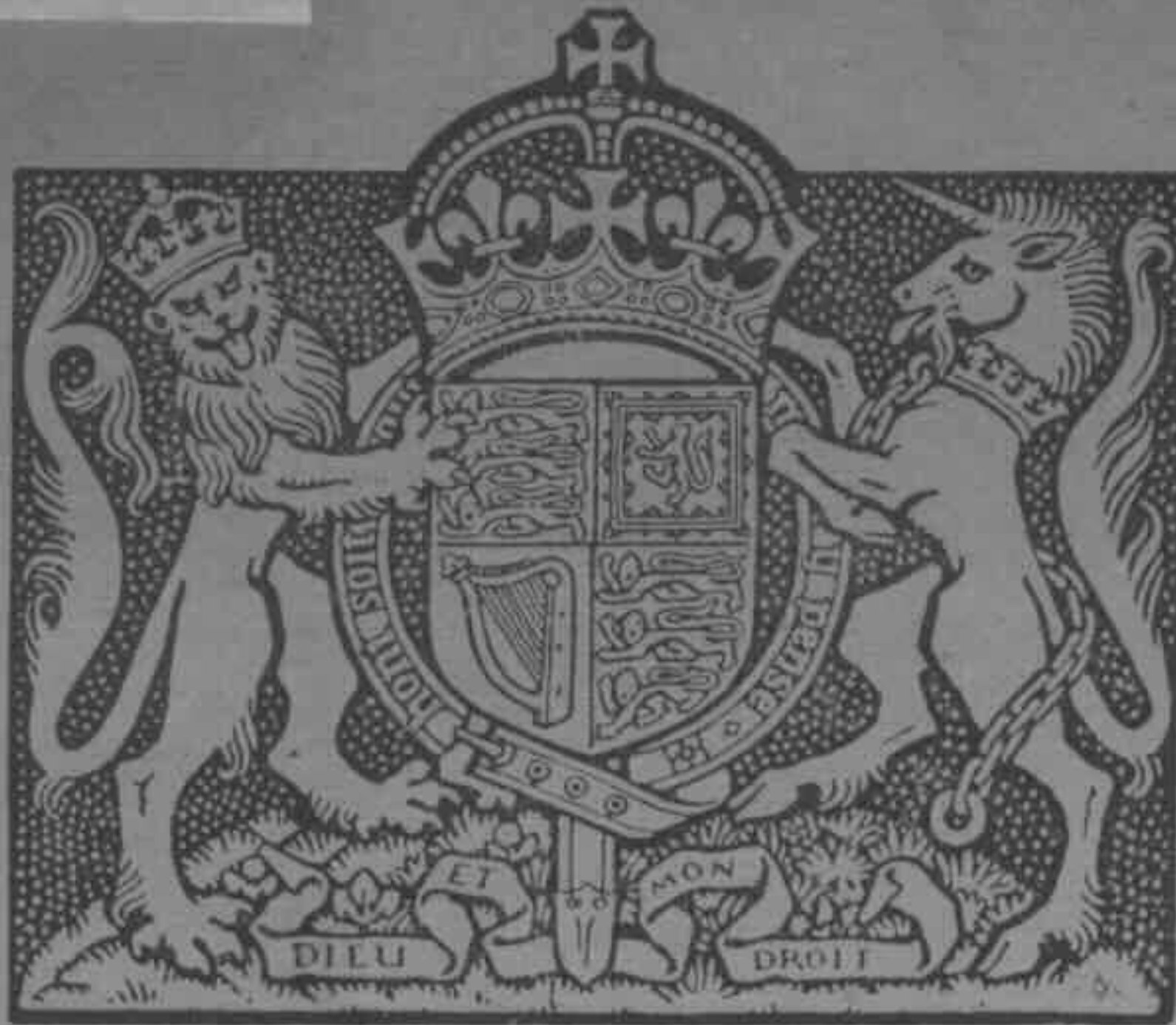


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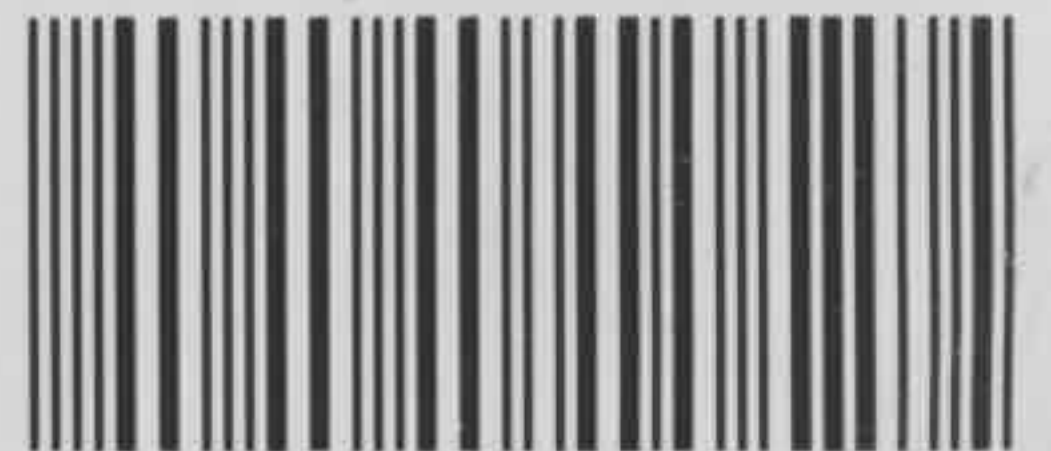


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HANDBOOK
FOR THE
MINES, CONTACT, A.T.,
~~MARK I~~

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1936

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AMENDMENTS

SERIAL No.	A.C.I. DATED	PAGES AMENDED	INITIALS
1	6-4-38	Pages 11, 17, 19, 20 & 21 & Plate 2	JF
2	4-10-39	Title. Pages 3, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17-23. Plates 2, 4, 5, 6, 7, 8.	RB

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57
Tanks
1856



139. HANDBOOK
FOR THE
MINES, CONTACT, A.T.,
~~MARK I~~

1936

By Command of the Army Council,

H. J. Creedy
J. J. 2

THE WAR OFFICE,
31st August, 1936.

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1. Mine, contact, A.T., Mark I.
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NOTE.—This book has been corrected up to July, 1936. Any alterations that may be suggested should be forwarded to the Chief Inspector of Armaments, Royal Arsenal, Woolwich.

3. Page 4.

Delete lines 3 to 15 and insert—

T.

Amdt. 2
Oct., 1939

Practice and drill mines—

General remarks

Mine, practice, contact, A.T., Mark I—

Description

Action

Mine, drill, contact, A.T., Mark I—

Description

Mine, drill, contact, A.T., Mark II—

Description

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Markings on mines and packages—

1. Mine	General remarks
2. Mine	Service mines
3. Box	Fuzes
	Practice and drill mines
	Ammunition packages

N
altera
Chief

Amdt. 2
Oct., 1939*For lines 6, 5 and 4 from bottom of page substitute—*

1. Mine, contact, A.T., Mark I.
2. Mine, contact, A.T., Mark II.
3. Box, outfit, mines, contact, A.T., M.54, Mark I.
4. Box, mine, contact, A.T., M.74, Mark I.
5. Mine, practice, contact, A.T., Mark I.
6. Mine, drill, contact, A.T., Mark I.
7. Mine, drill, contact, A.T., Mark II.
8. Mine, contact, A.T., Mark II (Markings).

CHAPTER I

MINE\$, CONTACT, A.T., ~~MARK I~~

S2/39.

~~(Plate 1)~~
(Plates 1 and 2.)

General remarks

The anti-tank contact mine is intended for use in making road blocks, temporary mine fields, etc.

It is a light mine fired by the direct pressure on the mine of the track, wheel or other object coming in contact with it. A tank or other vehicle must therefore actually pass over the mine to fire it.

S2/39.

MINE, CONTACT, A.T., Mk 1
(Plate 1)

Particulars

Weight (approximate) complete	..	7 lb. 14 oz.
Diameter	..	7.5 inches.
Height	..	2.875 inches.
Charge, Baratol (approximately)	..	4 lb.

Description

The mine consists principally of the container^{body} with central column, ~~lid~~^{cover}, pistol, exploder container with exploder, detonator and detonator plug.

The assembled mine is shown in Fig. 1, whilst Fig. 2 shows the container with lid, pistol, detonator plug and detonator removed. In Fig. 2 the markings are not shown; for these see page 9.

The container^{body} of steel, comprises a top and bottom portion which are soldered together and receive the main charge and other firing parts.

The top portion is prepared on one side with a filling hole where a filling hole socket is soldered in. The filling hole plug is screwed into the socket against a leather washer and is sealed on filling.

On the opposite side is another hole where is soldered the exploder plug socket into which is screwed the exploder plug, also against a leather washer, the plug being sealed on filling.

Four pins are placed equidistant around the side of the container to retain the lid in the assembled position.

The central column is prepared internally to receive the pistol. A lip is formed at each end, the lips, in manufacture, being spun or pressed over the top and bottom of the container respectively and soldered. The lower end is threaded on one side at an angle to receive the spigot of the exploder container.

~~The lid forms the sensitive cover of the mine.~~

It is pressed from sheet steel and has riveted to it on the underside a four-armed spring which bears on the top of the container and tends to force the lid upwards.

CHAPTER I

S2/39.

MINES, CONTACT, A.T., ~~MARK I~~~~(Plate 1)~~
(Plates 1 and 2.)

General remarks

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S2/39.

MINE, CONTACT, A.T., MK 1
(Plate 1)

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S2/39.

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Amdt. 2
Oct., 1939

The cover is the sensitizing agent of the mine.

Inside a four-armed spring which bears on the top of the container and tends to force the lid upwards.

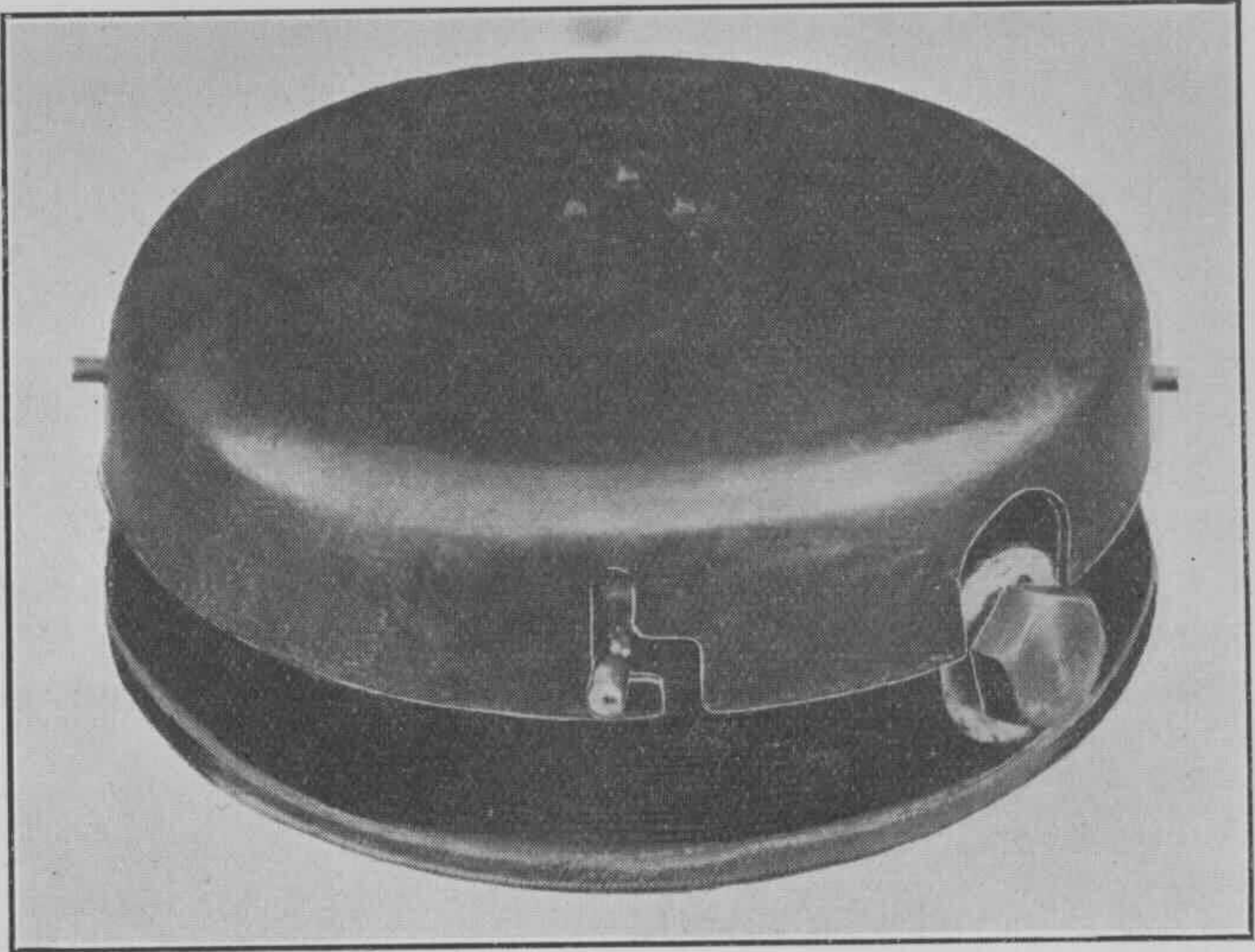


Fig. 1



Fig. 2

S2/39 Four bayonet slots cut in the side of the ^{cover}~~lid~~ engage with the pins in the side of the container. By pressing down the lid and rotating it slightly anti-clockwise it is locked to the container ^{body}, a reverse motion releasing it. The action is greatly facilitated by smearing the ends of the spring and points of contact on the top of the container, with grease.

S2/39 The ^{cover}~~lid~~ can only be assembled or removed when the detonator plug has been removed. When the ^{cover}~~lid~~ has been assembled and the plug inserted, a semi-circular slot in the ^{cover}~~lid~~ coincides with the plug, allowing the ^{cover}~~lid~~ to be fully pressed down on firing.

The *pistol* (Fig. 3) consists of a body, striker, striker spring, shear wire and screwed ring.

The *body* is threaded externally to screw into the central column

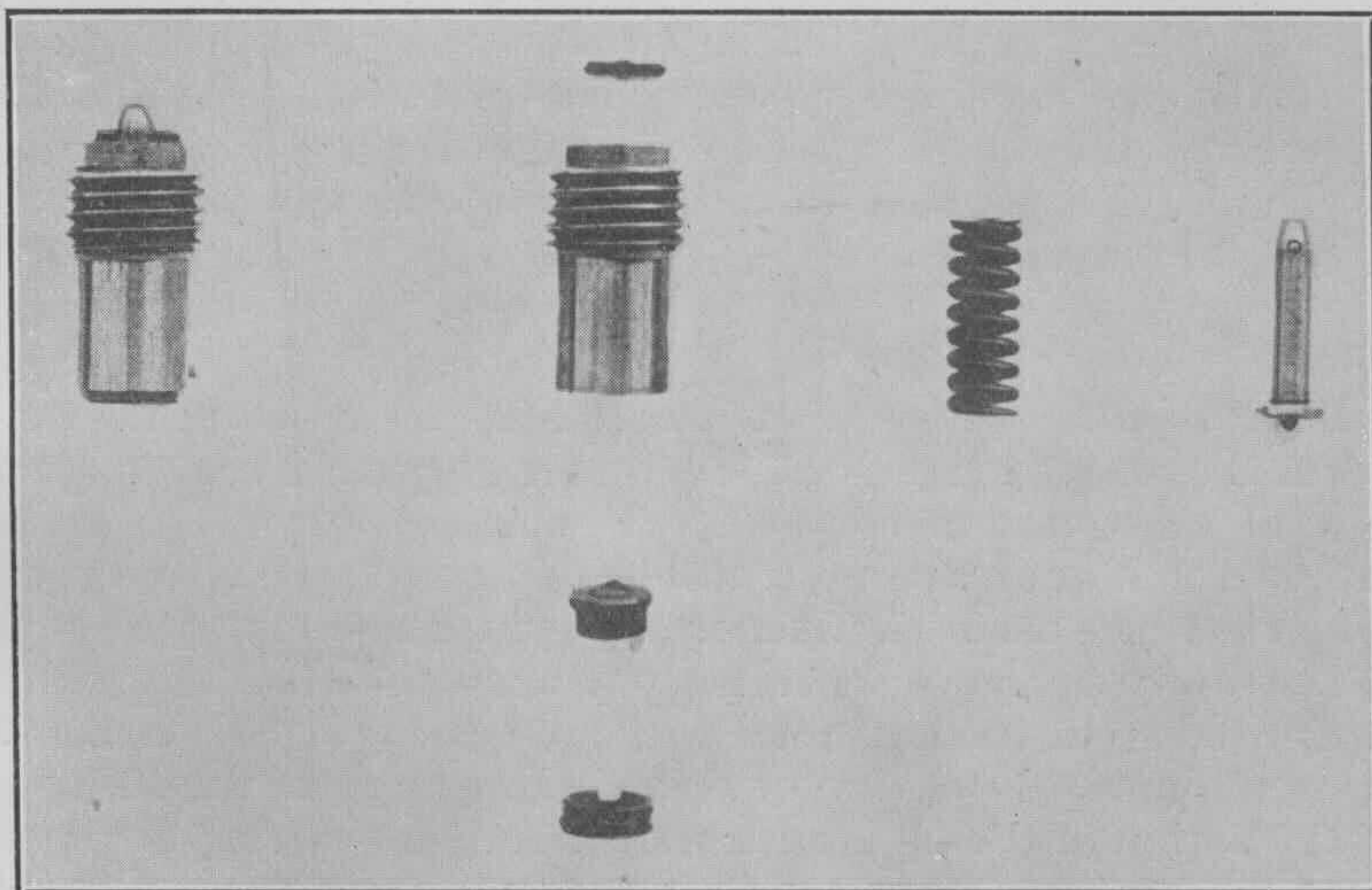


Fig. 3

and internally at the bottom to receive the screwed ring which retains in position the cap, which, in shape, is similar to the base end of a .303-inch S.A. cartridge. It is prepared to receive the striker and spring.

