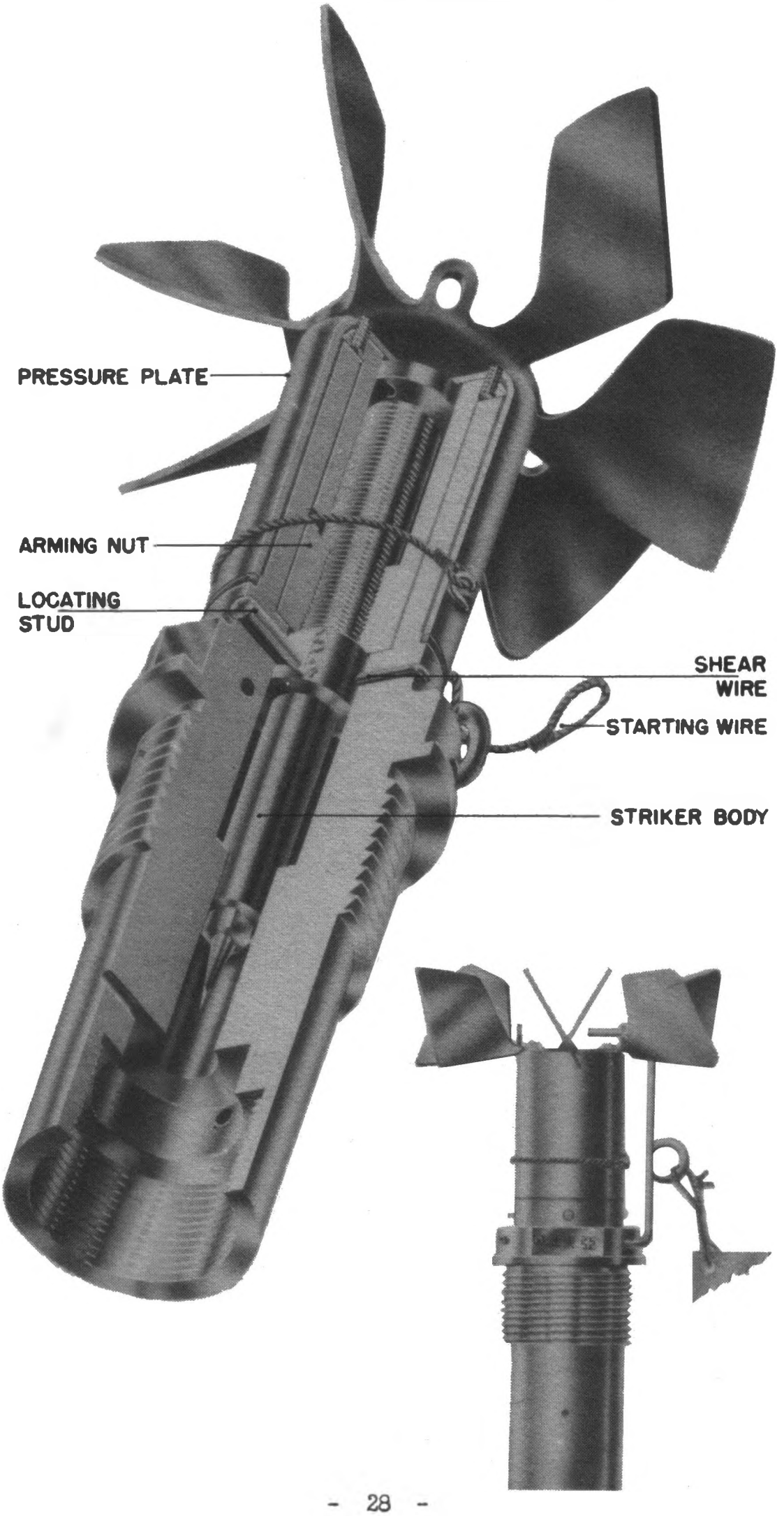
On release from the plane, the arming wire is withdrawn through the arming wire guide, allowing the pressure plate to rotate, thus screwing itself up and away from the striker body. When the arming nut locks against the retaining screw, the fuze is armed. On impact, the entire assembly (vanes, pressure plate, arming nut, and striker body) are driven inward, shearing the shear wire, and the striker pierces the primer.

REMARKS:

This fuze is designed for the same uses as the A-1(a) and is the most commonly used Navy fuze. Modified fuzes have been recovered having a fiber-plastic pressure plate and a steel body, a steel body with brass pressure plate, or all steel throughout. The threads on the striker body are 8 threads per inch.

1 June 1945

JAPANESE NAVY NOSE FUZE A-3 (b)



FILE NO.: 2511.N31

JAPANESE NAVY NOSE FUZE A-3(b)
(Type 1 Nose Fuze Model 2, Mod. 1)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	70 Kg. incendiary bombs.
		250 Kg. incendiary bombs.
		60 Kg. and 250 Kg. G.P.H.E.
		63 Kg. and 250 Kg. S.A.P.
		60 Kg. and 250 Kg. Anti-submarine bombs.
Companion fuzes	-	B-2(a), B-3(a).
Overall length	-	6.375 inches.
Overall width	-	2.25 inches.
Vane span	-	3.5 inches or 4.375 inches.
Material of construction	-	Brass except steel arming vanes and striker point.
Explosive train		Standard Navy gaine or magazine.
Delay times	-	Incorporated in Navy gaine.
Threads	-	10 threads per inch.
	-	1-13/16 inches diameter.
Color and markings	-	Natural brass overall except for steel color vanes.

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CONSTRUCTION:

Fuze consists of three main parts: the body, the striker body, and the arming vane assembly. The lower end of the fuze body is threaded to take the standard Navy gaine or magazine. The striker body is held in the fuze body by means of a locating pin and a shear wire which prevents the striker body from rotating or moving forward until impact. A steel striker screws into the lower end of the striker body while the upper portion is threaded. The arming vane assembly consists of the arming vanes, the pressure plate, and arming nut. The internally threaded arming nut screws onto the striker body, its length of travel being limited by a retaining screw threaded into the top of the striker body. The arming vanes and pressure plate are secured to the arming nut by four small screws. An arming wire guide is attached to the side of the fuze body to aid the arming wire in giving an initial turn to the arming assembly when the bomb is dropped. A safety fork extending through eyelets of the arming vane assembly prevents premature vane rotation.

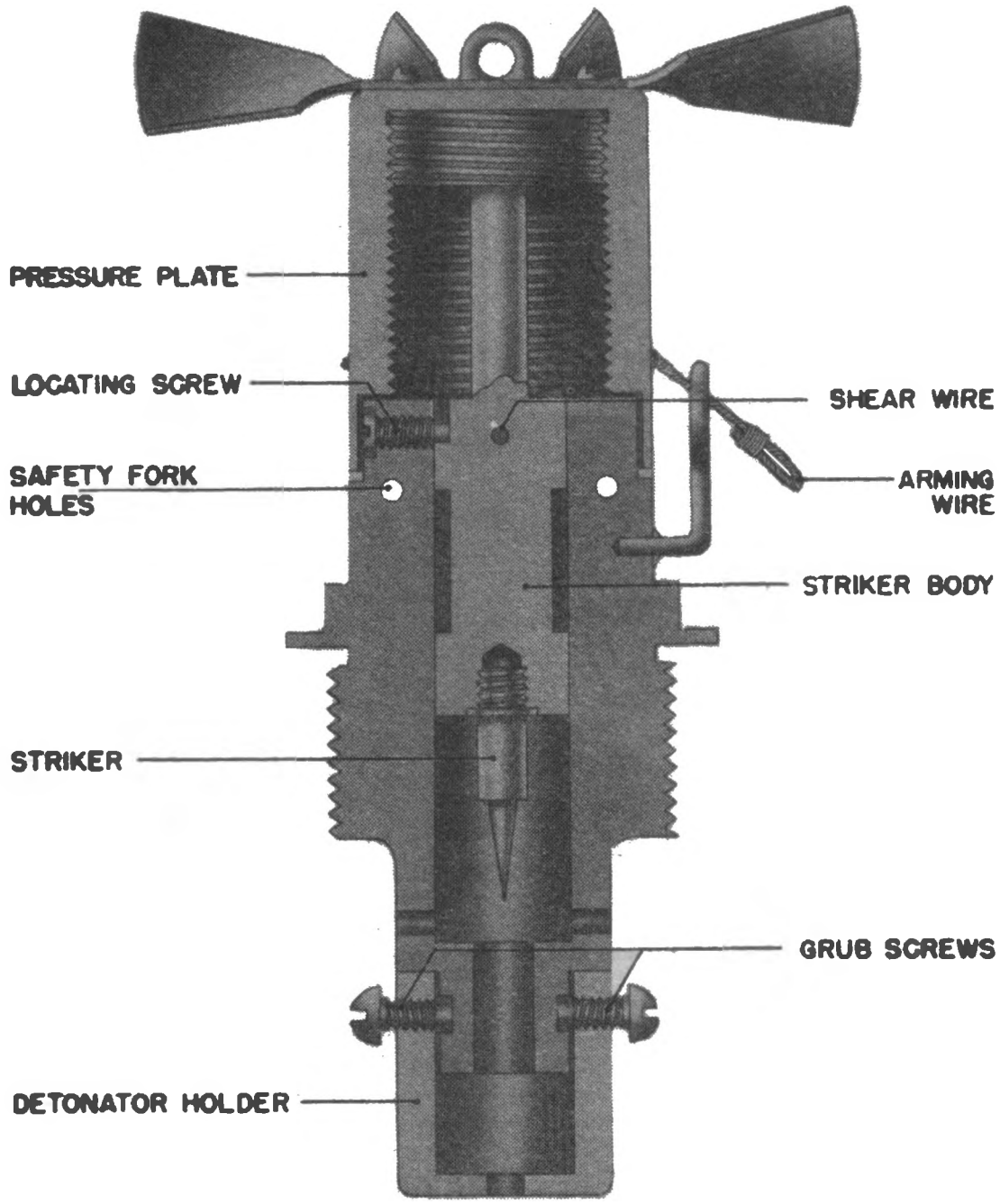
OPERATION:

On release from the plane, the arming wire is withdrawn from the arming wire guide, allowing the pressure plate to rotate, thus screwing itself up and away from the striker body. When arming nut locks against the retaining screw, the fuze becomes armed. On impact, the entire assembly (vanes, pressure plate, arming nut, and striker body) are driven inward, shearing the shear wire, and the striker pierces the primer.

REMARKS:

Two different types of arming vanes have been used on this fuze, the vanes varying as to size, shape, and pitch; each type having six blades. The striker body has 28 threads per inch.

JAPANESE NAVY NOSE FUZE A-3(c)



FILE NO.: 2511.N32

JAPANESE NAVY NOSE FUZE A-3(c)
(Type 2 Nose Priming Mechanism, Model 2)

DESCRIPTION:

Classification	-	Mechanical Impact Nose Fuze
Bombs used in	-	32 Kg. Incendiary
Companion fuzes	-	D-2(a), D-2(b), D-2(c)
Overall length	-	6.0 inches (including detonator holder)
Overall width	-	2.25 inches 3.68 inches (vane span)
Material of construction	-	Steel body, brass striker body and pressure plate
Arming time	-	28 revolutions, vanes fall away in 37 revolutions.
Delay setting	-	Probably none
Explosive train	-	Primer cap and detonator
Threads	-	1-13/16 inches diameter 10 threads per inch
Color and markings	-	Natural steel color overall with brass pressure plate. ㊅⚓門223

CONSTRUCTION:

Fuze consists of four parts: The fuze body, the striker body, the pressure plate, and the detonator holder. A safety fork fits into the fuze body and eyelets in the vane assembly to prevent premature vane rotation. The brass striker body has a steel striker point screwed into its lower end. A threaded flange, one inch in diameter, at the top of the striker body screws into the pressure plate. The striker body is held in place by a shear wire; a locating screw prevents upward or rotational movement. The brass pressure plate is of one piece construction, internally threaded to receive the flange of the striker body. A six bladed vane assembly is secured to the cap by four screws. An arming wire is soldered to the pressure plate and fits through an arming wire guide on the side of the fuze body. This gives an initial rotational movement to the vane assembly when the bomb is dropped. The detonator holder is fastened to the fuze body by two screws.

OPERATION:

On release, from the plane, the arming wire is withdrawn through the arming wire guide, allowing the pressure plate to rotate up on the striker body flange. The fuze becomes armed in approximately 28 revolutions and the arming vane assembly falls away in 37 revolutions. On impact, the striker body is forced inward, shearing the shear wire and driving the striker into the detonator.

REMARKS:

If a UXB is found and the fuze has completely armed, the only visible portions of the fuze will be the threaded brass striker body flange resting flush against the top of the fuze body.

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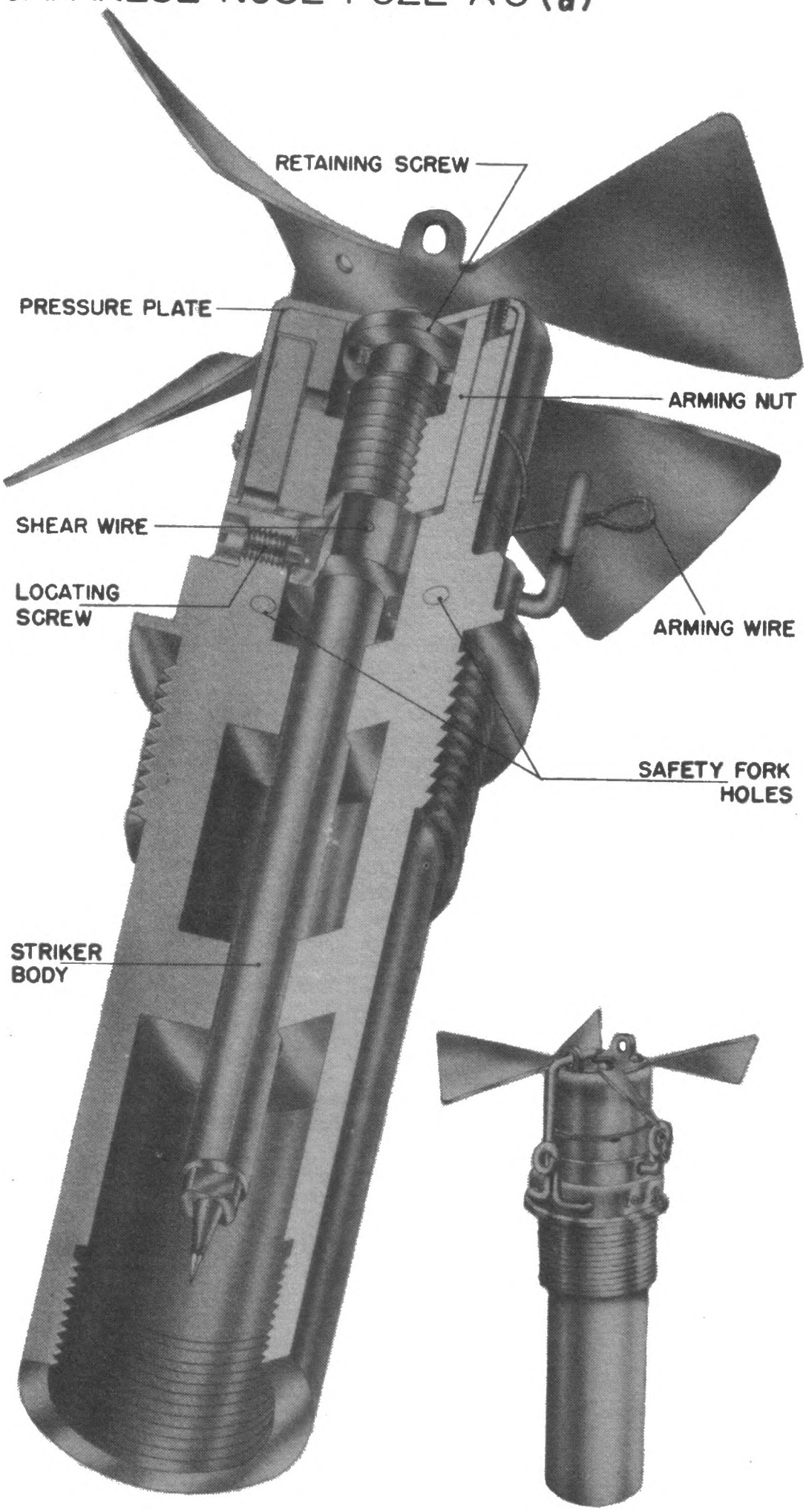
JAPANESE NOSE FUZE A 3 (d)



FILE NO.: 2511.N33

JAPANESE NAVY NOSE FUZE A-3(d)
(Type 97 Mk 2 Bomb Nose Fuze Model 1)

DESCRIPTION:

Classification	- Mechanical impact nose fuze.
Bombs used in	- 800 Kg. G.P. and S.A.P. bombs.
Companion fuzes	- B-3(b).
Overall length	- 7.125 inches.
Overall width	- 2.25 inches. 4.75 inches (vane span).
Material of construction	- Brass throughout except steel arming vanes and striker point.
Arming time	- 7 revolutions.
Delay setting	- Incorporated in Navy gaine.
Threads	- 1-13/16 inches diameter. 10 threads per inch.
Color and markings	- Natural brass, maroon lacquered lower body, steel colored vanes.

CONSTRUCTION:

Fuze consists of three main parts: the fuze body, the striker body, and arming vane assembly. The lower end of the fuze body is threaded to take the standard Navy gaine or magazine. The striker body is held in the fuze body by means of a locating screw and a shear wire which prevents the striker body from rotating or moving forward until impact occurs. A steel striker point screws into the lower end of the striker body while the upper portion is threaded. The arming vane assembly consists of the arming vanes, the pressure plate, and arming nut. The internally threaded arming nut screws onto the striker body, its length of travel being limited by a retaining screw threaded into the top of the striker body. The arming vanes and pressure plate are secured to the arming nut by four small screws. An arming wire guide is attached to the side of the fuze body to aid the arming wire in giving an initial turn to the arming assembly when the bomb is dropped. A safety fork fits into the upper portion of the fuze body, one prong of which extends up through the eyelets of the arming vane assembly to prevent premature vane rotation.

OPERATION:

On release from the plane, the arming wire is withdrawn through the arming wire guide, allowing the pressure plate to rotate, thus screwing the pressure plate and arming nut up and away from the striker body. When the arming nut locks against the retaining screw, the fuze is armed. On impact, the entire assembly (vanes, pressure plate, arming nut and striker body) are driven inward, shearing the shear wire, and the striker pierces the primer.

REMARKS:

This fuze has the same uses as the A-1(c) and the operation is the same as the A-3(a).

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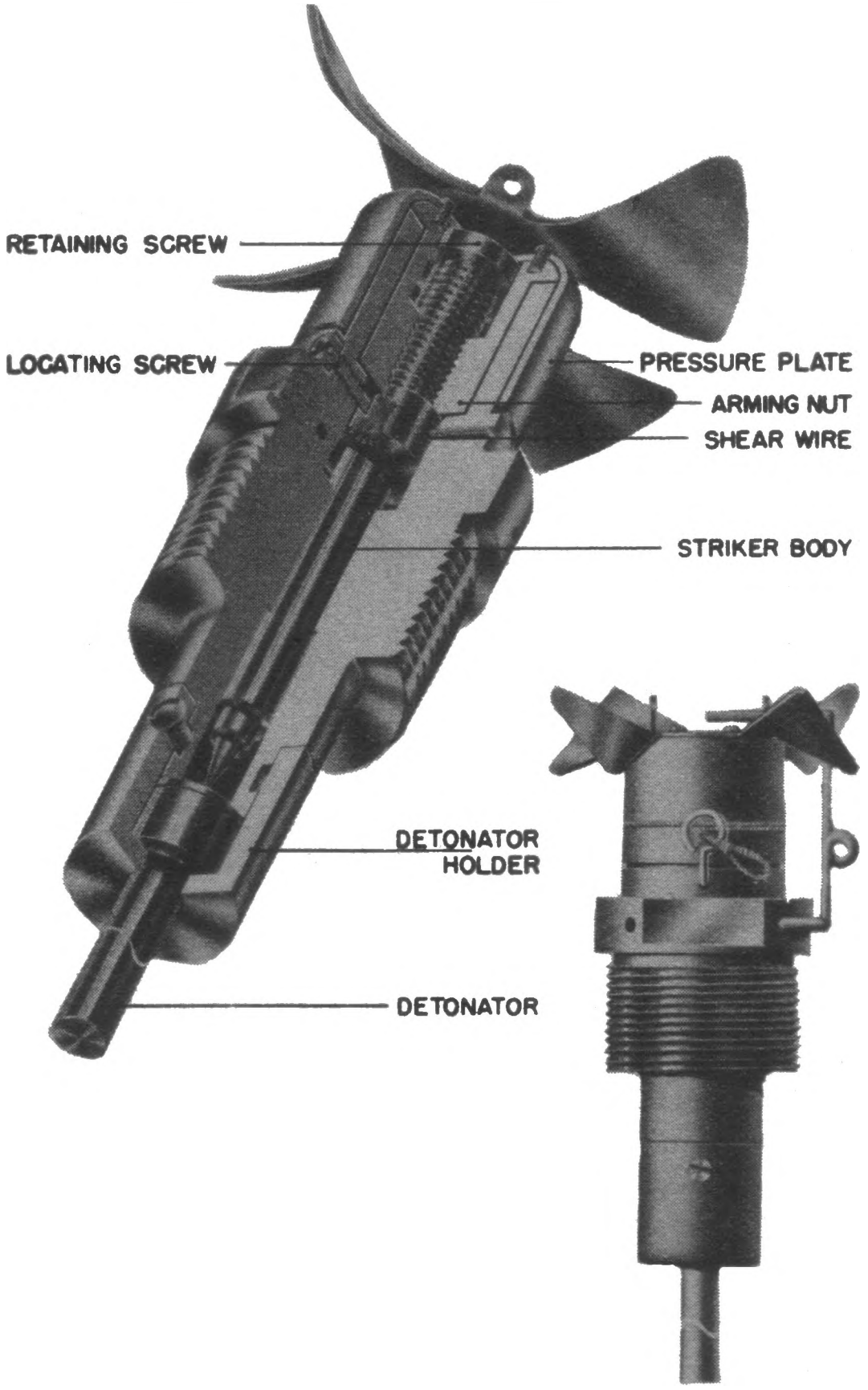
JAPANESE NAVY NOSE FUZE A-3 (e)



FILE NO.: 2511.N34

JAPANESE NOSE FUZE A-3(e)
(Type 3 Nose Priming Mechanism Model 2)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	Probably 32 kg. incendiary.
Companion fuzes	-	Possibly D-2 series.
Overall length	-	5.312 inches.
Overall width	-	2.187 inches.
Material of construction	-	Steel fuze body with brass pressure plate, arming nut, striker body, and shear wire.
Arming time	-	Seven revolutions.
Delay setting	-	Probably none.
Threads	-	1-13/16 inches, 10 threads per inch.
Color and markings	-	Brass pressure plate, balance natural steel color.

CONSTRUCTION:

Fuze consists of four parts: the fuze body, the striker body, the pressure plate, and the detonator holder. A safety fork fits into the fuze body and eyelets in the vane assembly to prevent premature vane rotation. The striker body is held in the fuze body by means of a locating pin and a shear wire which prevents the striker body from rotating or moving forward until impact. A steel striker screws into the lower end of the body while the upper portion is threaded. The arming vane assembly consists of the arming vanes, the pressure plate, and arming nut. The internally threaded arming nut screws onto the striker body, its length of travel being limited by a retaining screw threaded into the top of the striker body. The arming vanes and pressure plate are secured to the arming nut by four small screws. An arming wire guide is attached to the side of the fuze to aid the arming wire in giving an initial turn to the arming assembly when the bomb is dropped. The detonator holder is fastened to the fuze body by two screws.

OPERATION:

On release from the plane, the arming wire is withdrawn through the arming wire guide, allowing the pressure plate to rotate, thus screwing itself up and away from the striker body. When the arming nut locks against the retaining screw, the fuze is armed. On impact, the entire assembly (vanes, pressure plate, arming nut, and striker body) are driven inward, shearing the shear wire, and the striker pierces the primer.

REMARKS:

The upper portion of the fuze body down to the external threads is exactly the same as the A-3(a) as regards construction and dimensions, except that there is no projecting collar on the shoulder just above the external threads.

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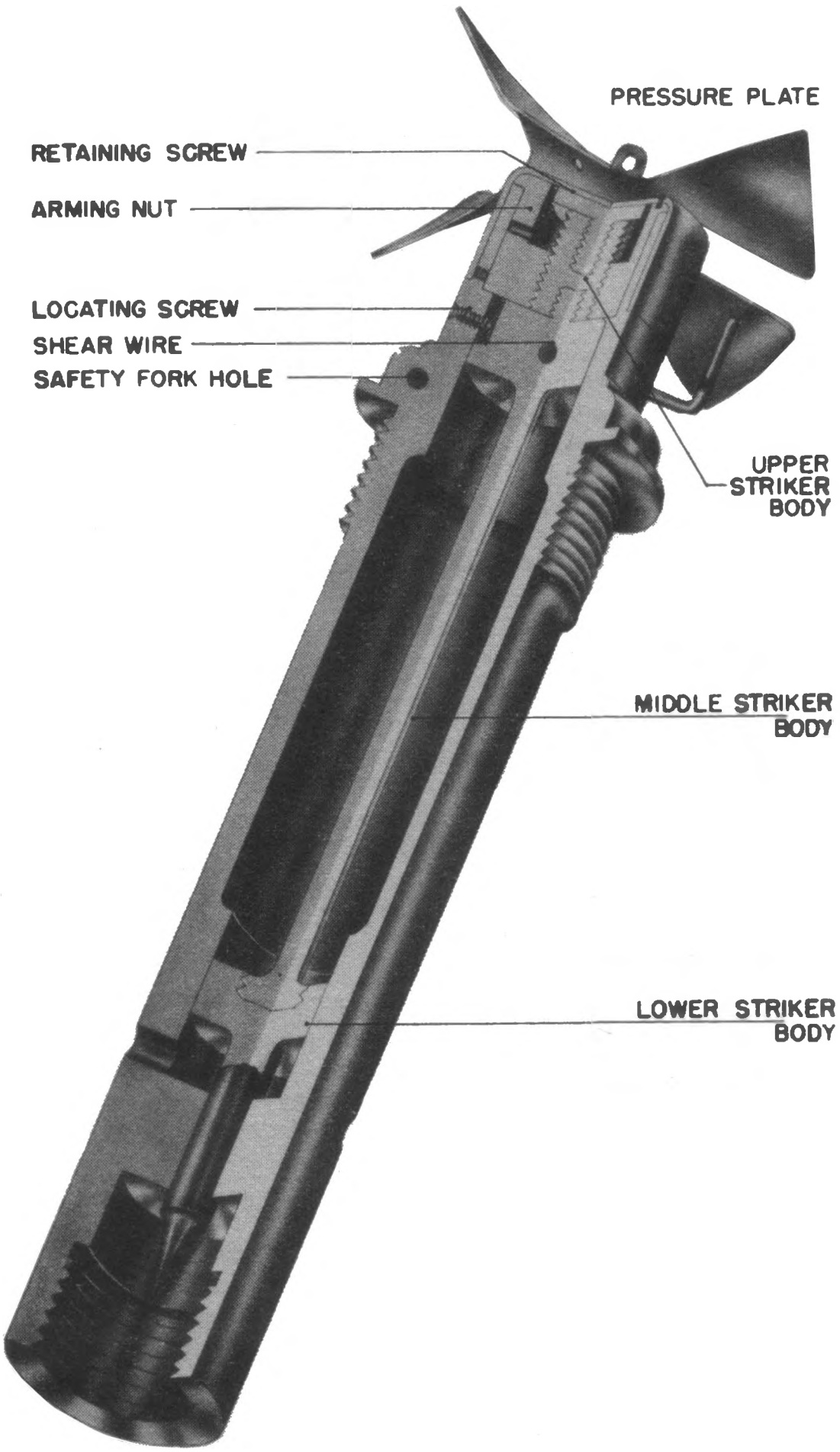
JAPANESE NAVY NOSE FUZE A-3 (f)



FILE NO.: 2511.N35

JAPANESE NAVY NOSE FUZE A-3(f)
(Type 2 No. 50 Ordinary Bomb Nose Fuze)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	500 Kg. Navy S.A.P. Bomb.
Companion fuzes	-	B-2(c).
Overall length	-	10.0 inches.
Overall width	-	2.187 inches.
Material of construction	-	Steel throughout with brass pressure plate.
Arming time	-	7 revolutions.
Delay setting	-	Incorporated in Navy gaine (Type 99 Ordinary Bomb Gaine A or C.)
Threads	-	1-13/16 inches diameter 10 threads per inch.
Color and markings	-	Natural steel color except brass pressure plate.

CONSTRUCTION:

Fuze consists of three main parts: the fuze body, the striker body, and the arming vane assembly. The lower end of the fuze body is threaded to take the standard Navy gaine or magazine. The striker body is held in the fuze body by means of a locating screw and a shear wire which prevents the striker body from rotating or moving forward until impact occurs. The striker body is made in three sections. The upper section, which is externally threaded to take the arming nut, is internally threaded in the top to take the retaining screw, and internally threaded in the bottom to take the middle section of the striker body. The lower section of the striker body is internally threaded at the top to take this middle section. The arming vane assembly consists of the arming vanes, the pressure plate, and arming nut. The internally threaded arming nut screws onto the striker body, its length of travel being limited by a retaining screw threaded into the top of the striker body. The arming vanes and pressure plate are secured to the arming nut by four small screws. An arming wire guide is attached to the side of the fuze body to aid the arming wire in giving an initial turn to the arming assembly when the bomb is dropped. A safety fork fits into the upper portion of the fuze body, one prong of which extends up through the eyelets of the arming vane assembly to prevent premature vane rotation.

