

AMMUNITION BULLETIN Nº 42

ITEMS 1087-1125

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MINISTRY OF SUPPLY
AMMUNITION BULLETIN NO. 42

RESTRICTED

ISSUED BY:-
CHIEF INSPECTOR OF ARMAMENTS.

Item No.

- 1107 Ammunition Packages, various, Marking.
- 1111 Box, ammunition, G.312 Mk.I. General purposes.
- 1096 Box, ammunition, S.A., H.31. Extension of use to pack M.L.3 inch Mortar primary cartridges.
- 1110 Boxes, C.206 and C.207. Additional marking.
- 1093 Cartridges, Drill, S.B. 4.2 inch Mortar S/L. Augmenting, Mks.II, III, IV and V.
- 1090 Cartridge, M.L. 3 in. Mortar, Augmenting, 280 Grns. Neonite, No.12. Packing and Labelling.
- 1087 Cartridges, Q.F. 6 pr. 7 cwt. Extension of use to Air Service.
- 1089 Cartridge, Q.F. 25 pr. Cordite, W.M.017. Intermediate Charge Increment. (For India).
- 1098 Cartridges, Q.F. 95 mm. Tank Howitzer.
- 1099 Cartridge, Q.F. 95 mm. S.P. and INF.How. 13 oz. 11 dr. Cordite, W.M.029.
- 1092 Container, Cartridge, No. 61 Mk.I. (Q.F. 6 pr. 7 cwt).
- 1091 Container, Cartridge, No.66 Mk.III: (Q.F. 2 pr. Mks.IX to XA Guns)
- 1097 Container, Cartridge, No.226 Mk.I. (Q.F. 40 mm.)
- 1112 Empty Shell in Transit. Use of Washers.
- 1104 Fuze, D.A. and Percussion, No.119B, Mk.IV. Addition of striker raising spring (FIG.440).
- 1105 Fuze, Mine, Contact, A.T. No. 3 Mk.IIIB. Fitting of solid top plate (FIG.441).
- 1109 Generator, Smoke, No.25 Mks. I and II. "OBSCULESCENT".
- 1106 Implements, Ammunition, Q.F. 75 mm.
- 1115 Nobel's Rifle Neonite. Extended system of Nomenclature.
- 1100 Projectiles, Practice, Q.F. 40 mm. Mks. VII and IX. Marking.
- 1114 Q.F. 40 mm. Bofors Ammunition. Extension of use to Air Service.
- 1113 S.A.A. 7.92 mm. Metal-cum-Fabric belts.
- 1088 Shell, H.E. Amatol Filling.
- 1094 Shell, H.E. Details of Method of Filling designs.
- 1095 Shell, Q.F., H.E. 40 mm. Spray painting.

Item No.

- 1101 Shell, Q.F. Smoke, B.E. 95 mm, S.P. and Inf.How. Mk.IA.
Extension of use to Tank How.
- 1103 Shell, Q.F. Smoke Emission, 3 in. How. Mk.I. "OBSCULESCENT".
- 1102 Tracer and Igniter, No.14. Shot A.P., Q.F., 6 pr.7 cwt.

ENEMY AMMUNITION

GERMAN

Item No.

- 1116 Fuze Kl. A.Z.23 (Fig. 442)
- 1117 Fuze A.Z. 23 umg 0,15 (Fig.443)
- 1118 Fuze A.Z. 23/28 v (0,1) (Fig.444)
- 1119 Fuze A.Z. 23/42 v (0,15) (Fig.445)
- 1120 Fuze Wgr.Z.36 (Fig 446)
- 1121 Fuze Dopp.Z.S/90 K. (Fig.447)
- 1122 Gaine 36 (Zdlg 36 Np) (Fig 448)
- 1123 Primer, electric C/23 (Fig. 449)
- 1124 20 cm Light Spigot Mortar H.E. Bomb (Figs.450 & 451)
- 1125 Fuze 3.7 cm Kpf.Z.Zerl.P. (Fig 452)

AMENDMENTS

Bulletin No.32, Item 671, line 4 :-
Delete "5.2 inch" and substitute ".52 inch"

Index to Bulletins No. 1 to 39.
Page 29, column headed "Detail", lines 28 and 30:-
Delete "38" in fuze designations and substitute "23".