The *striker* has a needle point and flange for spring at the bottom and a hole for the shear wire at the top.

When assembled, the top of the striker protrudes through the body and is retained by the shear wire which is inserted through the hole in the striker. In this position the spring is compressed and tends to drive the striker down on to the cap.

The method of assembly is described on page 10.

The *exploder container* is soldered to the exploder plug socket, also to the spigot. The latter is screwed into and soldered to the

central column, the outer end passing into the detonator tube. A central flash hole in the spigot leads from the central column to the detonator tube.

The *exploder* consists of two C.E. pellets. A washer is placed at each end and the whole secured in the exploder container by the exploder plug.

The *detonator* comprises a tube with a rimmed head. It is 2 inches long and is painted externally with red lacquer. For $\frac{3}{4}$ inch from the head it is insensitive and is intended to be handled by the head, the rim of which provides a good finger grip. When inserted, the open end fits over the spigot of the exploder container.

The detonator is never carried in the mine; for the method of use see page 12.

The *detonator plug* is a metal plug which fits over the head of the detonator when it is in position in the mine and screws into the exploder plug. It is fitted internally with a rubber pad and externally with a rubber washer. The pad retains the detonator in place and the washer assists water tightness.

The plug has a coarse thread and is intended to be screwed up finger tight only.

Action

Plate 1 will assist in the explanation of the action of the mine.

S2/39. The bayonet slots of the ~~lid~~^{cover} prevent upward movement but allow of downward movement. If sufficient downward pressure is applied to it at any point, it will be depressed and, after the small safety clearance has been taken up, it will bear on top of the striker.

The safety clearance is necessary to allow the ~~lid~~^{cover} to be assembled or removed from the container without bearing on the striker and also to minimize the chance of accidental damage to the shear wire.

S2/39. The action of the ~~lid~~^{cover} is such that a pressure applied at the edge exerts greater force on the striker than the same pressure applied centrally, the bayonet joint on the opposite side to the pressure acting as a fulcrum.

Continued downward movement of the ~~lid~~^{cover} forces the striker downwards, shearing the shear wire. The striker spring then drives the striker down on to the cap and fires it.

The flash from the cap travels up the flash hole in the spigot and ignites the detonator, which detonates the exploder surrounding the detonator tube. The exploder in turn detonates the main charge.

—MARKINGS—

S2/39. The general principle observed in any scheme of marking is that it should always be possible completely to identify the contents of a package, or separate article, and the conditions of manufacture, from the information on the exterior. Care should be taken,

Delete

Delete
 therefore, to avoid damage to the markings, as partial obliteration may render identification difficult.

The filled mine is given distinguishing marks as shown in Fig. 4.

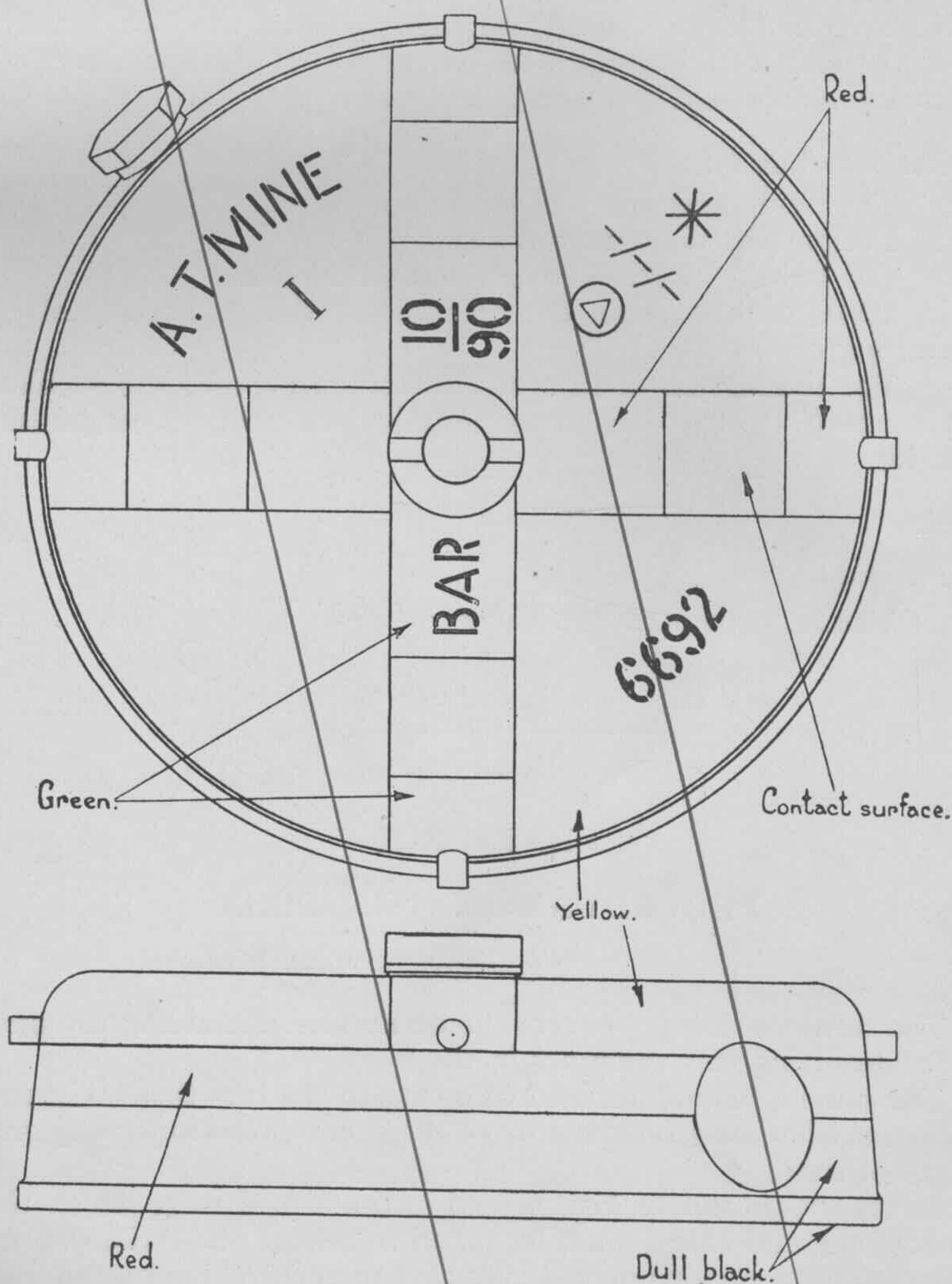


Fig. 4

Container—

Painting

(a) The base is painted black to present an all black appearance when the lid is assembled

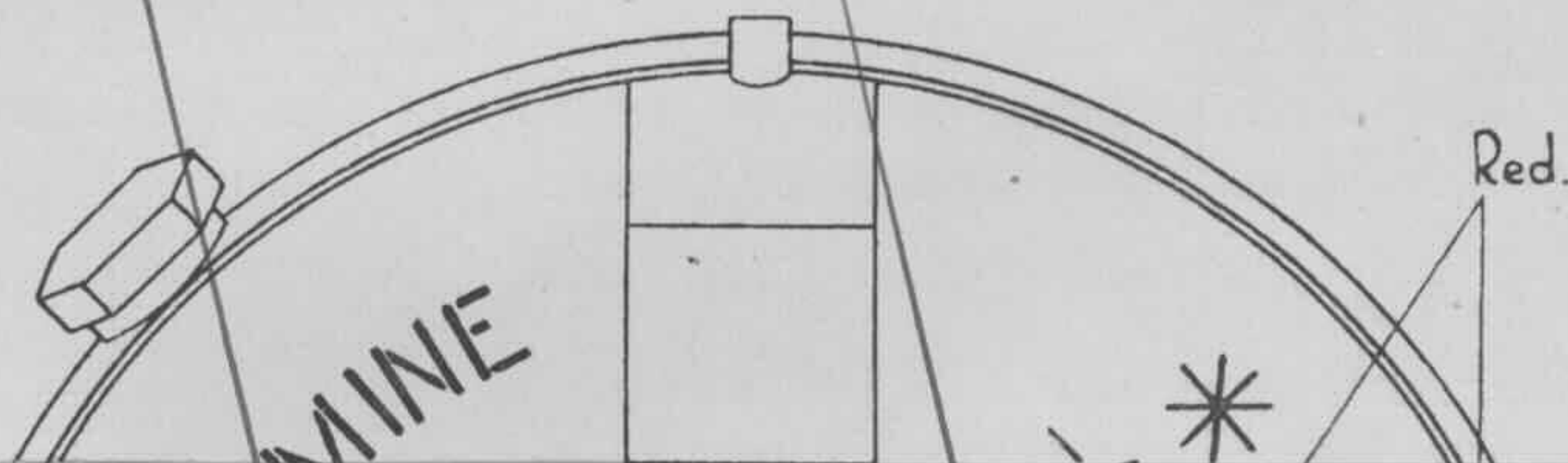
(b) The upper part of the side and the top are painted yellow to denote H.E. filling

Delete.

9

~~therefore~~ to avoid damage to the markings, as partial obliteration may render identification difficult.

The filled mine is given distinguishing marks as shown in Fig. 4.



2/39.

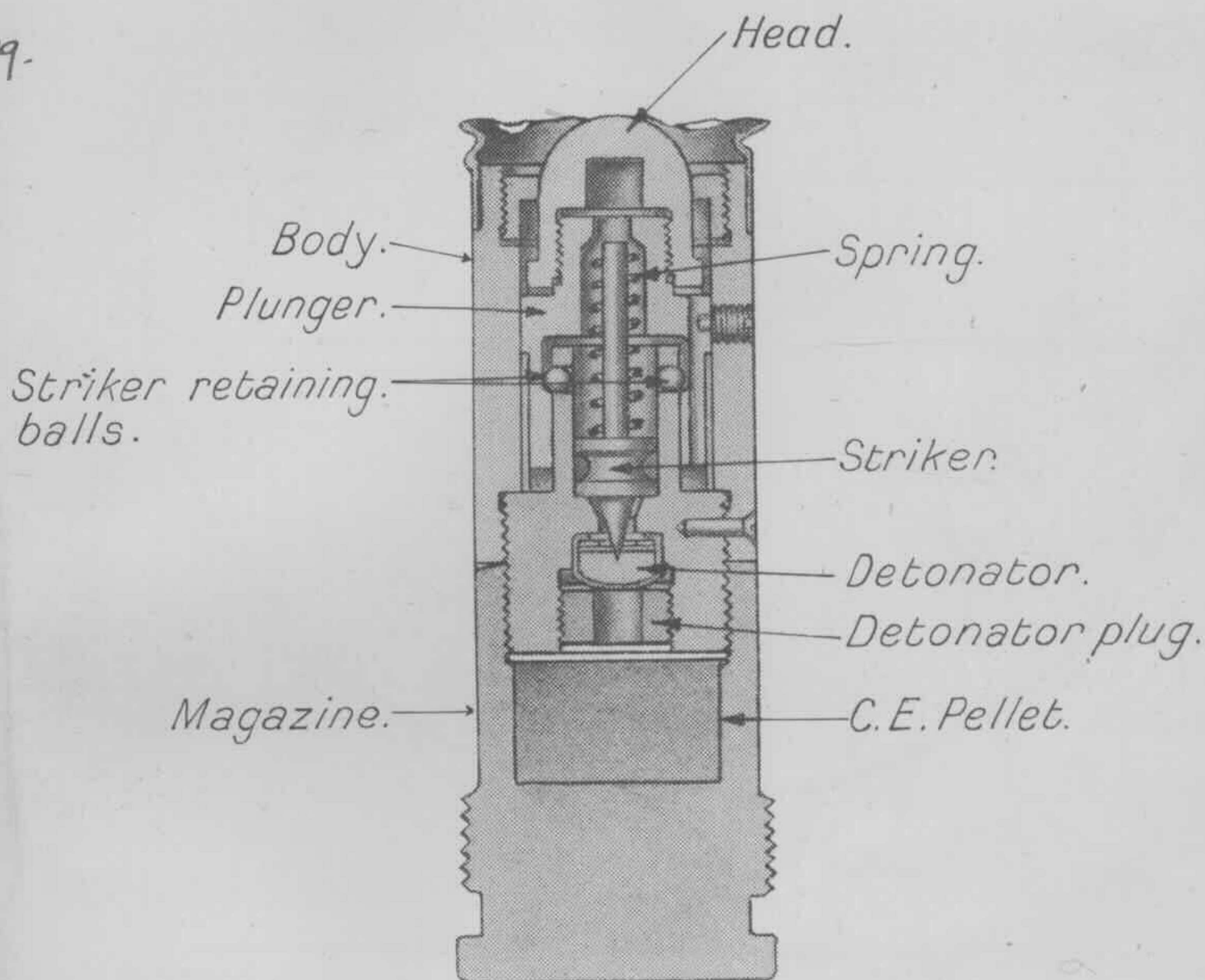


Fig. 5.

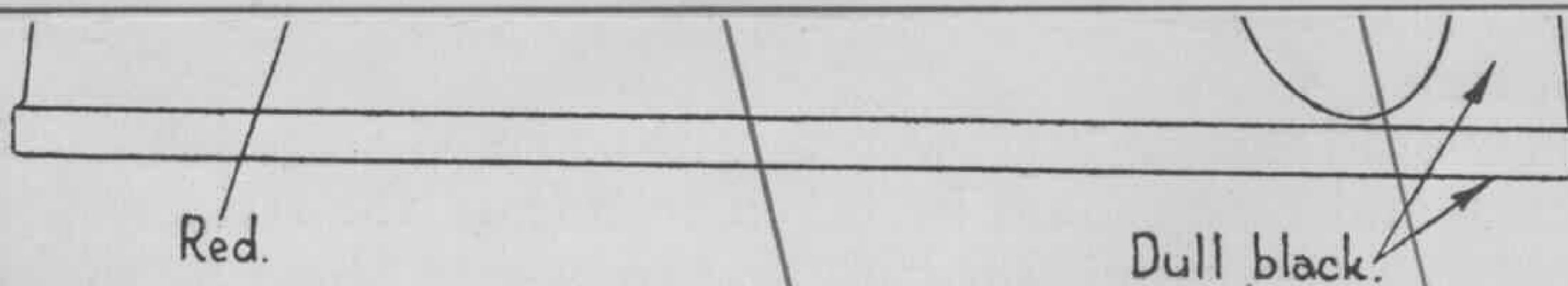


Fig. 4

Container—

Painting

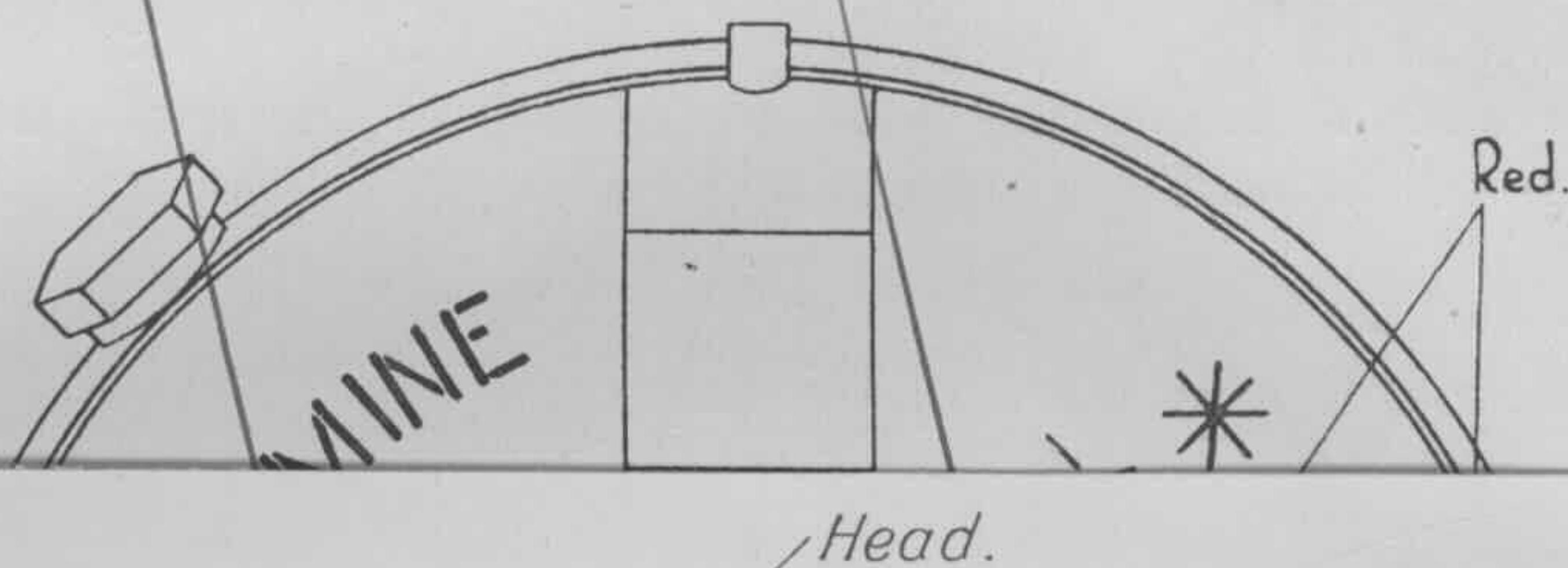
(a) The base is painted black to present an all black appearance when the lid is assembled

(b) The upper part of the side and the top are painted yellow to denote H.E. filling

~~Delete.~~

~~therefore~~ ^{Delete} to avoid damage to the markings, as partial obliteration may render identification difficult.