OPERATION:

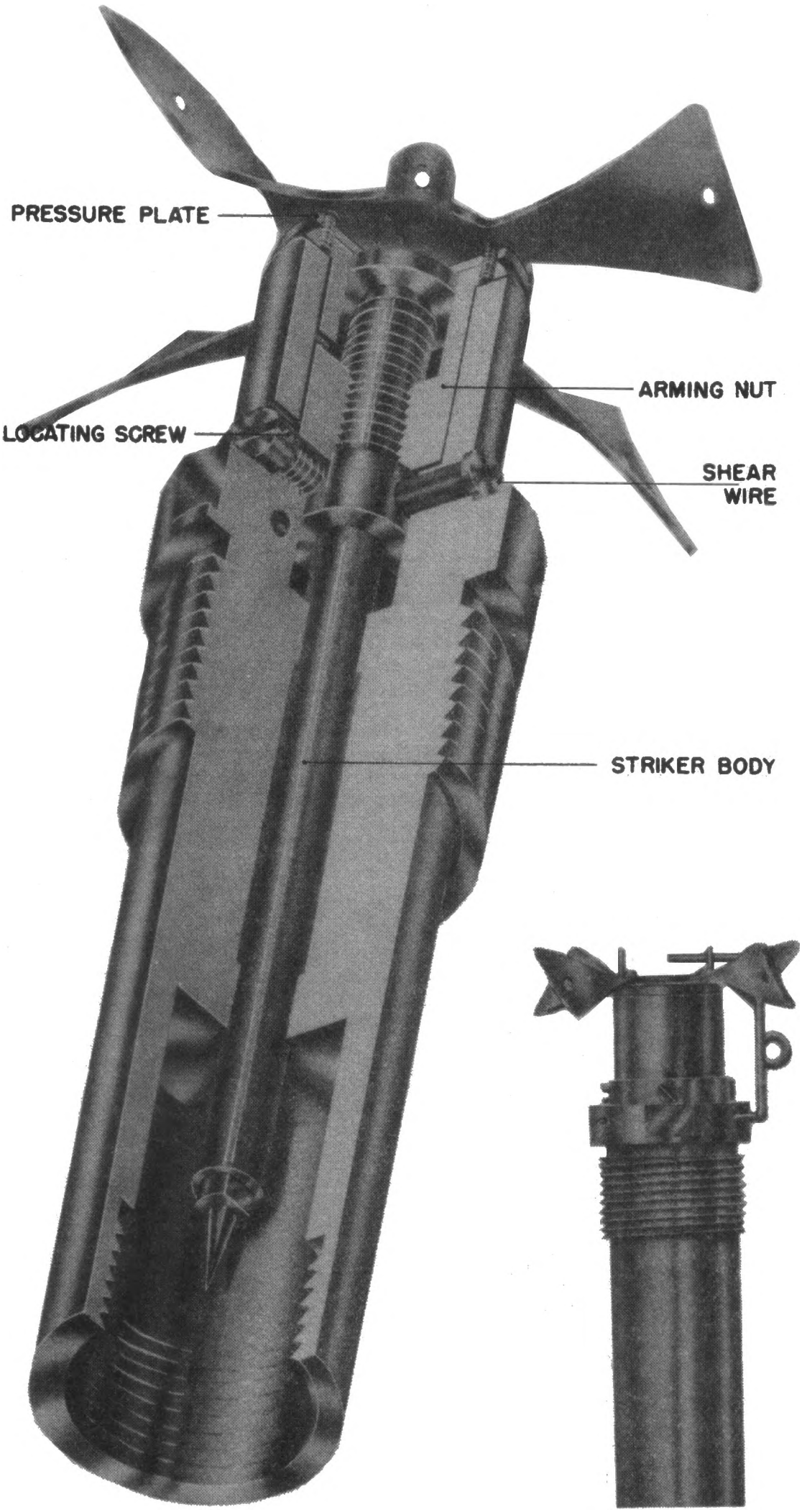
On release from the plane, the arming wire is withdrawn through the arming wire guide, allowing the pressure plate to rotate, thus screwing the pressure plate and arming nut up and away from the striker body. When the arming nut locks against the retaining screw, the fuze is armed. On impact, the entire assembly (vanes, pressure plate, arming nut, and striker body) are driven inward, shearing the shear wire, and the striker pierces the primer.

REMARKS:

This fuze is an elongated A-3(a) and its operation is identical.

1 June 1945

JAPANESE NAVY NOSE FUZE A-3(g)



DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	Baka (piloted rocket bomb).
Companion fuzes	-	B-9(a)
		B-10(a)
Overall length	-	7.125 inches.
Overall width	-	4.75 inches (vane span).
		2.05 inches (body diameter).
Material of construction	-	Steel throughout except brass locating screw, arming nut and striker body.
Explosive train	-	Standard Navy gaine.
Threads	-	10 threads per inch.
		1-13/16 inches diameter.
Color	-	Plated steel.

CONSTRUCTION:

Fuze consists of three main parts: the fuze body, the striker body, and arming vane assembly. The lower end of the fuze body is threaded to receive the standard Navy gaine. The striker body is held in the fuze body by means of a locating screw and a heavy steel shear pin (the shear pin has a head at one end and split at the opposite end to hold it in place by tension). A striker point screws into the lower end of the striker body while the upper portion is threaded. The arming vane assembly consists of the arming vanes, the pressure plate, and arming nut. The pressure plate consists of a disc inserted between the vanes and the arming nut. The internally threaded arming nut screws onto the striker body, its length of travel being limited by a retaining screw threaded into the top of the striker body. The arming vanes and pressure plate are secured to the arming nut by four small screws. Each vane is pierced by a 1/4 inch hole, presumably to take an arming wire. A safety fork fits into the upper portion of the fuze body, one prong of which extends up through the eyelets of the arming vane assembly to prevent premature vane rotation.

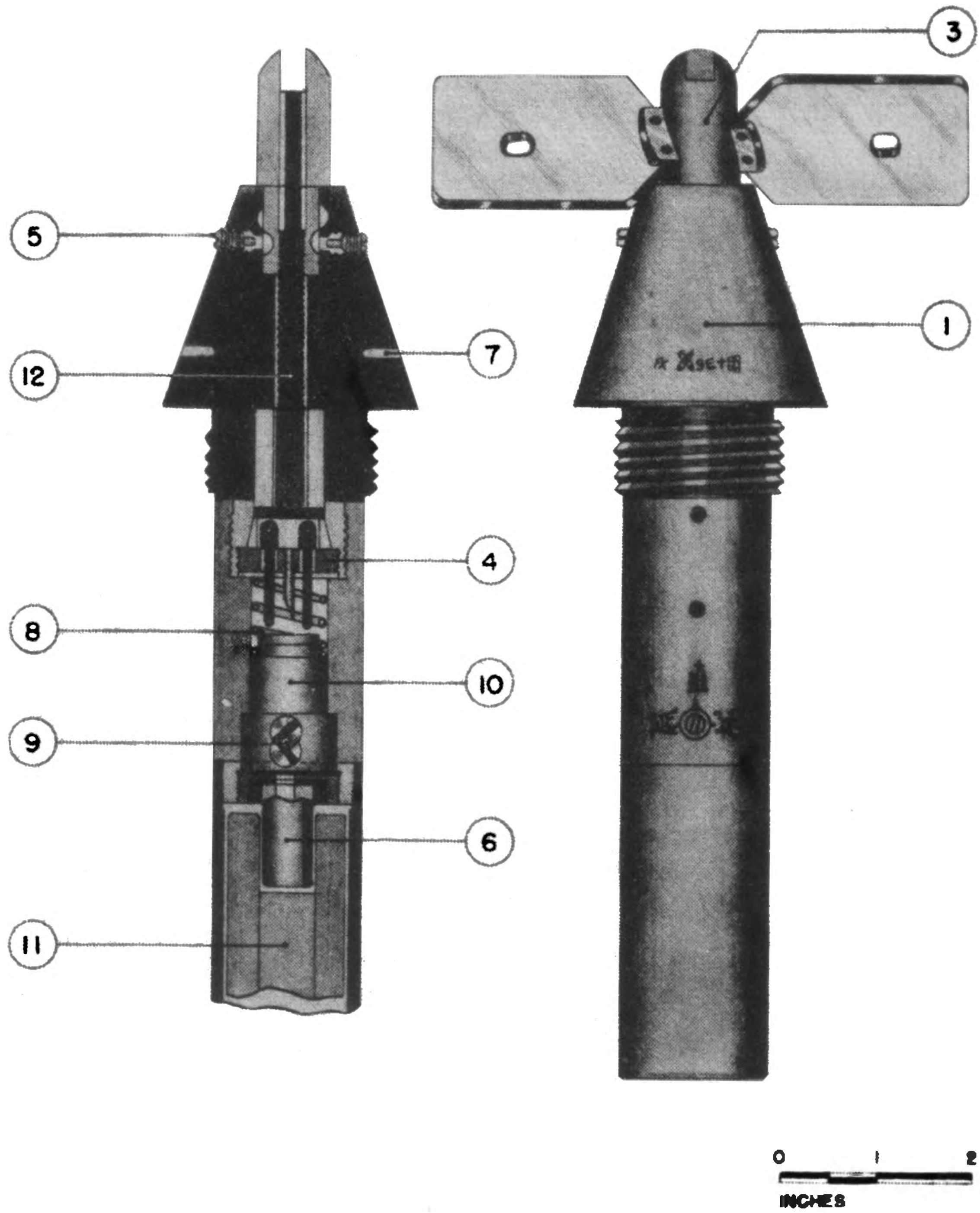
OPERATION:

The pilot of the Baka bomb pulls the arming wire from the vanes, allowing the pressure plate to rotate, thus screwing the pressure plate and arming nut up and away from the striker body. When the arming nut locks against the retaining screw, the fuze is armed. On impact, the entire assembly (vanes, pressure plate, arming nut, and striker body) is driven inward, shearing the shear wire, and the striker pierces the primer.

REMARKS:

There is no flange on the fuze body above the threads and no starting wire or starting eyelet present on this fuze as is common to the other A-3 series fuzes.

FUZE DATA:		FILE NO.: 2511.N40
NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION A-4(a)	CLASSIFICATION	Army Mechanical Impact Nose Fuze
	TYPE OF MISSILE	Army Bomb
MARKINGS: /ҡ ✖ 9 五 + 8 ⊐ (OSAKA - September, 1940.)		BOMBS USED IN: 250 Kg and 500 Kg G.P.H.E.



LEGEND	
1. UPPER PORTION OF BODY.	7. SPANNER HOLES.
2. LOWER PORTION OF BODY.	8. CREEP SPRING.
3. VANE HUB.	9. SETTING SCREW.
4. STRIKER.	10. PRIMER HOLDER.
5. BEARING PINS (2).	11. BOOSTER.
6. GAINE.	12. ARMING STEM.

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	250 Kg. and 500 Kg. G.P.H.E.
Companion fuzes	-	B-4(a).
Overall length	-	7.1 inches (less booster)
Overall width	-	2.4 inches.
Material of construction	-	Brass except steel creep spring and steel striker
Threads	-	8 threads per inch. 1.625 inches diameter.
Explosive train	-	A primer sets off the delay element which fires the gaine which in turn sets off the booster.
Delay time	-	
Color and markings	-	Natural brass. 

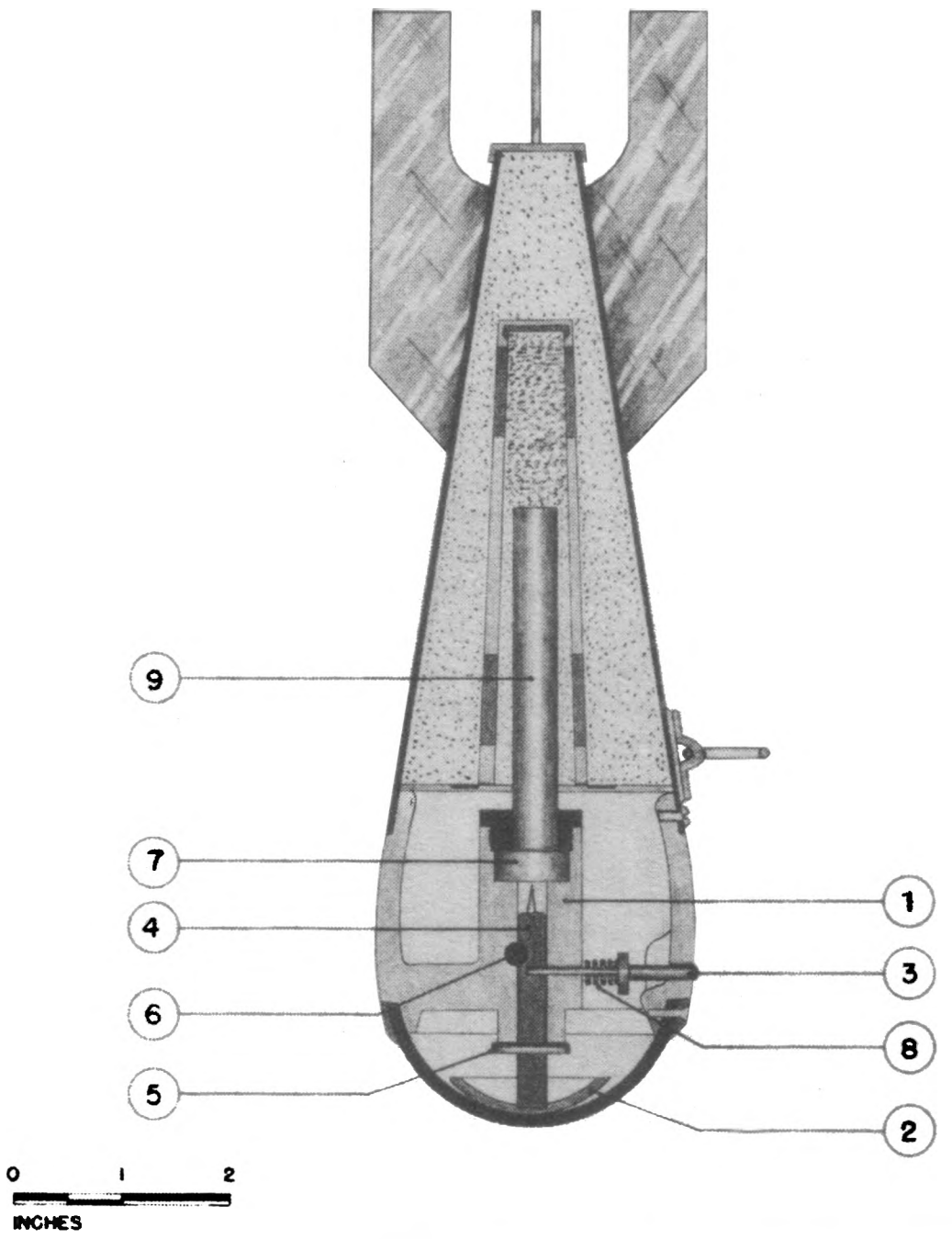
CONSTRUCTION:

The upper portion of the fuze body houses the arming vane assembly. The lower portion of the fuze body houses the striker which is attached to a plug, and the two safety plungers which protrude beyond the point of the striker. The vanes are rivetted to the vane hub which is threaded to the arming spindle. The vanes are free to rotate, but two bearing pins prevent their falling off. A creep spring keeps the striker away from the primer after the fuze is armed until impact occurs. A setting screw permits a delay to be set. The standard Army gaine is surrounded by a booster. A U-shaped safety wire is fitted over the arming vanes to prevent premature rotation.

OPERATION:

Upon release from the plane, an arming wire is withdrawn from the hole in the arming vanes and the vanes rotate, but do not fall free. The arming spindle is screwed upward by the vanes, raising the two safety plungers with it. This allows the striker point to protrude below the plungers. On impact, the primer carrier moves against the resistance of the spring and hits the striker to set off the explosive train.

FUZE DATA:		FILE NO.: 2511.N50
NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION	CLASSIFICATION	Army Mechanical Impact Nose Fuze
A-5(a)	TYPE OF MISSILE	Incendiary
MARKINGS: "6503" (Four digit number on striker head)		BOMBS USED IN: 1 Kg. Incendiary - Smoke - Anti-Personnel.



LEGEND	
1. FUZE BODY. 2. STRIKER HEAD. 3. SAFETY PLUNGER. 4. STRIKER. 5. SHEAR WIRE	6. SAFETY PIN. 7. PRIMER 8. SPRING. 9. PICRIC ACID.

FILE NO.: 2511.N50

JAPANESE NAVY NOSE FUZE A-5(a) (Type 3 Practice Bomb Fuze)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	1 Kg. Practice Mod. 3 (Incendiary-Smoke-Anti-Personnel).
Companion Fuzes	-	None.
Overall length	-	2.8 inches (less booster).
Overall width	-	3.0 inches (including fuze housing).
Material of body	-	Cast iron.
Delay setting	-	None.
Explosive train	-	Primer and burster.
Color and markings	-	Black, may have brass band. "6503" (Four digit number on striker head).

CONSTRUCTION:

The fuze is inside the rubber nose of the bomb and can not be seen. The fuze body is part of the nose of the bomb. The striker head has the striker point fastened onto the same spindle. In the unarmed position, the safety plunger holds the striker along with a safety pin which is withdrawn upon release. A shear wire is sheared on impact. A primer and burster constitute the exploder assembly.

OPERATION:

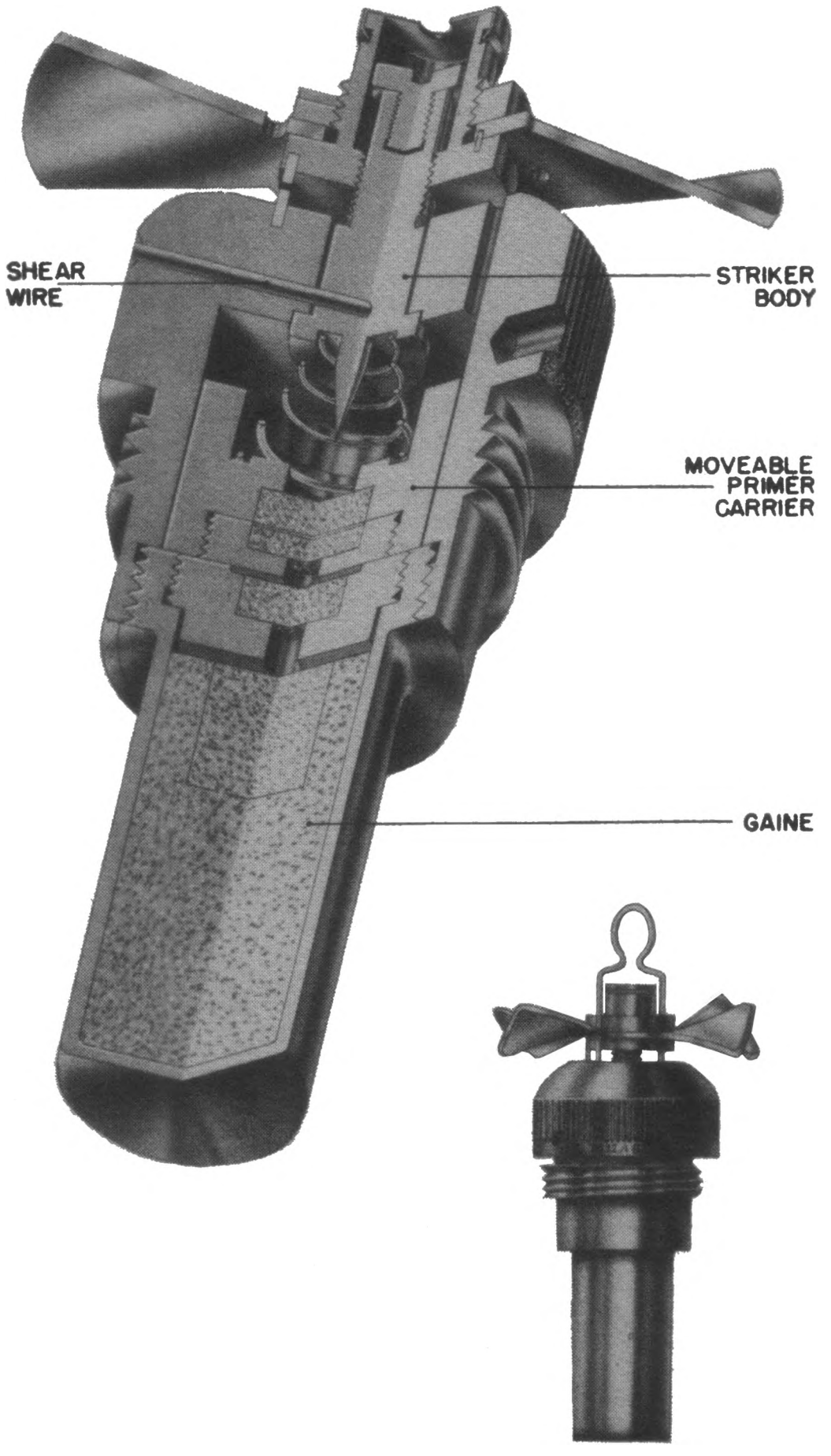
On release from the plane, the safety pin is unscrewed. The safety plunger is forced out by the spring and on impact, the wire is sheared. The striker is forced into the primer to start the explosion.

REMARKS:

This fuze has no creep spring. If the bomb has been dropped, the striker may be imbedded in the primer. Any slight movement may be sufficient to disturb the striker and to set off the bomb.

1 June 1945

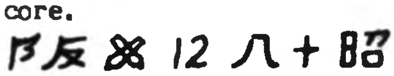
JAPANESE ARMY NOSE FUZE A-6 (a)



FILE NO.: 2511.N60

JAPANESE ARMY NOSE FUZE A-6(a)
(Type 3 Small Inst. Fuze)

DESCRIPTION:

Classification	-	Mechanical Impact Nose Fuze.
Bombs used in	-	1/2 Kg. H.E. Cluster Bomb.
Companion fuzes	-	None.
Overall length	-	2.5 inches (with gaine).
Overall width	-	1.0 inches (body). 1.5 inches (vane span).
Threads	-	1-13/16 inches (diameter). 16 threads per inch
Material of construction	-	Brass throughout except steel spring and firing pin and copper shear wire.
Arming time	-	4-1/2 turns of arming vanes.
Delay setting	-	None.
Explosive train	-	Primer flash cap, two black powder relay pellets, cyclonite gaine with lead azide core.
Color and markings	-	 "OSAKA ARMY ARSENAL, DECEMBER, 1943"

CONSTRUCTION:

The brass body contains the steel striker which is held in place by a copper shear wire. The arming vanes are held on the threaded portion of the striker between a collar and lock nut. The safety fork prevents the arming vanes from rotating. The primer carrier contains the primer and is held away from the striker by the creep spring. Two spanner holes are located in the fuze body. The fuze is screwed into the nose of the bomb and is secured by a grub screw.

OPERATION:

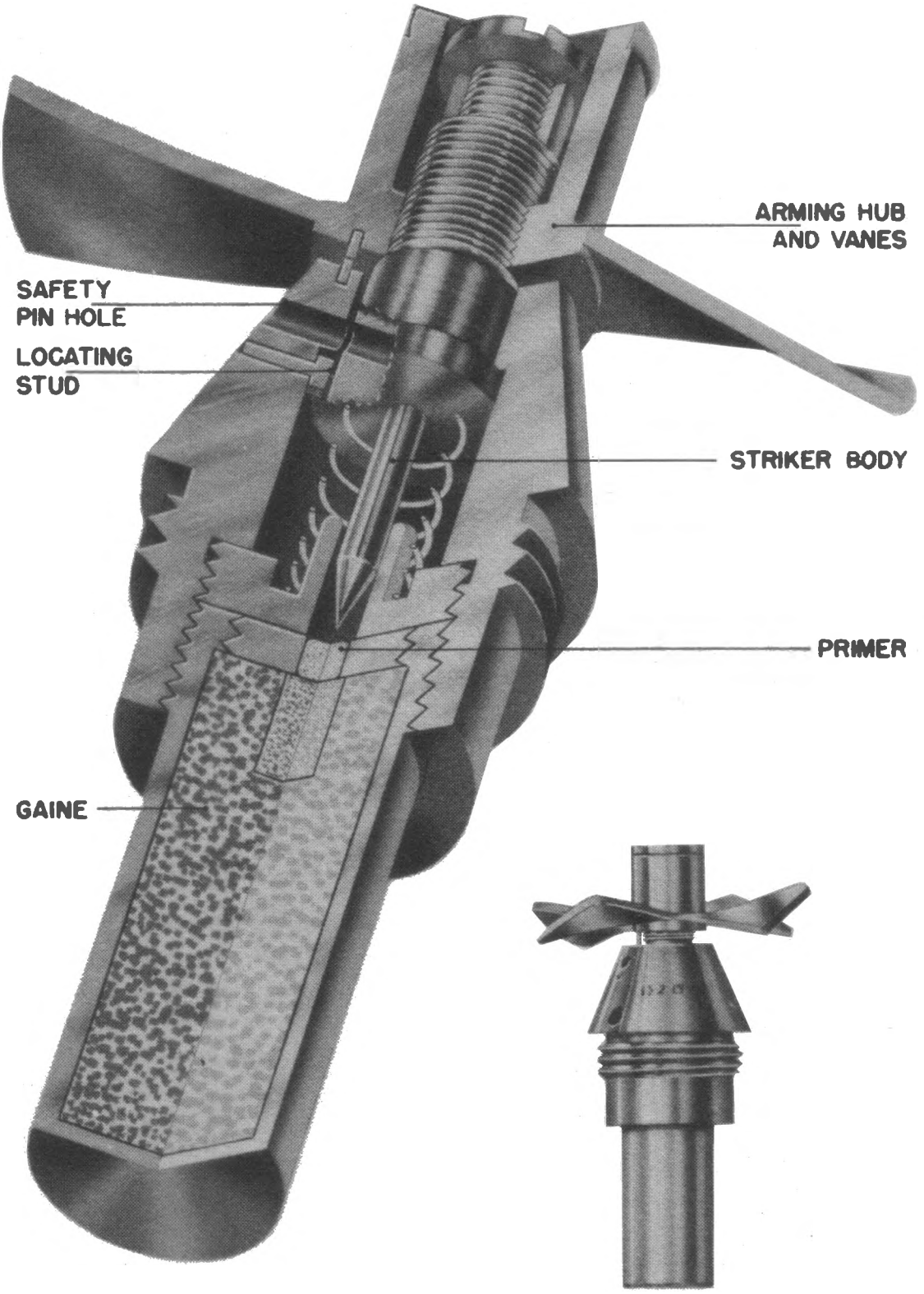
Before assembly of the bombs into the container, the safety fork is removed. The vanes of the bombs in the container are prevented from rotating by the tail fins of the next bomb in line. On release from the container, the arming vanes rotate and the fuze becomes armed after 4-1/2 revolutions. The vanes do not fall off due to a locking screw head. On impact, the shear wire is broken and the striker is driven inward. Simultaneously, the moveable primer carrier moves forward against the action of the creep spring until the striker pierces the primer.

REMARKS:

Even though the fuze is unarmed, it may function if dropped a short distance on a hard surface. This is due to the fact that the primer carrier will move against the light creep spring towards the striker.

1 June 1945

JAPANESE ARMY NOSE FUZE A-6(b)



FILE NO.: 2511.N61 JAPANESE ARMY NOSE FUZE A-6(b)

DESCRIPTION:

Classification	-	Mechanical Impact Nose Fuze.
Bombs used in	-	1/2 Kg. H.E. Cluster bomb.
Companion fuzes	-	None.
Overall length	-	2.56 inches (with gaine).
Overall width	-	0.875 inches (body); 1.82 inches (vane span).
Threads	-	1.812 inches (diameter); 16 threads per inch.
Material of construction	-	Brass throughout except steel creep spring, stop studs, and locating stud.
Arming time	-	4 Revolutions of arming vanes.
Delay setting	-	None.
Explosive train	-	Primer flash cap, cyclonite gaine with lead azide core.
Color and markings	-	東☆2四+8召 "TOKYO ARMY ARSENAL, FEBRUARY, 1939"

CONSTRUCTION:

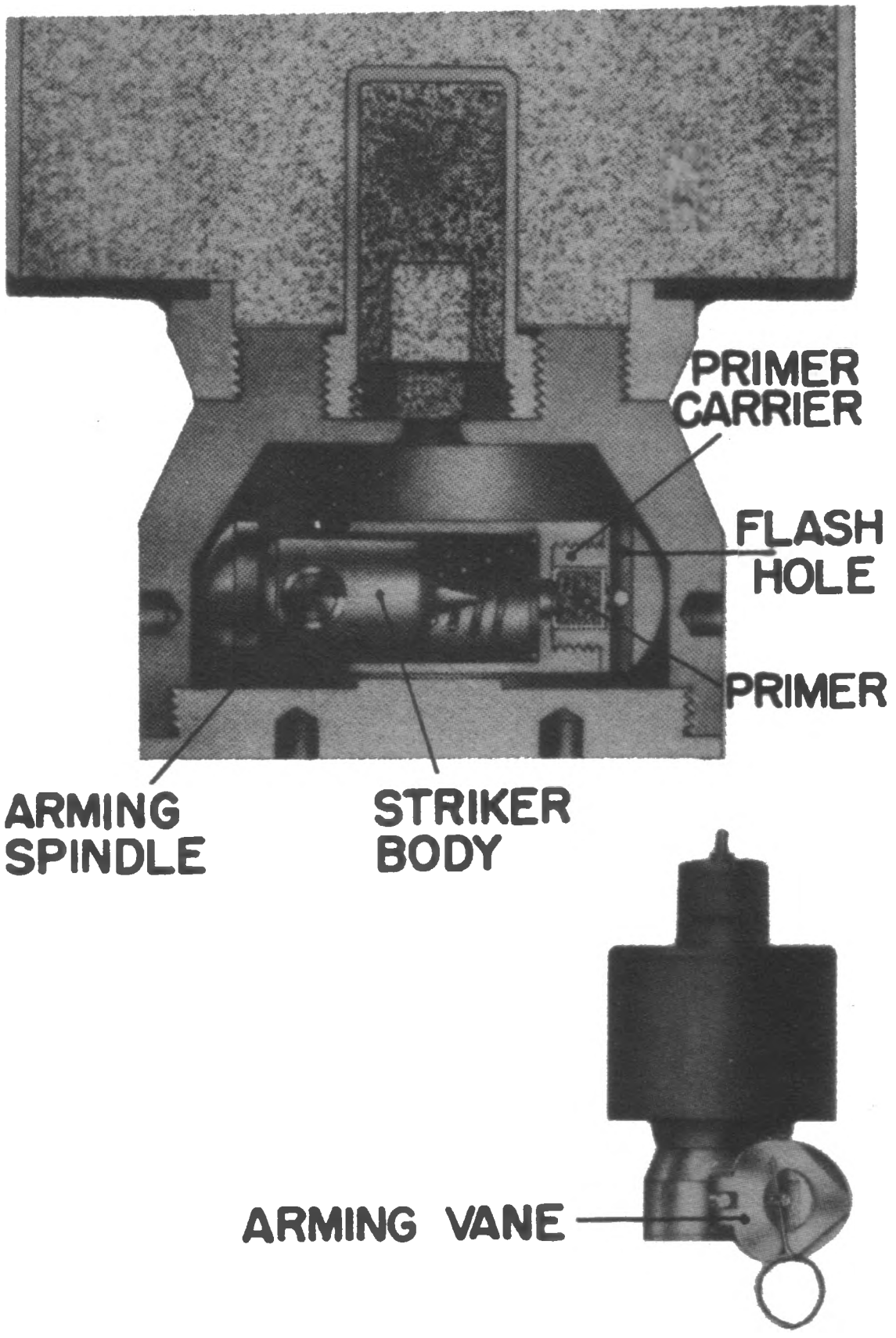
The brass body contains the striker body which is held in place by the creep spring. A locating stud prevents rotational movement of the striker body while allowing downward movement upon impact. A firing pin guide and the gaine are threaded into the lower end of the fuze body.

OPERATION:

Upon release from the container, the arming vanes rotate outward on the striker body and fuze becomes armed after four revolutions. The vanes do not fall off due to a locking screw threaded into the top of the striker body. On impact, the striker body overcomes the creep spring and is driven into the primer flash cap.

1 June 1945

JAPANESE NOSE FUZE A-7(A)



FILE NO.: 2511.N70

JAPANESE ARMY NOSE FUZE A-7(a)
(Fuze for To(h)2 Bomb)

DESCRIPTION:

Classification	- Mechanical impact "allways" fuze.
Bombs used in	- Army parachute "bolo" bomb.
Companion fuzes	- None.
Overall length	- 2.125 inches (with gaine)
Overall width	- 1.75 inches
Threads	-
Material of Construction	- Aluminum fuze body and arming vane, steel creep spring, remainder is brass
Arming time	- Ten revolutions of arming vane.
Delay setting	- None.
Explosive train	- Primer, black powder relay, lead azide core. - cyclonite gaine.
Color and markings	- Aluminum 昭十八2東☆

CONSTRUCTION:

The principal components of the fuze are: (1) the fuze body and nose cap, (2) the striker, (3) the primer carrier, (4) the arming vane and spindle, and (5) the gaine.