1087. CARTRIDGES, Q.F. 6 pr. 7 cwt. EXTENSION OF USE TO AIR SERVICE.

Approval has been given for the extension of use of the following Land Service ammunition and all relevant stores to Air Service:-

Cartridges, Q.F., 6 pr. 7 cwt.
A.P. Shot, Mks.I, II, III and IV.
H.V., A.P. Shot, Mks.I & II.
H.V., A.P.C. Shot, Mk.I.
H.V., A.P.C.B.C., Mk.I.
Practice, flatheaded, Mks.I & II.
Practice, pointed, Mks.I, II, III & IV.
Drill

1088. SHELL, H.E. - AMATOL FILLING

Reference Bulletin No. 41, Item 1068. Method of filling designs DD(L)12481 and DD(L)9712 have also been amended to provide for Amatol 50/50 only.

1089. CARTRIDGE, Q.F., 25 pr. CORDITE, W.M.017. INTERMEDIATE CHARGE INCREMENT (FOR INDIA).

Cartridge, Q.F., 25 pr. Cordite, W.M. 017, Intermediate charge increment, Charge, 3 oz. 10 dr., Mk.I. in cambric bag, to Design DD(L)18674, for production in India only, has been approved.

1090. CARTRIDGE, M.L. 3 in. MORTAR, AUGMENTING, 280 Gms. NEONITE, No.12 PACKING AND LABELLING.

Reference Bulletin No. 36, Item 874, line 1, charge weight should be amended to read "280 grains".

In connection with the replacement of the present six 100 grain NC(Y) cartridges by four of the above cartridges, the following procedure for packing and labelling the 280 grain cartridge, in bulk, has been approved:-

- (i) One in three filled cartridges to be labelled.
- (ii) $\frac{1}{3}$ of the cartons packed in the transit box E.30 to contain labelled cartridges. These cartons will be marked "LABELLED". The remaining cartons in the box will contain unlabelled cartridges. (Each carton holds 135 cartridges).

1091. CONTAINER CARTRIDGE, NO. 66 Mk.III.

The abovementioned waterproofed paper container, to hold one Q.F. 2 pr. Mks.IX to XA guns, A.P.C.B.C. round, has been approved.

1092. CONTAINER, CARTRIDGE, NO.61 Mk.I.

The abovementioned paper container, to hold one round Q.F. 6 pr. 7 cwt. flatheaded shot, has been approved.

1093. CARTRIDGES, DRILL, S.B. M.L. 4.2 in. MORTAR, STREAMLINE, AUGMENTING, MKS. II, III, IV & V.

Drill cartridges, as above, for the 4.2" Mortar have been approved.

Mks.II & III represent the 450 grain N.R.N. No.9 cartridge. The celluloid container of the Mk.II is of the built up type while that of the Mk.III is of the moulded type. Containers are filled with sawdust and 2 labels L.314 (black print on white paper) printed with the word "DRILL" are secured inside, diametrically opposite, with approved adhesive.

Mks.IV & V. represent a 350 grain N.R.N. No.9 cartridge. The celluloid container of the Mk.IV is of the built up type while that of the Mk.V is of the moulded type. Containers are filled and labelled as for the Mks.II and III.

1094. H.E. SHELL, DETAILS OF M. OF F. DESIGNS

The following table, giving details of Method of Filling designs for H.E. Shell, is published for information:-

H.E. SHELL. DETAILS OF M.O.F. DESIGNS.