The filled mine is given distinguishing marks as shown in Fig. 4.



screw-threaded internally to receive the top of the plunger and recessed to take the stem of the striker. The flange is prepared with keyholes to take a tool for assembling and dismantling.

The *securing ring* is of brass with an internal flange to suit the flange on the head and screw-threaded externally to take the internal threads in the top of the body. Keyholes are cut to facilitate assembly and dismantling.

Action (Fig. 5)

On the cover of the mine coming into contact with the head of the fuze, and sufficient pressure being exerted, the head is forced in, taking with it the plunger. The plunger, on moving downwards, allows the balls retaining the striker to move outwards into the enlarged recess, thus allowing the striker to move forward under pressure of its spring. The point of the striker pierces the detonator cap, detonates it and causes subsequent detonations in the fire channel of the detonator plug and in the magazine, which, in consequence, detonates the exploder and bursting charge in the mine.

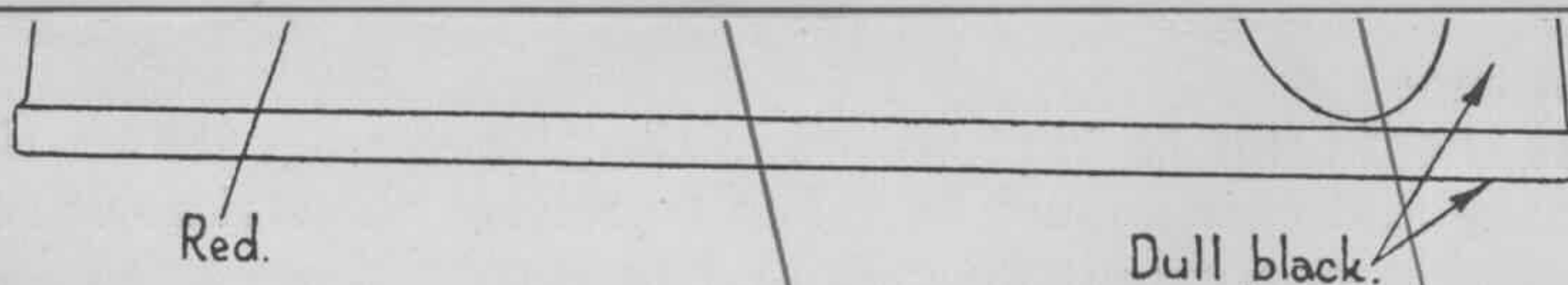


Fig. 4

Container—

Painting

(a) The base is painted black to present an all black appearance when the lid is assembled

(b) The upper part of the side and the top are painted yellow to denote H.E. filling

~~Delete~~

~~therefore~~ ^{Delete} to avoid damage to the markings as partial obliteration

Internally it is recessed to accommodate a C.E. pellet and screw-threaded to receive the lower portion of the detonator holder.

The *body* is a brass cylinder slightly reduced in diameter near the top to take the copper *protecting sleeve* secured by solder, and prepared in the side to take a guide pin. Internally it is recessed to accommodate the percussion arrangement and screw-threaded at the top to receive the securing ring and at the bottom to take the detonator holder, which is secured to it by a securing pin, the hole to receive it being bored after assembly.

The *detonator holder* is of brass and screw-threaded externally to suit the lower end of the body and upper end of the magazine. It is formed with a hollow spigot on its upper side, four holes, to accommodate the four balls which position the striker, being bored transversely at right angles to one another. The holder is recessed on the underside to house the detonator and is screw-threaded to receive the detonator plug. Both the holder and plug have a central fire channel, the one in the plug being stemmed with C.E., and are prepared with keyholes to facilitate insertion and removal. A paper disc is shellacked to the outside of the plug and a shalloon disc on the base of the holder.

The *detonator*, which contains 2-gr. detonating composition and 3-gr. lead azide, is composed of a copper alloy shell, a brass washer and disc. The disc is placed above the filling with the washer above the disc, the whole being secured by five tongues on the shell being pressed over on to the washer.

The *striker*, with its spiral spring, is positioned with its head in the top of the detonator holder and its stem in the head of the fuze. It is of steel with a radius formed on its periphery to form a housing or race for the four retaining balls which suspend the point of the striker clear of the detonator, the balls being prevented from moving outwards whilst the fuze is at rest by the plunger surrounding the top of the holder.

The *plunger* is formed with a flange, above which it is screw-threaded to take the head, the remainder being plain. On one side of the flange a guideway is cut to take the guide pin in the body. Internally it is bored throughout, in varying diameters to accommodate, at the bottom, the top of the detonator holder, and at the top, the stem of the striker. Between the top and bottom the interior is enlarged to permit the outward movement of the four striker retaining balls after the fuze is struck and the plunger forced in. The plunger is supported by the safety sleeve which is composed of a thin brass ring opened out to fit the guide pin in the body and cut away from the bottom to form four tags, which, being bent inwards underneath the plunger, forms the safety device.

The *head* is dome-shaped with a flange at the bottom and

therefore ~~to avoid damage to the markings as partial obliteration~~

Internally it is recessed to accommodate a C.E. pellet and screw-threaded to receive the lower portion of the detonator holder.

The *body* is a brass cylinder slightly reduced in diameter near the top to take the copper *protecting sleeve* secured by solder, and prepared in the side to take a guide pin. Internally it is recessed to accommodate the percussion arrangement and screw-threaded at the top to receive the securing ring and at the bottom to take the detonator holder, which is secured to it by a securing pin, the hole to receive it being bored after assembly.

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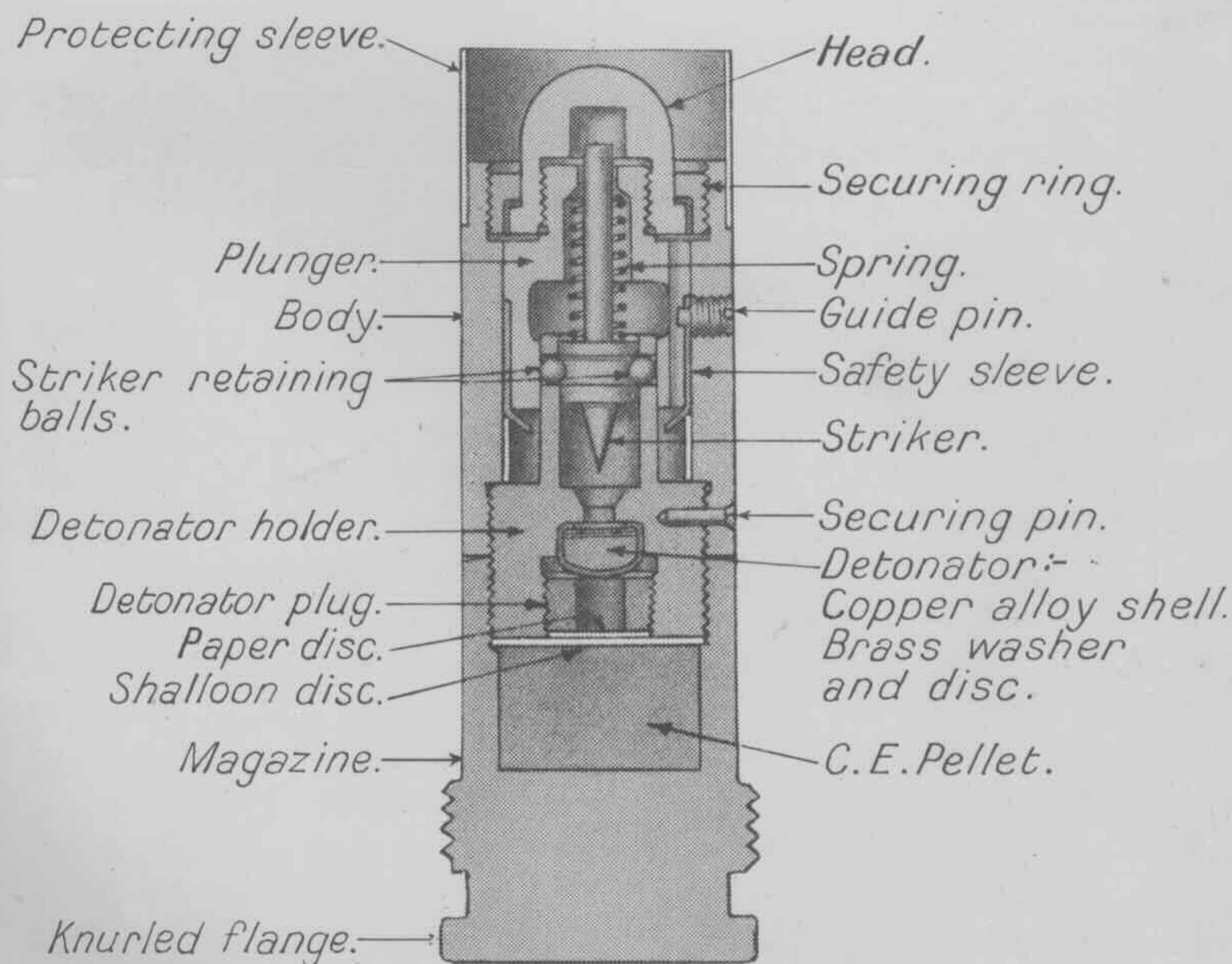


Fig. 4.

away from the bottom to form four tags, which, being bent inwards underneath the plunger, forms the safety device.

The *head* is dome-shaped with a flange at the bottom and

~~S.L.~~ therefore ~~to avoid damage to the markings as partial obliteration~~

7. Page 9. *Delete* page 9 and *insert*—

Amdt. 2
Oct., 1939

MINE, CONTACT, A.T., MARK II
(Plate 2)

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Particulars

Weight complete (approx.)	..	..	..	8 lb. 4 oz.
Diameter ..	..	..	..	7.5 inches.
Height ..	..	..	..	3.25 inches.
Charge, Baratol (approx.)	..	..	..	4 lb.

Description

The mine consists of a container body, bottom, exploder pocket, cover, exploder and plug.

The *body* is of tinned-steel, dome-shaped, bored centrally to receive the top of the exploder pocket, with eight corrugations radiating from the centre and four pins to secure the cover, welded in. Four bearing surfaces are formed against which the cover spring makes contact when assembled.

The *bottom*, with two filling holes and one central hole to receive the filling hole sockets with plugs, and exploder socket, with bush respectively, is soldered to the body and exploder socket, which is closed by a metal base plug.

The *exploder pocket* is of tinned-steel, cylindrical in shape, with a short neck formed at the top to fit the centre hole of the container body to which it is attached by being turned over.

The *cover* is dome-shaped, with four bayonet-joint sockets equidistantly spaced round the circumference to secure it to the body. A four-armed spring is riveted in four places to the inside and a brass or steel plate, bearing the words COVER NOT TO BE REMOVED, is sweated to the outside.

The *Mark I exploder* comprises a cylindrical aluminium body with a central hole and cover. It contains two circular, ring-shaped C.E. pellets with a glazeboard disc at the bottom and another at the top, below the cover. It is inserted into the exploder pocket against a felt washer and retained in position by the exploder pocket bush.

FUZE, MINE, CONTACT, A.T., No. 1, MARK I

The *fuze* (Fig. 4) consists of a magazine, body with protecting sleeve and guide pin, detonator holder with plug, detonator, striker, striker spring, plunger, safety sleeve, head and securing ring.

The *magazine* is of brass, cylindrical in shape, with a knurled flange at the bottom to facilitate insertion and removal from the mine, and screw-threaded externally just in front of the flange to the 1-inch fuze-hole gauge, the remainder being plain.

S 2/39.

- (c) A red ring around the side denotes that the mine is filled
- (d) A red bar across the top also denotes that the mine is filled
- (e) A green bar across the top with the appropriate stencilling denotes the nature of H.E. filling.

NOTE.—On the red and green bars the four contact surfaces, where the ends of lid spring bear on the top of the container, will be left unpainted and smeared with grease.

Stencilling on the top

- (a) The name and *Mark* of the mine
- (b) Design No. of method of filling
- (c) The letters "BAR" to denote baratol filling
- (d) 10/90 on the green bar to indicate the proportion of the baratol ingredients
- (e) The monogram of firm or station filling, the date of filling (day, month, year), and series number in ring, distinguishing filled lot.

Delete

Lid—

Painting

- (a) The lid is painted dull black.

CHAPTER II

PROCEDURE IN THE FIELD

S 2/39.

ARMING — *Mark I* MINES.

The term "arming" covers the actions in assembling the pistol and of inserting this assembly in the mine.

The mine is armed in the field owing to the fact that the striker spring may lose its strength if it is kept in compression for any great length of time.

Mines should not be kept stored in the armed state longer than is necessary and care should be taken to release the striker springs periodically as opportunity occurs and to re-arm them as they are required.

Procedure

The *arming tool* (Fig. 5) is a fixture on the outfit box (see page 14).

The striker spring is slipped over the striker and the two are inserted in the pistol body, which is then screwed into the arming tool by means of the spanner.

The needle of the striker enters a recess in a central spigot in the arming tool and the screwing action therefore compresses the striker spring. When the shear wire hole in the striker appears above the top of the pistol body, the shear wire can be inserted,

The body is then unscrewed from the arming tool, care being taken to see that the shear wire projects equally on each side of the striker.

The cap is then inserted in the bottom of the body and is secured by the screwed ring. The ring has two slots and may be tightened by engaging these slots on two pins let into the outfit box near the arming tool.

When the pistol has been fully assembled, the detonator plug

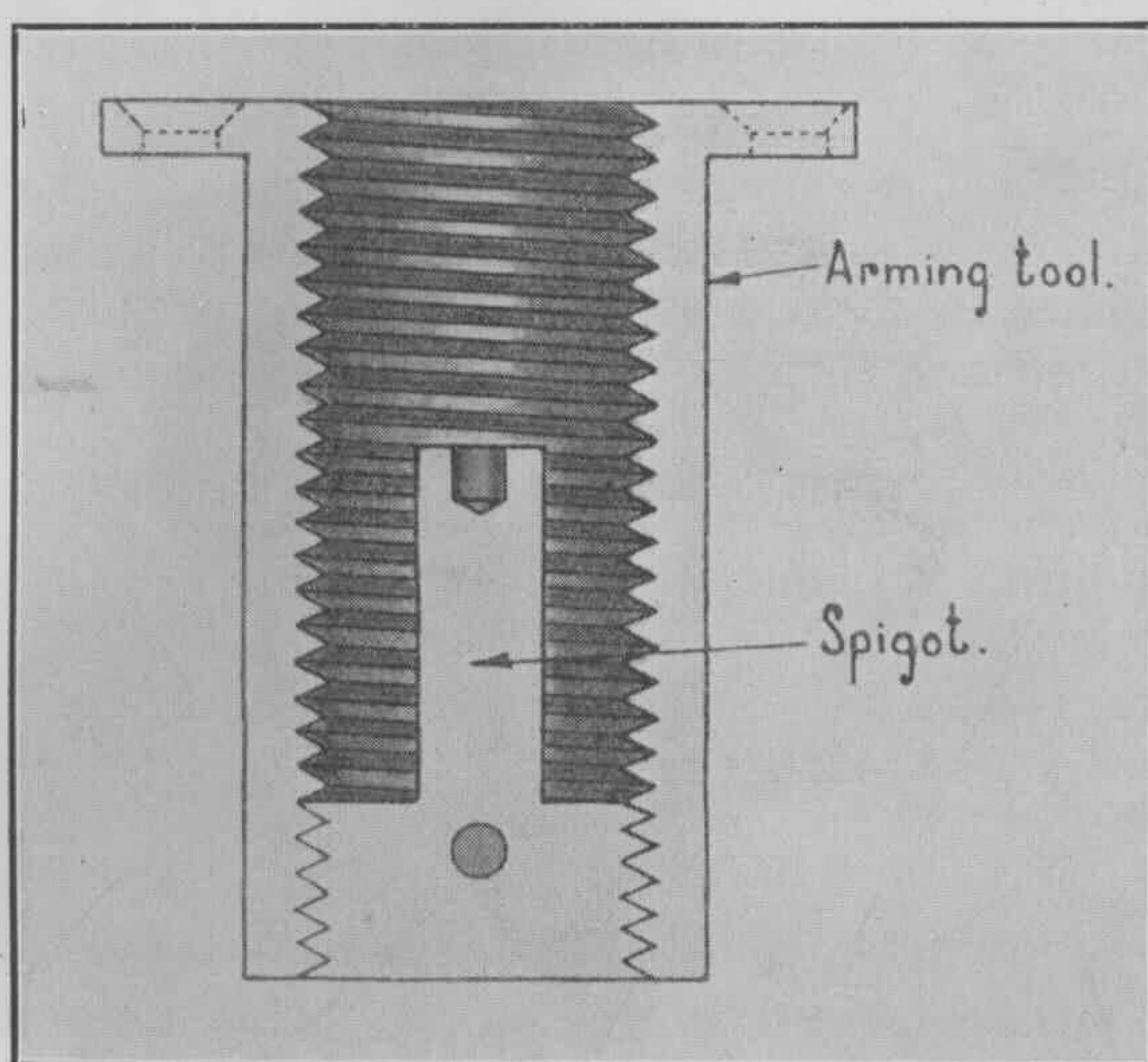


Fig. 5

and lid are removed from the mine and the pistol screwed home into the central column by means of the spanner.