The main portion of the body is cylindrical; the upper portion slopes inward to a neck which is externally threaded to screw into the bomb. The inside conforms to the shape of the exterior except that the top is closed below the neck. There are two spanner holes in the cylindrical portion of the body and two threaded holes for the arming pin and the safety pin housing. The latter is a brass screw with an elongated head containing two sets of holes, so that the safety pin can be inserted from either of two alternate angles. The striker is a brass cylinder with an enlarged domed head at one end and a steel striker point at the other. Near the head is a transverse hole for the arming spindle to fit through. One end of the hole has a larger diameter to house the threaded section of the arming pin. The primer carrier is in two brass pieces: a sleeve housing a steel creep spring and closed near one end except for a small hole as passage for the striker point; and a dome-headed screw containing the primer, threaded into the open end of the sleeve housing. Two transverse holes in the screw head provide a flash channel. The arming vane is a light metal alloy oval disc with a hole in the center and at one end a slight extension is bent over to form a hinge for the arming spindle. At the other end the outer edges are bent in opposite directions to cause the vane to rotate in a counterclockwise direction. The arming spindle is a brass pin with an enlarged threaded section and an enlarged head at one end connected to the arming vane. The gaine is threaded into the upper portion of the fuze body. In the assembled fuze, the spindle prevents the striker and carrier from moving close together. The vane is folded back over the safety pin housing and locked by the safety pin.

OPERATION:

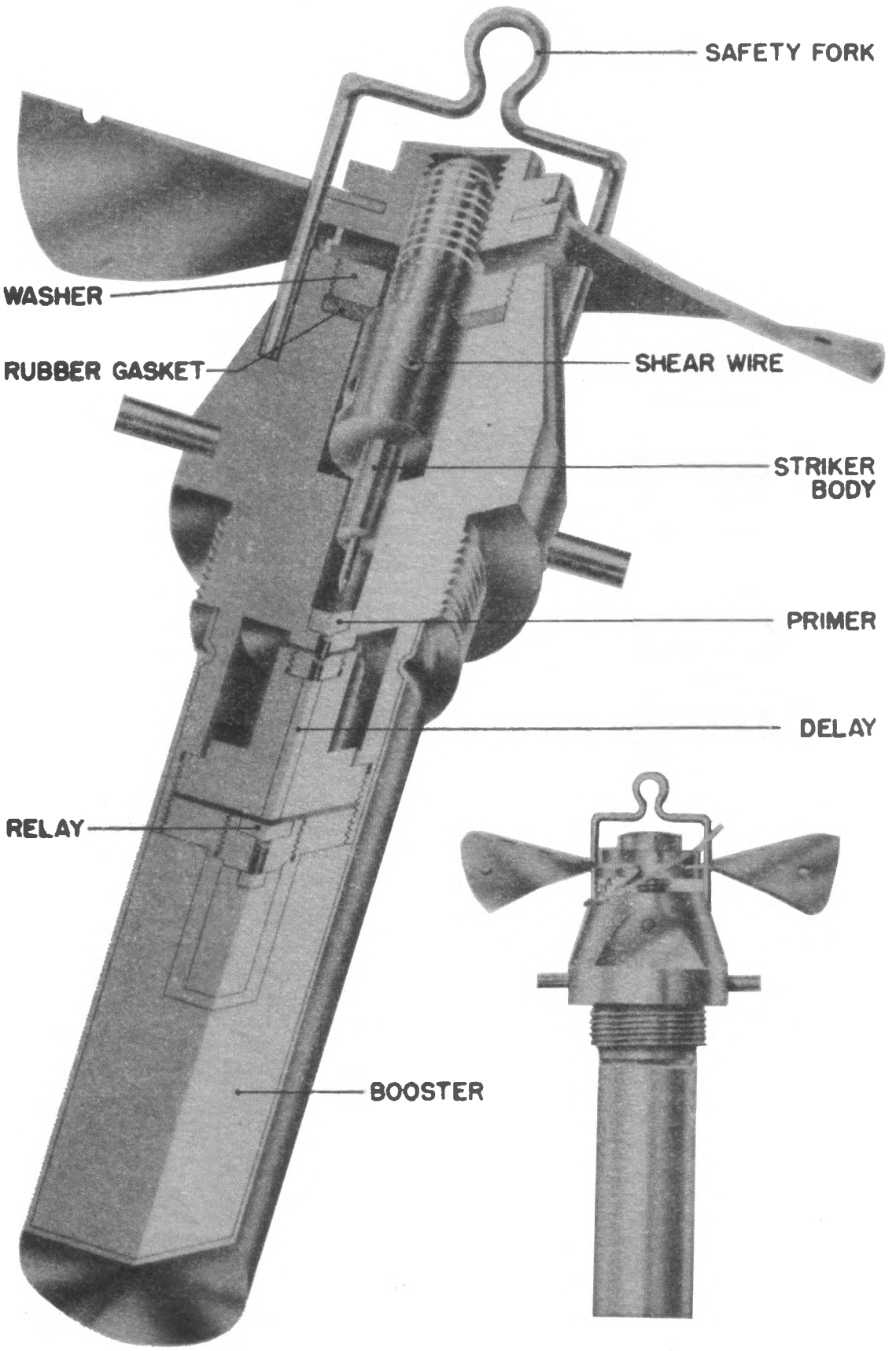
Prior to release, the safety pin is removed which allows the arming vane to rotate upon falling through the air. The bent surfaces insure that every revolution is in the same direction and thus that the arming spindle continually unscrews. Ten revolutions unscrews the spindle from the fuze body; the vane and spindle then fall away. The striker and moveable primer carrier are held apart only by the creep spring. Inertia on any side except the nose will cam the striker and carrier together to fire the primer. The flash of the primer blows through the flash hole in the body to the black powder relay in top of the gaine. The relay sets off the lead azide which initiates the cyclonite, in turn detonating the main filling.

REMARKS:

Since this fuze is designed not to fire when the bomb strikes on its nose, UXB's may be found without in any way having failed to function as designed. Because the creep spring is quite weak, a highly sensitive and dangerous UXB can be expected.

1 June 1945

JAPANESE ARMY NOSE FUZE A-8(a)



FILE NO.: 2511.N80

JAPANESE ARMY NOSE FUZE A-8(a)
(Type 4, 2-second Delay Nose Fuze)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	30 Kg. and 100 Kg. "Skipping Model" Bombs.
Companion fuzes	-	B-8(a).
Overall length	-	5.85 inches (approx.)
Overall width	-	2.425 inches (approx.)
Material of construction	-	Brass throughout with rubber sealing gasket.
Threads	-	13 threads per inch. 1-5/32 inches diameter.
Delay setting	-	2-3 seconds.
Explosive train	-	Primer, delay, relay, lead azide core in cyclonite booster.
Color and markings	-	Natural brass with black arming vanes.

CONSTRUCTION:

The fuze consists of the fuze body, arming vane assembly, striker body, primer, delay element, gaine, and booster.

The vane assembly consists of four vanes attached to a brass vane hub which threads onto the upper end of the striker body. The striker body is flanged at the top to receive a rubber sealing gasket. A brass washer threads into the fuze body and bears on top of the rubber gasket. A brass shear wire, 2.5 mm. in diameter, holds the striker body in position and prevents rotational or downward movement until impact occurs. The delay element threads into the base of the fuze and the gaine threads into the fuze immediately below. The booster housing, made of light metal, is crimped onto a groove in the lower part of the fuze body just below the threads. A safety fork fits over the arming vanes into the fuze body to prevent premature vane rotation.

OPERATION:

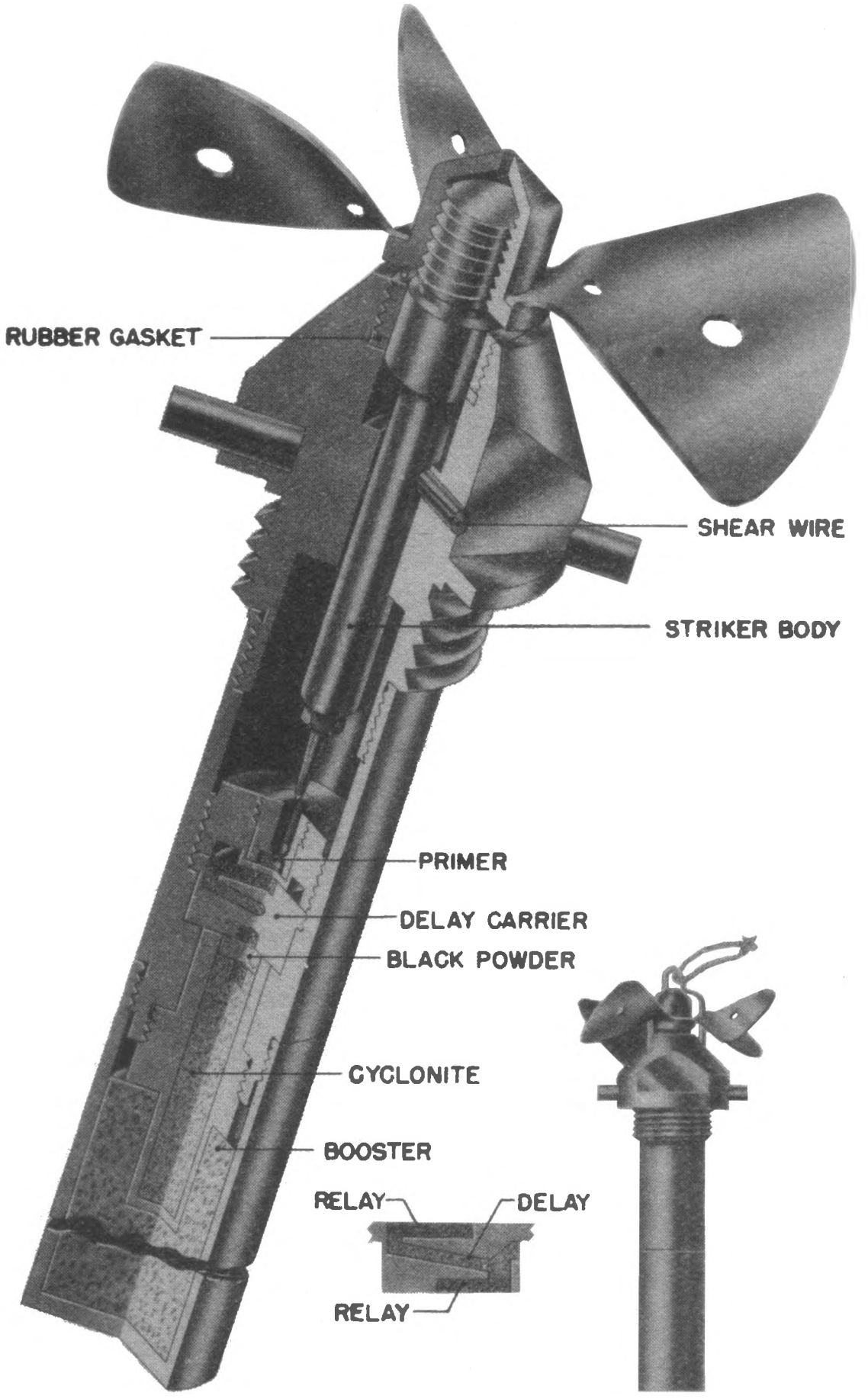
On release from the plane, the arming vanes unscrew from the threaded head of the striker body and fall clear. The shear wire prevents rotational movement of the striker body. On impact, the shear wire is sheared and the striker body is driven into the primer which ignites the delay element. After the delay has burned for its predetermined time, the gaine and booster are initiated.

REMARKS:

The section of the fuze body above the external threads is slightly larger than the A-2(a). This fuze is easily recognizable by two large spanner flats and two protruding steel pins.

1 June 1945

JAPANESE ARMY NOSE FUZE A-8(b)



FILE NO.: 2511.N81

JAPANESE ARMY NOSE FUZE A-8(b)
(Type 4, 2 second Delay Nose Fuze - Large)

DESCRIPTION:

Classification	-	Mechanical impact nose fuze.
Bombs used in	-	250 Kg. and 500 Kg. anti-shipping bombs.
Companion fuzes	-	B-8(a).
Overall length	-	9.1 inches (approx.)
Overall width	-	3.25 inches (approx.)
Material of construction	-	Brass throughout with rubber sealing gasket.
Threads	-	1-5/8 inch diameter 8 threads per inch.
Delay setting	-	2-3 seconds.
Explosive train	-	Primer, relay, delay, lead azide core in cyclonite booster.
Color and markings	-	Natural brass with black arming vanes.

CONSTRUCTION:

The fuze consists of a fuze body in three sections, an arming vane assembly, striker body, primer, delay element, gaine, and booster.

The vane assembly consists of four vanes attached to a brass vane hub which threads onto the upper end of the striker body. A rubber sealing gasket held in place by a brass washer threaded into the upper part of fuze body, is fitted around the striker body to exclude moisture. A brass shear wire holds the striker body in position, preventing rotational or downward movement until impact occurs.

The middle section of the fuze body is threaded internally at its forward end to screw onto the upper fuze body; threaded externally at the lower end to receive the lower body and booster; and internally at the lower end to receive the gaine. The primer and delay carrier are also threaded into the center section of the fuze body. A safety fork fits over the arming vanes and into the fuze body to prevent premature vane rotation.

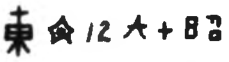
OPERATION:

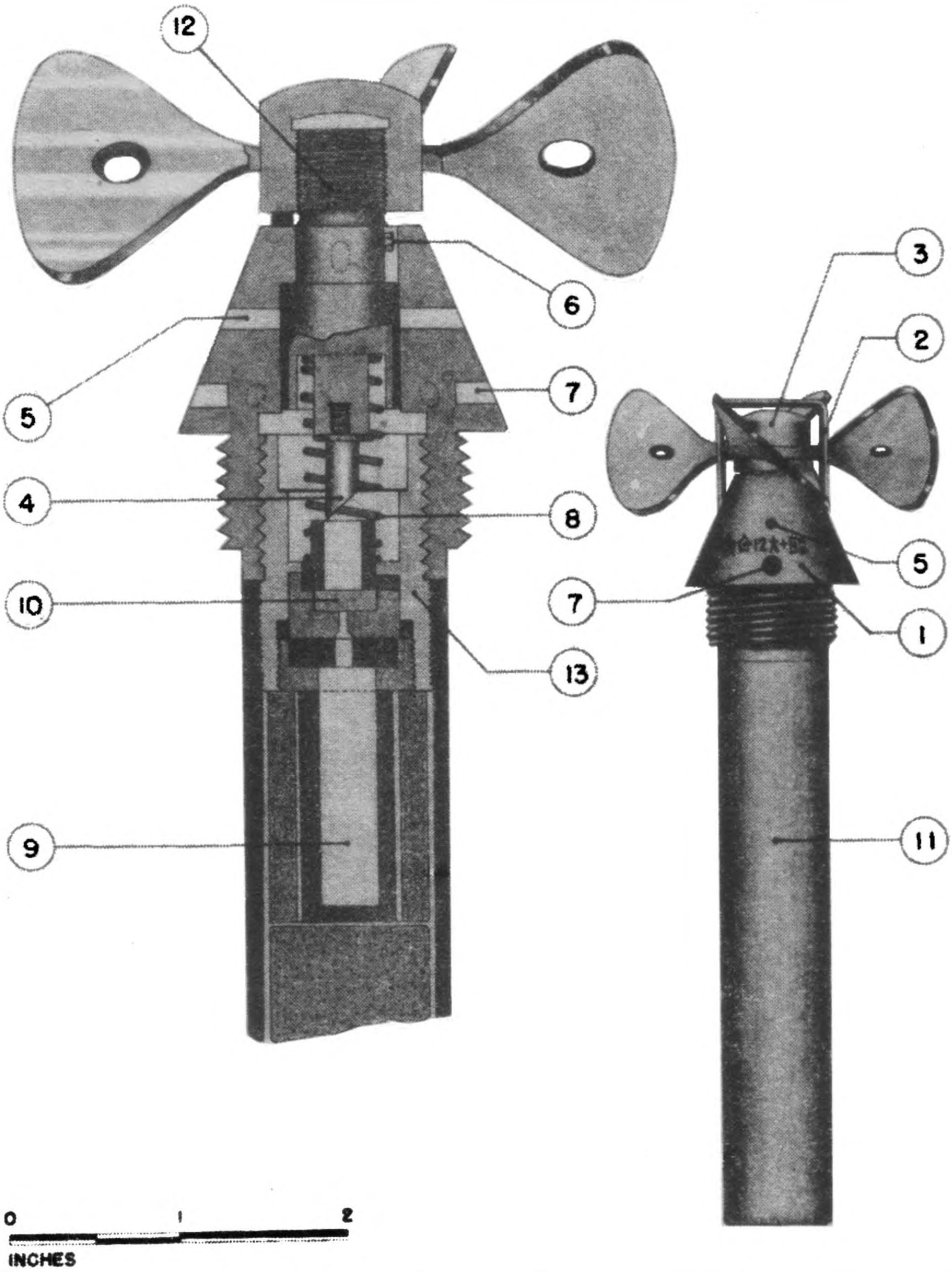
On release from the plane the arming vanes unscrew and fall clear, thus freeing the striker body. Upon impact the shear wire is sheared and the striker is driven into the primer. The delay element is ignited and after burning its predetermined time, the gaine is initiated.

REMARKS:

This fuze is essentially the same as the A-8(a). The differences are increased size of the fuze and parts and a slightly different arrangement of the delay train. The delay in this fuze runs across the diameter of the carrier with relays on the top and bottom of the carrier serving to lead the flash away from, and back to the centerline of the fuze.

FUZE DATA: FILE NO.: 2511.T10

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION B-1(a)	CLASSIFICATION	Army Mechanical Impact Tail Fuze
	TYPE OF MISSILE	Army Bombs
MARKINGS:  (TOKYO - December, 1941.)		BOMBS USED IN: 30 Kg. G.P.H.E. 50 Kg. G.P.H.E. 100 Kg. G.P.H.E.



LEGEND	
1. BODY.	8. CREEP SPRING.
2. SAFETY FORK.	9. GAINE.
3. VANE ASSEMBLY.	10. PRIMER.
4. STRIKER POINT.	11. BOOSTER HOLDER.
5 AIR VENT.	12. STRIKER BODY.
6. LOCATING STUD.	13. ADAPTER.
7. SPANNER HOLE.	

FILE NO.: 2511.T10 JAPANESE ARMY TAIL FUZE B-1(a)
(12th Year Type, Instantaneous Tail Fuze)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	30 Kg., 50 Kg., 100 Kg. G.P.H.E. 250 Kg. and 500 Kg. G.P.H.E. (with adapter).
Companion fuzes	-	A-2(a), A-2(c), A-2(d), D-5(a).
Overall length	-	2.85 inches (less booster).
Overall width	-	1.55 inches.
Material of construction	-	Brass except steel spring and firing pin or black steel body and steel vanes attached to a brass hub.
Threads	-	13 threads per inch. 1-5/32 inches diameter.
Explosive train	-	Primer, standard Army gaine and booster.
Delay times	-	None.
Color and markings	-	Natural brass or black steel color.

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CONSTRUCTION:

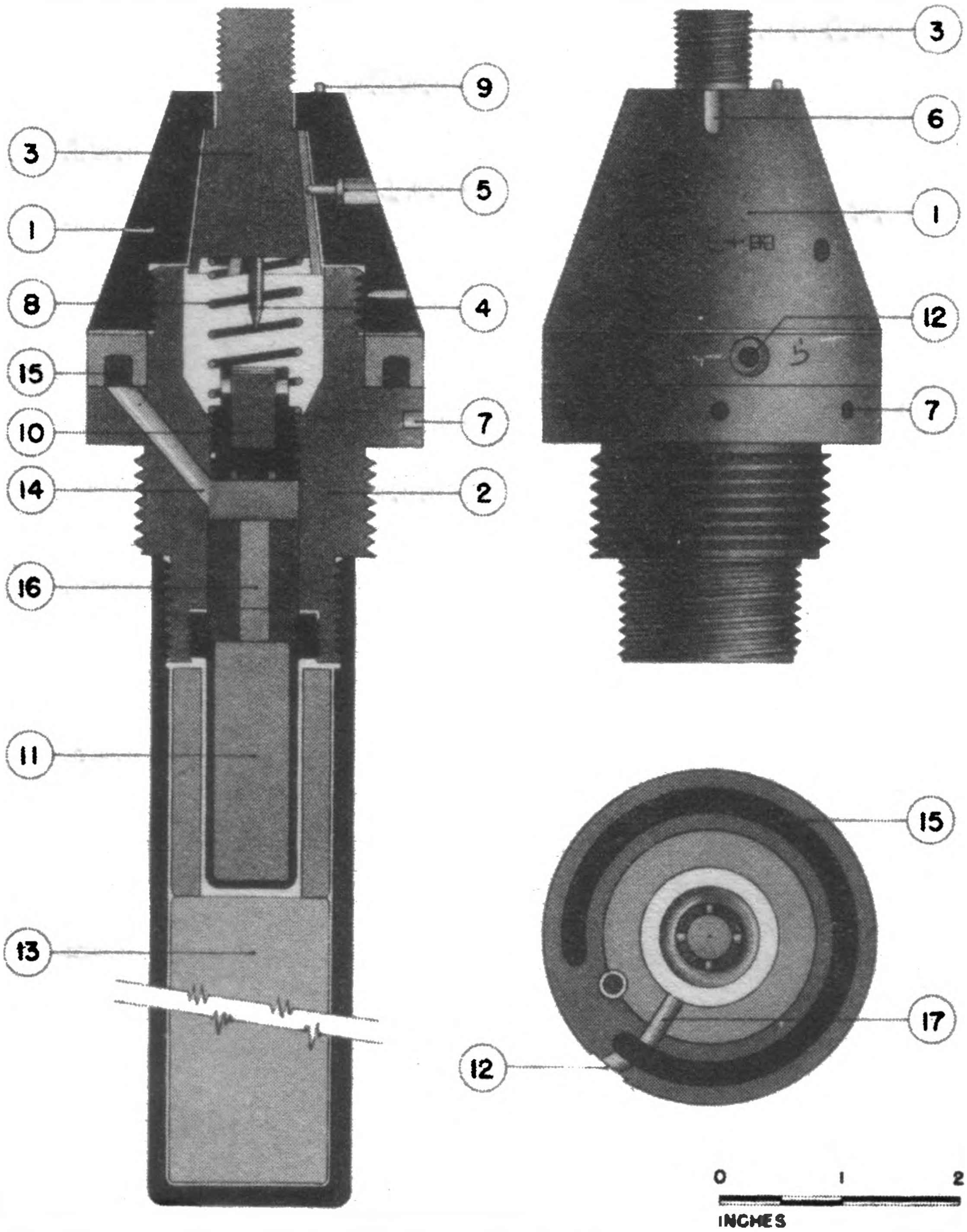
The fuze body houses the striker body which is held away from the primer by a creep spring. The striker point is screwed into the lower end of the striker body while the upper end is threaded to receive the arming vane assembly. A locating stud on side of striker body rides in a longitudinal groove to prevent rotational movement. An adapter permits the tail booster to be threaded to the body. Six spanner holes are present in the body.

OPERATION:

On release from the plane, the arming wire is withdrawn from the holes in the vanes, allowing the latter to rotate and fall free. On impact, the striker body is forced inward, against the action of the creep spring, to pierce the primer and set off the exploder system.

FUZE DATA: **FILE NO.: 2511.T11**

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION B-1(b)	CLASSIFICATION	Army Mechanical Impact Tail Fuze
	TYPE OF MISSILE	G.P.H.E. Bombs
MARKINGS: β/[illegible] 5 t + 8 3 (OSAKA - June, 1942.)		BOMBS USED IN: 30 Kg. G.P.H.E. 50 Kg. G.P.H.E. 100 Kg. G.P.H.E.



LEGEND	
1. UPPER BODY.	10. PRIMER.
2. LOWER BODY.	11. PICRIC GAINE.
3. STRIKER BODY.	12. GAS ESCAPE HOLE.
4. STRIKER.	13. PICRIC BOOSTER.
5. LOCATING STUD.	14. FLASH CHANNEL.
6. SAFETY PIN HOLE.	15. DELAY TRAIN.
7. SPANNER HOLES (6).	16. RELAY.
8. CREEP SPRING.	17. FLASH CHANNEL.

FILE NO.: 2511.T11

JAPANESE ARMY TAIL FUZE B-1(b)
(Type 1, 15 Second Delay Tail Fuze)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	30 Kg., 50 Kg., and 100 Kg. G.P.H.E. 250 Kg. and 500 Kg. G.P.H.E. (with adapter).
Companion fuzes	-	Nose plug.
Overall length	-	5.4 inches (less booster).
Overall width	-	1.56 inches.
Material of construction	-	Brass except steel spring and firing pin.
Threads	-	13 threads per inch. 1-5/32 inches diameter.
Explosive train	-	Primer, delay train, black powder relay, picric gaine, and picric booster.
Delay times	-	15 to 16 seconds.
Color and markings	-	Natural brass.

CONSTRUCTION:

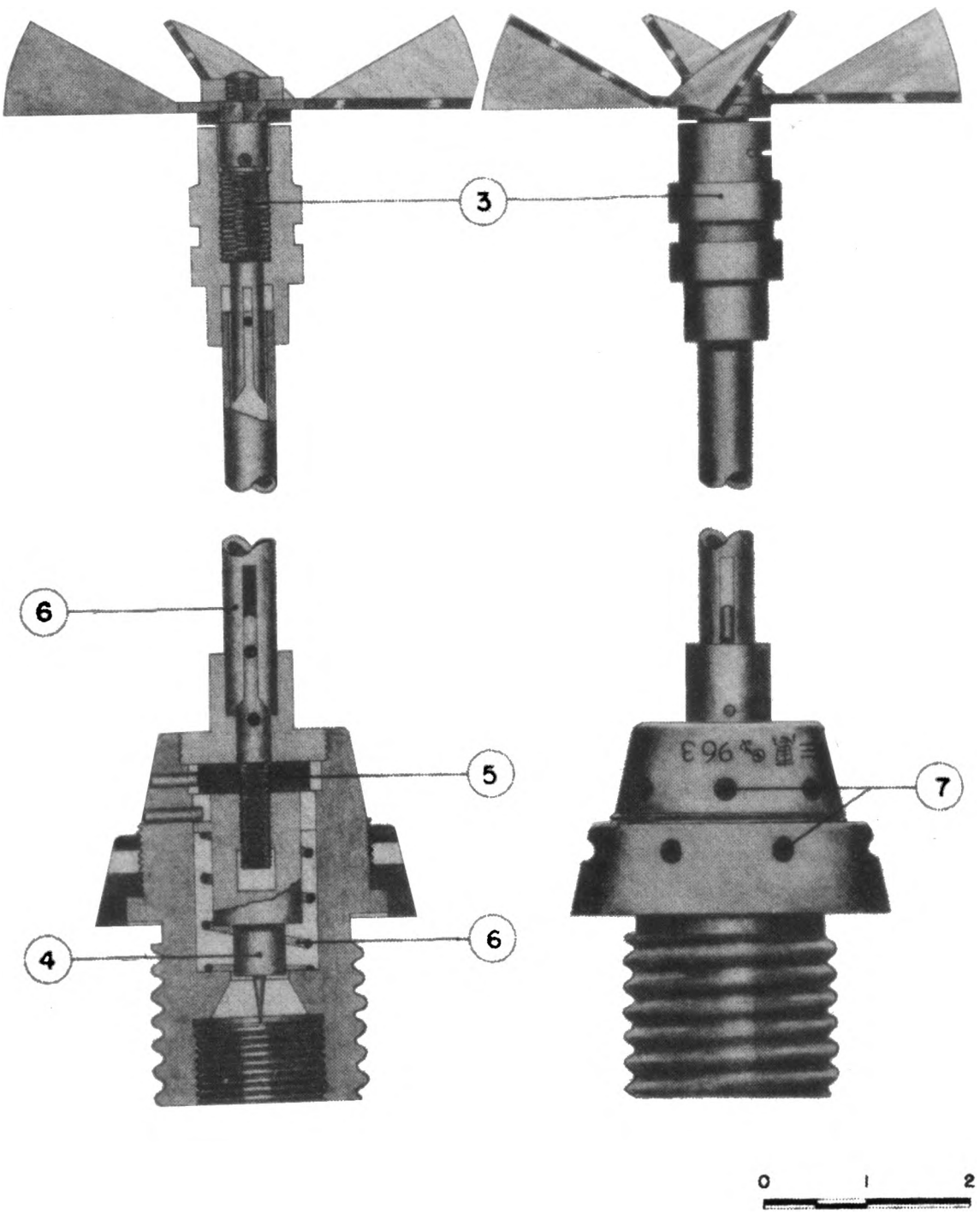
The upper portion of the body houses the striker body whose upper end is threaded for the arming vanes, which, are prevented from rotating prior to release by a U-shaped safety fork fitting into holes in the upper body. A locating stud, fitting into a longitudinal groove of the striker body, prevents rotational movement during the arming time. The creep spring prevents the striker body from moving down onto the primer after fuze is armed. The lower fuze body contains the primer, delay train, flash channel and black powder relay. The standard Army gaine threads into the lower body and is surrounded by a picric booster.

OPERATION:

On release from the plane, the arming wire is withdrawn, allowing the vanes to rotate and fall free after eleven turns. On impact, the striker body moves against the creep spring and pierces the primer. The flash passes through channel and ignites the delay train, the gas from burning powder escaping through the escape hole. The delay train burns around the periphery to flash channel, ignites the powder relay which in turn sets off the gaine and booster.

FUZE DATA: FILE NO.: 2511.T20

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION B-2(a)	CLASSIFICATION	Navy Mechanical Impact Tail Fuze
	TYPE OF MISSILE	Navy S.A.P. Bombs
MARKINGS: ⊗ T ⊗ 375		BOMBS USED IN: Navy 250 Kg. S.A.P.



LEGEND	
1. BODY.	5. LOCKING COLLAR.
2. LOCKING RING.	6. REACH ROD.
3. ARMING BARREL.	7. SPANNER HOLES.
4. STRIKER BODY.	8. CREEP SPRING.

FILE NO. 2511.T20

JAPANESE NAVY TAIL FUZE B-2(a) (Type 99, No. 25, Bomb Tail Arming Mechanism or Type 2 No. 50 Ordinary Bomb Tail Fuze)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	Type 99, No. 25 - 250 Kg. S.A.P.
		Type 2, No. 50 - 500 Kg. Ordinary.
Companion fuzes	-	Type 99, No. 25 - A-3(a), A-3(b), A-3(d).
		Type 2, No. 50 - A-3(f).
Overall length	-	4.5 inches (without reach rod).
Overall width	-	2.55 inches.
Material of construction	-	Steel except brass locking ring, locking collar, and arming spindle.
Threads	-	4 threads per inch.
		2-9/64 inches diameter.
Explosive train	-	Standard Navy gaine.
Delay times	-	Incorporated in gaine.
Color and markings	-	Chromium plated.

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CONSTRUCTION:

The fuze body houses the locking collar, the striker body, the arming spindle and the creep spring. Six spanner holes are found in both the body and the locking ring. The arming assembly consists of a long reach rod connecting the arming spindle and the arming vanes. The lower end of the spindle threads through the locking collar into the striker body.