(P. 4)

CALIBRE	M. OF F. DESIGN N°	BURSTING CHARGE	CAVITY DEPTH.(INCHES)	EXPLODER CONTAINER	EXPLODER.	T.N.T. SURROUND	SMOKE AGENT	TRACER.	FUZE	REMARKS.
Q.F. 40 ^m	D.D.(L) 9578A	T.N.T. OR RDX/BWX 91/9	1.68	NO	3 Dr. T.N.T. PELLET.	NO	NO	N° 12	N° 251	
	D.D.(L) 11606	T.N.T. OR RDX/BWX 91/9	1.68	NO	3 Dr. T.N.T. PELLET.	NO	NO	N° 11	N° 251	
	D.D.(L) 13674	T.N.T.	STRAIGHT THROUGH CAVITY.	NO	2 4 Dr. T.N.T. PELLETS.	NO	NO	N° 11	N° 251	
	D.D.(L) 14279	RDX/BWX.	1.68	NO	3 Dr. T.N.T. PELLET.	NO	NO	N° 14	N° 251	
Q.F. 75 ^m	D.D.(L) 12113	AMATOL 50/50 OR 80/20	6.2	NO	2 oz. C.E. PELLETS	NO	1½ OR 1¼ oz SMOKE BOX.	NO	24/31 R.Y.G.	
Q.F. 77 ^m	D.D.(L) 16673	T.N.T.	3.6	NO	B	NO	NO	N° 13	N° 244	
Q.F. 95 ^m	D.D.(L) 11556	AMATOL 50/50, 80/20 OR, FOR INDIA, 60/40	9.2	YES	$\frac{B}{A}$	YES	1½ OR 1¼ oz SMOKE BOX	NO	N° 119	OBSOLESCE.
	D.D.(L) 16879	AMATOL 50/50 OR 80/20	9.2	YES	$\frac{B}{A}$	YES	1½ OR 1¼ oz SMOKE BOX.	NO	N° 119	ISSUED WITH TOP EXPLODER IN POSITION
	D.D.(L) 17865	T.N.T.	9.2	YES	$\frac{B}{A}$	NO	2¼ OR 1½ oz. SMOKE BOX.	NO	N° 119	
Q.F. 2 PR.	D.D.(L) 8747	T.N.T.	STRAIGHT THROUGH CAVITY	NO	3 Dr. T.N.T. PELLET.	NO	NO	N° 7 or 10	N° 243 or 246	
Q.F. 6 PR.	D.D.(L) 7499	T.N.T.	1.78	NO	F	NO	NO	N° 1 (FOR MK VT AND VI T. ONLY.	N° 242	
	D.D.(L) 9869	T.N.T.	1.98	NO	F	NO	NO	N° 1 (FOR MK. I T.)	N° 244	
	D.D.(L) 14697	T.N.T.	2.27	NO	R	NO	NO	N° 13	N° 244	
	D.D.(L) 15199	T.N.T.	1.68	NO	8 Dr. C.E. PELLET.	NO	NO	N° 14	N° 370	MK. III GUN.

H.E. SHELL. DETAILS OF M. OF F. DESIGNS (CONTINUED)

(P.5)