The lid is then replaced and the detonator plug screwed home finger tight.

NOTE.—In arming mines, both the central column and detonator tube should be inspected to see that they are clean and free from obstructions.

As soon as mines are armed, they should be re-packed in the outfit box.

CARE IN HANDLING

Mines in the unarmed state and detonators will receive the normal care in handling which explosives of these kinds require.

The needle of the striker enters a recess in a central spigot in
1. Page 11.—Line 4.—*After "inserted" insert:—*

Amdt. 1
Apr., 1938

, care being taken not to compress the striker spring beyond
the point necessary to insert the shear wire

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When unscrewed from the arming tool, care being
taken to see that the shear wire projects equally on each side of
the striker.

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by the screwed ring. The ring has two slots and may be tightened
by engaging these slots on two pins let into the outfit box near the
arming tool.

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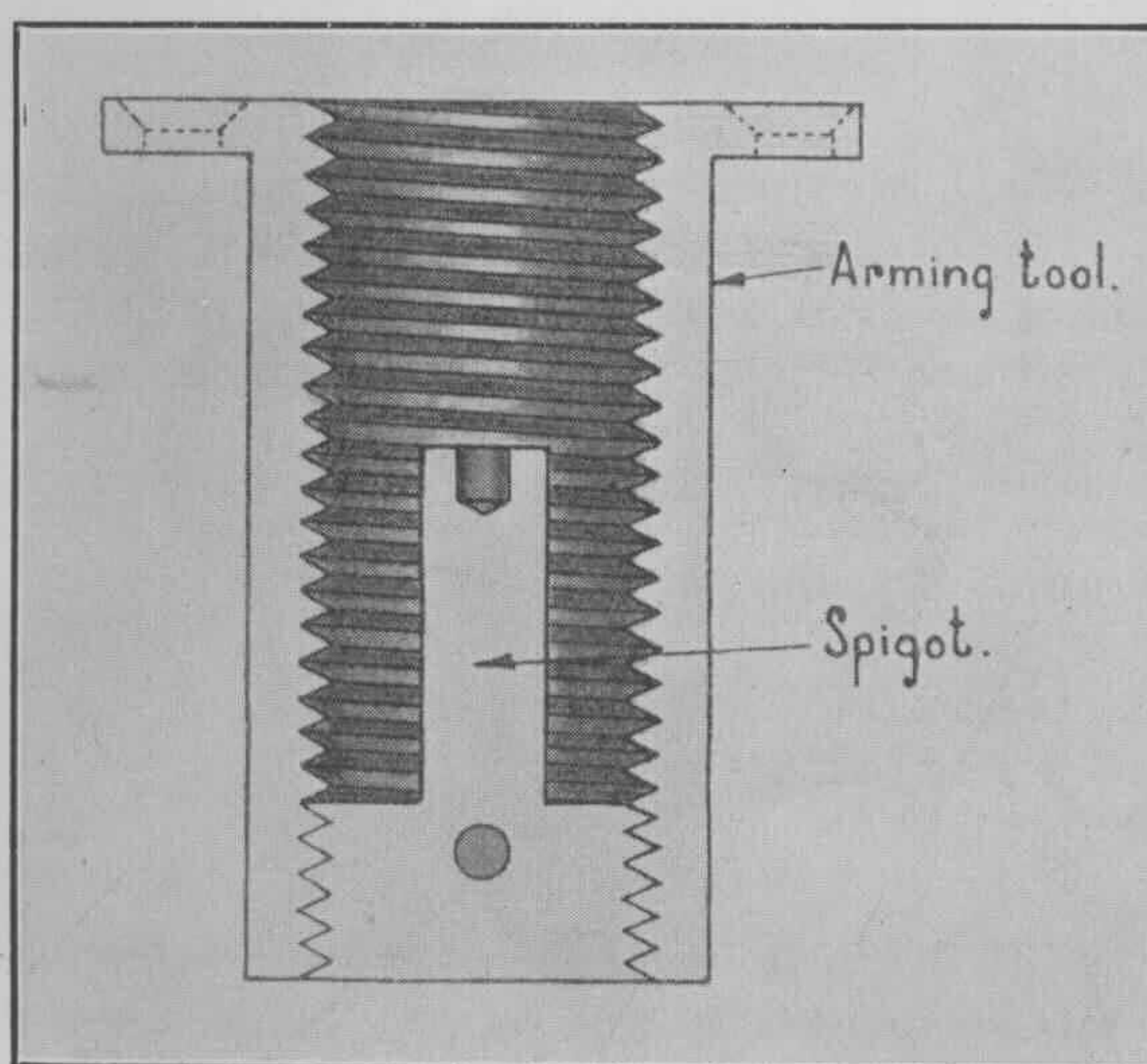


Fig. 5

and lid are removed from the mine and the pistol screwed home
into the central column by means of the spanner.

The lid is then replaced and the detonator plug screwed home
finger tight

9. Page 11. *Above line 3 from bottom insert—*

Amdt. 2
Oct., 1939

FUZING, MARK II MINES

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3939

Mark II mines are issued plugged and will be fuzed when
required for use.

Procedure

Remove the base plug from the bottom of the mine, insert
the fuze and screw home.

Care must be taken that no weight is placed on the cover,
as the fuze is very sensitive.

S2/39.

^{When containing detonators.}
Boxes of mines must be handled with special care, ~~as they contain detonators.~~

In handling armed mines singly, it is important that the mine should not be dropped, as this may damage the shear wire.

If a mine is dropped, it should be put aside and the shear wire inspected by removing the detonator plug and lid. If the shear wire is intact, the mine may be reassembled and laid. If the shear wire is damaged, it should be changed and the mine re-armed.

Normally mine boxes will be carried to the site for laying and the mines taken out and laid with as little handling as possible.

LAYING MINES

Mines may either be laid on the ground or partially buried according to the tactical requirements and the time available.

Laying

Mines laid on a hard surface such as concrete or macadam show a slight tendency to move sideways away from a track or wheel which approaches them at a tangent. If time permits, roughening the surface is an advantage. On soft or rough ground side slip does not occur.

Burying

The excavation for burying mines should not be more than 2 inches deep. The detonator plug must be readily accessible when the mine is laid.

Mines must not be laid in water.

MAKING LIVE

S2/39.

The mine is "live" when ~~it has been "detonated"~~, i.e., the detonator has been placed in the mine ^{or it has been fuzed.} The detonators should be carried in the detonator box to the mines.

A detonator must not be placed in the mine until it has been laid.

Procedure

S2/39.

To make the mine "live", the detonator plug is unscrewed with the fingers and the detonator is inserted open end first into the detonator tube, *or the base plug removed and the fuze inserted.*

The detonator must not be forced home. It is fully home when the rimmed head projects slightly from the general surface of the exploder plug.

The detonator plug is then screwed home finger tight only.

MAKING SAFE

S2/39.

The mine is made safe by ~~"undetonating"~~, i.e., removing the detonator ^{or fuze}. The action is the reverse to that in "making live". The detonator ^{or fuze} can be withdrawn easily from the detonator tube by the finger nails.

If the detonator plug ^{or fuze} cannot be unscrewed by hand, it may be

removed by using the spanner, except in dealing with missfires (see below).

Laid mines must be made safe before they are moved.

REMOVAL OF MINES

The removal of mines is necessary when (a) friendly traffic requires to pass through the mine field, or (b) the mine field is no longer required.

The mines must first be made safe.

In case (a) it will probably only be necessary to remove a few mines, which will be re-laid and made "live" as soon as the friendly traffic has passed. If not removed, the mines may be damaged or rendered useless by traffic passing over them even though they do not explode.

In case (b) the mines will be re-boxed.

RE-BOXING

The action of re-boxing is to refill the outfit box with safe mines and the detonator box with the same number of detonators as there are mines.

It is essential to ensure that no detonators^{or fuses} are left in the mines and that no mines with damaged or sheared shear wires are re-boxed.

The following precautions should be taken:—

(a) Mines will be brought in and re-boxed with detonator plugs removed. The detonator plugs will not be inserted in the mines until the box is full and the mines have been inspected.

(b) Any mine that shows signs of having been run over or that has been dropped will not be boxed until the shear wire^{or fuse} has been examined (see page 12).

MISSFIRES AND DAMAGED MINES

Missfires should be very exceptional.

The causes of a missfire may be—

- (a) Shear wire not fully sheared
- (b) Striker spring too weak
- (c) Cap failed
- (d) Flash hole in spigot blocked
- (e) Detonator wet.

Whatever the cause of the missfire, the first action is to "undetonator"; this must be done with great care, the detonator plug only being touched. If the detonator plug and the detonator cannot be removed easily with the fingers, the mine should be treated as dangerous and destroyed on the site.

When the detonator has been removed, the mine may be examined for the cause of the failure.

Mines which have been crushed but not exploded should be destroyed on the site. *Delete*

removed by using the spanner, except in dealing with missfires (see below).

Laid mines must be made safe before they are moved.

REMOVAL OF MINES

The removal of mines is necessary when (a) friendly traffic requires to pass through the mine field, or (b) the mine field is no longer required.

The mines must first be made safe.

In case (a) it will probably only be necessary to remove a few mines, which will be re-laid and made "live" as soon as the friendly traffic has passed. If not removed, the mines may be damaged or rendered useless by traffic passing over them even though they do not explode.

In case (b) the mines will be re-boxed.

RE-BOXING

The action of re-boxing is to refill the outfit box with safe mines and the detonator box with the same number of detonators.

Line 18. After "mines" insert "similarly, that there are the same number of fuzes as Mark II mines".

and that no mines with damaged or sheared shear wires are re-boxed.

The following precautions should be taken:—

(a) Mines will be brought in and re-boxed with detonator plugs removed. The detonator plugs will not be inserted in the mines until the box is full and the mines have been inspected.

(b) Any mine that shows signs of having been run over or that has been dropped will not be boxed until the shear wire ^{or fuze} has been examined (see page 12).

MISSFIRES AND DAMAGED MINES

Missfires should be very exceptional.

Line 19. After "detonators" insert "or fuzes".

Line 26. After "wire" insert "or fuze".

Delete last 14 lines and substitute—

- | | | |
|---|---|-----------------|
| <ul style="list-style-type: none"> (a) Shear wire not fully sheared (b) Striker spring too weak (c) Cap failed (d) Flash hole in spigot blocked (e) Detonator wet. (f) Faulty fuze in Mark II mine. | } | in Mark I mine. |
|---|---|-----------------|

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Wherever it is ascertained that a mine has misfired it must be destroyed in situ. If the mine cover is damaged, no doubt will exist, but if undamaged, difficulty may arise in ascertaining whether the mine has in fact misfired after being run over. If, after visual examination of the mine and the surrounding ground, doubt still exists as to whether the mine has been run over, and therefore possibly misfired, it should be treated as a misfired mine and must be destroyed in situ.

Amdt. 2
Oct., 1939

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CHAPTER III

SUPPLY AND TRANSPORT

SUPPLY

The field park company in the division and the field squadron in the cavalry division will hold mines as part of their equipment and will obtain their supplies in the normal way through the divisional ammunition company.

Certain rear R.E. units such as army troops and base park companies may also hold mines as equipment.

Mines supplied to a holding unit will be received in the unarmed state (see page 15). They will be packed in outfit boxes which will contain eight mines and ~~also the necessary parts and tools for arming them.~~ *Substituted* Detonators will be a separate supply, the detonators being packed in sealed boxes each containing eight detonators.

ISSUES

If mines are issued to ~~other units for use,~~ *Substituted* the holding unit is responsible for their arming and proper condition. The issue will include one detonator box in each box of armed mines.

It is preferable to issue complete boxes of mines rather than separate mines.

BOX, OUTFIT, MINES, CONTACT, A.T., M54, MARK I

(Plate 3)

S2/39 ^{M54} The ^{Mk. I} outfit box is the box in which the mines are packed at the factory and it is intended for use until the mines are actually laid in the field.

The box is of wood with hardwood ends and handle cleats which are fitted with wire handles having leather hand-grips.

The lid, battened transversely, is readily removable, being secured by a steel fastener and two dowel pins.

The arming tool is a fixture in the box and also serves to secure the lid in the closed position, the fastener being screwed into the threads of the arming tool. The lid may be unlocked by using as a screwdriver the blade of a clasp knife or the edge of a spanner in the slot of the fastener.

This method of fastening allows of the easy removal of the lid when the boxes are stacked on their sides, which method of stacking allows the mines to be unboxed in the minimum amount of time.

CHAPTER III

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The field park company in the division and the field squadron in the cavalry division will hold mines as part of their equipment and will obtain their supplies in the normal way through the divisional ammunition company.

Certain rear R.E. units such as army troops and base park companies may also hold mines as equipment.

12. Page 14.

For lines 10 to 14 substitute—

Amdt. 2
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Mines will be supplied plugged and packed in boxes containing eight mines together with the necessary parts and tools for arming or fuzing them.

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Detonators will be supplied separately packed in sealed tinned plate boxes, eight in a box.

For lines 16 to 18 substitute—

Amdt. 2
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If mines are issued to units, other than those referred to above, for use, the issuing unit will be responsible for their arming and proper condition. The issue will include one box of detonators to each box of armed Mark I mines and the requisite number of fuzes for Mark II mines.

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(Plate 3)

S2/39

^{M54} The ^{Mk I} outfit box is the box in which the mines are packed at the factory and it is intended for use until the mines are actually laid in the field.

The box is of wood with hardwood ends and handle cleats which are fitted with wire handles having leather hand-grips.

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This method of fastening allows of the easy removal of the lid when the boxes are stacked on their sides, which method of stacking allows the mines to be unboxed in the minimum amount of time.

The box is divided by partitions to form a good packing for the mines so that, when armed, they will not have to support any weight.

A web band is provided in one partition to facilitate the removal of the first mine.

A recess is provided under the end batten carrying the arming tool to house the pistol box and spanner, a turnbutton holding them in position, and a pocket in the batten accommodates the detonator box.

~~A clip is fixed to one side of the box for the cleaning tool for use when the box contains training mines only.~~

The *pistol box* is of tinned plate, flat, with hinged lid. To the bottom, throughout its length, is soldered a strip with upright spring arms which grip the eight pistol assemblies.

~~In the case of training mines (see page 17), when the pistols have been removed and the mines armed, the slots between the spring arms allow of the packing of the puff containers with puffs.~~

A recess along one side of the box is padded with box cloth and forms a bed for the cap and shear wire containers, also for the spare striker spring and screwed ring, which are wrapped in brown or waterproof paper.

The exterior of the box is painted yellow.

The *cap* and *shear wire containers* are simple tin cylinders with push-on lids.

The *spanner* is double ended, one end being made to suit the $\frac{7}{16}$ -inch head of the detonator plug and the other to suit the $\frac{5}{16}$ -inch head of the pistol body.

The box, when filled, weighs about 80 lb. and 42 boxes containing 336 mines can be carried in a 30-cwt. lorry.

Contents

The contents as received by the holding unit are as follows:—

Mines, assembled, with lid and detonator plug	8
Pistols—	
Bodies	8
Strikers	8
Striker springs	9 (1 spare)
Shear wires (in container)	12 (4 spare)
Caps (in ² containers)	8 9 (1 spare)
Screwed rings	9 (1 spare)
Pistol box (for parts, etc.)	1
Shear wire container	1
Cap containers ⁵	2 7
Spanner	1
Arming tool (fixed to box)	1

On receipt, a box of eight detonators will be placed in the outfit box.

~~The holding unit will arm the mines as and when necessary and repack the boxes ready for use or issue.~~

CHAPTER IV

EFFECT AND SENSITIVITY

EFFECT ON TRACKED VEHICLES

A tracked vehicle is not necessarily destroyed by a mine detonating beneath it but it is rendered immobile.

Tests with tanks have shown that a mine detonating under the outer edge of the track will break it completely and wreck one or two of the bogie rollers. A mine detonating under the centre or the inner side of the track may also fracture the hull floor and probably incapacitate part of the crew.

The effect on the tank is similar whether the ground is hard or soft. In the latter case the mine may also form a crater as large as 5 feet in diameter and 3 feet deep, which renders the salvage of the tank more difficult.

EFFECT ON WHEELED VEHICLES

A wheel which fires the mine by passing over it will be destroyed and the axle will probably be damaged. With pneumatic tyred vehicles the tyre on the other wheel of the same axle will probably also be punctured and the wheel buckled.

A mine detonating 2 feet outside the wheel track of a vehicle, as the axle passes the mine, will damage and puncture the near wheel.

SENSITIVITY

The sensitivity of the mine depends only on the minimum force which will depress the lid and shear the shear wire. This is about 500 lb.

The mine is therefore non-selective in the sense that the sensitivity cannot be altered at will to suit any particular load.

It is important that only the special shear wire supplied with the mine should be used. Other types of wire will render the mine over-sensitive or not sufficiently sensitive.

14. Page 16.

For lines 3 and 4 substitute—

Amdt. 2
Oct., 1939

Units referred to in the first and second paragraphs of this chapter and others who hold mines as part of normal equipment will be regarded as holding units. They will arm mines, as and when necessary, and repack the boxes ready for use or issue.

Below line 4, insert—

Amdt. 2
Oct., 1939

BOX, MINES, CONTACT, A.T., M.74, MARK I
(Plate 4)

The box, for use with Mark II mines, is of steel with a handle, having a rubber handgrip, in a recess at each end. The lid is hinged and when closed is held by two clips. Internally it is provided with steel fittings to position the mines, clips to house the paper packing tubes which contain the fuzes, a tool for unseating the plugs and a webbing band to facilitate extraction of the mines.

Contents

The contents, as received by the holding unit, are as follows :

Mines, contact, A.T., Mark II		8
Fuzes, mine, contact, A.T., No. 1, Mark I		8

probably incapacitate part of the crew.