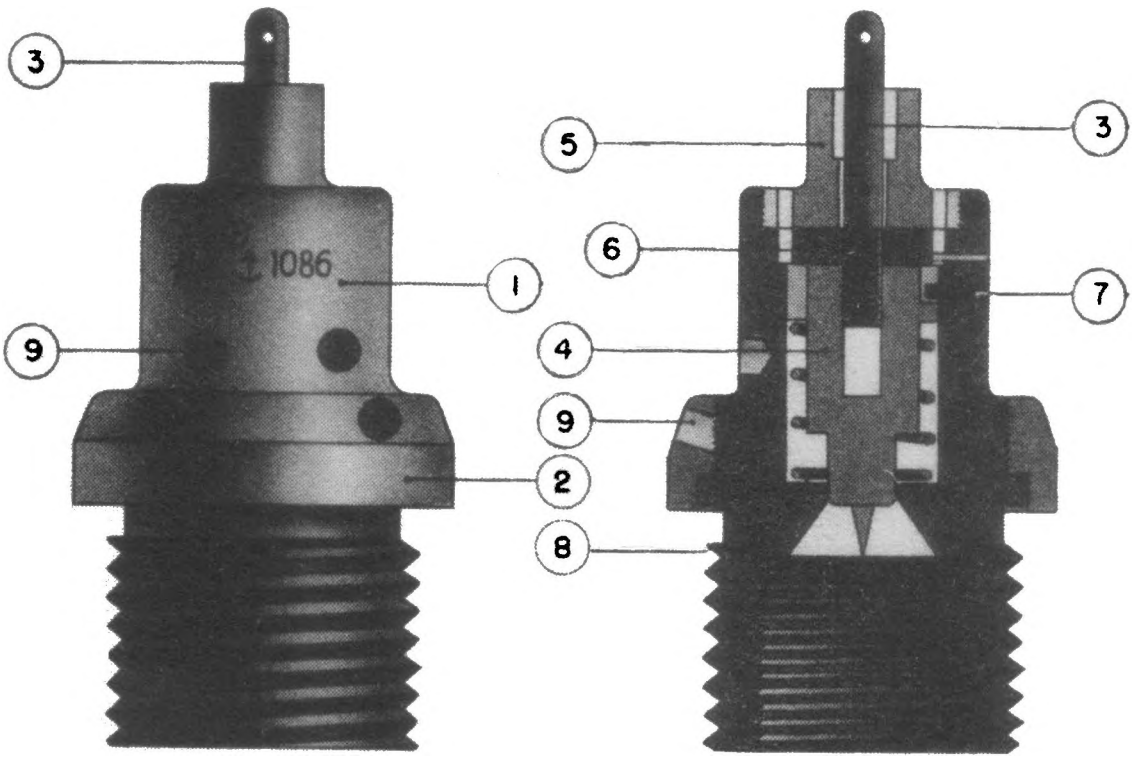
OPERATION:

On release from the plane, the vanes rotate, unscrewing the arming spindle from the striker body. On impact, the striker body moves against the restraining action of the creep spring and pierces the primer in the gaine to set off the exploder system.

REMARKS:

Slight variations of the B-2(a) which have been recovered are: 1) fuze body and locking ring made of zinc-plated steel alloy; 2) fuze body made of unplated steel, locking ring made of brass. body shoulders are straight rather than sloping and has two locating pins located 180° apart. This latter fuze with a longer reach rod has the Japanese designation of Type 2 No. 50 Ordinary Bomb Model 1 Tail Fuze. Operation is the same as the Type 99 No. 25 Tail Fuze.

FUZE DATA:		FILE NO.: 2511.T21
NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION B-2(b)	CLASSIFICATION	Navy Mechanical Impact Tail Fuze
	TYPE OF MISSILE	A.P. Bomb
MARKINGS: 1086		BOMBS USED IN: 800 Kg. A.P.



0 1 2
INCHES

1. FUZE BODY.
2. LOCKING RING.
3. ARMING SPINDLE.
4. STRIKER BODY.
5. RETAINING COLLAR.
6. LOCKING COLLAR.
7. LOCATING STUD.
8. CREEP SPRING.
9. SPANNER HOLES.

FILE NO.: 2511.T21

JAPANESE NAVY TAIL FUZE B-2(b)
(Type 99 No. 80, Mk 5, Bomb
Tail Arming Mechanism, Model 1)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	800 Kg. A.P. Bomb.
Companion fuzes	-	One other B-2(b).
Overall length	-	5.56 inches.
Overall width	-	3.16 inches.
Material of construction	-	Steel except brass arming spindle and locking collar.
Threads	-	4 threads per inch. 2-17/32 inches diameter.
Explosive train	-	Primer, gun powder delay, and picric detonator are all incorporated in the large Japanese gaine filled with picric acid as the booster charge.
Delay time	-	0.2 second delay incorporated in gaine.
Color and markings	-	Unpainted steel.

1086

CONSTRUCTION:

The fuze body houses the striker body, the creep spring, the locking collar, and the arming spindle. The upper end of the body is internally threaded to receive the retaining collar. The locking collar and the striker body are internally threaded left-hand to receive the arming spindle. The striker body and locking collar are prevented from rotating by locating studs. The locking collar rests on a shoulder of the fuze body and prevents the striker body from moving downward when fuze is unarmed. The arming assembly consists of the vanes and a long reach rod which slide-fits over the arming spindle. A locking ring threads down over a shoulder of the fuze body to secure the fuze in the bomb.

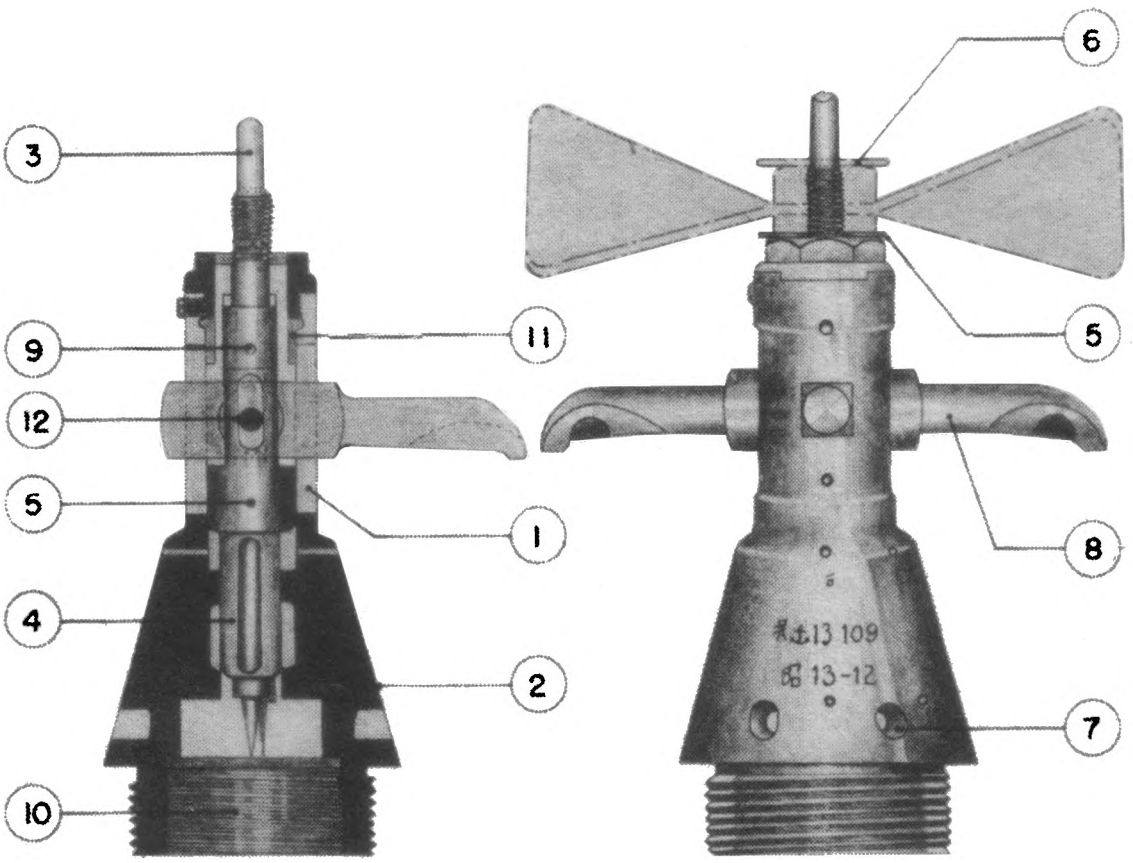
OPERATION:

On release from the plane, the arming vanes rotate, unscrewing the arming spindle from the striker body. On impact, the striker body moves against the creep spring and pierces the primer in the gaine.

REMARKS:

The arming assembly is similar to the B-2(a) except that the arming vane span of the B-2(b) is only 3- 15/16 inches as compared to the 4- 11/16 inches span of the vanes used with the B-2(a).

FUZE DATA:		FILE NO.: 2511.T30
NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION	CLASSIFICATION	Navy Mechanical Impact Tail Fuze
B-3(a)	TYPE OF MISSILE	Navy G.P.H.E. Bombs
MARKINGS: 三式十番 2537		BOMBS USED IN: Navy 250 Kg. G.P.H.E.



LEGEND	
1. UPPER PORTION OF BODY.	7. SPANNER HOLES.
2. LOWER PORTION OF BODY.	8. ARMS.
3. ARMING VANE ASSEMBLY.	9. SAFETY PIN.
4. STRIKER.	10. THREADS FOR GAINE.
5. SHEAR WIRE.	11. SLEEVE.
6. SAFETY PIN.	12. PIN.

FILE NO.: 2511.T30

JAPANESE NAVY TAIL FUZE B-3(a)
(Type 15 Tail Fuze Model 2, Mod. 1 or 2)

ESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	250 Kg. G.P.H.E. and Anti-submarine bombs.
Companion fuzes	-	A-3(a)
Overall length	-	5.6 inches
Overall width	-	2.4 inches
Material of	-	Brass except steel sleeve, striker, and
Construction	-	pivot pin for lever arms.
Threads	-	1-31/32 diameter
	-	12 threads per inch.
Arming time	-	
Delay setting	-	Instantaneous or short delay only (incorporated in gaine)
Explosive train	-	Standard Navy gaine.
Color and Markings	-	Brass 2537

CONSTRUCTION:

The principal parts are the body, the arming sleeve, the striker body which is threaded to receive the arming vanes, and the lever arms which pivot on a steel pin extending through the body. Six spanner holes are drilled in the body. Unarmed, the striker body is prevented from moving down by the safety pin, the safety fork, the shear wire, and the arming vanes. The arming sleeve, held in place by the arming vanes, prevents the lever arms from moving when fuze is unarmed. The fuze is threaded for the standard Navy gaine.

OPERATION:

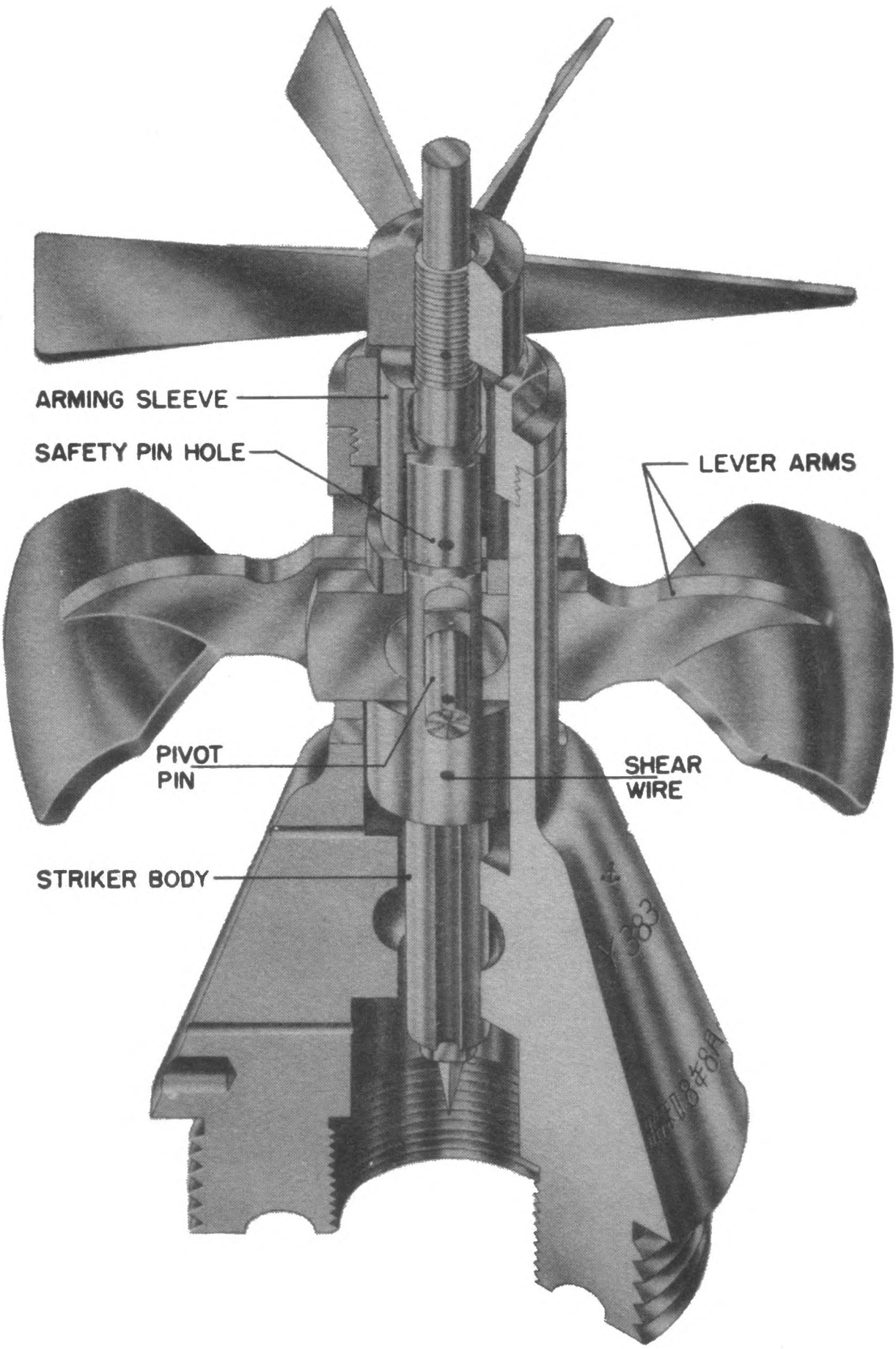
On loading in the plane, the safety pin and the safety fork are removed. The vanes are prevented from rotating by an arm on the bomb rack. On release, the vanes unscrew and fall off. The arming sleeve moves upward relieving the pressure on the arms. On impact, the lever arms move down against the striker body breaking the shear wire, and the striker pierces the primer. Because both lever arms pivot about the stationary pivot pin and extend through the body, pressure upward against the arms will force the short ends of the arms down against the striker body and thereby shear the shear wire. Two-way action is thus achieved.

REMARKS:

After impact, a slight movement of the arms is liable to force the striker into the primer.

Used with a standard gaine in Japanese designated No. 25 Land bombs, No. 25 streamlined Ordinary bombs, and No. 25 Mk 2 bombs.

JAPANESE NAVY TAIL FUZE B-3(B)



FILE NO.: 2511.T31

JAPANESE NAVY TAIL FUZE B-3(b)
(Type 15 Tail Fuze, Model 1 Mod. 2 or 3)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	800 Kg. G.P.H.E.
	-	800 Kg. S.A.P.
Companion fuzes	-	A-1(c)
Overall length	-	7.2 inches
Overall width	-	3.5 inches
Material of Construction	-	Brass except for steel sleeve, striker,
	-	and pivot pin for lever arms.
Threads	-	3 inches diameter
	-	8 threads per inch
Delay setting	-	Instantaneous or short delay (incorporated
	-	in gaine).
Explosive train	-	Standard Navy gaine.
Color and Markings	-	Brass. Y383 ⚓ 昭和18年8月

CONSTRUCTION:

The principal parts are the body, the arming sleeve, the striker body which is threaded to receive the arming vanes, and the lever arms which pivot on a steel pin extending through the body. Six spanner holes are drilled in the body. Unarmed, the striker body is prevented from moving down by the safety pin, the safety fork, the shear wire, and the arming vanes. The arming sleeve, held in place by the arming vanes, prevents the lever arms from moving when fuze is unarmed. The fuze is threaded for the standard Navy gaine.

OPERATION:

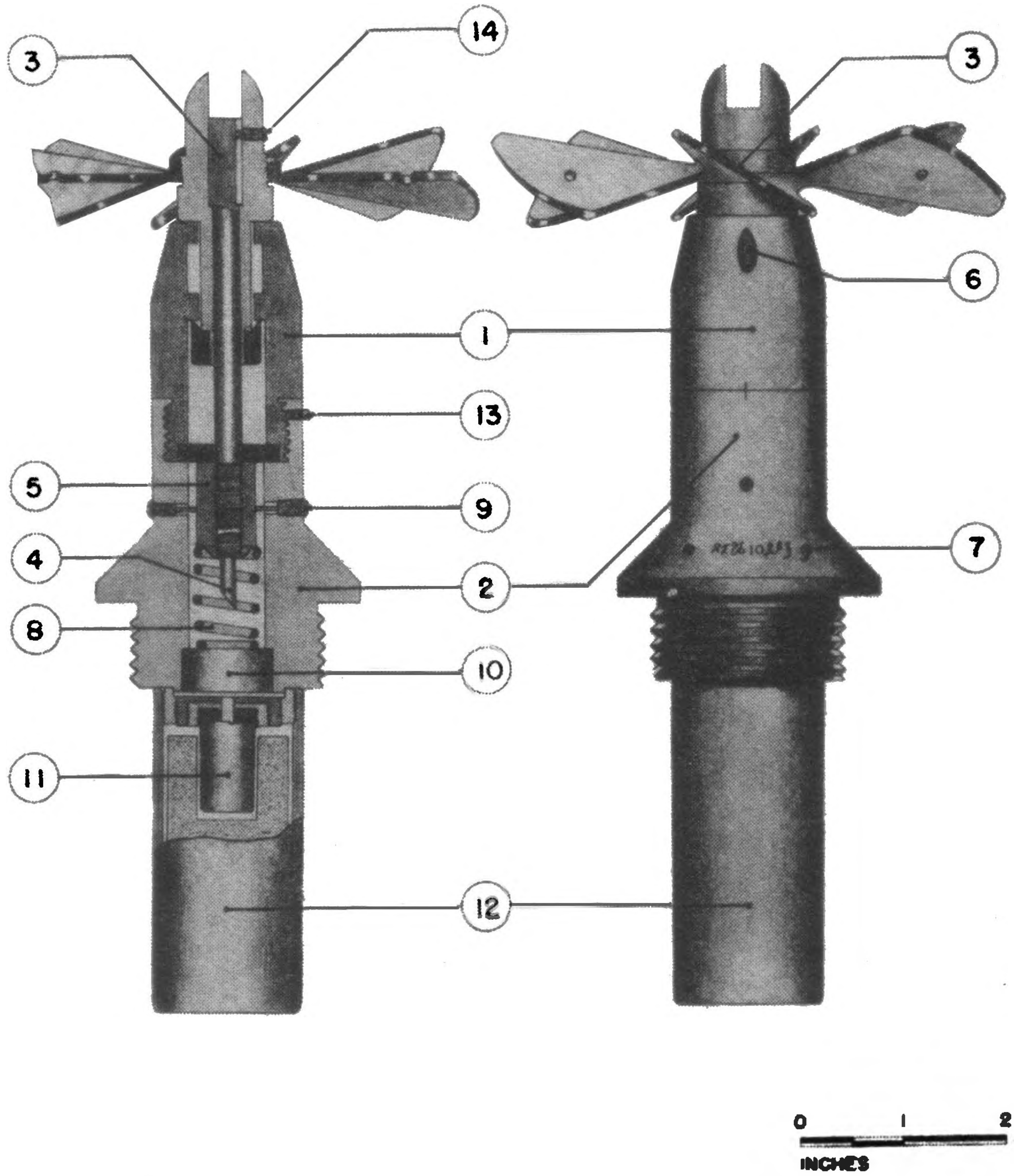
On loading in the plane, the safety pin and the safety fork are removed. The vanes are prevented from rotating by an arm on the bomb rack. On release, the vanes unscrew and fall off. The arming sleave moves upward relieving the pressure on the arms. On impact, the lever arms move down against the striker body, breaking the shear wire, and the striker pierces the primer. Because both arms pivot about the stationary pin and extend through the body, pressure upward against the arms will force the short ends of the arms down against the striker body and thereby shear the shear wire. Two-way action is thus achieved.

REMARKS:

For use with a standard gaine in Japanese designated Nos. 50 and 80 Land and Ordinary Bombs. This fuze is similar to the B-3(a) except that all parts are larger and it lacks one safety pin hole at the top of the striker body. The threads for the fuze pocket are larger than any other Japanese Navy fuze, but the fuze is internally threaded to take the standard Navy gaine. Increased size of the fuze may provide greater certainty of arming and of firing despite the greater disruptive force of impact of the larger bomb.

FUZE DATA: **FILE NO.:** 2511.T40

NATIONALITY: JAPANESE		**INFORMATION DATE:** October 1943
DESIGNATION B-4(a)	**CLASSIFICATION**	Army Mechanical Impact Tail Fuze
	TYPE OF MISSILE	Army Bombs
MARKINGS: 阝ケ ✕ 10 九 8ヨ (OSAKA - December 19__)		**BOMBS USED IN:** 250 and 500 Kg. G.P.H.E.



LEGEND	
1. UPPER PORTION OF BODY.	8. CREEP SPRING.
2. LOWER PORTION OF BODY.	9. LOCATING STUDS.
3. ARMING SPINDLE.	10. PRIMER.
4. STRIKER.	11. GAINE.
5. STRIKER BODY.	12. BOOSTER.
6. SAFETY WIRE HOLES.	13. GRUB SCREW.
7. SPANNER HOLE.	14. GRUB SCREW.

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	250 and 500 Kg. G.P.H.E.
Companion fuzes	-	A-4(a).
Overall length	-	5.9 inches (less booster).
Overall width	-	2.4 inches.
Material of construction	-	Brass except steel spring and striker.
Threads	-	8 threads per inch.
	-	1-25/32 inches diameter.
Explosive train	-	A primer fires the Army gaine which detonates the booster.
Delay times	-	None.
Color and markings	-	Natural brass.

CONSTRUCTION:

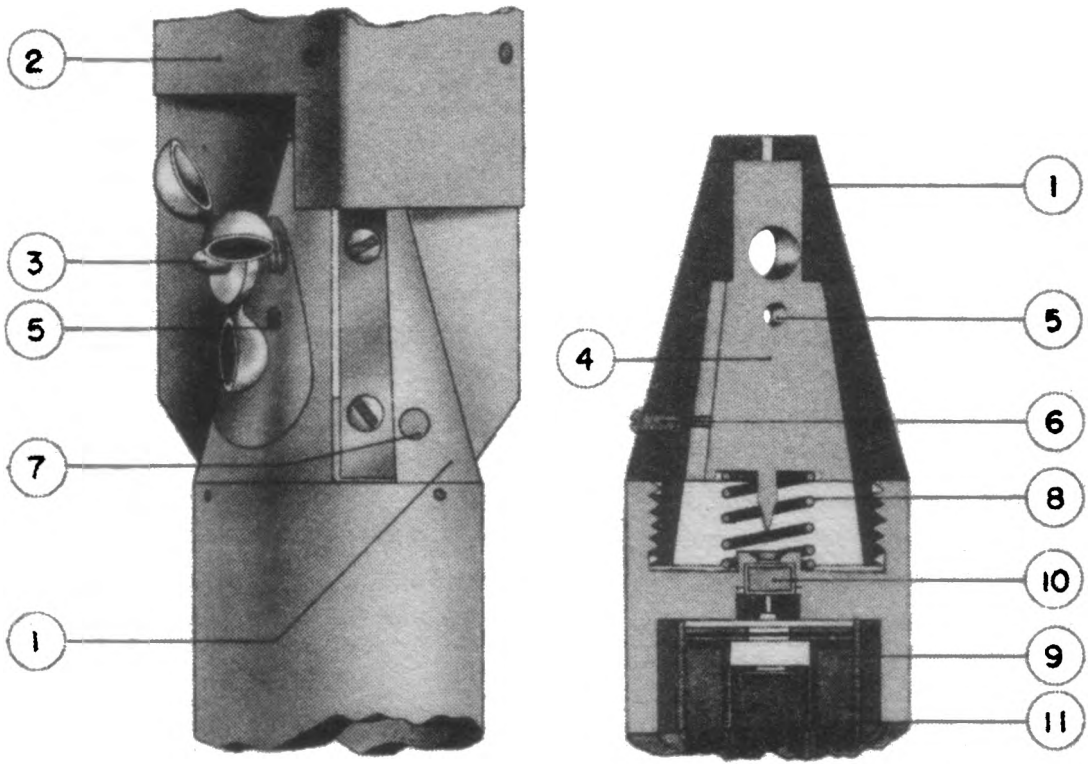
The upper portion of the body houses the arming vane assembly. The arming spindle is threaded at the lower end to screw into the striker body which is located in the lower body portion. A grub screw causes the arming spindle to rotate with the arming vanes. Two locating studs keep the striker body from rotating as the spindle is unscrewed. The striker is kept away from the primer by a creep spring. The upper body threads into the lower body and are held together by a grub screw. -A U-shaped safety wire fits over the arming vanes into the fuze body to prevent premature vane rotation. Six spanner holes are present in the body. The booster screws onto the lower body portion.

OPERATION:

On release from the plane, the arming wire is withdrawn from the holes in the arming vanes and the latter rotate, unscrewing the spindle from the striker body. The vanes will not fall free because they are held on by a lock-nut on the vane boss collar. On impact, the striker body moves downward, and the striker enters the primer, overcoming the resistance of the creep spring.

FUZE DATA: FILE NO.: 2511.T50

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION B-5(a)	CLASSIFICATION	Mechanical Impact Tail Fuze (Navy)
	TYPE OF MISSILE	Anti-Personnel and Aircraft
MARKINGS: None		BOMBS USED IN: 1/3 Kg. Anti-Aircraft and Anti-Personnel.



LEGEND	
1. TAIL CONE.	7. SPANNER HOLES.
2. TAIL ASSEMBLY.	8. CREEP SPRING.
3. ARMING VANE ASSEMBLY.	9. BOOSTER.
4. STRIKER BODY.	10. PRIMER.
5. SHEAR WIRE.	11. DETONATOR.
6. LOCATING STUD.	

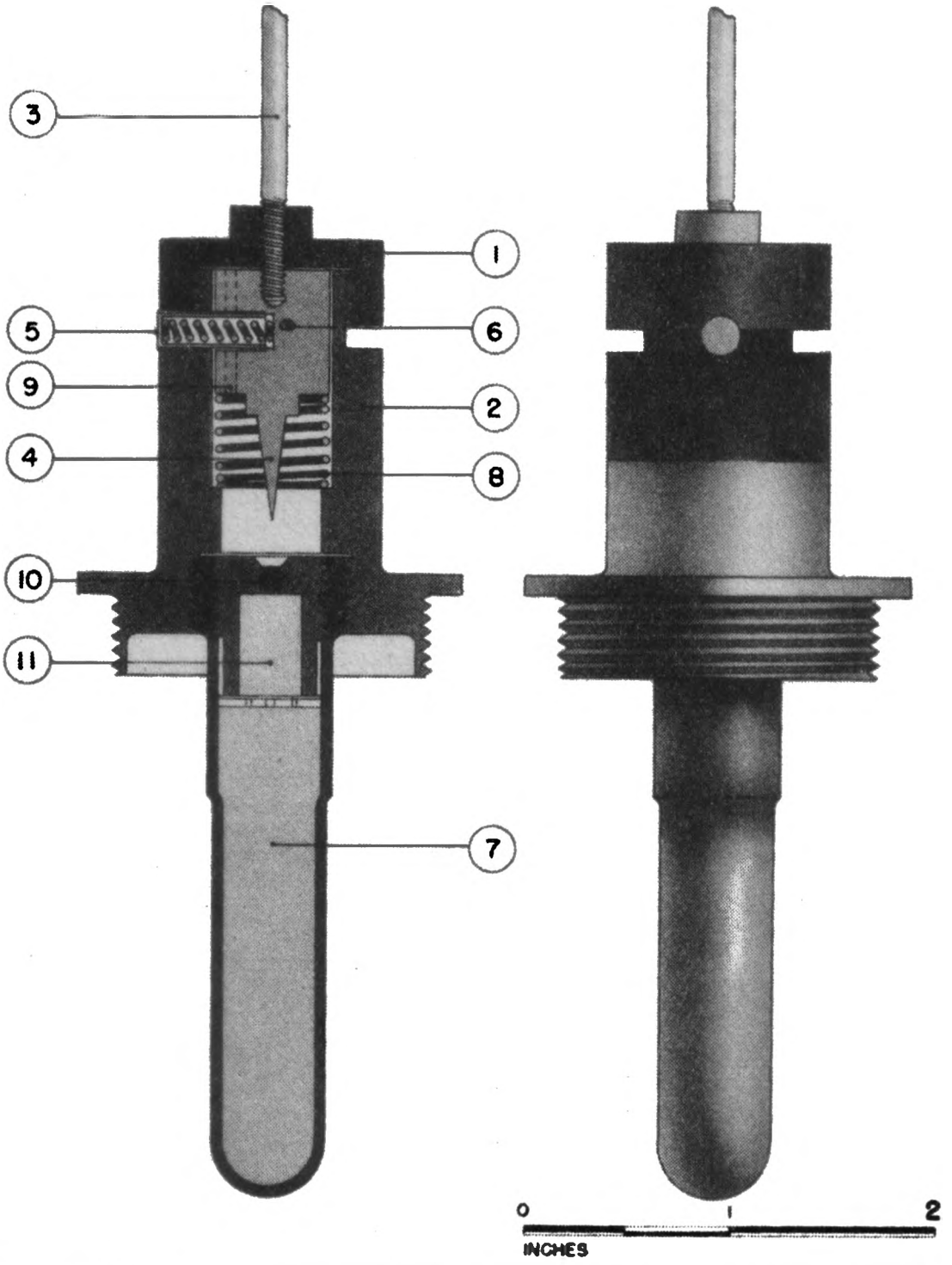
FUZE DATA: **FILE NO.:** 2511.T50

NATIONALITY: JAPANESE		**INFORMATION DATE:** October 1943
DESIGNATION B-5(a)	**CLASSIFICATION**	Mechanical Impact Tail Fuze (Navy)
	TYPE OF MISSILE	Anti-Personnel and Aircraft
MARKINGS: None		**BOMBS USED IN:** 1/3 Kg. Anti-Aircraft and Anti-Personnel.

DATA	B-5(a)
COLOR	Aluminum.
OVERALL LENGTH	3.37 inches (including tail extension).
OVERALL WIDTH	1.3 inches
MATERIAL OF CONSTRUCTION	Aluminum.
DESCRIPTION	Fuze body (1) houses an inertia striker (4) which is secured by the arming vane assembly (3) which protrudes from the side of the body (1). The arming vanes are cup-shaped. A copper shear wire (5) is present and a guide pin (6) keeps the striker from turning. A creep spring (8) keeps the striker away from the primer flash cap (10) after the arming vane assembly falls away. The tail assembly (2) hides the fuze to a great extent.
OPERATION	The arming vane assembly (3) unscrews and falls away after the bomb is released from the container. The striker (4) has a tendency to creep up to the top of the primer flash cap (10). This is prevented by the creep spring (8) and shear wire (5). On impact, inertia causes the striker to move downward against the creep spring. The shear wire is sheared and the striker pierces the primer and the exploder system is set into operation.
POSITION & METHOD OF FIXING IN BOMB	Tail fuze held under tail cone with vanes and arming spindle protruding perpendicular to side of bomb body.
COMPONENTS OF EXPLOSIVE TRAIN	Lead azide primer, cyclonite detonator and TNT. Cyclonite main filler.
FUZES LIKELY TO BE FOUND WITH	None.
DELAY TIMES	None.
REMARKS	

FUZE DATA: FILE NO.: 2511.T51

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION B-5(b)	CLASSIFICATION	Navy Mechanical Impact Tail Fuze
	TYPE OF MISSILE	1 Kg. Anti-parked aircraft
MARKINGS:		BOMBS USED IN: 1 Kg. Anti-parked aircraft.