CALIBRE	M. OF F. DESIGN NO	BURSTING CHARGE	CAVITY DEPTH (INCHES)	EXPLODER CONTAINER	EXPLODER	T. N.T. SURROUND	SMOKE AGENT	TRACER	FUZE	REMARKS
Q.F. 12 PR. 12 CWT	DD(L) 861	LYDDITE	3.58	NO	5Dr. P.P.	NO	NO	NO	Nº 45 P.	
	DD(L) 12157	LYDDITE.	3.0	NO	5Dr. P.P.	NO	NO	NO	Nº 242 P. (WITH ADAPTER Nº 24)	
	DD(L) 13756	LYDDITE. (T.N.T. TOPPING)	4.4	NO	B. (T.N.T.)	NO	NO	YES	Nº 44	MK. IV N.T. SHELL
	DD(L) 13757	LYDDITE. (T.N.T. TOPPING)	3.95 (FOR ADAPTER Nº 2 MK. II) 3.7 (FOR ADAPTER Nº 2 MK. III)	NO	B. (T.N.T.)	NO	NO	NO	Nº 44	
Q.F. 17 PR.	DD(L) 16673	T.N.T.	3.6	NO	B.	NO	NO	Nº 13	Nº 244	
Q.F. 18 PR.	DD(L) 4197	AMATOL 80/20 (CENTRE THIRD T.N.T.)	6.2	NO	B A	NO	NO	NO	Nº 117 OR 119	
	DD(L) 4837(I)	T.N.T.	3.85	NO	B	NO	2¼ OR 1¼ OZ. SMOKE BOX	NO	Nº 117 OR 119	
	DD(L) 5221	T.N.T.	6.2	NO	B A	NO	NO	NO	Nº 117 OR 119	
	DD(L) 10346	AMATOL 50/50	6.2	NO	B OR A 2 C.E. PELLETS	NO	NO	NO	Nº 106 E, 117 OR 119	Nº 106 E. FUZE NOT USED WHEN EXPLODER IS C.E. PELLETS.
Q.F. 25 PR.	DD(L) 7389	AMATOL 60/40	6.2	NO	B A	NO	SMOKE MIXTURE STEMMED IN BOTTOM OF FILLING.	NO	Nº 117 OR 119	
	DD(L) 7517	T.N.T.	6.65	NO	B	NO	2¼ OR 1¼ OZ. SMOKE BOX.	NO	Nº 117 OR 119	
	DD(L) 9028	AMATOL 60/40 OR 50/50	6.65	NO	B	NO	1½ OR 1¼ OZ. SMOKE BOX.	NO	Nº 117, 117C, 119, 210 OR 222.	OBSOLESCE.
	DD(L) 14818	T.N.T.	6.2	NO	B A	NO	NO	Nº 16	NOT YET CLEAR	MK. II D.T. SHELL
B.L. 60 PR.	DD(L) 9562	AMATOL 50/50 OR 80/20	6.3	NO	B A	YES	50/50 SMOKE BOX SET IN FILLING. 80/20 SMOKE NOT YET INCORPORATED	NO	Nº 106 E.	OBSOLESCE

H.E. SHELL . DETAILS OF M. OF F. DESIGNS (CONTINUED.)

(P.6)

CALIBRE	M. OF F DESIGN N°	BURSTING CHARGE	CAVITY DEPTH.(INCHES)	EXPLODER CONTAINER	EXPLODER	T.N.T SURROUND	SMOKE AGENT.	TRACER.	FUZE	REMARKS.
B.L. 60 PR. CONT:-	D.D.(L) 9566	T.N.T.	6.3	YES	$\frac{B}{A}$	NO	NO	NO	N° 106 E.	
	D.D.(L) 11557	AMATOL 50/50 OR 80/20	9.2	YES	$\frac{B}{A}$	YES	1/2 OR 1/4 OZ SMOKE BOX.	NO	N° 106 E, 117, 117C, OR 119.	OBSOLESCE.
	D.D.(L) 16879	AMATOL 50/50 OR 80/20	9.2	YES	$\frac{B}{A}$	YES	1/2 OR 1/4 OZ SMOKE BOX.	NO	N° 106 E, 117, 117C, OR 119	ISSUED WITH TOP EXPLODER IN POSITION.
Q.F. 3 IN. 20 CWT	D.D.(L) 8028	T.N.T.	6.27	NO	8 DR. C.E. PELLET OR EXPR. "Y"	NO	2 1/2 OR 1/4 OZ. SMOKE BOX.	NO	N° 199 GAINE N° 11	SUFFIX LETTER 'A' ADDED TO DESIGN N° WHEN T.N.T. EXPLODER IS USED IN LIEU OF SMOKE BOX.
	D.D.(L) 12074	AMATOL 50/50	6.27	NO	3 DR. C.E. PELLET OR EXPR. "Y"	NO	1/2 OR 1/4 OZ. SMOKE BOX	NO	N° 199 GAINE N° 11	— Do —
Q.F. 3 IN. HOW.	D.D.(L) 7476	AMATOL 80/20 OR 70/30	6.2	NO	$\frac{B}{A}$	NO	NO	NO	N° 106 E OR 119	
	D.D.(L) 7712	T.N.T.	3.85	NO	B	NO	NO	NO	N° 106 E OR 119	
Q.F. 3.7 IN. HOW.	D.D.(L) 9561	AMATOL 50/50 OR 80/20	6.3	YES	$\frac{B}{A}$	YES	50/50:- SMOKE COMPOSITION IN BOX SET IN FILLING. 80/20:- SMOKE MIXTURE INCORPORATED.	NO	N° 106 E.	OBSOLESCE.
	D.D.(L) 9565	T.N.T.	6.3	YES	$\frac{B}{A}$	NO	NO	NO	N° 106 E.	
	D.D.(L) 11556	AMATOL 50/50, 80/20 OR FOR INDIA, 60/40	9.2	YES	$\frac{B}{A}$	YES	1/2 OR 1/4 OZ SMOKE BOX.	NO	N° 106 E, 117, 117C, OR 119	
	D.D.(L) 12479	AMATOL 50/50	6.2	NO	$\frac{B}{A}$	YES	NO	NO	N° 106 E.	DESIGN PROVIDES THAT PAPER TUBE LINING CAVITY MAY BE OPEN AT LOWER END.