The effect on the tank is similar whether the ground is hard or soft. In the latter case the mine may also form a crater as large as 5 feet in diameter and 3 feet deep, which renders the salvage of the tank more difficult.

EFFECT ON WHEELED VEHICLES

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SENSITIVITY

The sensitivity of the mine depends only on the minimum force which will depress the lid and shear the shear wire. This is about 500 lb.

The mine is therefore non-selective in the sense that the sensitivity cannot be altered at will to suit any particular load.

It is important that only the special shear wire supplied with the mine should be used. Other types of wire will render the mine over-sensitive or not sufficiently sensitive.

In practice it has been found that the following loads *will not* fire the mine :—

A man standing on the mine, or walking or running on to it.
A man riding a bicycle.

The following loads *will* fire the mine :—

A man jumping on to it.

Horses.

All horse transport.

Motor cycles and all other service mechanical vehicles.

In addition the shear wire may be sheared or damaged if the mine falls under its own weight from a height of a foot or more upside down and on to level ground. In normal handling the probability of accidentally dropping a mine sufficiently accurately upside down for this to occur is small. Nevertheless care in handling the mines is of the greatest importance.

A damaged shear wire renders the mine highly sensitive and may lead to an accident. Such wires should always be removed at the first opportunity (see page 12).

CHAPTER V

TRAINING AND DUMMY MINES

MINE, TRAINING, CONTACT, A.T., MARK I

(Plate 2)

General remarks

The training mine is intended to represent the service contact mine as closely as possible compatible with its being used for training and manœuvre purposes. It contains a smoke puff which gives a distinctive cloud of smoke when the mine is fired.

Description

The weight of the mine is 7 lb. 3 oz.

The assembled mine is shown in Fig. 6, whilst Fig. 7 shows the body with lid, pistol, puff container, puff and plug removed.

The main differences between the training mine and the service contact mine are as follows :—

The *body* is a wood block suitably bored to receive the central column and the puff chamber, a flash channel connecting the two.

In practice it has been found that the following loads *will not* fire the mine :—

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A man riding a bicycle.

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A man jumping on to it.

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All horse transport.

Motor cycles and all other service mechanical vehicles.

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Description

The weight of the mine is 7 lb. 2 oz.
Substituted
Above line 4 from bottom insert :—

Amdt. 1
Apr., 1938

NOTE.—No puff container is required with *Mark II* puffs.
The differences between the training mine and the service contact mine are as follows :—

The *body* is a wood block suitably bored to receive the central column and the puff chamber, a flash channel connecting the two.

In practice it has been found that the following loads *will not* fire the mine :—

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A damaged shear wire renders the mine highly sensitive and may lead to an accident. Such wires should always be removed at the first opportunity (see page 12).

CHAPTER V

15. Pages 17 to 23. *Delete Chapter V and substitute—*

Amdt. 2
Oct., 1939

CHAPTER V

PRACTICE AND DRILL MINES

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General remarks

The *practice and drill mines* are intended to represent the service contact mines as closely as possible, compatible with the circumstances.

The *practice* mine gives off a smoke like vapour to represent a fired mine.

The *drill* mines are for use at drill and to represent the service mines, the *Mark I* drill to *Mark I* service and the *Mark II* drill to the *Mark II* service.

Apr., 1939

contact mine are as follows :—

The *body* is a wood block suitably bored to receive the central column and the puff chamber, a flash channel connecting the two.

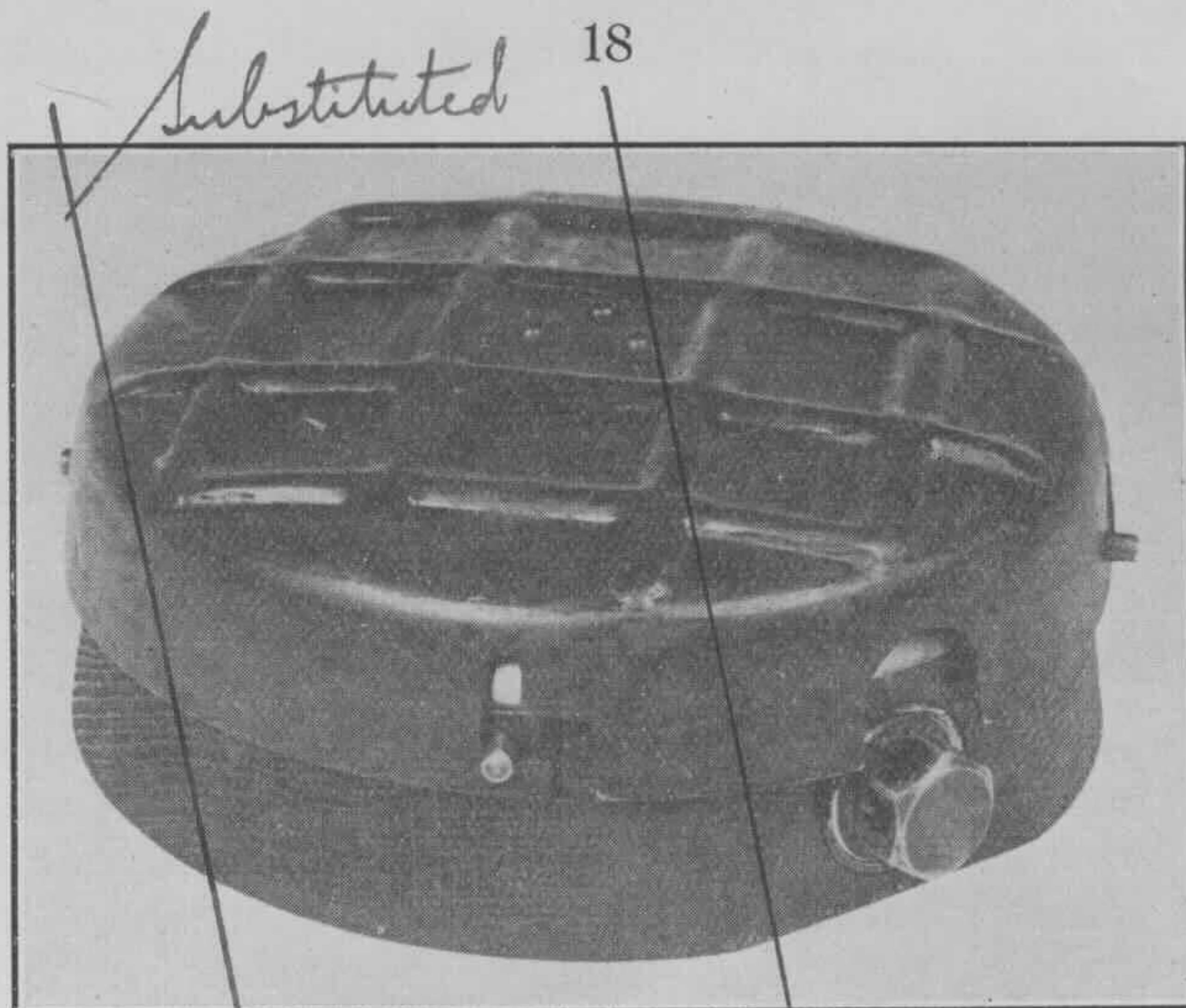


Fig. 6

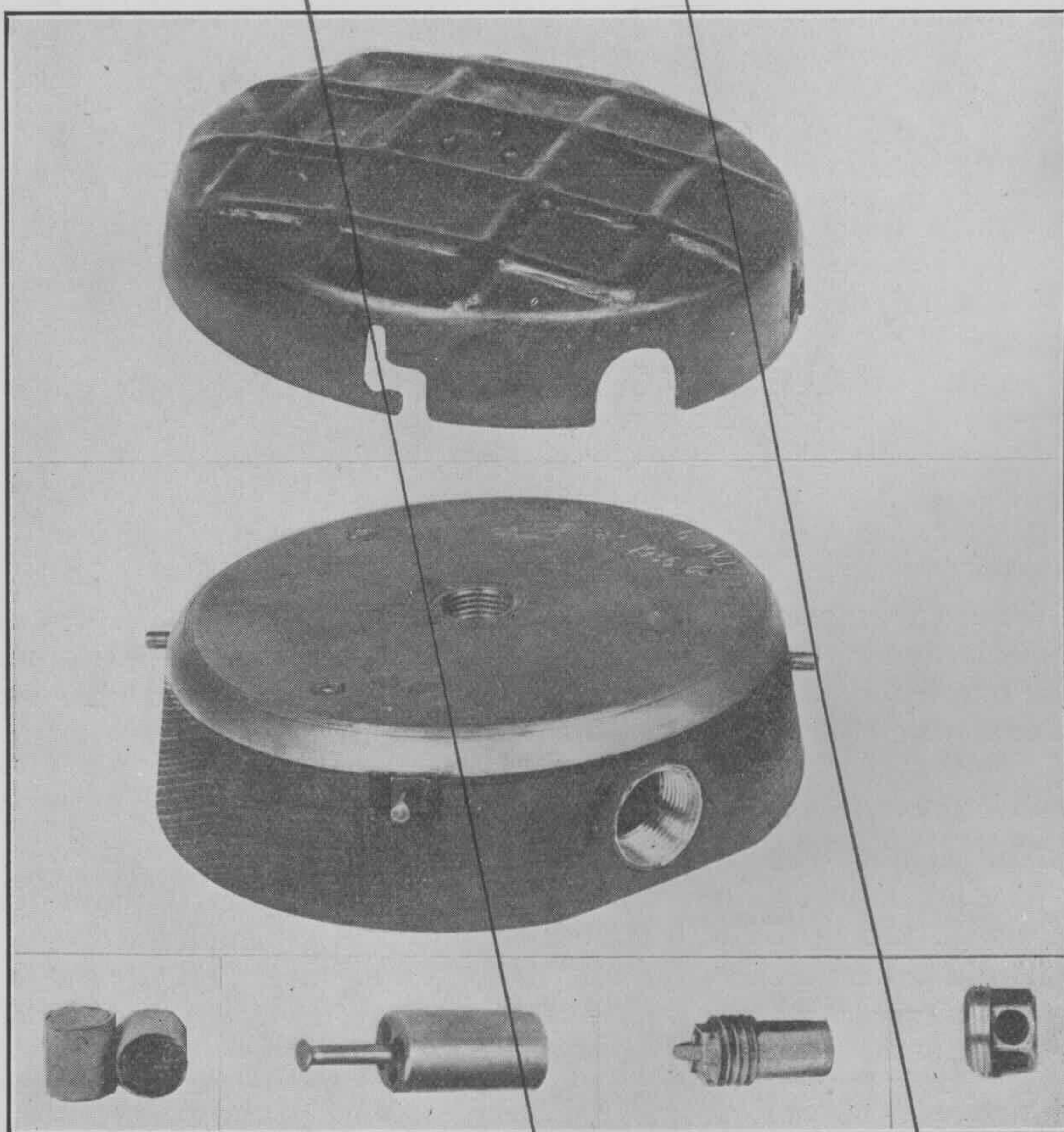


Fig 7

18
Substituted 1

MINE, PRACTICE, CONTACT, A.T., MARK I
(Plate 5)

The *Mark I* practice mine consists of a body, base and two glass capsules.

The *body* is of paper pulp, dome-shaped and prepared with 15 holes equidistantly spaced round its circumference and 5 holes in the top, one central and four at right angles equally spaced from the centre. It is secured to the base by 4 counter-sunk screws.

The *base* is a circular piece of wood with a felt pad, $4\frac{1}{2}$ inches square and centrally placed, with 2 rubber bands, each secured by 3 staples to the base to secure the two glass capsules.

The *glass capsules*, one containing chlorosulphonic acid and one ammonia, are glued to the felt and placed underneath the rubber bands. They are hermetically sealed.

Action

On pressure being brought to bear on the mine, the pulp body is readily crushed and thus breaks the capsules. The acid and the ammonia coming into contact causes a smoke-like vapour to be emitted, thus signifying that the mine has "exploded".

NOTE.—For precautions to be taken when using this mine, see "PRECAUTIONS TO BE OBSERVED," printed later.

MINE, DRILL, CONTACT, A.T., MARK I
(Plate 6)

The *Mark I* drill mine is converted from the *Mark I* training mine and is in external appearance similar to the *Mark I* service mine (Fig. 1) and composed of a cover, body, top plate, puff chamber, adapter and detonator plug, central column and pistol hole plug.

The *cover* is similar to that of the *Mark I* service mine, differing in external appearance in having corrugations on the top.

The *body* is of wood recessed centrally to take the central column and in four places on the top to house the catch pins of the top plate. The side is recessed to accommodate the puff chamber, adaptor and plug.

The *top plate* is a circular steel plate, with four catch pins welded to the underside and three screw-holes to take the screws securing it to the wood body. A further hole houses the screw securing the puff chamber.

The *puff chamber* is of metal, cylindrical in shape and screw-threaded internally for a short distance to suit the adapter and screw-threaded in the side to receive the securing screw, by which it is prevented from turning.

Substituted
A steel top plate is secured by screws and has four catch pins for the attachment of the lid.

The *lid* is similar in shape but is strengthened on top by corrugations to allow it to be used several times. The spring is of a double type, the four-armed portion with the contact points being of thinner spring steel permitting of slightly easier assembly and removal.

The *puff chamber* is substituted for the exploder container and is threaded to receive the plug.

The *puff container* has a cylindrical portion to contain the puff and has four holes in the outer end. A rimmed head is attached on a spindle similar to and representing the detonator head in the service mine.

The *plug*, which retains the *puff container* in position, has three holes bored through the head to allow the smoke to escape.

The *puff* is in two parts which can be pressed into the puff container. It is important to keep the smoke puffs dry.

Action

The firing action of the pistol is similar to that of the service contact mine (see page 8). The flash from the cap ignites the ~~uncovered end of the smoke puff and the smoke generated passes round the outside of the puff container and out through the holes in the plug.~~

The smoke puff burns for about four seconds and emits a distinctive yellow cloud.

USE

The training mine is intended to be used in precisely the same manner as the service contact mine. The original arming will be carried out by the receiving unit.

The *puff container*, when filled with a *puff*, represents the detonator and is used to make the mine "live" or "safe" in a similar manner (see page 12).

The plug of the training mine represents the detonator plug of the service mine but, in making the training mine "live", the plug should be screwed in loosely, leaving the three holes pointing upwards. This tends to throw the smoke clouds into the air and to increase its visibility.

The instructions as regards handling (see page 11) apply to the training mine.

CLEANING

The *smoke puff*, when fired, leaves a large amount of residue. Fired mines must be cleaned as soon as possible after firing. If a fired mine is left for two hours in wet weather, the residue becomes a sticky mess which is difficult to remove.

A special *cleaning tool* (Fig. 8) is provided for use with training mines.

Substituted
A steel top plate is secured by screws and has four catch pins for the attachment of the lid.

The *lid* is similar in shape but is strengthened on top by corrugations to allow it to be used several times. The spring is of a double type, the four-armed portion with the contact points being of thinner spring steel permitting of slightly easier assembly and removal.

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The *plug*, which retains the *puff container* in position has three

After line 16 insert :—

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The *Mark II puff* may be formed in one pellet or two pellets of approximately equal proportions, the pellets being perforated through the centre. The puff is contained in a waterproof container of celluloid and is composed of S.R. composition with a layer of S.F.G. mealed gunpowder at each end, the perforation being primed with mealed powder priming. After filling, the joints of the waterproof container are sealed with collodion varnish.

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With the *Mark II* puff the use of the puff container is discontinued.

It is important that smoke puffs should be kept dry.

USE

The training mine is intended to be used in precisely the same manner as the service contact mine. The original arming will be carried out by the receiving unit.

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Substituted

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The *adapter* is a brass plug hollowed out and screw-threaded internally to receive the detonator plug and screw-threaded externally to suit the puff chamber. On its outer face two keyholes are formed to facilitate assembly.

The *detonator plug* is of brass and formed with a hexagonal head and threaded to fit the adapter. It is hollowed out to receive a rubber plug, and provided with a rubber washer under its head.

The *central column* is of metal with a top flange, hollowed internally and screw-threaded to receive the pistol hole plug and is provided with a hole at the bottom which communicates with the puff chamber. It is prevented from turning by a locking pin being driven through the flange into the top plate.

MINE, DRILL, CONTACT, A.T., MARK II (Plate 7)

The *Mark II* mine is composed of a body and fuze bush.

The *body* is of hardwood with a central hole recessed on the underside in two diameters, the smaller recess to accommodate the fuze bush, the larger merely forming a cavity. The top is prepared to receive a circular steel disc secured by three screws.

FUZE, DRILL, MINE, CONTACT, A.T., No. 1, MARK I

The *Mark I* drill fuze is in the form of a metal plug with a knurled flange at the base, similar to that on the service fuze, and is screw-threaded to fit the fuze-hole bush in the *Mark II* drill mine. It is recessed at the top and bored transversely to indicate that it is for drill only.

RECORDING

Since drivers of vehicles cannot see the smoke cloud produced by practice mines which have been run over, separate observation must be arranged.

For assessing the efficiency of the mines certain information is required, and to this end a field report, giving the particulars to be recorded, is given in Appendix I.

SUPPLY AND TRANSPORT

Practice mines are supplied and transported in trade pattern cardboard boxes.

Drill mines are supplied loose but transported in the appropriate service package, i.e. M.54 for *Mark I* mines and M.74 for *Mark II* mines. (See page 14.)

The tool has four arms for use as follows :—

- A—For cleaning the puff chamber.
- B—For cleaning the ^{flash} puff container.
- C—For cleaning the flash channel at the end of the puff chamber.
- D—For cleaning the plug.