LEGEND	
1. UPPER BODY CAP.	7. BOOSTER.
2. GAINE AND FUZE HOLDER.	8. CREEP SPRING.
3. ARMING SPINDLE.	9. AIR VENT.
4. STRIKER BODY.	10. PRIMER.
5. SAFETY DETENT.	11. DETONATOR.
6. SHEAR WIRE.	

FILE NO.: 2511.T51 JAPANESE NAVY TAIL FUZE B-5(b)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	1 Kg. anti parked aircraft bombs.
Companion fuzes	-	None.
Overall length	-	2.3 inches (less booster).
Overall width	-	1.75 inches.
Material of construction	-	Aluminum and steel.
Delay time	-	Instantaneous.
Threads	-	
Explosive train	-	Primer, detonator, booster similar to Navy Type I.
Color and markings	-	Aluminum.

CONSTRUCTION:

The fuze consists of the gaine and fuze holder, upper body cap, arming spindle, striker body, safety detent, and creep spring.

The gaine and fuze holder which houses the striker body is externally threaded at the base to thread into the bomb body and externally threaded at the top for the upper body cap. The upper body cap threads onto the fuze and gaine holder and is threaded to receive the arming spindle which threads into the striker body and holds it in position. There are three longitudinal grooves in the striker body, two of which act as air vents and one as a keyway to engage the locating stud. In the unarmed position, the striker body is held in the safe position by a safety detent or jump out pin and the arming spindle. An arming wire passes through the vanes preventing rotation and extends down to lock the safety detent against the pressure of the safety detent spring. A thin metal disc attached to the arming wire and lying just over the vanes inside the circular tail brace, acts as a drogue to withdraw the arming wire when bomb falls. When armed, the striker body is held away from the primer by the creep spring.

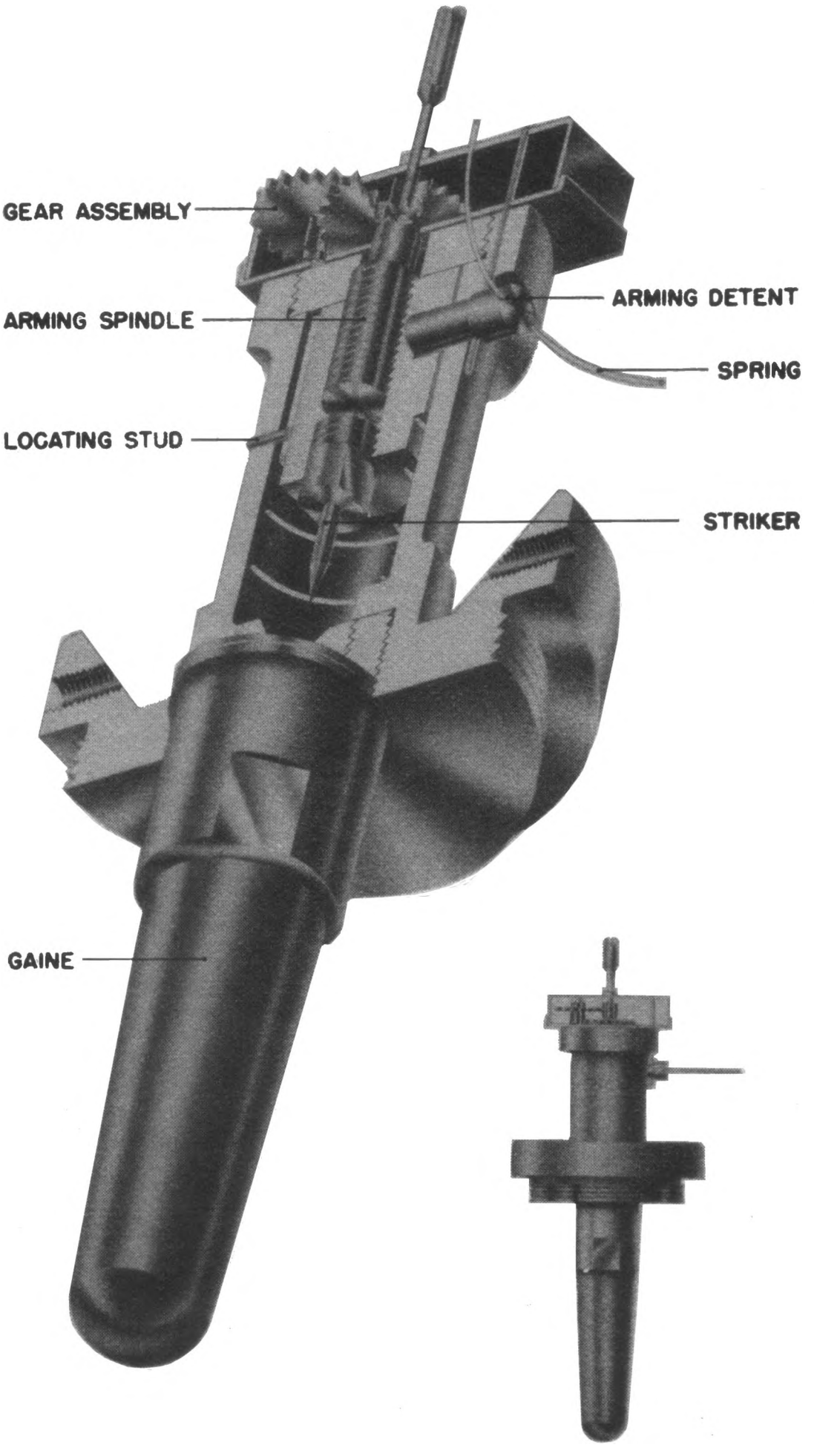
OPERATION:

When bomb is released from the container, the pressure of air against the drogue forces it upward, withdrawing the arming wire. This allows the spring loaded safety detent to be ejected from fuze body and the vanes to rotate. Rotation of the arming vanes unscrews the threaded arming spindle from the striker body (the arming spindle is threaded with a left hand thread). On impact, the striker body overcomes the creep spring and drives the striker into the primer.

REMARKS:

Refer to 1 Kg. anti-parked aircraft bomb.

JAPANESE NAVY TAIL FUZE B-5(c)



FILE NO.: 2511.T52 JAPANESE NAVY TAIL FUZE B-5(c)

DESCRIPTION:

Classification	- Mechanical impact tail fuze.
Bombs used in	- 1 Kg. anti-personnel bomb.
Companion fuzes	- None.
Overall length	- 5.875 inches (less booster).
Overall width	- 2.0625 inches.
Material of construction	- Aluminum alloy.
Explosive train	- Gaine similar to the Navy Type I with primer, detonator, and booster.
Delay time	- Instantaneous.
Threads	-
Color and markings	- Aluminum.

CONSTRUCTION:

The aluminum alloy fuze body is externally threaded at the base to screw into the bomb body and houses the striker body, creep spring, and safety detent. The arming spindle and reduction gear assembly screw into the striker body and with the safety detent hold the striker body in a safe position. The reduction gear assembly is used to slow down the arming process. There are three grooves in the striker body, two of which act as air vents and one as a keyway to prevent rotational movement of the striker body. A thin metal drogue placed just over the arming vanes prevents premature vane rotation.

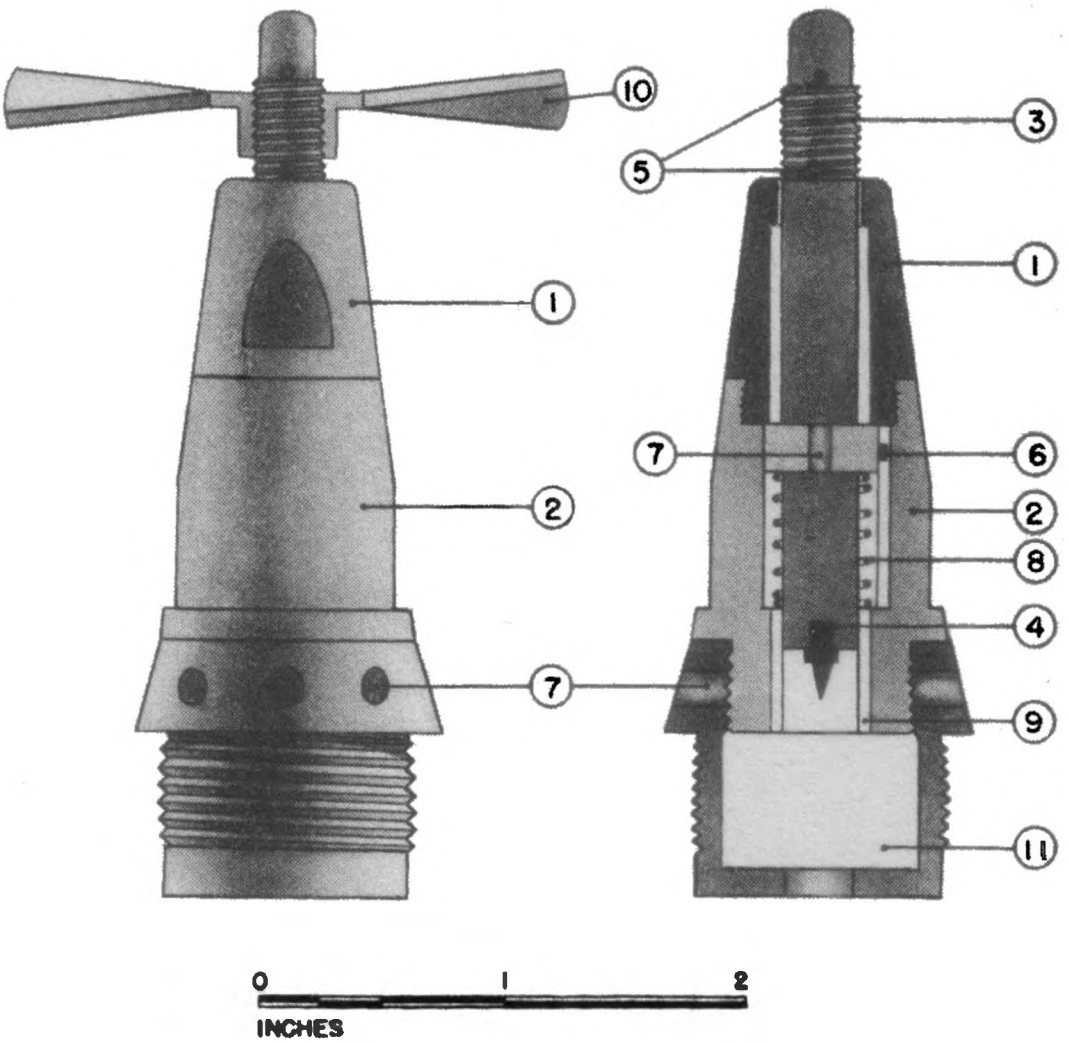
OPERATION:

As each bomb falls free of the container, the drogue retaining the vanes is carried away by the wind, allowing the vanes to rotate. The motion of the vanes is transmitted through the reduction gear assembly to the arming spindle which is thus threaded out of the striker body. A locating stud riding in one groove of the striker body prevents rotational movement but allows downward movement. As the arming spindle rises, it also lifts the gear frame to which is secured a pin retaining a spring-loaded detent, which fits through the fuze body into the striker to hold it in the safe position. With the arming spindle and safety detent removed, the heavy striker body is held up only by a weak creep spring. On impact, the striker body overcomes the creep spring, initiating the gaine.

REMARKS:

FUZE DATA: FILE NO.: 2511.T60

NATIONALITY: JAPANESE		INFORMATION DATE: April 1944
DESIGNATION	CLASSIFICATION	Navy Mechanical Impact Tail Fuze
	TYPE OF MISSILE	Practice Bombs
MARKINGS: ⓗ ⓗ ⚓ 14978		BOMBS USED IN: 31 Kg. Practice



LEGEND	
1. UPPER BODY.	7. AIR DUCTS.
2. LOWER BODY.	8. CREEP SPRING.
3. STRIKER BODY.	9. AIR DUCTS.
4. STRIKER.	10. VANES (8).
5. HOLES FOR U-SHAPED PIN.	11. DETONATOR HOLDER.
6. LOCATING STUD.	

FILE NO.: 2511.T60

JAPANESE NAVY TAIL FUZE B-6(a) (TYPE 97, TAIL ARMING MECHANISM)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	31 Kg. Practice bombs.
Companion fuzes	-	None.
Overall length	-	3.62 inches.
Overall width	-	1.25 inches.
Vane span	-	2.3 inches.
Material of construction	-	Brass except steel striker point and creep spring.
Threads	-	20 threads per inch. 1-3/64 inches diameter.
Delay	-	None
Explosive train	-	Primer-detonator and picric acid.
Color and markings	-	Natural brass.

CONSTRUCTION:

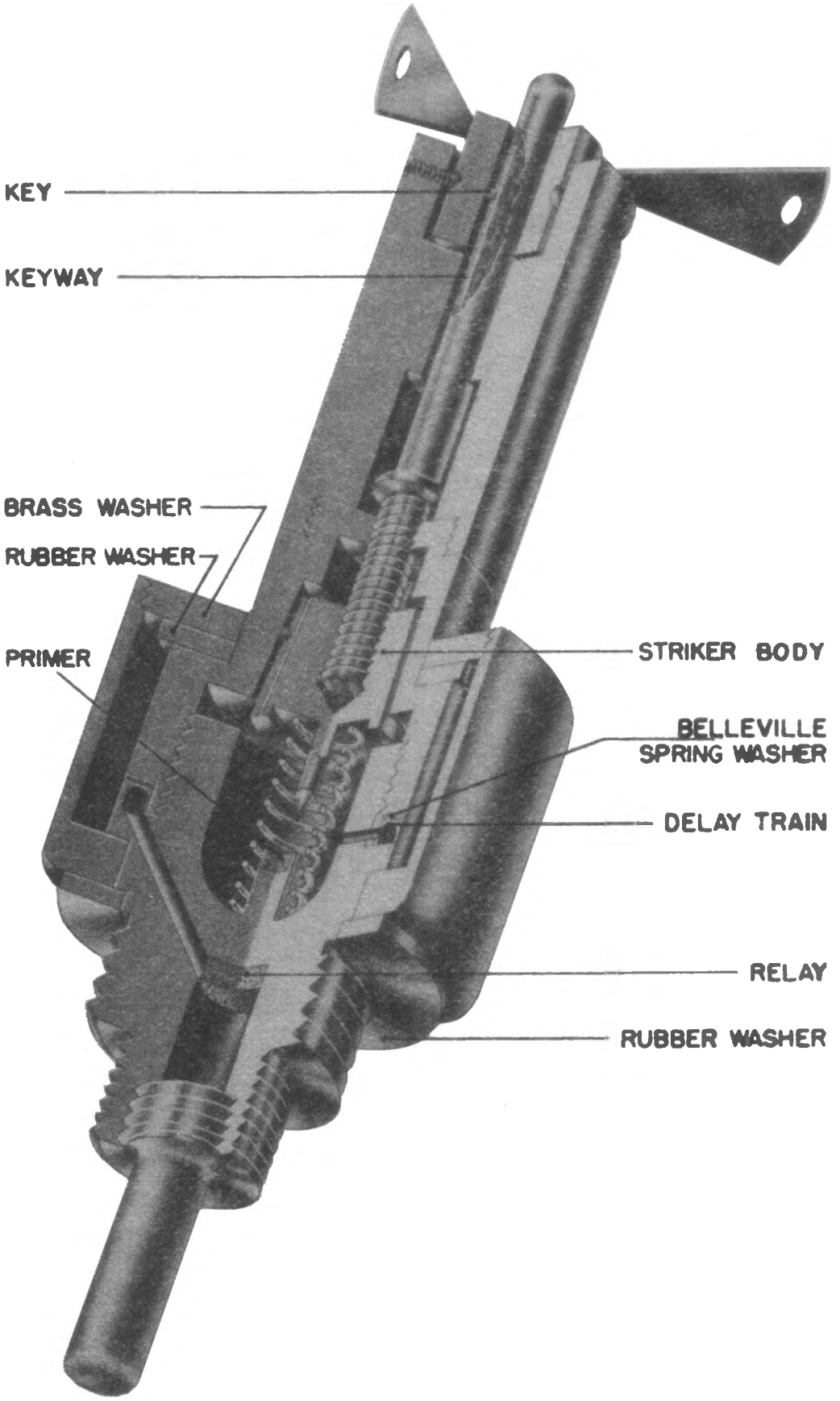
The fuze consists of the upper fuze body, lower fuze body, striker body, creep spring, and detonator holder.

The upper portion of the body acts as a guide for the striker body. The lower portion of the body threads onto the upper portion and contains the light creep spring. The striker point is screwed into the end of the striker body. The lower portion of the fuze has a combination spanner ring and detonator cup screwed onto it. Around the striker point, four air vents are drilled. Two air vents are also located in the striker collar. These vents allow the striker body to move against the primer on impact without any cushion effect caused by the air in the striker channel. The arming vane assembly has eight vanes.

OPERATION:

On release from the aircraft, a U-shaped safety fork is withdrawn from the two holes in the striker body. The vanes rotate twelve times and fall free, leaving the striker body held back by the light creep spring. The striker body is prevented from rotating by a small locating stud engaging a longitudinal keyway in the lower fuze body. On impact, inertia causes the striker body to move against the spring and to pierce the primer.

JAPANESE ARMY TAIL FUZE B-7(a)



FILE NO.: 2511.T70

JAPANESE ARMY TAIL FUZE B-7(a)
(Exp. Mfg. 3.5. Second Delay Anti-Sub Fuze)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	50 Kg., 100 Kg., 250 Kg. Anti-submarine bombs.
Companion fuzes	-	Probably none.
Overall length	-	5.88 inches - less booster (approx.).
Overall width	-	2.0 inches (approx.).
Material of construction	-	Brass throughout with rubber sealing gaskets.
Threads	-	13 threads per inch. 1-5/32 inches diameter
Explosive train	-	Primer, delay ring, relay, gaine, booster.
Delay time	-	3.5 seconds.
Color and markings	-	Black arming vanes, balance is natural brass.

CONSTRUCTION:

The fuze consists of the vane assembly, striker body and housing, lower fuze body, explosive train and sealing ring.

Vane assembly: Three vanes are mounted on a hub retained in a housing by two retaining screws, which engage an annular groove in the hub and permit the hub to rotate. Inside the vane hub, a key fitting into a longitudinal keyway in the arming spindle allows the spindle to thread itself upward. The hub housing threads onto the striker body housing and constitutes the top part of the fuze.

Striker Body Housing: Threaded internally at the top to take the arming spindle, and internally at its base to thread onto the lower fuze body. The lower, external portion is enlarged to form a shoulder for a rubber gasket. The striker is mounted on the tapered striker body which is keyed to prevent rotation. The body rides on a creep spring and when unarmed, is retained by the arming spindle which threads into its top.

Lower Fuze Body: Contains the primer, delay ring, relay and is threaded to receive the gaine. The delay ring is a friction fit against a flange on the lower fuze body. A Belleville spring washer, fitting between the delay ring and the striker housing, maintains tension on the ring. A diagonal flash hole leads through the flange of the lower fuze body to a relay of black powder above the gaine. The base of the lower fuze body has external threads and internal threads of the same size as those of the B-1(a).

OPERATION:

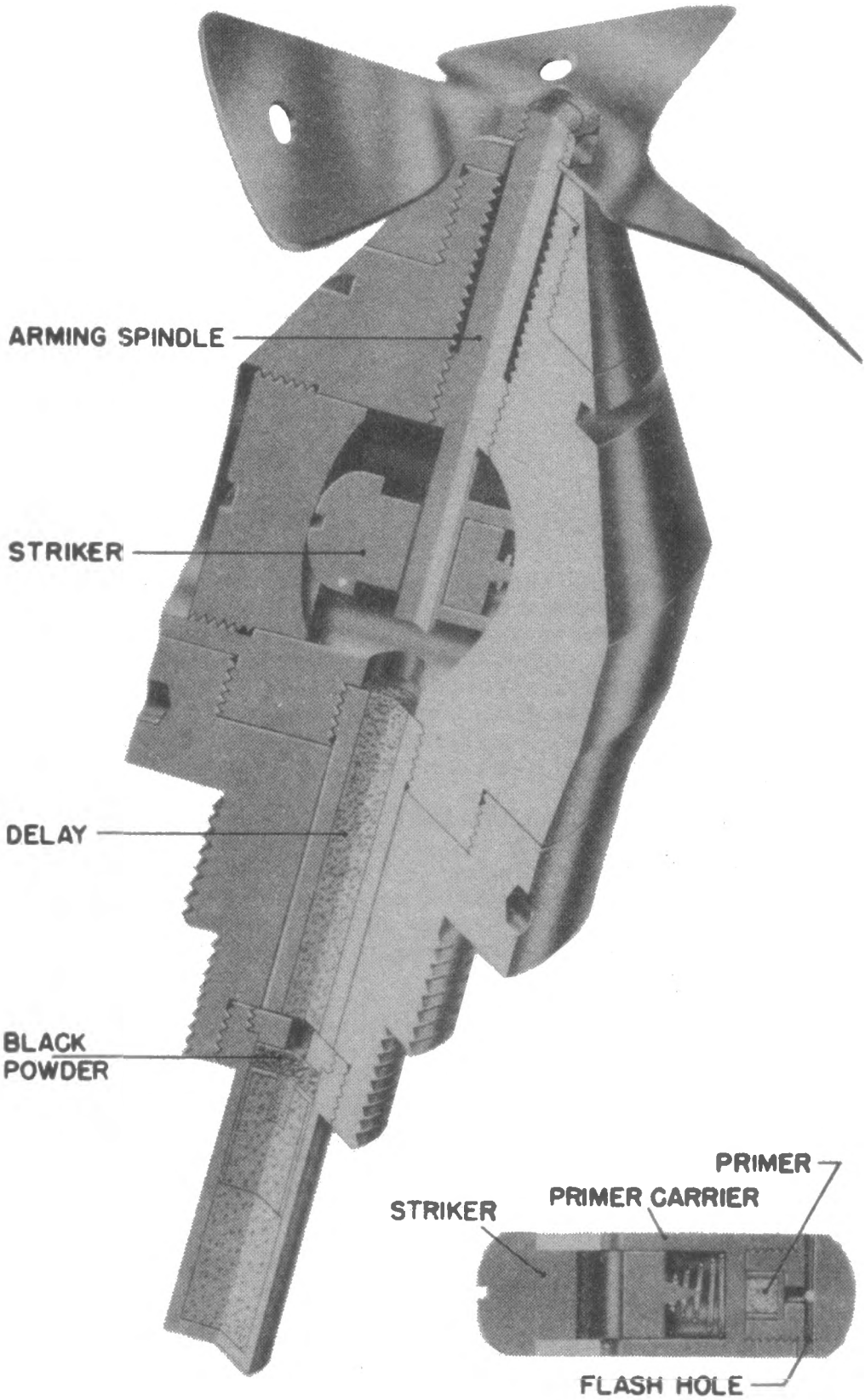
On release from the plane, the arming vanes rotate the hub, which threads the arming spindle out of the striker body. On impact the striker body is driven forward by inertia, compressing the creep spring and piercing the primer. The weight of the striker body and the lightness of the creep spring makes the fuze very sensitive.

The flash from the primer goes through the lead -in hole to the delay ring, burns around to the lead-out hole, and sets off the relay and gaine. A red setting line on the lower body flange gives a delay of about 3.5; an uncolored line sets it so that the whole delay train must burn, giving a delay of about 25 seconds. Any setting has to be made before the fuze is sealed.

REMARKS:

The sealing ring serves to waterproof all the explosive elements of the fuze which are outside the fuze pocket.

JAPANESE ARMY TAIL FUZE B-8(a)



FILE NO.: 2511.T80 JAPANESE ARMY TAIL FUZE B-8(a)

DESCRIPTION:

Classification	-	Mechanical impact "all-ways" tail fuze.
Bombs used in	-	30 Kg. and 100 Kg. anti-shipping bombs. 250 Kg. and 500 Kg. anti-shipping bombs (with adapter).
Companion fuzes	-	A-8(a) or possibly A-8(b)
Overall length	-	5.39 inches - less booster (approx.).
Overall width	-	2.25 inches (approx.).
Material of construction	-	Brass throughout.
Threads	-	13 threads per inch. 1-5/32 inches diameter.
Delay setting	-	Probably 4-5 seconds.
Explosive train	-	Primer, delay, standard Army tail gaine and booster.
Color and markings	-	Natural brass. Markings give date and place of manufacture, i.e. "Tokyo, January 1944."

CONSTRUCTION:

The fuze consists of an upper and lower fuze body, an all-ways action striker and primer carrier assembly, an arming spindle and vanes, a delay element, and gaine.

The upper fuze body houses the all-ways action striker and primer-carrier assembly in a cavity drilled transversely in body ending concavely in a dome. The open end of this cavity is closed by a threaded plug with a similar dome on the inside. The upper fuze body threads into the lower fuze body and is threaded to take the delay element. A conical piece threads onto the top of the upper body and contains the holes for the safety fork.

The striker body top and primer-carrier base are domed to facilitate camming action. A weak creep spring holds the striker off the primer.

The arming spindle threads into the upper fuze body and its lower end extends into the striker body to hold the striker in a safe position. The 3-bladed arming vanes are fitted over the arming spindle. A safety fork fitting over the vanes and into the fuze body prevents premature vane rotation.

The lower fuze body consists externally of a flange with six spanner holes, threads to fit the standard fuze pocket, and threaded for the standard booster. Internally on the top it is threaded to take the upper fuze body, pierced for the delay element, and threaded at the bottom for the gaine.

The delay element is a powder filled tube wich threads into the base of the upper fuze body. The gaine is the standard Army gaine.

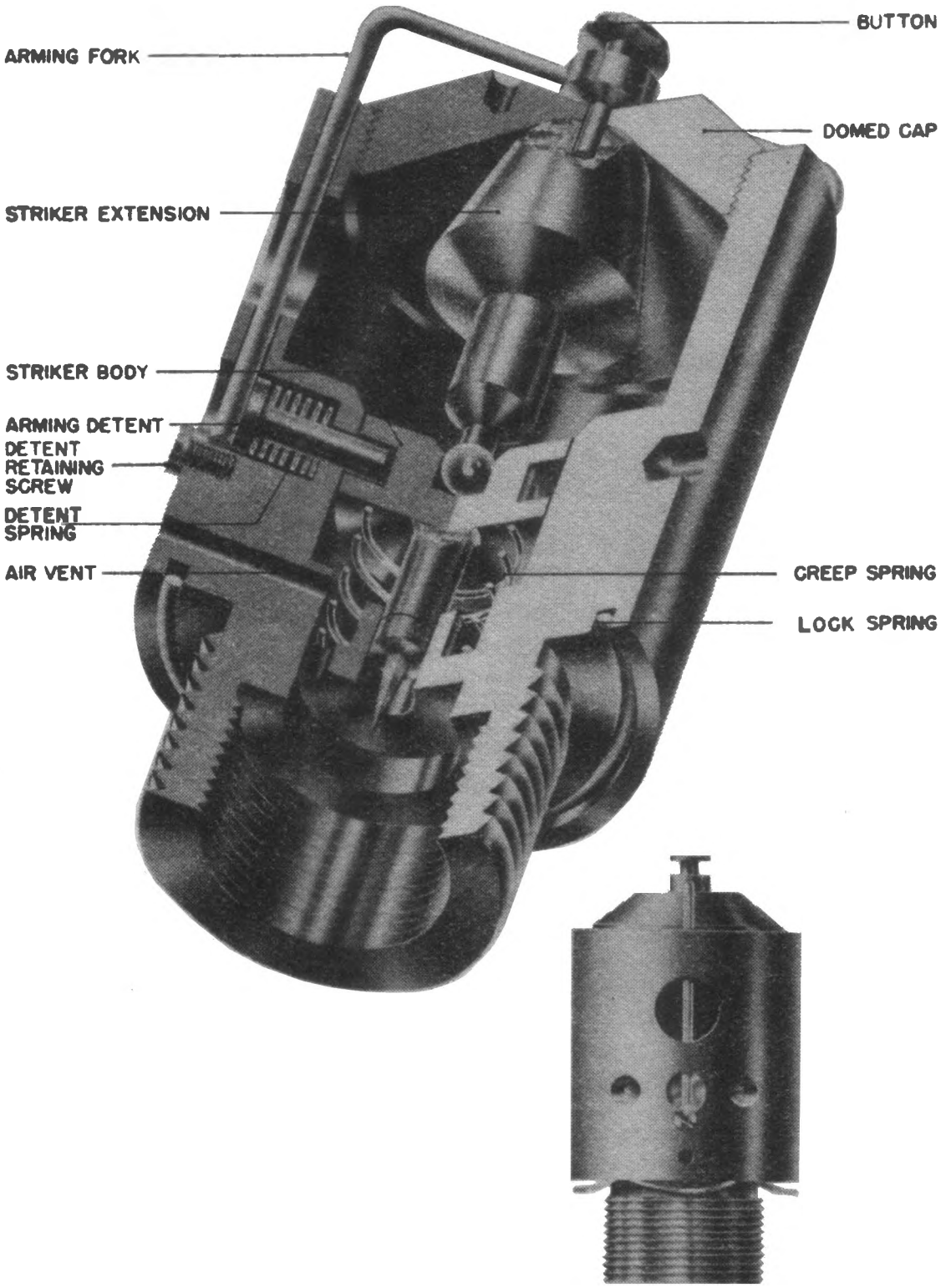
OPERATION:

In flight, rotation of the arming vanes threads the arming spindle out of the fuze body leaving the striker body and primer-carrier separated only by a creep spring. On any impact the primer-carrier and striker body will be driven together by inertia acting on one of the two parts or by being cammed together by moving into a narrower part of the cavity. The flash from the primer spits out of the flash holes and ignites the delay which in turn ignites the relay on top of the gaine.

REMARKS:

Because this fuze has the standard B-1(a) size threads, it could be used in bombs up through 100 Kg. and with the adapter in B-4(a) size fuze pockets.

JAPANESE NAVY TAIL FUZE B-9(a)



FILE NO.: 2511.T90

JAPANESE NAVY TAIL FUZE B-9(a) (MODEL 2 ALL-WAYS ACTION FUZE)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	Baka bomb.
Companion fuzes	-	3(g), B-10(a)
Overall length	-	4.54 inches.
Overall width	-	2.75 inches.
Material of construction	-	Brass fuze body, aluminum striker body, steel striker point.
Threads	-	12 threads per inch.
		1-31/32 inches diameter.
Delay	-	Incorporated in gaine.
Explosive train	-	Standard Navy gaine.
Color and markings	-	Natural brass.

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CONSTRUCTION:

This fuze has a heavy, solid, brass body. Six spanner holes are located slightly below the center of the fuze body. Two air vents, 180° apart, are in the lower portion of the fuze body. The opening in the top of the fuze body is closed by a dome-shaped cap, which has a curved inner surface. The cap is pierced by two spanner holes and a central hole. through which a stud on the safety fork fits, to engage a recess in the top of the striker extension. The cap is held in place by a grub screw. The base of this fuze is internally threaded to take a standard Navy gaine.

The internal mechanism of the fuze consists of a striker extension, striker body, creep spring, and arming detent. The striker extension is a conical-shaped, brass knob having a cylindrical lower shaft, at the end of which is machined a small ball. The top of the striker extension is recessed to take the middle stud of the safety fork. The striker body is made of aluminum. A steel striker point is threaded into its lower portion. The main body of the striker has a wide head, which is recessed in its center to take the ball of the striker extension. The striker is held away from the primer by a creep spring. An arming detent, spring loaded outward, engages a deep, annular groove in the striker body preventing it from moving forward.