H.E. SHELL. DETAILS OF M. OF F. DESIGNS. (CONTINUED)

(P. 7.)

CALIBRE	M. OF F. DESIGN N°	BURSTING CHARGE	CAVITY DEPTH (INCHES)	EXPLODER CONTAINER	EXPLODER	T.N.T SURROUND	SMOKE AGENT.	TRACER	FUZE	REMARKS.
Q.F. 3.7 IN. GUN.	D.D.(L) 8029	T.N.T.	6.3	NO	26 Dr. C.E. PELLET OR EXPR. "W"	NO	2¼ OR 1¼ OZ. SMOKE BOX.	NO	N° 199, 207 OR 209. GAINE N° II	SUFFIX LETTER "A" ADDED TO DESIGN N° WHEN T.N.T. EXPLODER IS USED IN LIEU OF SMOKE BOX. SUFFIX LETTER "B" ADDED TO DESIGN N° WHEN TUBE IS CUT AND SMOKE BOX IS OMITTED.
	D.D.(L) 9716	AMATOL 50/50	3.6	NO	26 Dr. C.E. PELLET.	YES	2½ OZ. SMOKE BOX SET IN FILLING.	NO	N° 199 WITH GAINÉ N° II	FOR INDIA.
	D.D.(L) 12056	AMATOL 50/50	6.3	NO	26 Dr. C.E. PELLET OR EXPR. "W"	NO	1½ OR 1¼ OZ. SMOKE BOX.	NO	N° 199, 207 OR 209. GAINE N° II	OBSOLESCE. SUFFIX LETTER "A" ADDED TO DESIGN N° WHEN T.N.T. EXPR. IS USED IN LIEU OF SMOKE BOX. SUFFIX LETTER "B" ADDED TO DESIGN N° WHEN TUBE IS CUT AND SMOKE BOX OMITTED.
	D.D.(L) 12568	RDX/TNT. 60/40	6.3	NO	"W"	YES	2¼, 1½ OR 1¼ OZ. SMOKE BOX.	NO	N° 199, 207 OR 209. GAINE N° II	
	D.D.(L) 13456	T.N.T. OR AMATOL 50/50	3.6	NO	26 Dr. C.E. PELLET OR EXPR. "W"	NO	NO	NO	N° 199, 207 OR 209. GAINE N° II	OBSOLESCE.
	D.D.(L) 14261	T.N.T. OR AMATOL 50/50	6.3	NO	26 Dr. C.E. PELLET OR EXPR. "W"	NO	2¼, 1½ OR 1¼ OZ. SMOKE BOX. (2¼ OZ. NOT USED IN AMATOL FILLED SHELL.)	NO	N° 208	
Q.F. 4.5 IN. HOW.	D.D.(L) 9561	AMATOL 50/50 OR 80/20	6.3	YES	$\frac{B}{A}$	YES	50/50:- SMOKE COMPOSITION IN BOX SET IN FILLING. 80/20:- SMOKE MIXTURE INCORPORATED	NO	N° 106E, 117 OR 119	OBSOLESCE.