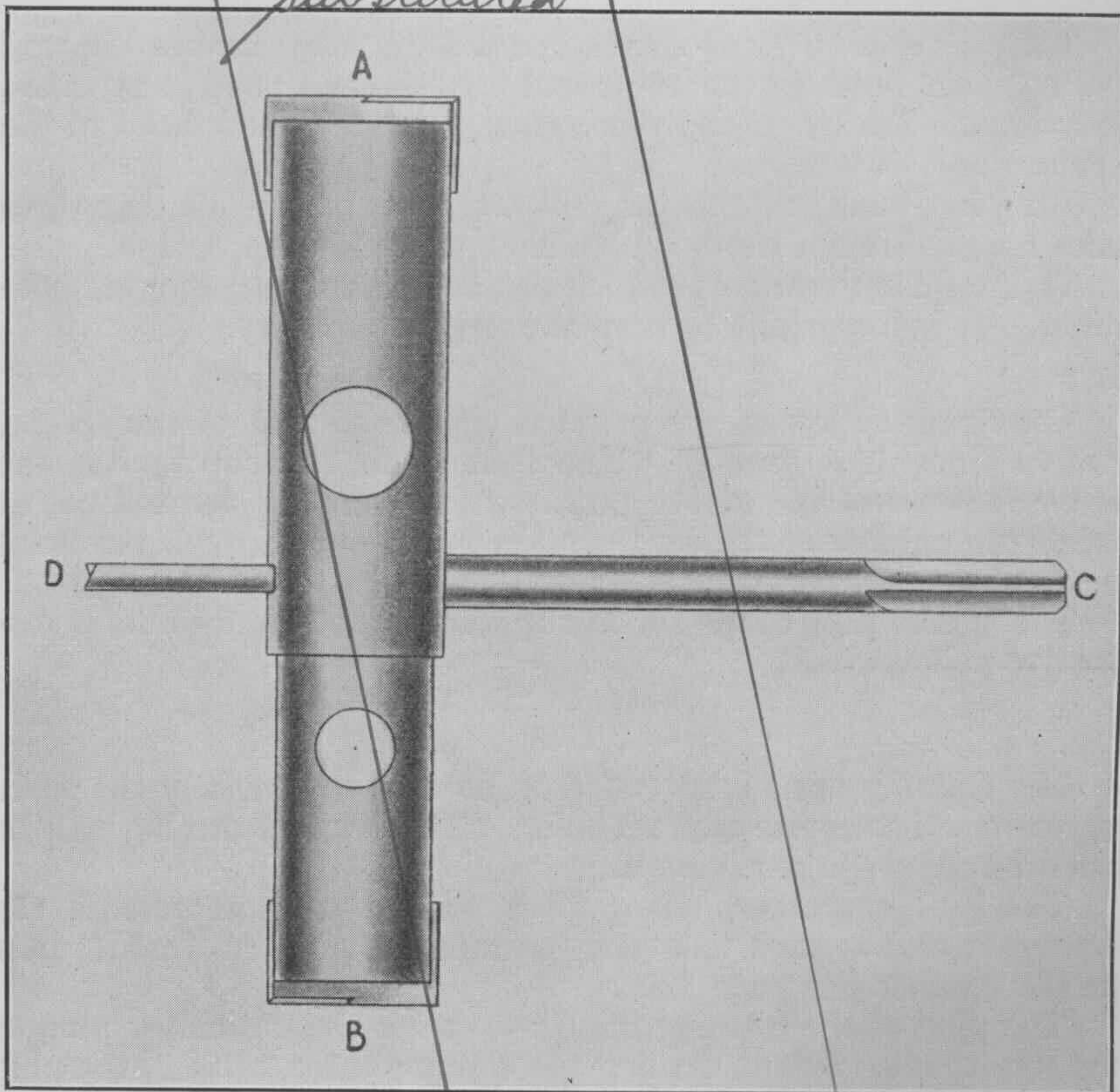


Fig. 8

When mines have been cleaned, they should be specially examined to see that the flash channel joining the central column and puff chamber is clear. Any blockage of this channel will prevent the puff from being ignited.

After cleaning the mines are ready for re-arming.

RE-ARMING

The process of re-arming is the same as that described on page 10.

In the case of training mines, re-arming is the normal procedure

The tool has four arms for use as follows :—

PRECAUTIONS TO BE OBSERVED WHEN USING MINES,
PRACTICE, A.T.

S2/39

1. These mines, containing chlorosulphonic acid and ammonia, will cause injury when brought into contact with the eyes or skin. When mines burst by impact of a heavy weight passing over or falling on them, the chemicals are liable to be sprayed outwards to a distance as much as 10 ft.

Where, however, the chlorosulphonic acid and ammonia come into contact, they will neutralize one another, in which case there would be no danger. If, on the other hand, one or the other of the liquids alone falls on a vehicle or the ground, it is unlikely that there would be any contact danger after about 10 to 15 minutes' weathering. Where contamination is suspected, simple washing or hosing down with water will provide adequate protection.

These mines, therefore, will at all times be handled with care so that they may not be dropped or subjected to impact.

2. When mines have been laid, steps will be taken to ensure that no persons traverse the area in company with vehicles.

3. All personnel will be warned to avoid treading on the mines and lying on ground where mines have burst.

4. A careful record must be kept of all mines laid so that on completion of an exercise or demonstration, unexpended mines may be lifted and all mines accounted for.

5. Due care must be exercised in changing wheels and cleaning vehicles which have been contaminated with the chemicals.

Insert new chapter—

CHAPTER VI

MARKINGS OF MINES AND PACKAGES

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General remarks

Mines issued to the service are suitably marked to facilitate identification and to ensure correct segregation in store and transport. Markings also ensure that correct types are used and assist greatly in tracing defects, in design or manufacture, to their source.

Markings are of two kinds, permanent and temporary. The former are in the nature of stamping in the article concerned and relate, as a general rule, to the process of manufacture, while the latter are usually painted or stencilled and refer more particularly to the explosive element employed.

Great care should be exercised in handling mines, either loose or in packages, to avoid damage to the markings,

within the unit for replenishing stocks of mines which have been fired. For this reason puffs, caps and shear wires are obtainable in bulk as required on demand.

When the original arming is carried out by the unit, a sufficient number of spare caps and shear wires will be packed in the outfit box to allow all mines to be re-armed once in the field. Puffs for re-armed mines must be carried separately. They should be kept in the air-tight containers in which they are issued, as long as possible.

Puffs and puff containers will be supplied separately from the mines.

Puff containers can be used again after cleaning. After the first supply they will therefore be demanded only in replacement of those rendered unserviceable.

Substituted

OUTFIT BOX

The outfit box is the same as that described on page 14.

The contents of the box as received by the unit are as follows :—

Training mines complete with lid and plug..	8
Pistols—	
Bodies	8
Strikers	8
Striker springs	9 (1 spare)
Shear wires	20 (12 spare)
Screwed rings	9 (1 spare)
Pistol box (for parts of pistol)	1
Shear wire container	1
Cap container (empty)	1
Spanner	1
Cleaning tool	1
Arming tool (fixed to box)	1

The receiving unit will arm the mines and repack the boxes ready for use or issue with contents as follows :—

Training mines assembled with pistol, lid and plug	8
Pistol box	1
Containing—	
<i>Back 11 Puffs or 11</i> Puff containers, complete with ^{<i>Mark I</i>} puffs	8
Striker spring (spare)	1
Screwed ring (spare)	1
Shear wires (in container)	12
Caps (spare in container)	9
Spanner	1
Cleaning tool	1
Arming tool (fixed to box)	1

within the unit for replenishing stocks of mines which have been fired. For this reason ruffs, caps and shear wires are obtainable

as partial obliteration may render identification difficult and in some cases impossible.

S 2/39.

In drawing up a scheme of marking the general principle observed is that it should always be possible to identify, from the information on the exterior, the contents of a package or a separate article and conditions of manufacture.

A label is affixed to the inside of each package giving details of its contents. The particulars on the label must be altered as necessary when any change of contents is made.

If possible, mines should be repacked, when necessary, in the box from which they were removed.

MARKINGS

MINES

(Plate 8)

Service Mines

Stamping

Top of body and cover

- (a) A.T. and Mark.
- (b) Contractor's initials or recognized trade mark.
- (c) Date of manufacture. (Month and year.)

Stencilling

On top of Mark I mine and bottom of Mark II

- (a) Nature and Mark of mine.
- (b) Design No. of method of filling.
- (c) BAR (on the green bar) to denote Baratol filling.
- (d) 10/90 (on the green bar) to denote proportion of Baratol ingredients.
- (e) Monogram of firm or filling station and date of filling (month and year).
- (f) Serial No. in a ring to distinguish filled lot.

Painting

Bodies

Mark I mines

- (a) Base and lower part of side—khaki-green.
- (b) Upper part of side and top—yellow, to denote H.E filling.
- (c) Red ring round the side and a red bar across the top, at right angles to the green band at (d) below, to denote "filled".

MAINTENANCE AND STORAGE

Apart from cleaning after firing, the training mine requires little maintenance in the field. The working parts of the pistol should always be kept free from grit and the flash channel must be kept clear.

After continued use, the lid may be crushed and the spring weakened, but these parts can be repaired to make them serviceable.

When mines are returned to store, they should be given a thorough cleaning and all working parts should be oiled. The mines must not be stored in the armed state (see page 10).

Substituted

RECORDING

Since the drivers of vehicles cannot see the smoke cloud produced by the mines which are run over, separate observation must be arranged.

For assessing the efficiency of the mines certain information is required. A form of field report showing the particulars to be recorded is given at Appendix 1.

MINE, DUMMY, CONTACT, A.T., MARK I

The mine is a simple representation of the service mine. It contains no mechanism or explosive and is intended purely as a

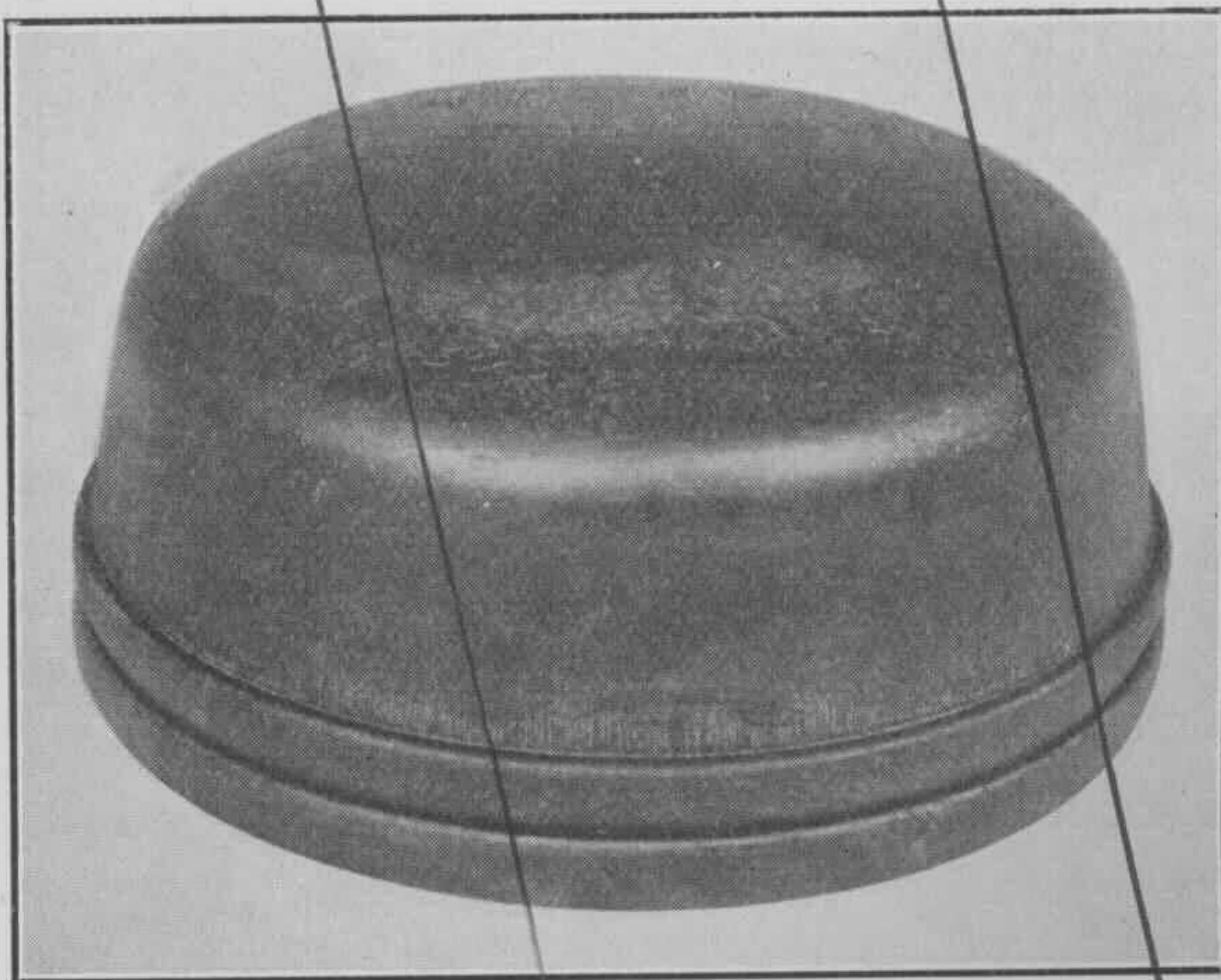


Fig. 9

means of economizing in the use of explosive mines where circumstances are favourable.

The *mine* is of steel and is pressed to form a simple dome. The bottom edge throughout is pressed outwards and then nosed in, thus forming a ridge.

MAINTENANCE AND STORAGE

~~Apert from cleaning after firing the fuze~~

S2/39. (d) A green band across the top (with BAR and 10/90 stencilled on) denotes Baratol filling.

NOTE.—On the red and green bars the four contact surfaces are to be left unpainted and greased.

Mark II mines

(a) Base—yellow as at (b) above, and red and green bars as at (c) and (d) above.

(b) Top and sides khaki-green.

(c) Red ring round the side to denote that mine is filled.

NOTE.—The four contact surfaces on the top to be left unpainted and greased.

Covers

(a) Khaki-green.

FUZES

Stamping on base

(a) No. and Mark of fuze.

(b) Contractor's initials or recognized trade mark and date of manufacture. (Month and year.)

(c) Initials of contractor filling or monogram of filling station and date of filling. (Month and year.)

(d) Filled Lot No.

PRACTICE AND DRILL MINES

Practice Mines

Painting—Khaki-green

Branding on top

(a) Nature and Mark of mine.

(b) Contractor's initials or recognized trade mark and date of manufacture. (Month and year.)

*Drill Mines**Mark I*

Painting—Khaki-green

Stamping on top

(a) Nature and Mark of mine.

(b) Initials of contractor converting and date of conversion. (Month and year.)

Mark II

Painting—Unpainted, treated with creosote.

Branding or stamping on top

(a) Nature and Mark of mine.

(b) Contractor's initials or recognized trade mark and date of manufacture. (Month and year.)

The ridge affords a means of "nesting" the mines for transport. When one mine is placed over another, the nosed in edge of the former rests on the ridge of the latter. Fig. 9 illustrates this by showing two mines.

Substituted

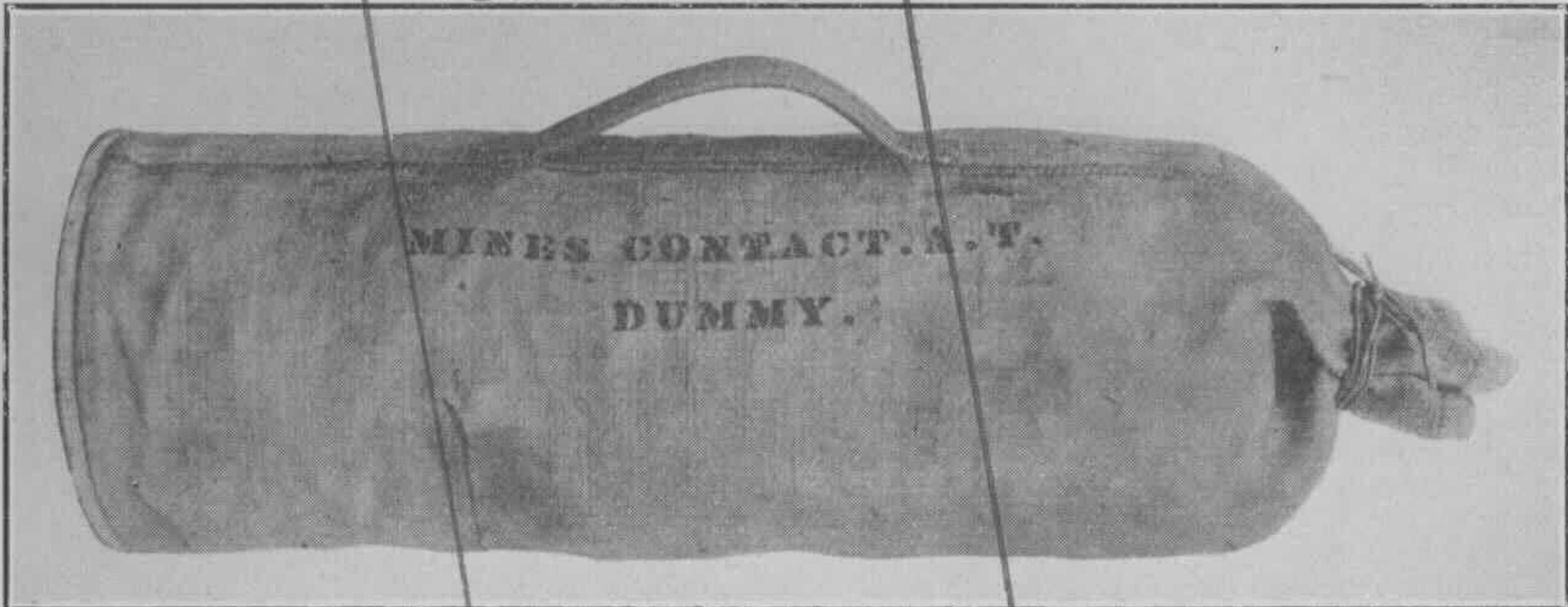


Fig. 10

For transport purposes the mines are packed in a carrier (Fig. 10) consisting of a canvas bag with a carrying handle, the mouth being tied with cord.