The safety fork holds the arming detent inward to engage the striker body and an additional safety feature is provided by the lower stud on the safety fork, which engages a recess at the top of the striker extension to prevent functioning of the all-ways action feature.

OPERATION:

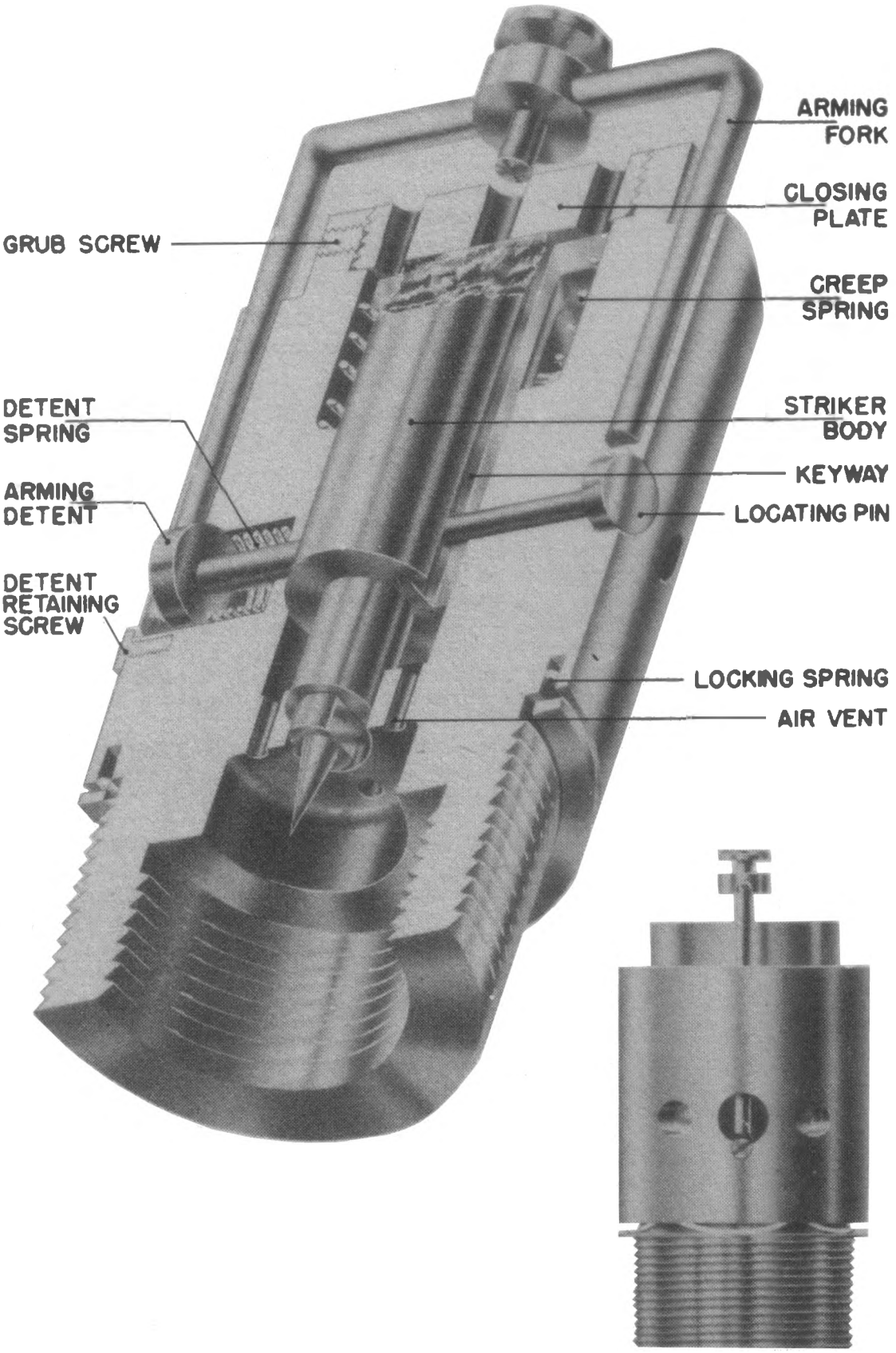
When the safety fork is pulled by the pilot of the Baka bomb, the spring-loaded detent moves outward, disengaging the groove in the striker body. The fuze is now armed. The striker is held away from the primer by the creep spring. On direct impact the weight of the striker extension forces the striker body down against the creep spring and the striker impinges on the primer, thus firing the fuze.

If impact is not direct, the striker extension is cammed to the side against the curved dome of the closing cap. This action forces the striker body down against the creep spring, firing the fuze.

REMARKS:

The safety fork is pulled by removal of the arming device attached to the fuzes.

JAPANESE NAVY TAIL FUZE B-10 (a)



FILE NO.: 2511.T100

JAPANESE NAVY TAIL FUZE B-10(a) (MODEL 1 BASE IMPACT FUZE)

DESCRIPTION:

Classification	-	Mechanical impact tail fuze.
Bombs used in	-	Baka bomb.
Companion fuzes	-	A-3(g), B-9(a)
Overall length	-	4.094 inches.
Overall width	-	2.375 inches.
Material of construction	-	Brass except for steel striker point.
Threads	-	12 threads per inch. 1-3/32 inches diameter.
Explosive train	-	Standard Navy gaine.
Delay	-	Incorporated in gaine.
Color and markings	-	Natural brass. On closing plate: 五一 - Ⓐ On body: Ⓐ ⚓ 549

CONSTRUCTION:

The body is of heavy, one-piece, brass construction. The top of the fuze is closed by a brass plate, pierced by two spanner holes and a central hole. The closing plate is locked in place by a grub screw. Six spanner holes are located slightly below the central portion of the main body. In the same plane as the spanner holes are a locating pin, which engages a longitudinal slot in the striker body, and 180° removed, the arming detent, which is spring loaded outward. The arming detent is held in the fuze body by the detent retaining screw.

A groove in the bottom of the fuze body, cut into the shoulder above the threads, contains a locking spring. This spring is held in place by four stakes in the fuze body and serves to secure the fuze firmly in its pocket. A laminated washer of paper impregnated with rubber, is located directly forward of the locking spring.

The heavy striker body has a steel striker point threaded into its lower end. There are four air escape vents in the striker body head. The striker body has a longitudinal groove to engage the locating pin, and 180° removed, a hole for the arming detent. The striker body rests on a creep spring located in the central channel of the fuze body. The bottom shoulder of the striker body channel is pierced by four air vents. The base of the fuze is internally threaded to take a standard Navy gaine.

A safety fork holds the arming detent inward so that it engages a hole in the striker body preventing fuze from operation.

OPERATION:

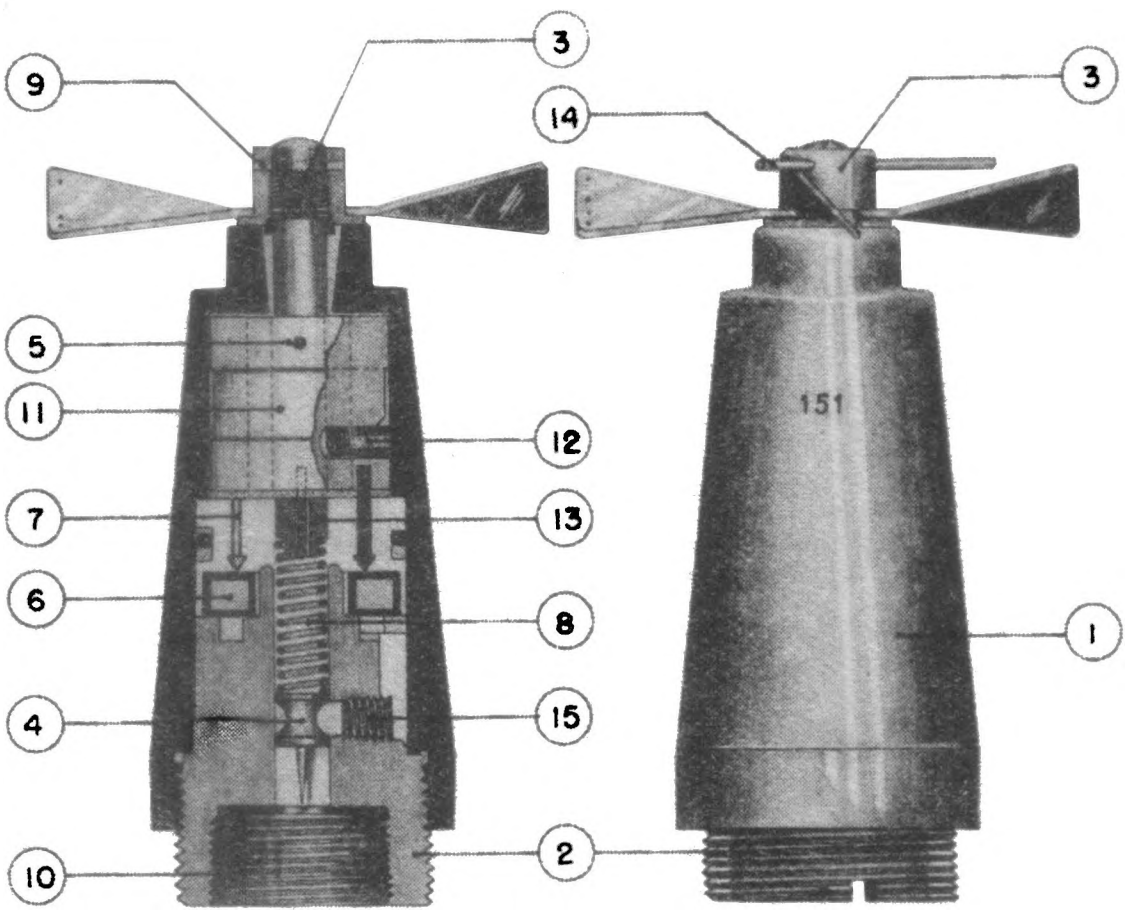
When the safety fork is pulled, the spring loaded detent moves outward, disengaging the striker body. The fuze is now armed and the striker body is held away from the primer by the creep spring. On impact the striker body moves downward, compressing the creep spring and the striker impinges upon the primer.

REMARKS:

The fuze is armed by the Baka operator pulling the arming device attached to the fuze.

FUZE DATA: FILE NO.: 2533.T10

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION C-1(a)	CLASSIFICATION	Navy Chemical Long Delay Tail Fuze
	TYPE OF MISSILE	Navy G.P.H.E. Bombs
MARKINGS: Three digit number "151" on one fuze "385" on another fuze		BOMBS USED IN: Navy 250 Kg. G.P.H.E.



LEGEND

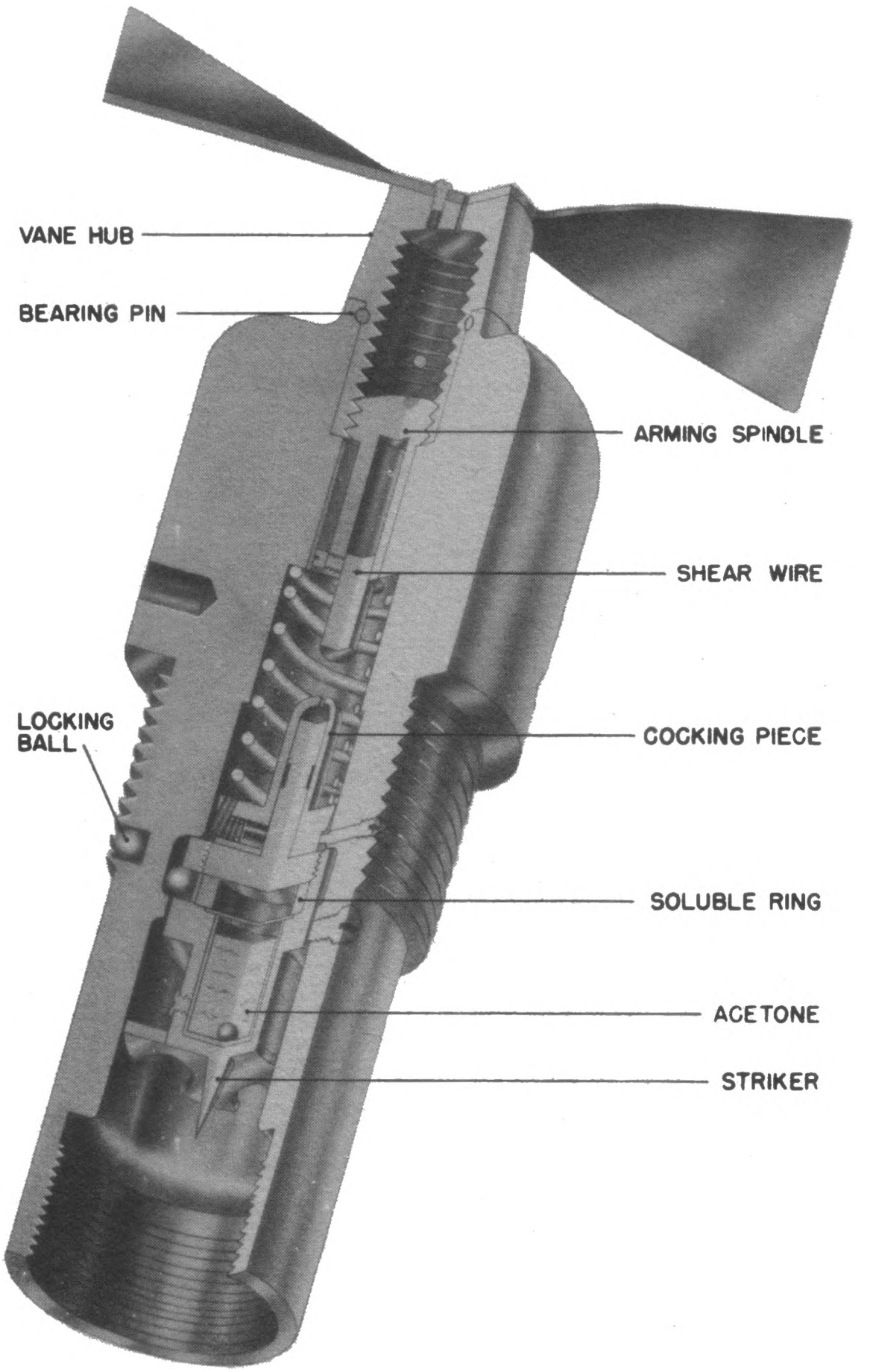
1. OUTER PORTION OF BODY.
2. INNER PORTION OF BODY.
3. ARMING VANE ASSEMBLY.
4. STRIKER.
5. SHEAR WIRE.
6. ACETONE TANK.
7. PLUNGERS. (4)
8. SPRING.
9. ARMING WIRE HOLE.
10. THREADS FOR GAINE.
11. INERTIA WEIGHT.
12. SPRING LOADED PLUNGER.
13. LUG ON INERTIA WEIGHT.
14. ARMING WIRE.
15. SOLUBLE PLUG.

FUZE DATA: FILE NO.: 2533.T10

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION C-1(a)	CLASSIFICATION	Navy Chemical Long Delay Tail Fuze
	TYPE OF MISSILE	Navy G.P.H.E. Bombs
MARKINGS: Three digit number "151" on one fuze "385" on another fuze		BOMBS USED IN: Navy 250 Kg. G.P.H.E.

DATA	C-1(a)
COLOR	Steel.
OVERALL LENGTH	6.1 inches.
OVERALL WIDTH	2.45 inches.
MATERIAL OF CONSTRUCTION	Steel throughout except copper chemical tank.
DESCRIPTION	The outer portion of the body (1) houses the arming vane assembly (3), the inertia weight (11) and the inner body portion (2). Rotation of the inertia weight is prevented by a shear wire (5). At the base of the inertia weight are fastened four plungers (7) and a lug (13) to which is fastened a heavy spring which bears against the striker (4) located in the inner body portion (2). A torus-shaped copper tank (6) is located directly under the plungers (7). Bearing against the concave portion of the firing pin is a chemical composition plug (15), spring-loaded.
OPERATION	On release from the plane, the arming wire (14) is withdrawn and the vanes unscrew and fall free, leaving the inertia weight to be held back by the pin (5) which is sheared on impact. The inertia weight, moving down after impact, is locked in the down position by the spring-loaded plunger (12). The acetone from tank (6) contacts the soluble plug (15). At the moment that the inertia weight (11) moved down and the plungers (7) pierced the tank, the spring (8) was compressed; the striker (4) is then under pressure. When the plug (15) dissolves, the striker moves forward under spring pressure and pierces the gaine. A steel ball locks the fuze in the pocket to prevent withdrawal.
POSITION & METHOD OF FIXING IN BOMB	The fuze is screwed into the tail of the bomb. A steel locking ball prevents removal.
COMPONENTS OF EXPLOSIVE TRAIN	Standard Navy gaine.
FUZES LIKELY TO BE FOUND WITH	None. A plug is placed in the nose fuze pocket.
DELAY TIMES	Varies from 1/2 to 125 hours.
ANTI-WITHDRAWAL	A steel ball in the threads of the fuze locks the fuze when an attempt is made to withdraw it.
REMARKS	

JAPANESE NAVY NOSE FUZE C-2(A)



FILE NO.: 2533.N20 JAPANESE NAVY CHEMICAL NOSE FUZE C-2 (a)
(Type 99 Special Bomb Nose Fuze Models 1, 2, 3)

DESCRIPTION:

Classification	-	Chemical Long Delay Nose Fuze.
Bombs Used In	-	60 Kg. G.P.H.E. and 250 Kg. G.P.H.E. Bombs.
Companion Fuzes	-	C-1(a) Navy Chemical Long Delay Tail Fuze.
Overall length	-	5.9 inches
Overall width	-	2.3 inches
Material of Construction	-	Steel throughout except brass cocking piece.
Delay	-	4 to 67 hours.
Explosive train	-	Standard Japanese Navy gaine.
Threads	-	1-61/64 inches diameter, 12 threads per inch.
Color and Markings	-	Cadmium plated.

CONSTRUCTION:

The fuze consists of a steel fuze body in which are housed the arming assembly and the delay assembly. The arming assembly, which is housed in the upper end of the body, consists of the arming vanes which are attached to the arming vane hub by three small screws. The arming vane hub is internally threaded at the lower end to receive a short, hollow arming spindle and a arming spindle extension which is held in the base of the spindle by a copper shear wire. A locating stud inserted in the spindle engages in the keyway of the fuze body and prevents the spindle from rotating but permits upward or downward movement. The vane hub is retained in the fuze body by two bearing pins which also permit the hub to rotate. A safety pin is inserted through the fuze body and the vane hub.

The delay assembly, which is housed toward the lower end of the body, is actuated by a spring after the delay period has expired. Screwed into the top of the delay assembly is a steel plug with a cut-away shank on which a brass cocking piece rides. In one side of this cocking piece is a small brass spring loaded detent; on the opposite side is an assembly screw. The cocking piece and shank are held in position by the striker body.

Under the steel plug is a soluble ring outside of which is a copper ring and a steel striker retaining ball set into a drilled hole. This ball prevents downward movement of the striker assembly as the ball rests on a shoulder of the fuze body. A lead foil cover is fitted over a copper acetone-filled tank. A solid lead ball with a small copper stud on its side is placed in the container.

OPERATION:

When the bomb is released, the safety pin is withdrawn, allowing the arming vanes and vane hub to rotate. This action screws the arming spindle and the arming spindle extension into the vane hub clear of the cocking piece. On impact, the cocking piece moves forward, compressing the striker spring and is locked down by the detent, thus holding the striker unit under compression of spring. Simultaneously, the solid ball in the acetone container breaks the lead foil cover of the acetone filled tank, allowing the solvent to escape into the space above and dissolve the soluble ring. After a period of time in which the soluble ring has become softened, the steel ball, due to the pressure of the striker spring, is forced away from the shoulder of the fuze body. The striker assembly, under compression of the spring, is thus forced downward with striker detonating the cap.

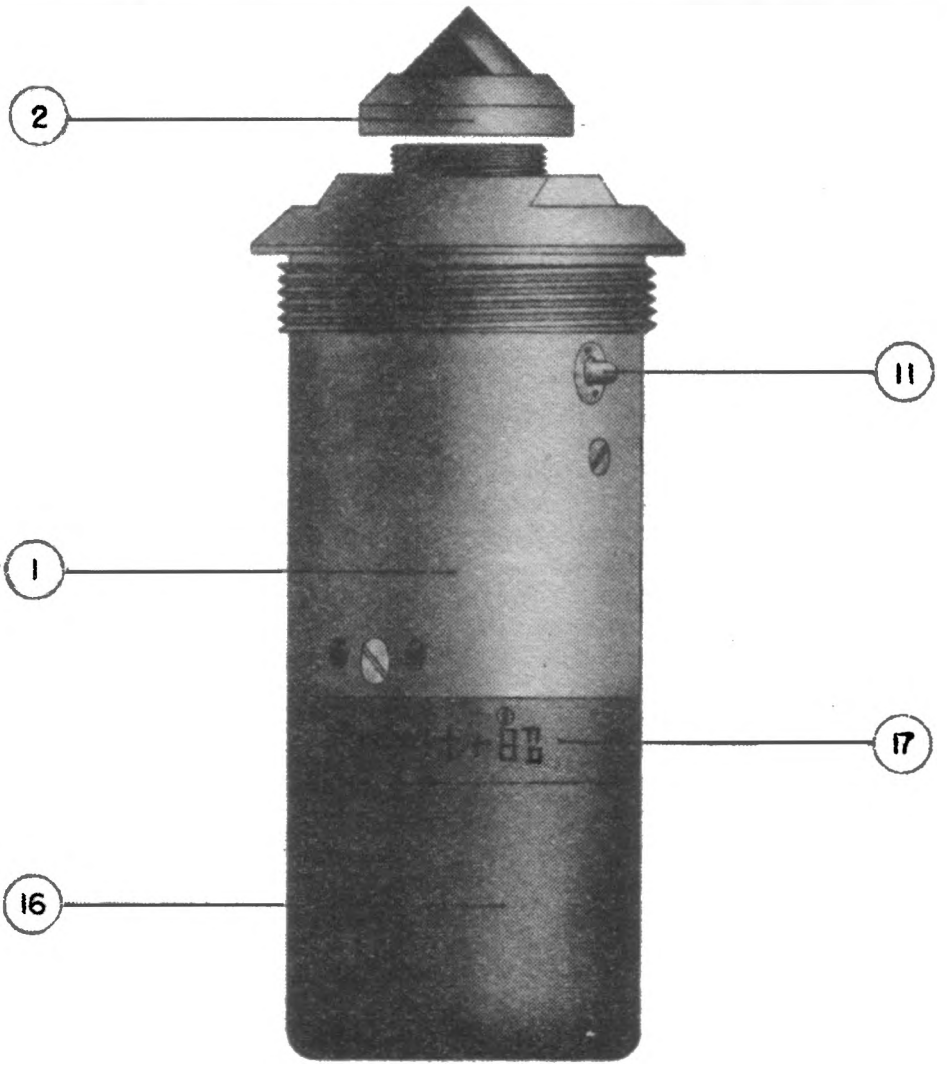
REMARKS:

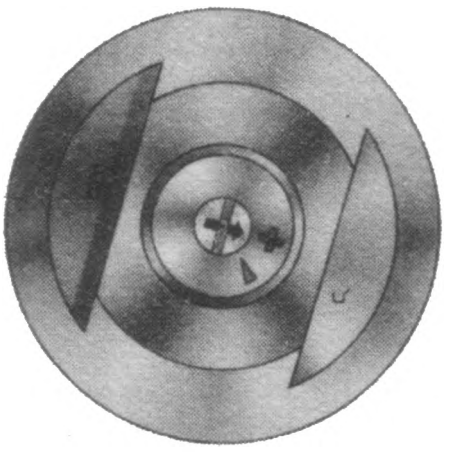
A steel ball in the threads of the fuze body locks the fuze when an attempt is made to withdraw it.

If the vanes fail to rotate, the inertia of the cocking piece may be sufficient to shear the shear wire and to drive the arming piece into the provided recess in the spindle and thus permit the fuze to arm if dropped from sufficient altitude. Thus the fuze may be armed despite the presence of the safety pin.

FUZE DATA: FILE NO.: 2533.N30

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION C-3(a)	CLASSIFICATION	Army Chemical Long Delay Fuze
	TYPE OF MISSILE	G.P.H.E.
MARKINGS: 東 ★ 4t+8月 TOKYO - April, 1942.		BOMBS USED IN: 50 Kg. G.P.H.E. (Modified nose).





TOP VIEW WITHOUT NOSE CAP

0 1 2
INCHES

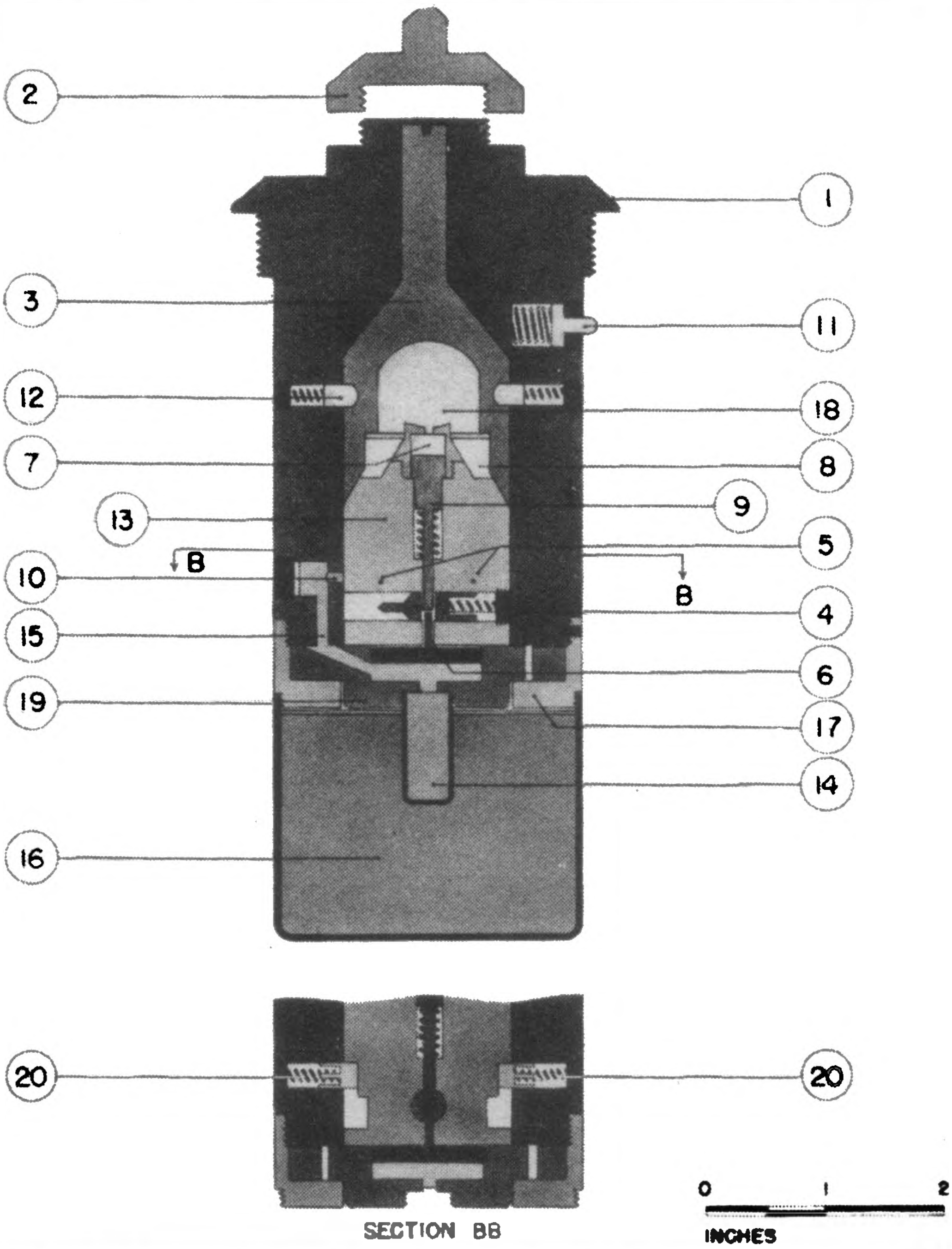
LEGEND	
1. BODY (STEEL).	16. BOOSTER HOLDER.
2. NOSE CAP (STEEL).	17. ADAPTER.
11. ANTI WITHDRAWAL.	

FUZE DATA:		FILE NO.: 2533.N30
NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION C-3(a)	CLASSIFICATION	Army Chemical Long Delay Fuze
	TYPE OF MISSILE	G.P.H.E.
MARKINGS: 東 ☆ 4 t + 8 日 TOKYO - April, 1942.		BOMBS USED IN: 50 Kg. G.P.H.E. (Modified nose).

DATA	C-3(a)
COLOR	Unpainted steel.
OVERALL LENGTH	7.78 inches (Visible length 1.54 inches).
OVERALL WIDTH	3.5 inches.
MATERIAL OF CONSTRUCTION	Steel body, brass inside.
DESCRIPTION	The fuze consists of the fuze body (1), a nose cap (2) which will not usually be found on a UXB, and a collar (17) which joins the booster (16) to the body. An anti-withdrawal pin (11) prevents the fuze from being unscrewed by hand. An arming spindle (3) is hollowed out to house a copper tank filled with acetone (18). The arming spindle (3) is held in place by two spring-loaded plungers (12). A screw-driver slot in the top of the spindle allows it to be turned from the safe (+) position to the armed position (▲) marked in red meaning "firing point". The rotation of the spindle is regulated by the length of the grooves into which the spring-loaded plungers are fitted. When in the armed position, the four cut-away segments of the spindle are in line with the cut-out portions of the inertia weight (13), thus allowing the latter to move up on impact. The inertia weight (13) is held by two shear wires (5) which are sheared on impact. In the section B-B, the bottom of the inertia weight is shown, rotated through 90 degrees. Two spring-loaded plungers (20) hold the inertia weight as shown in the position before impact. On impact, the inertia weight moves up toward the top of the fuze, and is locked in this position by plungers (20). This insures that the firing pin (4) is in line with the primer (10). When the inertia weight moves up to the armed position, the safety detent (6) remains behind, leaving the firing pin held only by the striker release pin (9) bearing against the soluble plug (7). When this plug dissolves, the detent moves up, freeing the striker and allowing it to be pushed into the detonator by the spring behind the striker (4). A rubber sealing plug (8) keeps the solvent from running throughout the fuze after the acetone tank (18) is pierced.
OPERATION	The arming spindle (3) is turned 45 degrees to the firing point (▲) as shown in the view of the fuze. This turns the spindle (3) so that the inertia weight (13) is free to move up on it on impact. The spindle is locked in position by the plungers (12) and inertia weight is locked by the plungers (20). The safety wire (6) remained behind when the weight moved up. The firing pin (4) is held only by the striker release pin (9). After the acetone has dissolved the soluble plug (7), the striker release pin (9) moves up under spring action, thus releasing the firing pin (4) which moves into the primer (10) under spring action.

FUZE DATA: **FILE NO.:** 2533.N30

NATIONALITY: JAPANESE	**INFORMATION DATE:** October 1943
DESIGNATION C-3(a) / CLASSIFICATION	Army Chemical Long Delay Fuze
TYPE OF MISSILE	G.P.H.E.
MARKINGS: 東 [illegible] 4 t + 8 ロ TOKYO - April, 1942.	**BOMBS USED IN:** 50 Kg. G.P.H.E. (Modified nose).