H.E. SHELL. DETAILS OF M. OF F. DESIGNS. (CONTINUED)

(P.8.)

CALIBRE	M. OF F DESIGN N°	BURSTING CHARGE	CAVITY DEPTH (INCHES)	EXPLODER CONTAINER	EXPLODER	T.N.T. SURROUND	SMOKE AGENT	TRACER	FUZE	REMARKS.
3" 4.5 IN. HOW CONT.:-	D.D.(L) 9565	T.N.T.	6.3	YES	$\frac{B}{A}$	NO	NO	NO	N° 106E, 117 OR 119	
	D.D.(L) 11556	AMATOL 50/50, 80/20 OR FOR INDIA, 60/40	9.2	YES	$\frac{B}{A}$	YES	1½ OR 1¼ OZ. SMOKE BOX.	NO	N° 106E, 117, 117C OR 119.	OBSOLESCE.
	D.D.(L) 12479	AMATOL 50/50	6.2	NO	$\frac{B}{A}$	YES	NO	NO	N° 106E, 117 OR 119	DESIGN PROVIDES THAT PAPER TUBE LINING CAVITY MAY BE OPEN AT LOWER END.
	D.D.(L) 16879	AMATOL 50/50, 80/20 OR, FOR INDIA, 60/40	9.2	YES	$\frac{B}{A}$	YES	1½ OR 1¼ OZ. SMOKE BOX.	NO	N° 106E, 117, 117C OR 119	ISSUED WITH TOP EXPLODER IN POSITION.
3" 4.5 IN. GUN	D.D.(L) 8029	T.N.T.	6.3	NO	26 Dr. C.E. PELLET OR EXPR. "W"	NO	2¼ OR 1¼ OZ. SMOKE BOX.	NO	N° 199, 207 OR 209 FOR A.A., OR 230 P. FOR ANTI-SHIP. GAINE N° II.	
	D.D.(L) 12056	AMATOL 50/50	6.3	NO	26 Dr. C.E. PELLET OR EXPR. "W"	NO	1½ OR 1¼ OZ. SMOKE BOX	NO	N° 207 OR 209 FOR A.A., OR 230 P. FOR ANTI-SHIP. GAINE N° II	OBSOLESCE. SUFFIX LETTER "A" ADDED TO DESIGN N° WHEN T.N.T. EXPLODER IS USED IN LIEU OF SMOKE BOX. SUFFIX LETTER "B" ADDED TO DESIGN N° WHEN TUBE IS CUT AND SMOKE BOX OMITTED.
	D.D.(L) 12568	RDX./T.N.T. 60/40	6.3	NO	"W"	YES	2¼, 1½ OR 1¼ OZ. SMOKE BOX.	NO	N° 207 OR 209 FOR AA, OR 230 P. FOR ANTI-SHIP. GAINE N° II.	
	D.D.(L) 13456	T.N.T. OR AMATOL 50/50	3.6	NO	26 Dr. C.E. PELLET OR EXPR. "W"	NO	NO	NO	N° 207 OR 209 FOR A.A., OR 230 P. FOR ANTI-SHIP GAINE N° II	
	D.D.(L) 14261	T.N.T. OR AMATOL 50/50	6.3	NO	26 Dr. C.E. PELLET OR EXPR. "W"	NO	2¼, 1½ OR 1¼ OZ. SMOKE BOX. (2¼ OZ. NOT USED IN SHELL FILLED AMATOL.)	NO	N° 208	

H.E. SHELL. DETAILS OF M. OF F. DESIGNS. (CONTINUED)

(P. 9.)