The carrier will accommodate 40 dummy mines, the total weight being approximately 36 lb.

The ridge affords a means of "nesting" the mines for transport. When one mine is placed over another, the nosed in edge of the

Steel boxes (M.74)

On both ends

(a) Number and nature of mines, Mark and PLUGGED AND FUZE and No. and Mark of fuzes.

(b) 10/90, denoting the composition of Baratol.

(c) Monogram or initials of filling station of mines and date of filling. (Month and year.)

(d) Filler's initials and Lot No. of filled fuzes and date of filling. (Month and year.)

(e) Packing serial number (in white).

DRILL MINES

M.74 box, when containing Mark II drill mines

On both ends

(a) Number and nature of mines and Mark.

(b) DRILL, to denote drill mine.

On both sides

(a) DRILL.

(b) Number and nature of mines, Mark, and PLUGGED AND DRILL FUZES.

(c) Contractor's initials or recognized trade mark and date of manufacture.

PRACTICE MINES

Trade pattern cardboard package

Stencilling—in black

On top

(a) HANDLE CAREFULLY.

On side

(a) Contractor's initials or recognized trade mark and date of manufacture. (Month and year.)

(b) Initials of firm or station assembling and date of assembly.

LABELS

(a) Government explosive and classification label—on top of wood boxes and side of steel boxes.

(b) Two station labels, affixed over the junction of cardboard packages, over the junction of lid on opposite sides on wood boxes and over the fastenings on steel boxes.

(c) Packer's labels affixed to the underside of the lid.

The ridge affords a means of "nesting" the mines for transport. When one mine is placed over another, the nosed in edge of the

AMMUNITION PACKAGES

52/39. Mines are issued in boxes to hold eight complete, with fuzes and detonators. The fuzes are carried in paper tubes, in clips, in the boxes and the detonators are carried eight in a tinned-plate box.

The particulars of packages are shown in the following table :—

No. of box	Contents	Dimensions	Material
M.54	See pages 15 and 16.	28.6 in. × 9.25 in. × 9.5 in.	Wood
M.74	See page 16	27.6 in. × 8.5 in. × 8.0 in.	Steel

Markings, usually in the form of stencilling, are placed on the sides and ends of the boxes where they are least likely to receive damage and where they can be seen when stacked.

The following markings are to be found :

Painting

Wood boxes—Vandyke brown.

Steel boxes—Service colour.

SERVICE MINES

Stencilling. (In yellow unless otherwise stated.)

Wood boxes (M.54)

On top

(a) O.D. to denote package is oil dressed.

On both ends

(a) Nature of mines.

(b) Lot No. of mines.

(c) BAR, 10/90, denoting the composition of Baratol.

On both sides

(a) Number and nature of mines, Mark and WITH PISTOLS, SHEARWIRES AND SPANNER.

(b) Monogram of firm or station filling.

(c) Lot No. of mines.

(d) Date of filling mines. (Month and year.)

(e) No. of and DETONATORS.

(f) Initials or recognized trade mark of detonator filling.

(g) Lot No. of detonators.

(h) Date of filling detonators. (Month and year.)

} When packed.

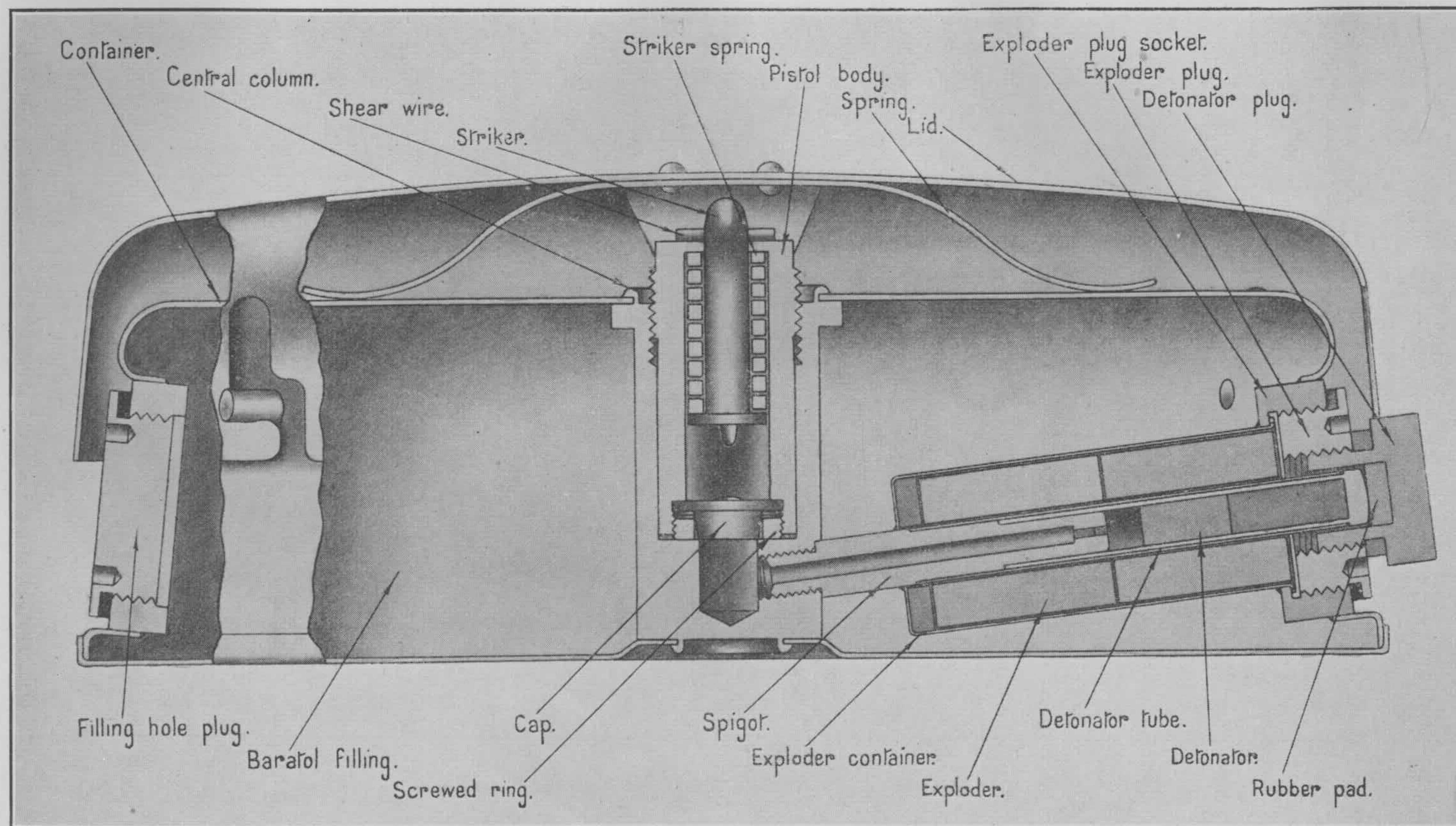
APPENDIX 1
TRAINING ANTI-TANK MINE
FIELD REPORT

1. Unit.....
2. Number of mines armed..... Date
3. MINEFIELD AT.....
 Number of mines laid Date
 Time taken in un-
 boxing and laying Strength of party
 Remarks *re* arrangement and terrain :—

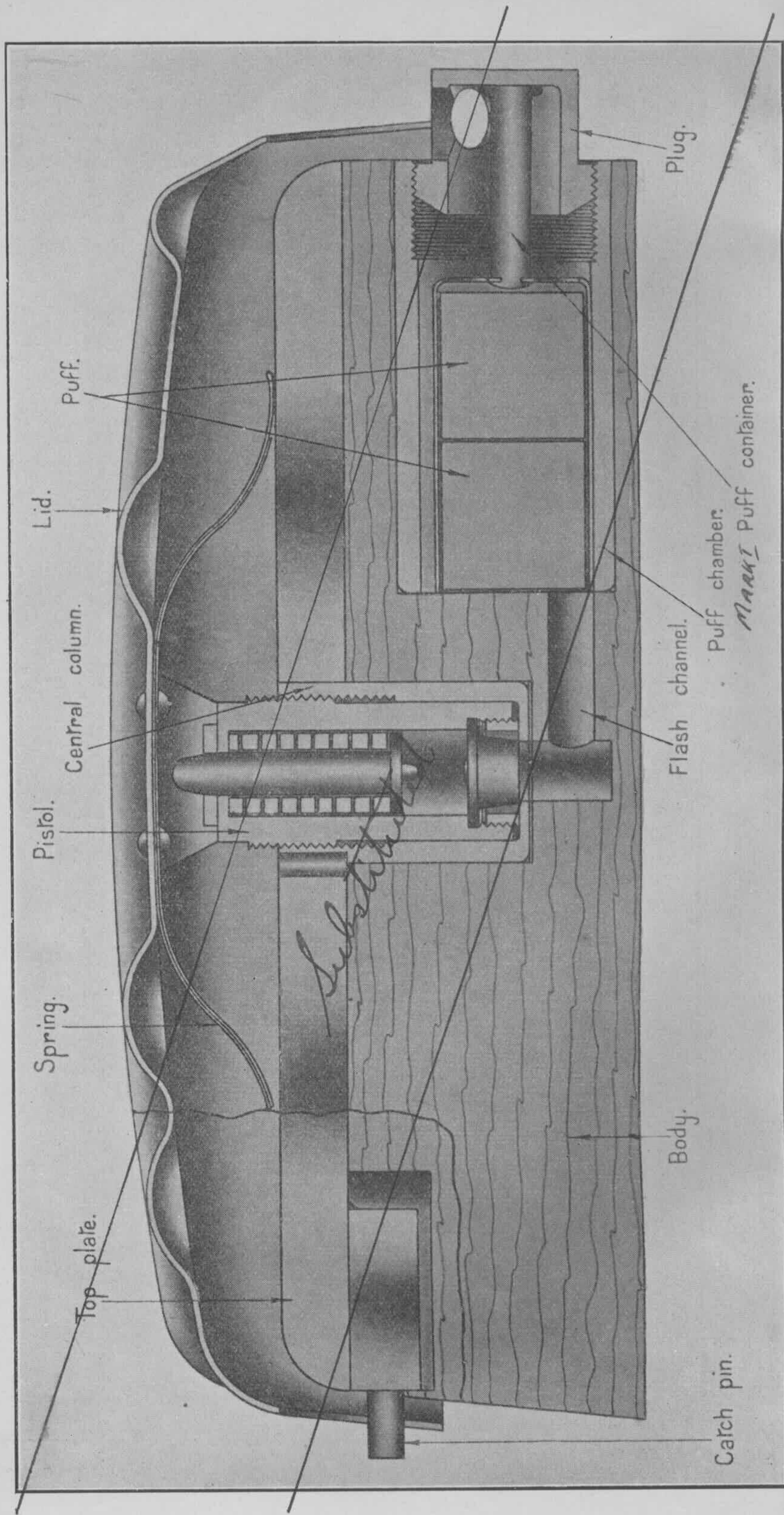
Number of enemy vehicles
 crossing the minefield Date
 Date
 Date
 Number of mines fired Date
 Date
 Date
 Number of missfires
 Causes of missfires :—

4. Number of mines re-armed and laid
 Number of mines collected Date
 Time taken in collecting Strength
 and re-boxing of party
 Number of mines dropped in laying In collecting.....
 Number of shear wires damaged by dropping mines
5. Number of mines unarmed Date
6. Remarks