LEGEND	
1 BODY (STEEL)	11 ANTI WITHDRAWAL
2 NOSE CAP (STEEL)	12 PLUNGERS
3 ARMING SPINDLE (BRASS)	13 INERTIA WEIGHT
4 STRIKER ASSEMBLY (STEEL)	14 DETONATOR
5 SHEAR WIRE (COPPER)	15 POWDER TRAIN
6 SAFETY WIRE	16 BOOSTER
7 SOLUBLE PLUG	17 COLLAR (BRASS)
8 RUBBER SEALING PLUG	18 ACETONE
9 STRIKER RELEASE PIN	19 POWDER TRAIN HOLDER
10 PRIMER	20 PLUNGERS

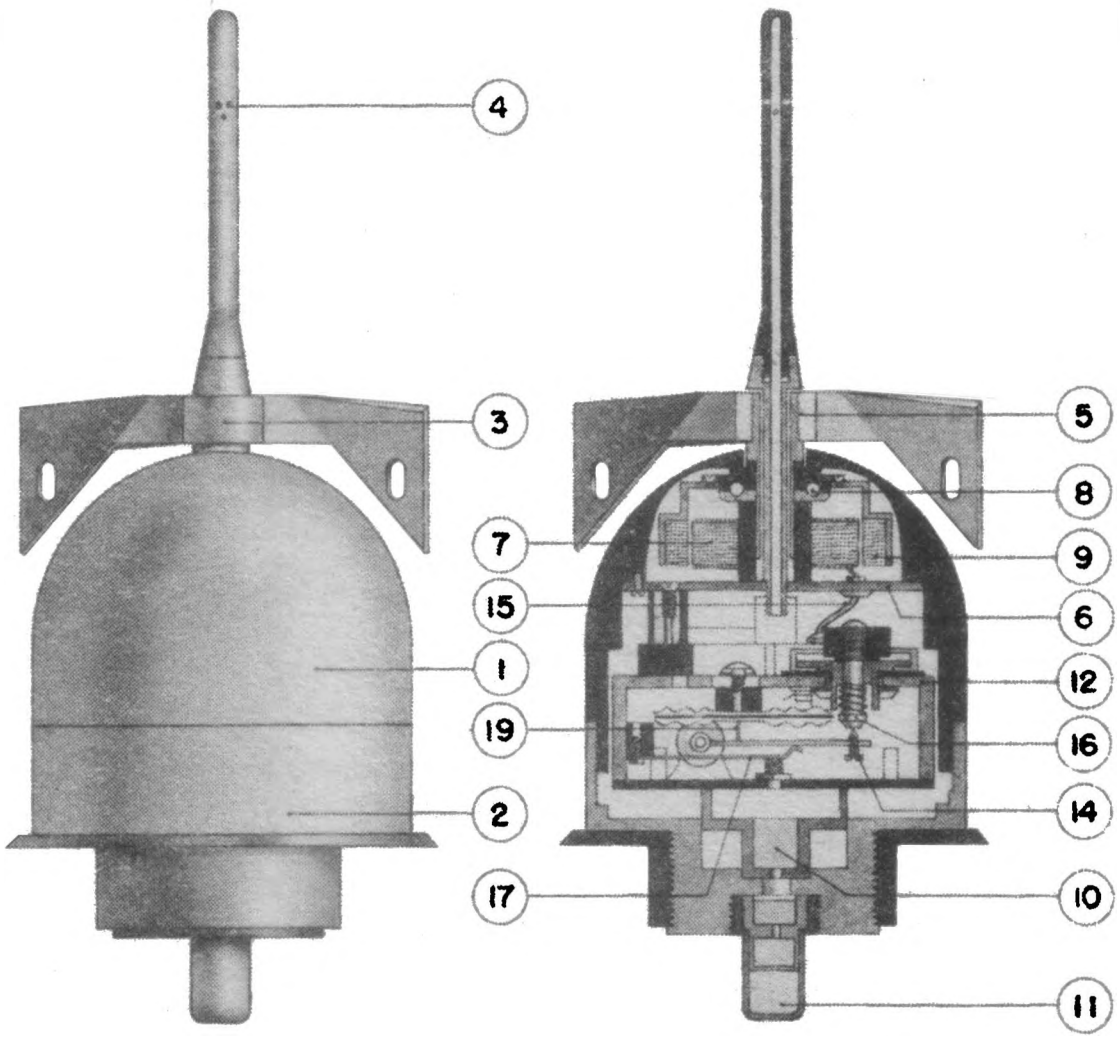
FUZE DATA: FILE NO.: 2533.N30

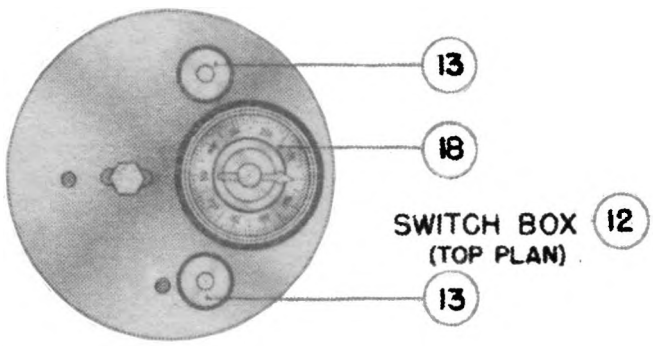
NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION C-3(a)	CLASSIFICATION	Army Chemical Long Delay Fuze
	TYPE OF MISSILE	G.P.H.E.
MARKINGS: 東金4七+8日 TOKYO - April, 1942.		BOMBS USED IN: 50 Kg. G.P.H.E. (Modified nose).

DATA	C-3(a)
POSITION & METHOD OF FIXING IN BOMB	Screwed into modified nose of 50 Kg. G.P.H.E. Army bomb. (Right hand thread.) Anti-withdrawal device (11) is fitted to prevent removal.
COMPONENTS OF EXPLOSIVE TRAIN	Primer (10); Powder train relay (15); Gaine (14) and Booster (16).
FUZES LIKELY TO BE FOUND WITH	None. (Plastic plug in tail fuze pocket.)
DELAY TIMES	Two hours to twenty-four hours. (May be shorter or longer.) Recommended delay period is 125 hours waiting time.
REMARKS	a. Once the arming spindle (3) is turned through 45 degrees to the firing point, it cannot be turned back to safe. The spring-loaded plungers (12) prevent this. Also, after impact, the inertia weight (13) has moved on to the spindle and will prevent rotation. b. If the cap is found on a UXB, the fuze may have been armed and the cap may have been replaced. c. The anti-withdrawal will usually prevent the fuze from being removed from the bomb. If the fuze is removed, the booster and gaine may be set off if the fuze operates later. Therefore, unscrew the booster and gaine immediately after withdrawing the fuze. d. This fuze may be fitted in the 100 Kg. G.P.H.E. Army bomb (file no. 1554.10) and possibly the 30 Kg. G.P.H.E. Army bomb (file no. 1552.10).

FUZE DATA: FILE NO.: 2522.N10

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION D-1(a)	CLASSIFICATION	Electrical Aerial Burst Nose Fuze
	TYPE OF MISSILE	Pamphlet containers
MARKINGS: Three digit number on collar. (i.e. "182")		BOMBS USED IN: Pamphlet container bomb (50 Kg.)





SWITCH BOX 12
(TOP PLAN)

0 1 2
INCHES

LEGEND

1 UPPER PORTION OF BODY
2 LOWER PORTION OF BODY.
3 ARMING VANE ASSEMBLY
4 TWELVE SMALL HOLES.
5 COLLAR.
6 PLATE.
7 ARMATURE.
8 BALL RACE
9 MAGNETS.
10 PRIMER-DETONATOR.
11 DETONATOR-BOOSTER.
12 SWITCH BOX
13 TWO SOCKETS.
14 SCREW.
15 PLUG LEADS (2).
16 CONTACT.
17 SPRING.
18 DIAL.
19 STRIP

FILE NO.: 2522.N10
2522.N11

JAPANESE ARMY NOSE FUZE D-1 (a) D-1(b)

DESCRIPTION:

Classification	-	Electrical aerial burst nose fuze.
Bombs used in	-	50 Kg. pamphlet container.
Companion fuzes	-	None.
Overall length	-	D-1(a) 7.4 inches.
	-	D-1(b) 8.55 inches.
Overall width (Vanes)	-	3.3 inches.
(body)	-	3.05 inches.
Material of Construction	-	Aluminum or bakelite body, brass vanes.
Delay time	-	None
Explosive train	-	Primer cap, gaine, gun powder bursting
	-	charge.
Color & Markings	-	Lamp black. Three digit number on
	-	collar (i.e. "182")

CONSTRUCTION:

The upper (1) and lower (2) body portions contain the generator and the aneroid pressure box. Several magnets (9) are attached to the inside portion of the arming vane assembly (3), and revolve around an armature as the vanes rotate during flight of the bomb. The current from this generating system is conducted through the plug leads (15) to the aneroid pressure box through two sockets (13). One wire leads to a screw (14) at the end of a lever and the other is connected with a contact point (16). The dial (18) can be turned by hand. By this means, the contact (16) is moved closer to or further from the screw (14). If moved closer, less air pressure is required to close the contacts against the action of a spring (17) which bears against the lever (19). If moved further, then a greater air pressure is required to close the contacts.

OPERATION:

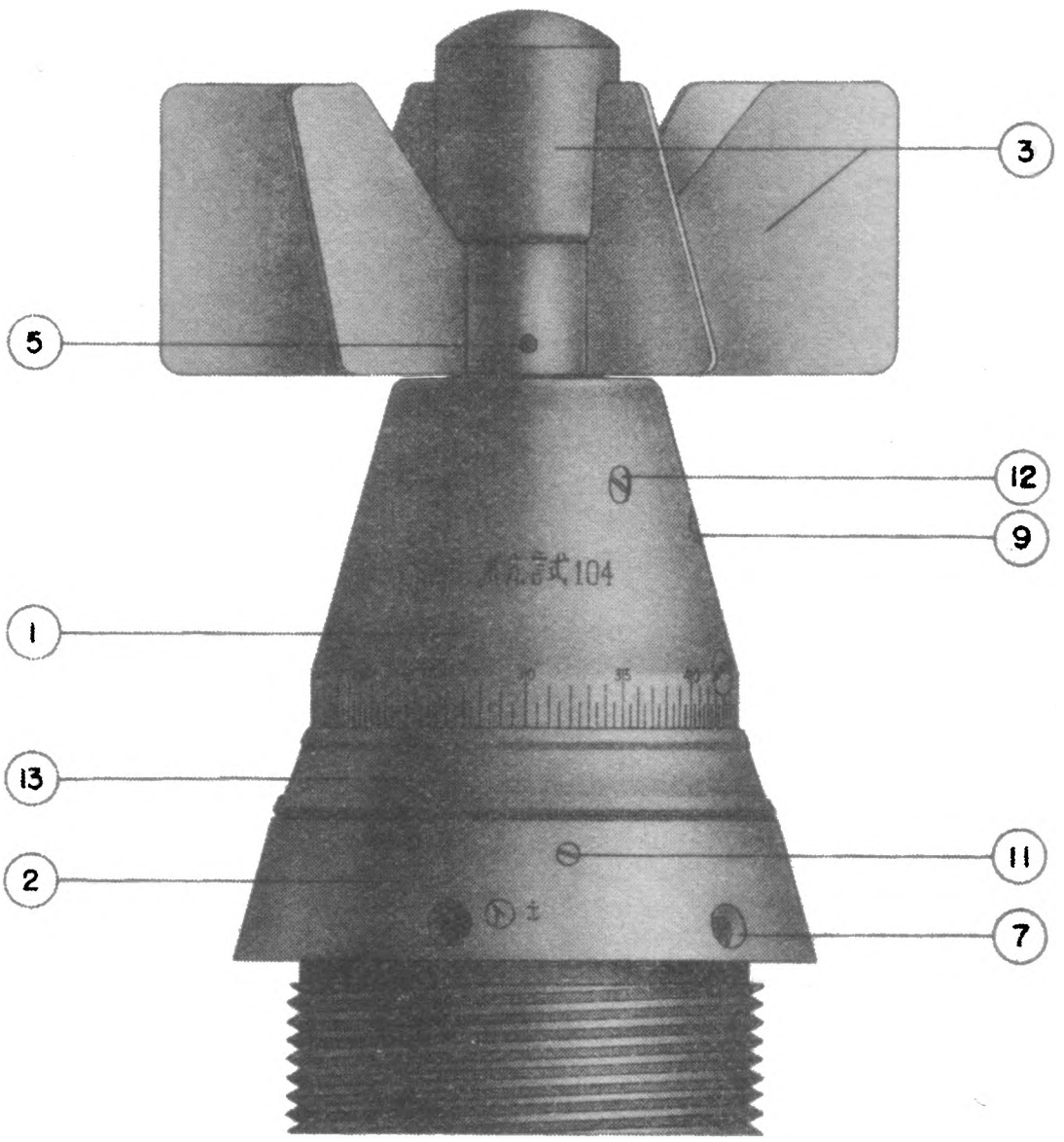
As the bomb is released, the arming wire is withdrawn from the holes in the vanes and the latter rotate in downward flight. A current is generated by the revolution of the magnets (9) around the armature (7). The current is conducted through one of the plug leads (15) to one of the sockets (13) to the contact (16). As the bomb continues to fall, the air rushes through the fuze after entering it through twelve small holes (4) and eventually, builds up to the point where the pressure box is sufficiently compressed to allow the strip (19) to recede slightly, allowing the lever holding the screw (14) to move upwards under pressure of the spring (17). When the circuit is closed, the current continues from the contact (16) through the screw (14), through the primer-detonator (10) and returns to the generator through the other socket (13). The primer is fired and thus sets off the explosive train. The dial (18) serves the purpose of allowing the distance between contact (16) and screw (14) to be adjusted, thus varying the distance above ground at which the burst will occur. A gun powder bursting charge splits the case and scatters the pamphlets or propaganda leaflets.

REMARKS:

The modified version of the D-1(a), designated D-1(b), is similar in operation but contains an additional internal insulator and is somewhat longer overall giving a slightly different external appearance.

FUZE DATA: FILE NO.: 2542.T20

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION D-2(a)	CLASSIFICATION	Clockwork Delay, Aerial Burst, Tail
	TYPE OF MISSILE	Incendiary Shrapnel
MARKINGS: 航空試 104 Air Experimental No. 2, Type 2.		BOMBS USED IN: 250 Kg. Incendiary



0 1 2
INCHES

LEGEND

1. FUZE BODY CASING.
2. CLOCKWORK RETAINING RING.
3. ARMING VANE ASSEMBLY.
5. ARMING VANE SAFETY PIN.
7. SPANNER HOLES.
9. TIME SETTING APERTURE.
11. GRUB SCREW.
12. GRUB SCREW FOR ARMING BUSH.
13. FIXED SLEEVE.

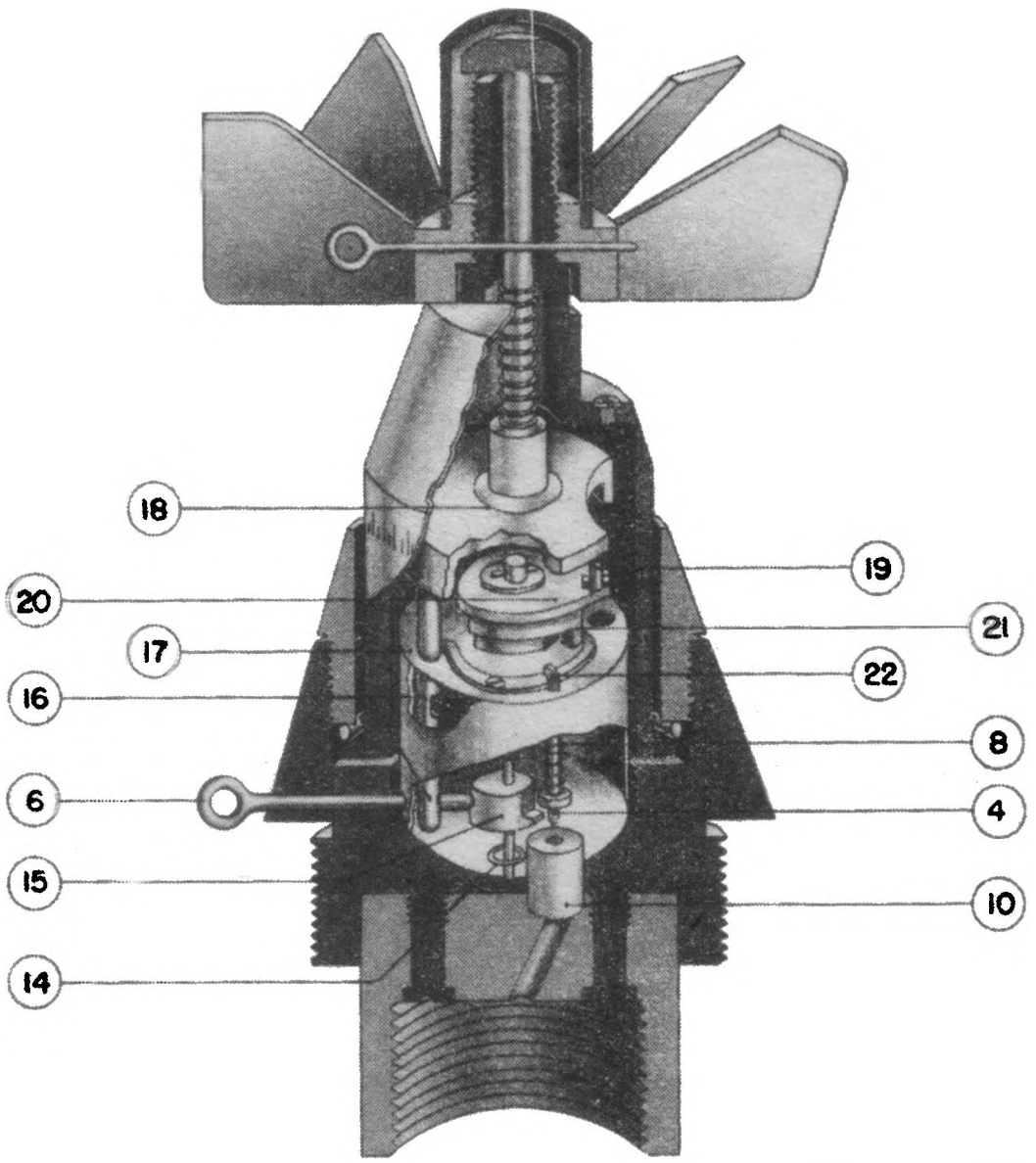
FUZE DATA: FILE NO.: 2542.T20

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION D-2(a)	CLASSIFICATION	Clockwork Delay, Aerial Burst, Tail
	TYPE OF MISSILE	Incendiary Shrapnel
MARKINGS: 九四式 104 Air Experimental No. 2, Type 2.		BOMBS USED IN: 250 Kg. Incendiary

DATA	D-2(a)
COLOR	Unpainted brass.
OVERALL LENGTH	5.75 inches (less booster).
OVERALL WIDTH	2.44 inches.
MATERIAL OF CONSTRUCTION	Brass throughout except steel studs in body and steel studs and springs in clock.
DESCRIPTION	The fuze body consists of a body casing (1), a clockwork retaining ring (2), an arming assembly (3), a clockwork mechanism (17), and a fixed sleeve (13). A safety pin (5) secures the arming vanes and prevents rotation until bomb is released. The grub-screw (11) holds a fixed sleeve (13) in position with the clockwork retaining ring (2). Six spanner holes (7) are found in the base of the ring (2). A clockwork safety pin (6) passes through an actuator (16) which bears against a safety plate (18) and holds the striker stop-catch (22) in place. The latter is U-shaped and is pivoted on a screw shown in the drawing. The safety pin (6) also holds a centrifugal safety-catch (15) which in turn prevents the striker from moving down. A rotation of 1000 R.P.M. must be reached by the fuze or the striker (4) will not be released by this safety-catch (15) and the primer (10) will not be fired. The clockwork is very intricate and delicate and must be carefully handled. The time is set by removing the screw from the time setting aperture and inserting a special tool. Having turned the body portion (1) until the desired setting is reached, a grub-screw is tightened to hold the setting.
OPERATION	Both pins (5 and 6) are withdrawn as the bomb is released. The arming vanes revolve, raising the safety plate (18), with the actuator (16) moving upward against it as a result of spring action. As the bomb falls it rotates due to the angled fins, and at 1000 R.P.M., the centrifugal safety-catch (15) flies out against the action of its spring (14), and is completely free from the striker collar bearing against it. As the clock runs, the sliding disc (21) rotates and at the set time, the notch in the plate will be opposite the striker stop-catch (22). The top of the striker is fitted with a knife-edge which bears down on the stop-catch. Previously, the actuator moved up, allowing the end of the stop-catch to enter a notch in the actuator. The striker, pulling down, forces the stop-catch to pivot, and to enter the notch in the sliding plate, thus allowing the striker to move downward and to pierce the primer (10).
POSITION & METHOD OF FIXING IN BOMB	Fixed in adaptor ring at apex of tail cone.
COMPONENTS OF EXPLOSIVE TRAIN	Unknown.
FUZES LIKELY TO BE FOUND WITH	A-3(a) Nose fuze.

FUZE DATA: FILE NO.: 2542.T20

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION D-2(a)	CLASSIFICATION	Clockwork Delay, Aerial Burst, Tail
	TYPE OF MISSILE	Incendiary Shrapnel
MARKINGS: 航六号弐104 Air Experimental No. 2, Type 2		BOMBS USED IN: 250 Kg. Incendiary



LEGEND

4. STRIKER.	17. CLOCKWORK.
6. CLOCKWORK SAFETY PIN.	18. SAFETY PLATE
8. STRIKER SPRING.	19 TIME SETTING CAM.
10. PRIMER.	20. TIME SETTING PLATE.
14. CENTRIFUGAL SPRING.	21. SLIDING PLATE
15. CENTRIFUGAL SPRING SAFETY CATCH.	22. STRIKER STOP CATCH.
16. ACTUATOR	

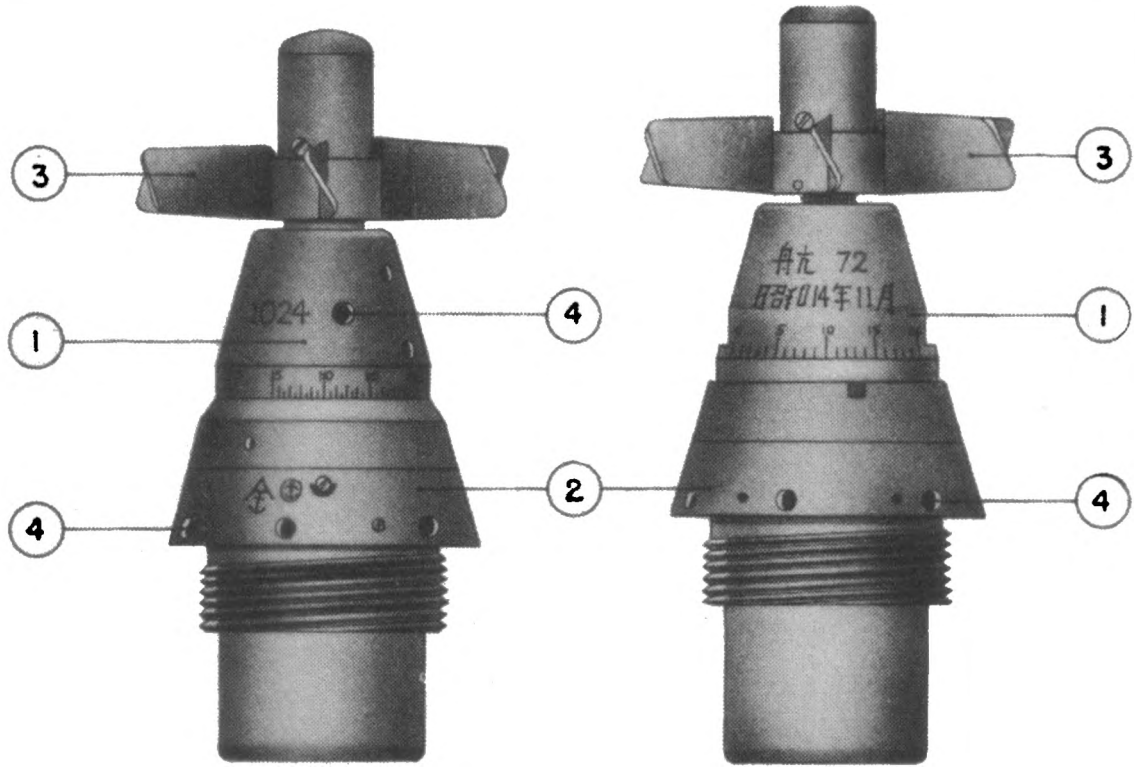
FUZE DATA: FILE NO.: 2542.T20

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION D-2(a)	CLASSIFICATION	Clockwork Delay, Aerial Burst, Tail
	TYPE OF MISSILE	Incendiary Shrapnel
MARKINGS: 航弐式104 Air Experimental No. 2, Type 2		BOMBS USED IN: 250 Kg. Incendiary

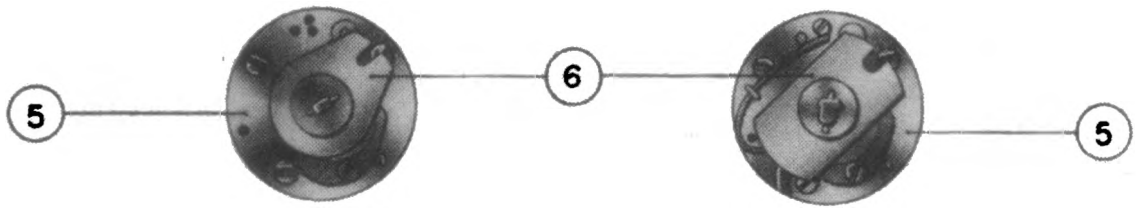
DATA	D-2(a)
ARMING TIME	Clock is started after 11 turns of the arming vanes.
DELAY TIMES	From zero to 50 seconds
REMARKS	The time of delay is set before leaving the ground, and the bomb must be dropped from a specific height above the target. The bomb usually explodes about 100 to 175 feet above ground. The Japanese designate this fuze as Type 2 Mark 3 Bomb Fuze, Model 2, for use in a Mark 3 bomb (the 250 Kg. Shrapnel Incendiary). The description and operation are based on a captured Japanese Document. UXB's may result with the fuze in a very sensitive condition.

FUZE DATA: FILE NO.: 2542.T21 & 2542.T22

NATIONALITY: JAPANESE		INFORMATION DATE: November 1943
DESIGNATION D-2(b) D-2(c)	CLASSIFICATION	Navy Clockwork Delay Aerial Burst
	TYPE OF MISSILE	Navy Incendiary (Shrapnel)
MARKINGS: D-2(b) - "1027" D-2(c) - 昭和14年11月 舟九 72 (November 1939) (No. 72)		BOMBS USED IN: D-2(b) - Navy 32 Kg. Incendiary (Shrapnel) (probably) D-2(c) -



D-2 (b) D-2 (c)



TOP PLATE TOP PLATE

0 1 2
INCHES

LEGEND	
1. UPPER PORTION OF BODY.	4. SPANNER HOLES.
2. LOWER PORTION OF BODY.	5. UPPER PORTION OF CLOCK.
3. ARMING VANE ASSEMBLY.	6. ROTOR ARM.

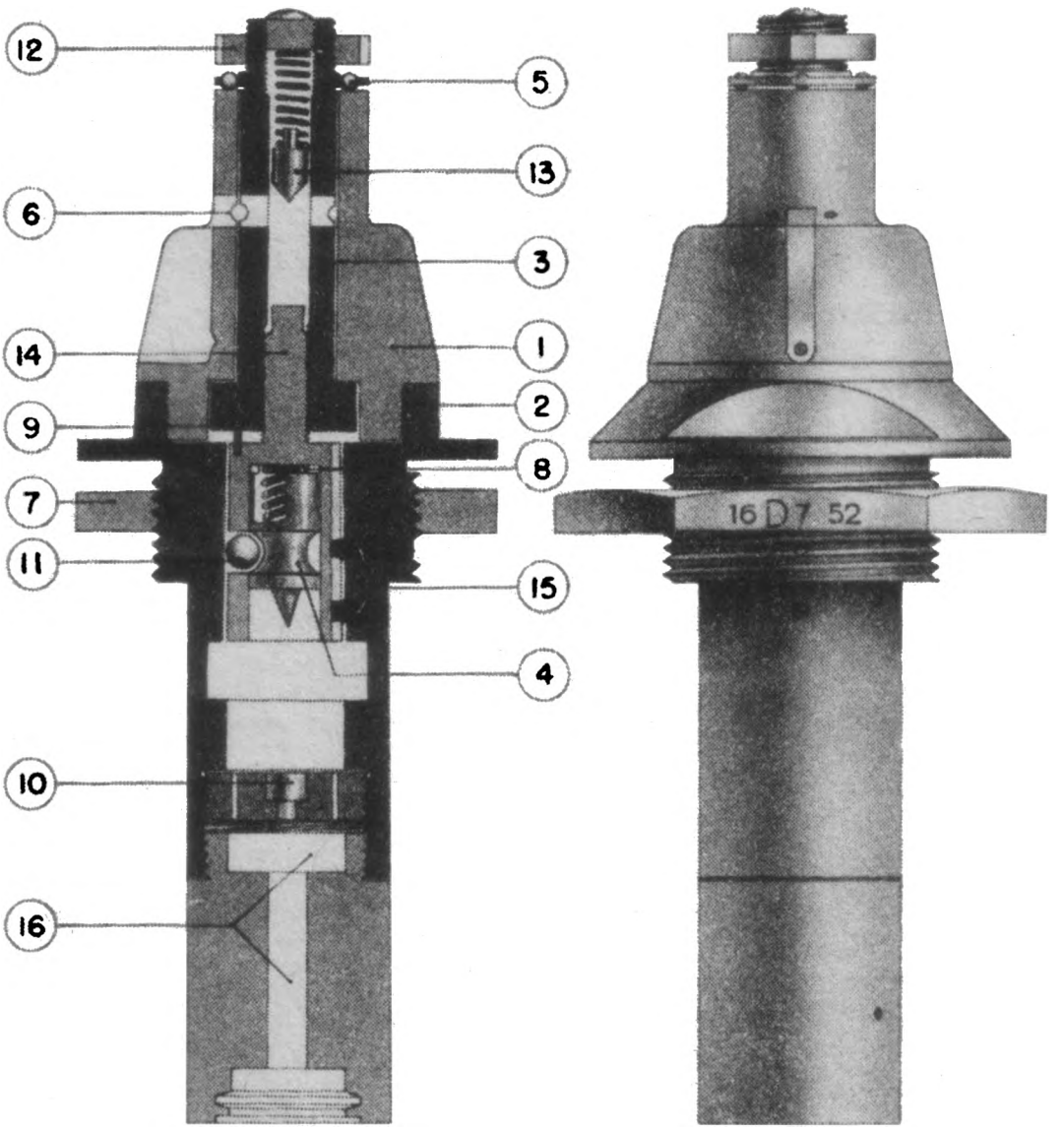
FUZE DATA: FILE NO.: 2542.T21 & 2542.T22

NATIONALITY: JAPANESE		INFORMATION DATE: November 1943
DESIGNATION D-2(b) D-2(c)	CLASSIFICATION	Navy Clockwork Delay Aerial Burst
	TYPE OF MISSILE	Navy Incendiary (Shrapnel)
MARKINGS: D-2(b) - "1027" D-2(c) - 昭和14年11月 (November 1939) 舟六 72 (No. 72)		BOMBS USED IN: D-2(b) - Navy 32 Kg. Incendiary (Shrapnel) (probably) D-2(c) -

DATA	D-2(b)	D-2(c)
COLOR	Stainless steel.	Stainless steel.
OVERALL LENGTH	5.75 inches	5.75 inches.
OVERALL WIDTH	2.5 inches (body). 3.0 inches (arming vanes)	2.5 inches (body). 3.0 inches (arming vanes)
MATERIAL OF CONSTRUCTION	Cadmium plated brass except for a few internal parts of steel.	
DESCRIPTION	These fuzes are similar in design, construction and operation to the D-2(a) described in File No. 2542. T20 in this manual. The clockworks in all three fuzes is almost exactly identical with the clock in a Japanese Artillery Projectile and with the fuze in a German Artillery Projectile for the 88 mm gun. All of the fuzes require a rotation of 1000 R.P.M. before they can function.	
POSITION & METHOD OF FIXING IN BOMB	Screwed into adaptor ring at apex of tail cone. Six holes for spanner wrench.	
COMPONENTS OF EXPLOSIVE TRAIN	A primer detonator is fitted in the fuze. The flash from it sets off a standard Japanese gaine.	
FUZES LIKELY TO BE FOUND WITH	Probably A-3(a) nose fuze.	
DELAY TIMES	5 to 20 seconds.	0 to 20 seconds.
REMARKS	The fuzes D-2(b) and D-2(c) were not recovered from UXB's, but were found in ammunition dumps. The D-2(b) is believed to be used with the 32 Kg. Incendiary (Shrapnel), (see File 1522.10), which has its tail fins bent at an angle of 30 degrees so as to impart a rotatory motion to the bomb in flight. The fuzes will fit the tail fuze pocket of almost any Navy bomb. An A-3(a) is most likely to be used in the nose fuze pocket with a D-2 series fuze. The D-2(a), D-2(b) and D-2(c) fuze are very similar. The D-2(c) is the earliest model of the clockwork fuzes - as indicated by the early date of manufacture and the lack of an external means of winding the clock. The D-2(b) will probably be employed in the 32 Kg. Shrapnel Incendiary (File 1522.10) while the D-2(a) is used in the 250 Kg. Shrapnel Incendiary (File 1525.10).	

FUZE DATA: FILE NO.: 2512.N30

NATIONALITY: JAPANESE		INFORMATION DATE: October 1943
DESIGNATION D-3(a)	CLASSIFICATION	Navy Mechanical Aerial Burst Nose Fuze
	TYPE OF MISSILE	Flare
MARKINGS: 16 D 752		BOMBS USED IN: 33 Kg. Illuminating (Parachute flare).



LEGEND

1. UPPER PORTION OF BODY.
2. LOWER PORTION OF BODY.
3. ARMING VANE ASSEMBLY.
4. SPRING LOADED STRIKER.
5. BALL RACE.
6. HOLES FOR V SHAPED LOCKING WIRE.
7. LOCK NUT.
8. SPRING
9. STOP STUDS.
10. PRIMER FLASH CAP.
11. STEEL BALLS (3).
12. LOCK NUT.
13. SPRING LOADED PIN.
14. ARMING SLEEVE.
15. GUIDE PINS.
16. POWDER TRAIN.

FILE NO.: 2512.N30

JAPANESE NAVY NOSE FUZE D-3(a)
(LARGE MODEL PARACHUTE FLARE, MOD. 1 AERIAL BURST NOSE ARMING MECHANISM)

DESCRIPTION:

Classification	-	Mechanical aerial burst nose fuze.
Bombs used in	-	33 Kg. illuminating flare. 43 Kg. floating smoke flare.
Companion fuzes	-	None.
Overall length	-	4.53 inches.
Overall width	-	1.75 inches.
Material of construction	-	Brass except for steel striker and locking balls.
Threads	-	15 threads per inch. 1-3/32 inches diameter.
Delay	-	
Explosive train	-	Flash cap directly over a powder pellet & black powder train.
Color and markings	-	Natural brass. 16 D 752

CONSTRUCTION:

The upper body portion houses the vane hub and the safety pin retainer used for holding the safety pin firmly in place. A vane bearing race provides smooth operating surface for the arming vanes. The lower body portion contains the arming sleeve into which three striker retaining balls are fitted and which lock the spring loaded striker body when in the unarmed position. A primer flash cap and black powder relay comprise the explosive train.

A lock nut is used for fastening the fuze securely to the body of the bomb.

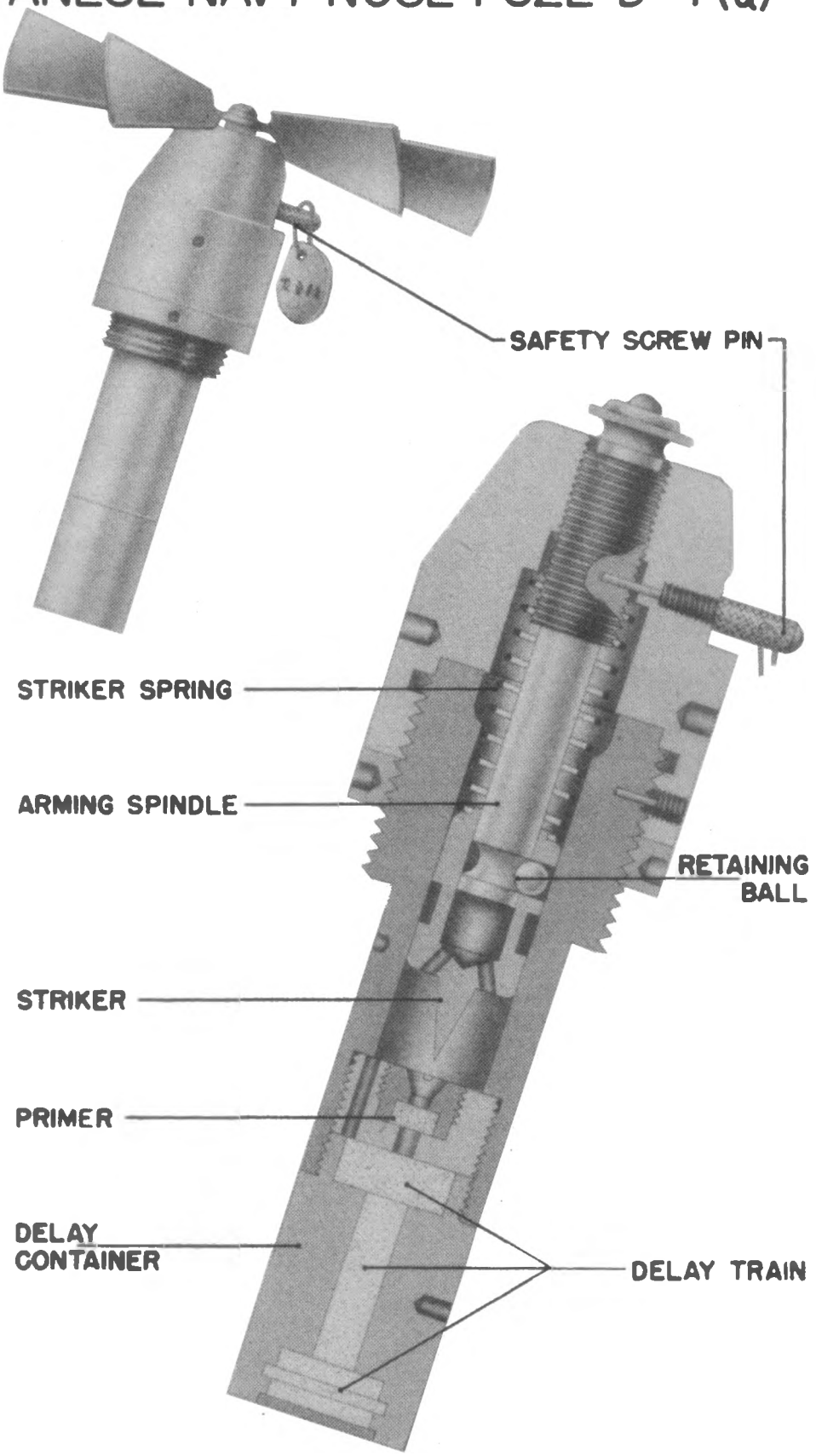
OPERATION:

The locking nut is tightened over the vanes which rest on the vane bearing race. On release from the aircraft the safety pin is withdrawn, allowing the vanes to rotate, thus threading the arming spindle downward. The arming spindle is prevented from rotating by the locating studs engaging in the keyway of the spindle. As the arming spindle moves downward, the striker body and its spring move also until the striker body, being under spring pressure, forces the retaining balls to move into the groove cut into the lower body. As the retaining balls move outward, the striker body moves downward, under the spring action, and pierces the primer to initiate the explosive train.

REMARKS

Two modifications of arming vanes have been recovered in this fuze. One type has 26 blades and the other consists of six vane cups. Use of vane cups permits transverse fuzing as in the 43 Kg. floating smoke flare.

JAPANESE NAVY NOSE FUZE D-4 (a)



FILE NO.: 2512.N40 JAPANESE NAVY AERIAL BURST NOSE FUZE D-4(a)
2512.N41 D-4(b)

(D-4(a) - Type 3 Bomb Nose Igniting Mechanism
D-4(b) - Fuze for Type 0, Model 1, Parachute Flare)

DESCRIPTION:

Classification	-	Mechanical aerial burst nose fuze.
Bombs used in	-	D-4(a) - Type 2 No. 6 Mk. 21 Container. D-4(b) - Type 0 Parachute Flare, Model 1.
Companion fuzes	-	None.
Overall length	-	D-4(a) - 5.75 inches. D-4(b) - 4.75 inches.
Overall width	-	1.406 inches.
Vane span	-	4.312 inches.
Material of body	-	Steel or brass.
Arming time	-	26 revolutions, fires in 27 revolutions.
Delay setting	-	May be varied by changing type of delay container.
Explosive train	-	Primer flash cap and delay train incorporated in delay container.
Color and markings	-	Natural brass, steel or yellow lacquer; vanes are natural steel color. One fuze "404" Other fuze "213" "4" "" stamped on body.

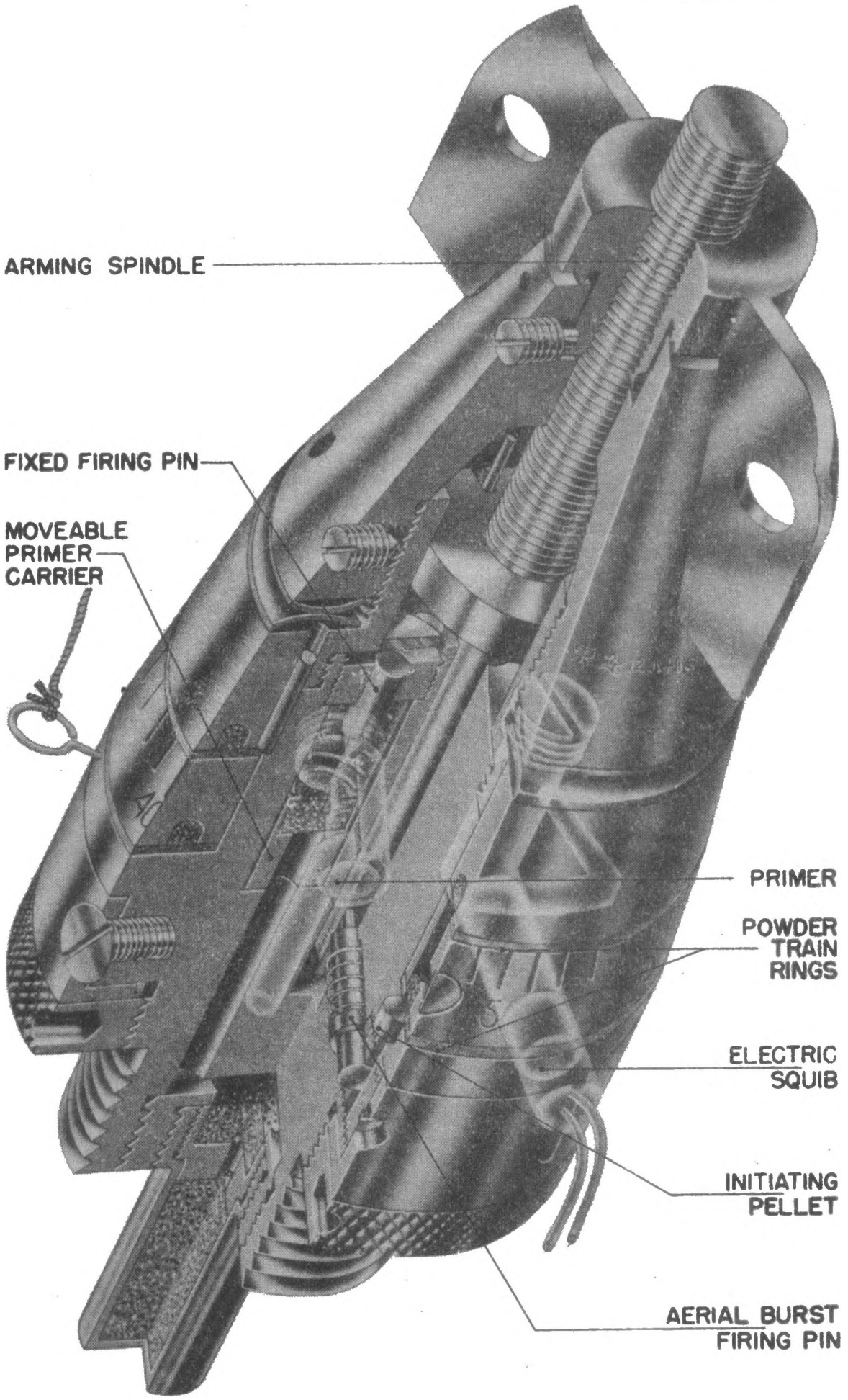
CONSTRUCTION:

The fuze consists of three parts: The upper fuze body contains the arming spindle; the lower body housing the striker, striker retaining ball, and striker spring; and the powder delay container. The upper body is threaded internally at the base to receive the lower fuze body and threaded internally at the top to take the arming spindle. A safety screw pin threads into the upper body and extends into a hole in the arming spindle, thus preventing rotation. The lower body is threaded externally at its upper end to screw into the upper body and threaded internally at its lower end to receive the primer flash cap holder and powder delay container. The central channel of the lower body flares out at its upper end to allow the striker retaining ball to move outward during the operation of the fuze. The powder delay container is threaded externally at its upper end to screw into the lower fuze body. A six-bladed arming vane is attached to the top of the arming spindle.

OPERATION:

The safety screw pin is removed when bomb is loaded in the plane. On release from the aircraft, the arming vanes rotate and thus thread the arming spindle upward. The spindle is locked to the striker by the striker retaining ball and, moving up, pulls the striker with it, compressing the striker spring. After 26 revolutions of the arming vanes, the striker retaining ball is opposite the flared portion of the channel in which the striker rides. The retaining ball moves outward and the spindle, no longer held to the striker, threads out of the fuze body and falls away. Removal of the spindle from the striker permits the retaining ball to move inward under pressure of the cocked striker. This releases the striker which is driven into the flash cap by its spring. The flash cap sets off the powder delay container.

JAPANESE ARMY NOSE FUZE D-5 (A) D-5 (B)



FILE NO.: 2512.N50 AND 2512.N51

JAPANESE ARMY AERIAL BURST NOSE FUZE D-5(a) & D-5(b)

(D-5(a) - Type I Aerial Burst Nose Fuze;
D-5(b) - Type I Combination Nose Fuze
for Black Powder Bursting Charge.)

DESCRIPTION:

Classification	-	Electrical Aerial Burst (or impact) nose fuze.
Bombs used in	-	D-5(a): 15 Kg., 30 Kg., 50 Kg., 100 Kg., H.E. Bombs. 50 KG Incendiary Bombs
		D-5(b) 12 Kg. Army Parachute Flare.
Companion fuzes	-	D-5(a): B-1(a), B-1(b)
		D-5(b): None.
Overall length	-	4.0 inches.
Overall width	-	2.0 inches.
Material of body	-	Brass.
Arming time	-	13 Revolutions of arming vanes.
Delay setting	-	3 to 40 seconds.
Explosive train	-	D-5(a): Army H.E. gaine.
		D-5(b): Black powder filled magazine.
Color and markings	-	Brass. 昭十八7東☆ Bomb Fuze
		昭十八11阪※ Flare Fuze

CONSTRUCTION:

The vane hub is secured to the upper fuze body by two grub screws. This allows the vanes to rotate; yet prevents the vanes from falling away. The upper fuze body threads onto an internal adapter ring which in turn screws around the lower fuze body. Two powder train rings slip down over the lower fuze body. The upper ring is fixed, being locked to the upper fuze body by a key pin. The lower ring is moveable and graduated for 3 to 40 seconds delay. The squib retaining collar is an "L" shaped ring fitting around the lower fuze body. A knurled locking ring threads onto the lower fuze body and serves to lock the fuze in the bomb. The arming spindle is threaded at the upper end to turn through the vane hub and is slotted at the lower end to prevent the aerial burst firing pin access to the primer. In the unarmed position the arming spindle flange holds the moveable primer carrier down and away from its fixed firing pin by bearing against the safety arm of the carrier. An electric squib, with two insulated copper wires terminating in a wipe contact rod, fits into the lower fuze body.

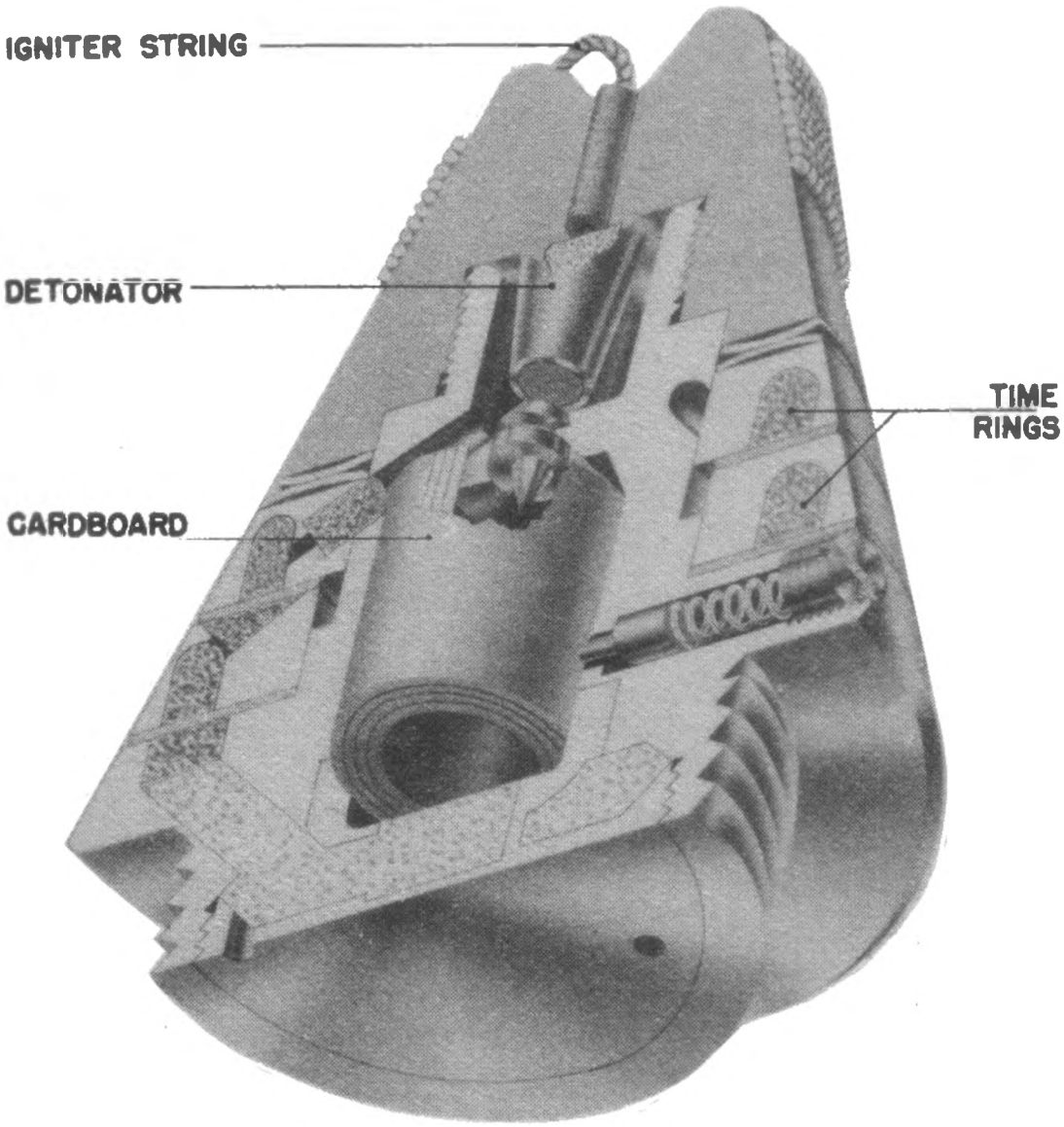
OPERATION:

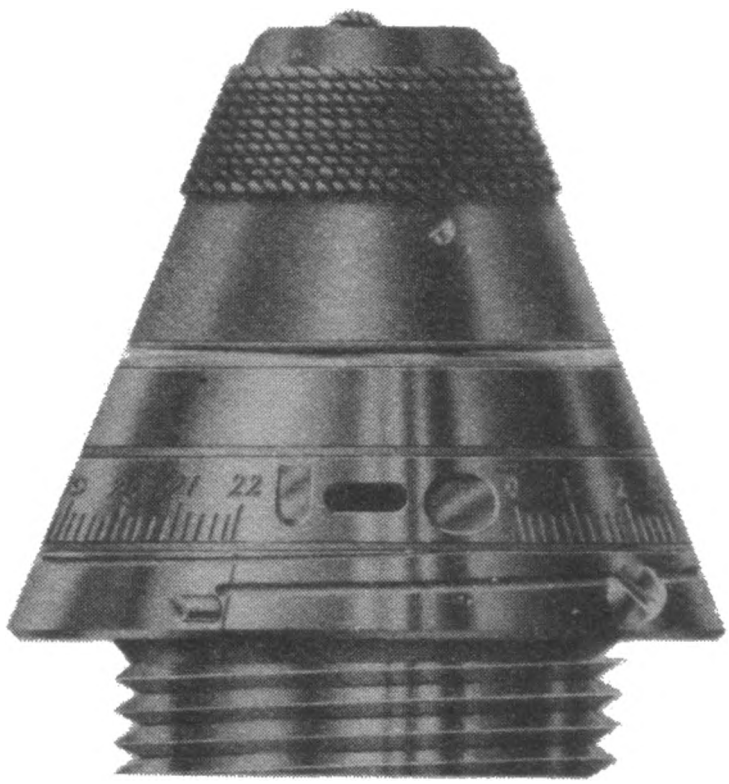
On release, the wipe contact rod is pulled through the plane's contact points, firing the squib and thus initiating the powder train rings. Rotation of the arming vanes causes the arming spindle to move up, freeing the aerial burst striker and moveable primer carrier. When the powder train has burned its course, the explosion of the initiating pellet drives the firing pin against the creep spring and into the primer. A relay pellet transmits the flash to the black powder magazine or H.E. gaine. If aerial burst fails or impact occurs between the arming time and before the aerial burst feature operates, the moveable primer carrier will move forward against its creep spring and impinge on the fixed firing pin upon impact.

REMARKS:

The D-5(a) fuze differs from the D-5(b) in: (1) An H.E. gaine and adapter ring instead of a black powder magazine, (2) No impact firing feature is present.

JAPANESE ARMY NOSE FUZE





FILE NO.: 2512.N90 JAPANESE NOSE FUZE

DESCRIPTION:

Classification	-	Mechanical aerial burst nose fuze.
Bombs used in	-	Propaganda bombs.
Companion fuzes	-	None.
Overall length	-	2.875 inches.
Overall width	-	2.875 inches.
Material of construction	-	Brass except for plastic composition nose piece.
Threads	-	10 threads per inch. 1.85 inches diameter.
Delay	-	Setting scale graduated 0-22 seconds.
Explosive train	-	Match composition igniter, black powder delay, black powder magazine.
Color and markings	-	Natural brass lower body, mottled brown plastic-fiber composition nose piece.

CONSTRUCTION:

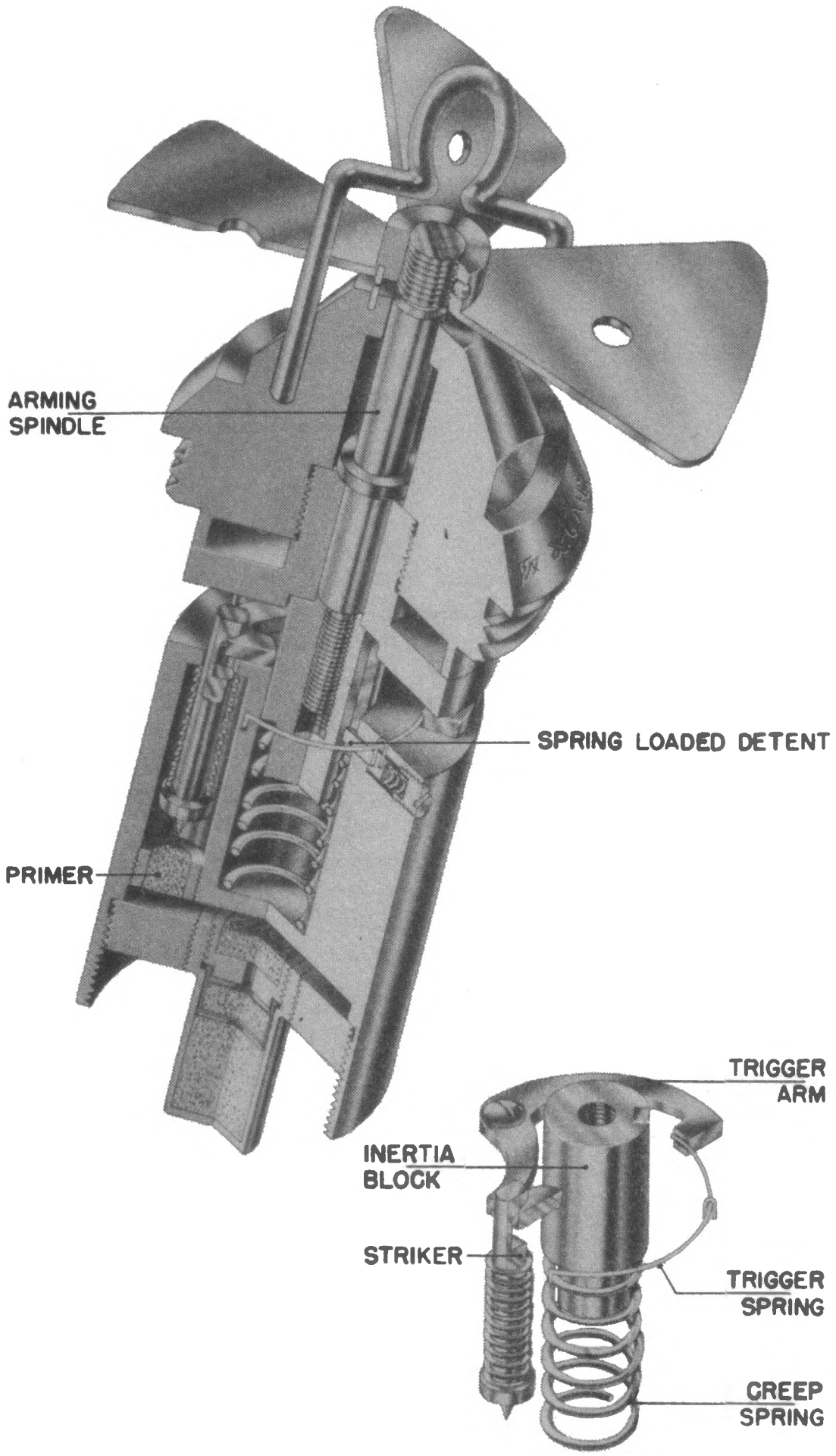
This fuze is a modified form of the 3rd year time-impact projectile fuze modified in the following details:

The moveable primer carrier and creep spring are removed and replaced with a cardboard cylinder to act as a spacer; the upper fuze body above the time rings has been replaced by a mottled brown plastic-fiber composition nose containing the pull igniter; the time firing pin has been filed flat. A grub screw secures the nose piece to the fuze body. There are two time rings; the upper one fixed, and the lower one moveable. The setting dial is graduated from 0 to 22 seconds in increments of 1/5 of a second. Through the center and top of the nose piece is an igniter string, the fuze end of which is attached to a pull igniter leading to a detonator. The detonator occupies the space formerly occupied by the setback primer.

OPERATION:

The time rings are set and the free end of the igniter string is attached to the plane prior to release of the bomb. When the bomb falls, the string is pulled and the match composition ignites the detonator which flashes into the powder rings. After the powder rings burn for the pre-set time, they ignite the black powder charge, which in turn explodes the bursting charge of the bomb.

JAPANESE ARMY TAIL FUZE E-1(A)



FILE NO.: 2516.T10

JAPANESE ARMY ANTI-WITHDRAWAL TAIL FUZE E-1(a)
(Type 1 Anti-Withdrawal Fuze)

DESCRIPTION:

Classification	-	Anti-withdrawal Tail Fuze.
Bombs used in	-	Army 30 Kg., 50 Kg., 100 Kg., 250 Kg., 500 Kg. Type I Time Bombs.
Companion fuzes	-	C-3(a)
Overall length	-	4.625 inches (with gaine)
Overall width	-	2.0 inches.
Material of body	-	Brass and steel.
Threads	-	1-13/16 inches diameter, 8 threads per inch.
Arming time	-	15 Revolutions of the vanes.
Delay setting	-	No delay.
Explosive train	-	Primer and standard Army type gaine.
Color and markings	-	Brass. 阪 ⊗ 7八十昭 (Osaka Army Arsenal, July 1943)

CONSTRUCTION:

The vanes, similar to those of the B-1(a), are locked to the arming spindle by a set screw. The arming spindle, housed in the upper fuze body, is attached to the arming vanes at the top by right hand threads and threads into the inertia block at the lower end with left hand threads. The spacing ring is secured by screws to the lower fuze body and screws into the upper fuze body. This serves to hold the inertia block part way down against the creep spring, reducing the distance the block has to move on impact. The lower fuze body contains the inertia block and creep spring, the spring-loaded detent, the spring-loaded striker, the primer, and gaine. The trigger arm is pivoted on a screw threaded into the top of the lower fuze body. One end bears against the trigger spring; the other in the cocked position engages the striker notch, preventing the spring-loaded striker from firing. With the fuze in the unarmed position, the trigger is prevented from pivoting by the inertia block against which it bears.

OPERATION:

On release from the plane, the vanes rotate the arming spindle clockwise, unscrewing it from the inertia block, which is keyed to prevent rotation. The flange of the arming spindle prevents the spindle and vanes from falling completely off the fuze body. On impact the inertia block moves down against the creep spring and is retained below the surface of the lower fuze body by the spring-loaded detent. The spring-loaded trigger arm is released and pivots out beyond the fuze body approximately 1/64 inch until it bears against the wall of the fuze pocket. This movement is not sufficient to release the striker and the fuze will not fire as long as it remains in the bomb.

If withdrawal is attempted, the trigger arm will move into the annular groove of the fuze pocket as the last thread of the fuze pocket is disengaged. This movement of the trigger arm releases the spring-loaded striker, firing the primer.

FIELD PRINTING PLANT
THE ORDNANCE SCHOOL
ABERDEEN PROVING GROUND
MARYLAND