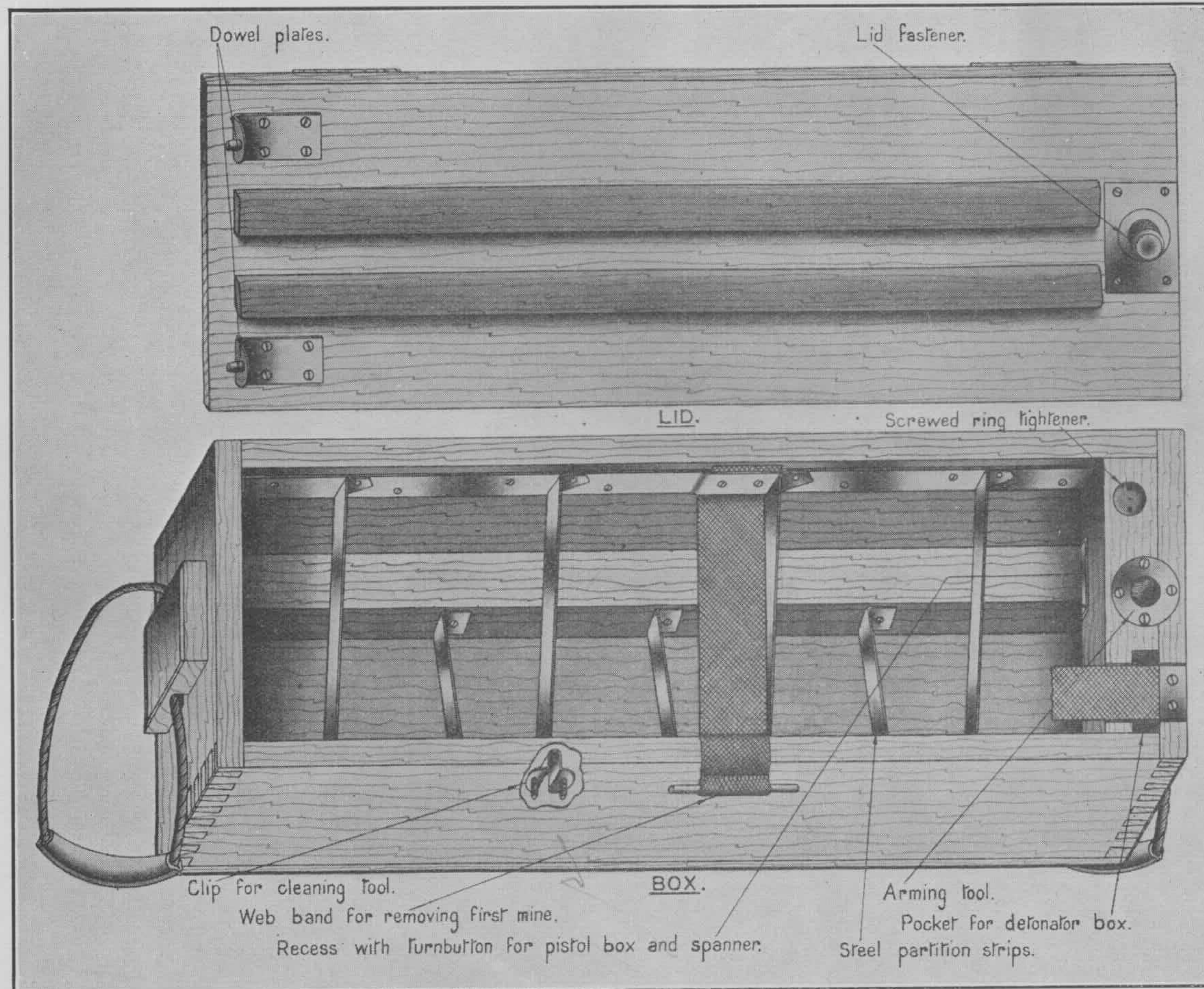
MINE, CONTACT, A.T., MARK 1



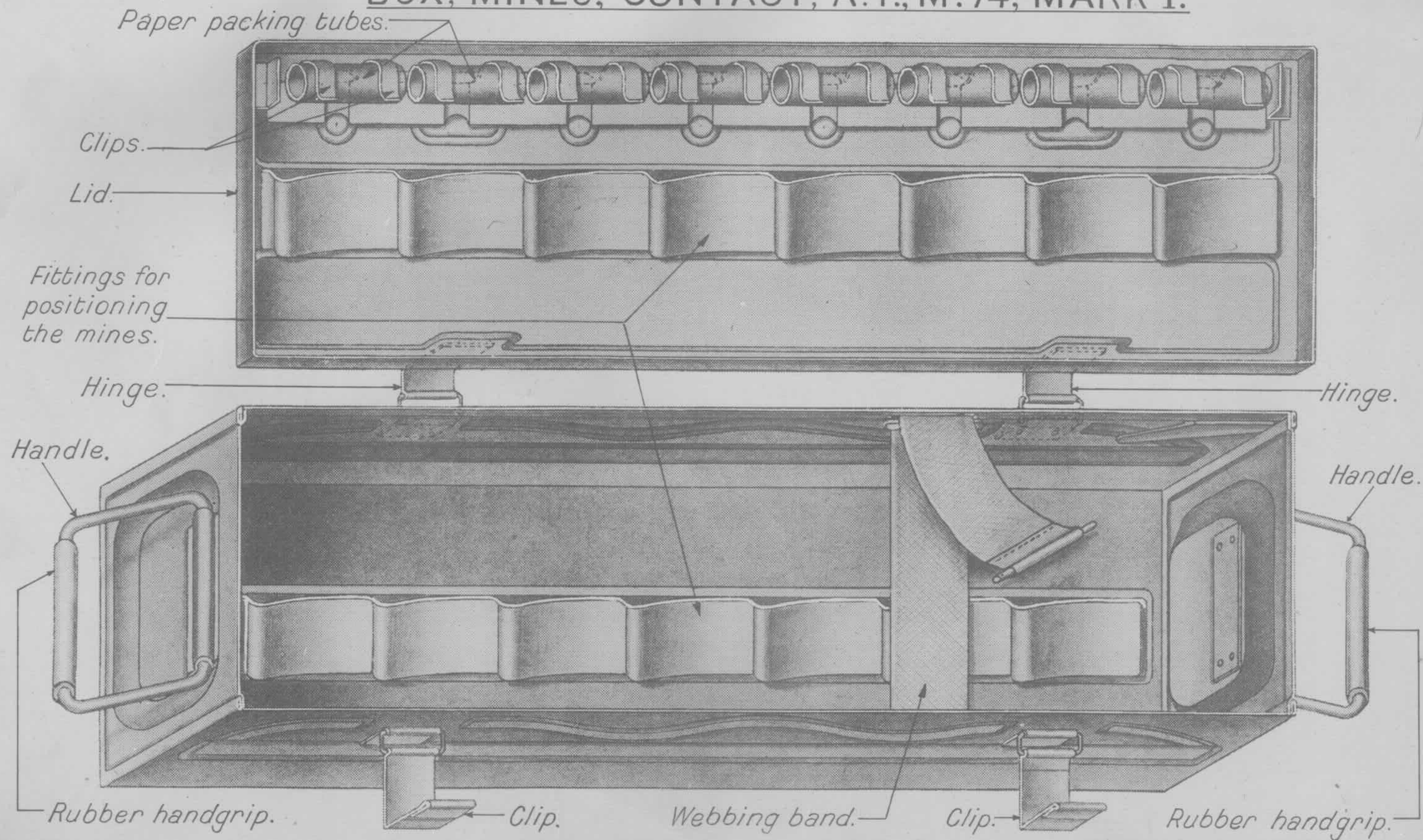
MINE, TRAINING, CONTACT, A.T., MARK I



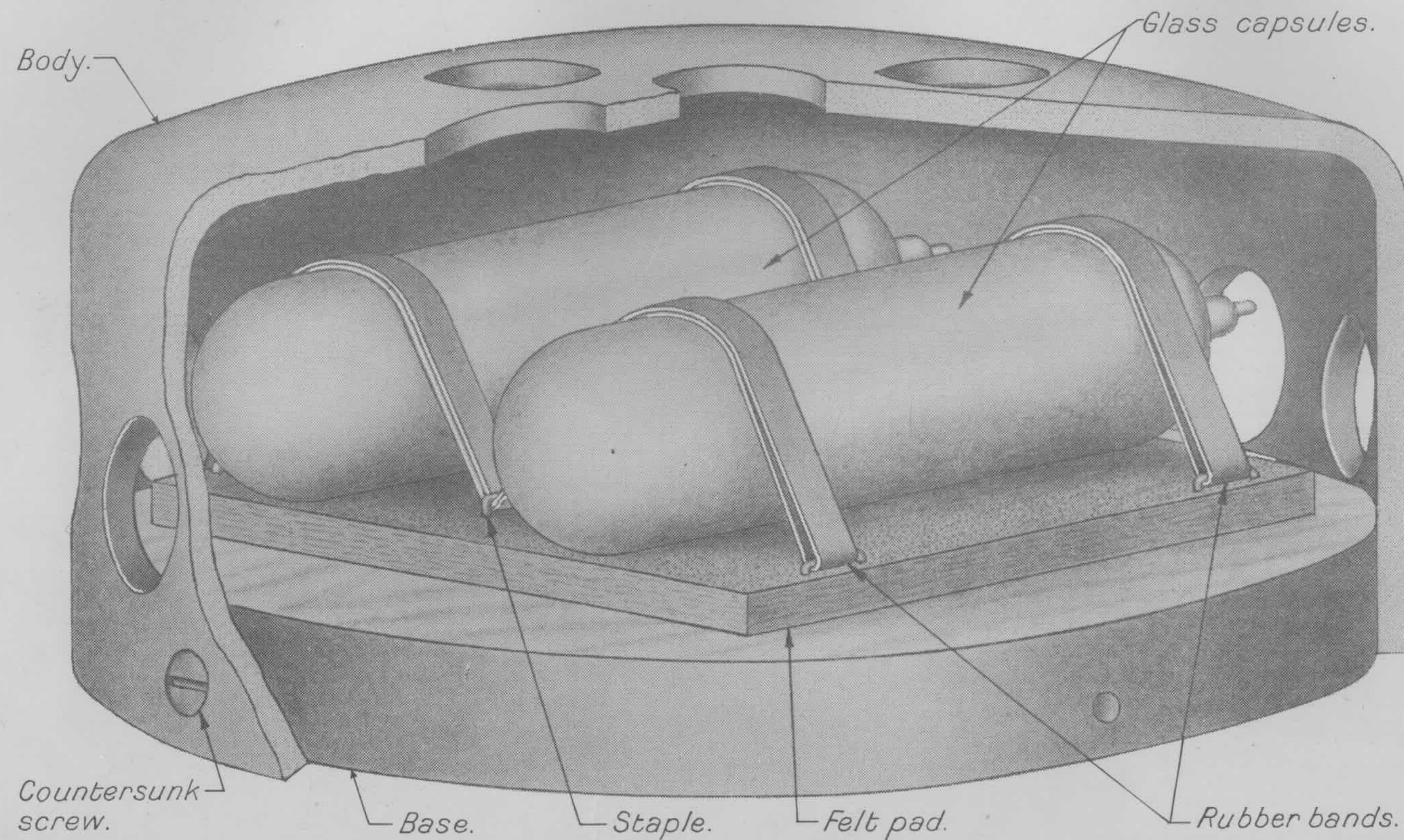
BOX, OUTFIT, MINE, CONTACT, A.T., M54, MARK I



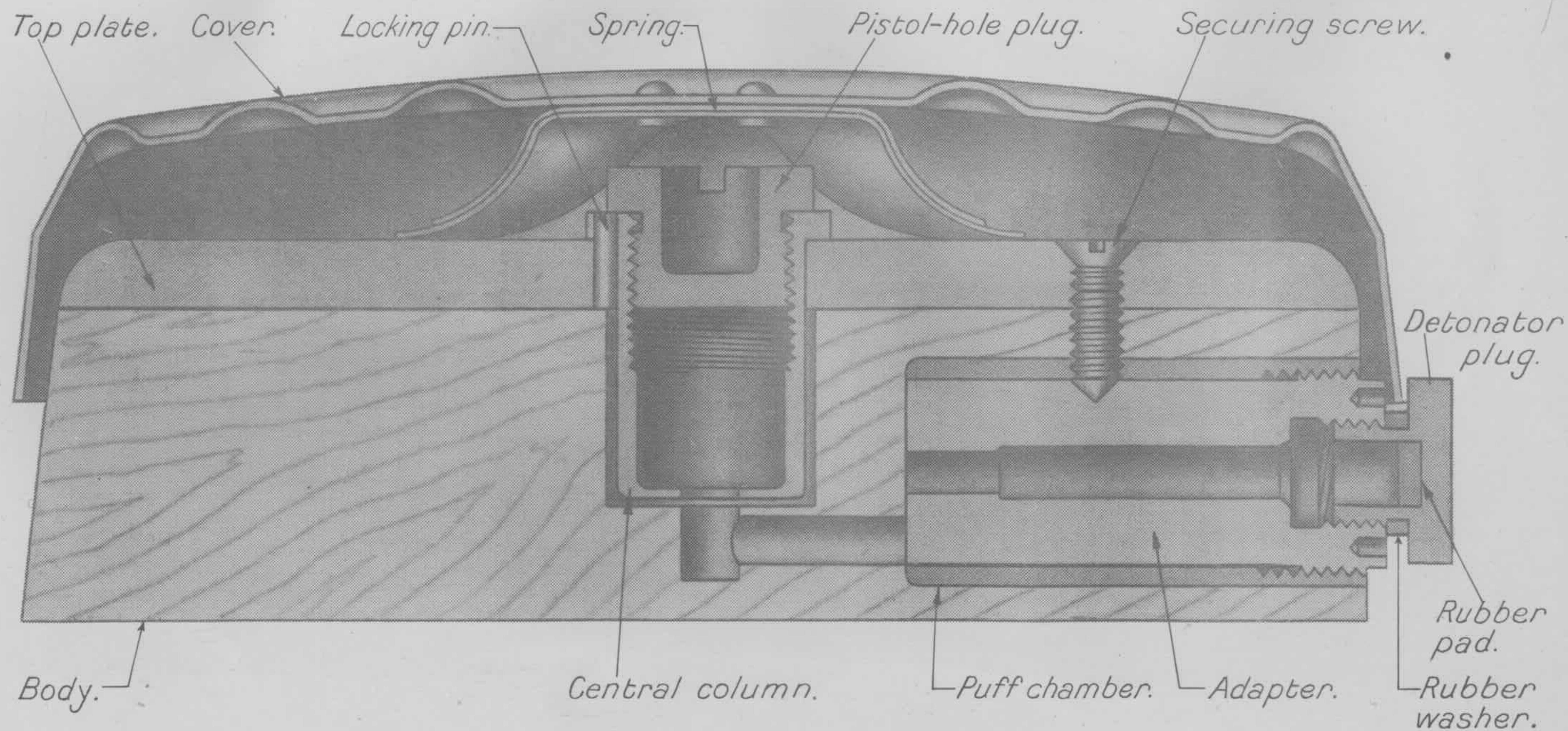
BOX, MINES, CONTACT, A.T., M.74, MARK I.



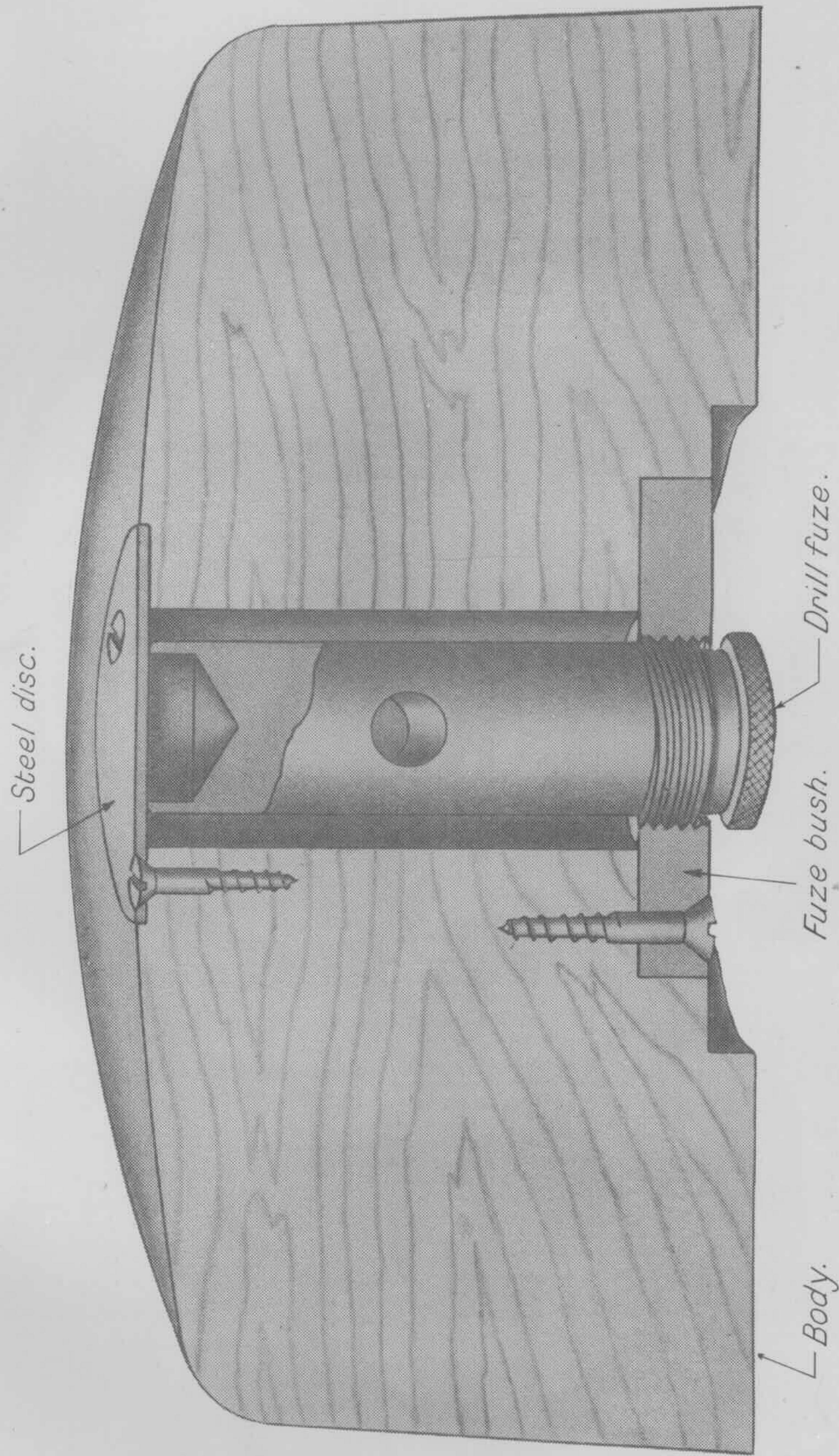
MINE, PRACTICE, CONTACT, A. T., MARK I.



MINE, DRILL, CONTACT, A.T., MARK I.

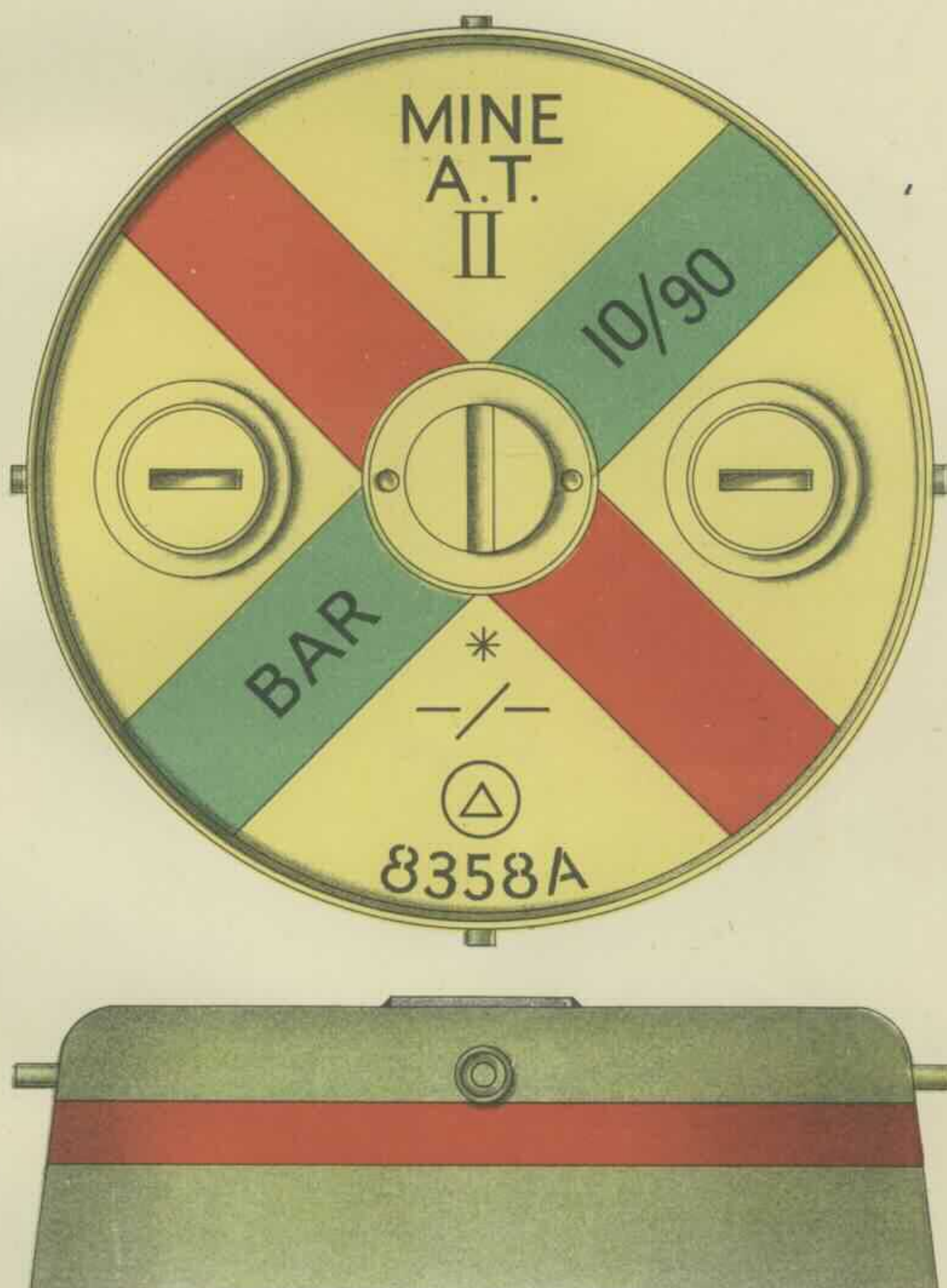


MINE, DRILL, CONTACT, A.T., MARK II.



MINE, CONTACT, A.T., MARK II.
MARKINGS.

INVERTED PLAN.



- * Monogram of firm or station filling.
- /— Date of filling. (month and year.)
- ⊙ Serial N° in ring distinguishing filled lot.