CALIBRE	M. OF F. DESIGN N°	BURSTING CHARGE	CAVITY DEPTH (INCHES)	EXPLODER CONTAINER	EXPLODER	T.N.T. SURROUND	SMOKE AGENT.	TRACER	FUZE.	REMARKS.
B.L. 4.5 IN. GUN. CONT?:-	D.D. (L) 7342	T.N.T.	6.65	NO	B	NO	2 1/4 OR 1/4 OZ. SMOKE BOX.	NO	N° 117 OR 119	
	D.D. (L) 7343C	AMATOL 70/30 OR 50/50	6.3	YES	B/A	YES	50/50 ONLY:- SMOKE COMPOSITION IN BOX SET IN FILLING.	NO	N° 117 OR 119	OBSOLESCE.
	D.D. (L) 11561	AMATOL 50/50, 70/30 OR 80/20	9.2	YES	B/A	YES	1 1/2 OR 1/4 OZ SMOKE BOX	NO	N° 119	OBSOLESCE.
	D.D. (L) 16879	AMATOL 50/50, 70/30 OR 80/20	9.2	YES	B/A	YES	1 1/2 OR 1/4 OZ. SMOKE BOX.	NO	N° 119	ISSUED WITH TOP EXPLODER IN POSITION.
Q.F. 5.25 IN. GUN.	D.D. (L) 14261	T.N.T. OR AMATOL 50/50	6.3	NO	26 DR. C.E. PELLET. OR EXPR. "W"	NO	2 1/4, 1/2 OR 1/4 OZ. SMOKE BOX. (2 1/4 OZ. NOT USED IN AMATOL FILLED SHELL.)	NO	N° 208	
Q.F. 5.5 IN. GUN.	D.D. (L) 10226	AMATOL 50/50 OR 70/30	6.3	YES	B/A	YES	NO	NO	N° 119 OR 231	OBSOLESCE 100 LB. MK. I.D. SHELL
	D.D. (L) 10226A	AMATOL 50/50 OR 70/30	6.3	YES	B/A	YES	50/50:- SMOKE BOX SET IN FILLING. 70/30:- SMOKE MIXTURE STEMMED IN BOTTOM OF CAVITY.	NO	N° 119 OR 231	OBSOLESCE.
	D.D. (L) 10911	AMATOL 50/50, 70/30, 80/20 OR FOR INDIA, 60/40	9.2	YES	B/A	YES	1 1/2 OR 1/4 OZ. SMOKE BOX.	NO	N° 119 OR 231	OBSOLESCE. 100 LB. MK. I.D. AND III D. SHELL.
	D.D. (L) 16879	AMATOL 50/50, 70/30 OR 80/20 OR FOR INDIA. 60/40	9.2	YES	B/A	YES	1 1/2 OR 1/4 OZ. SMOKE BOX.	NO	N° 119 OR 231	100 LB. MK. I.D. AND III D. SHELL. ISSUED WITH TOP EXPLODER IN POSITION.
	D.D. (L) 16879	AMATOL 50/50	9.2	YES	B/A	YES	1 1/2 OR 1/4 OZ. SMOKE BOX	NO	N° 117, 119, 213 OR 222	80 LB. MK. I.D. AND II D. SHELL ISSUED WITH TOP EXPLODER IN POSITION.
B.L. 6 IN. HOW.	D.D. (L) 8386	T.N.T.	6.3	YES	B/A	NO	NO	NO	N° 117, 119 OR 231	100 LB. S/L SHELL.
	D.D. (L) 8387	AMATOL 70/30, 72/28 OR 50/50	6.3	YES	B/A	YES	50/50:- SMOKE COMPOSITION IN BOX SET IN FILLING.	NO	N° 117, 119 OR 231	OBSOLESCE. 100 LB. S/L SHELL.

H.E. SHELL . DETAILS OF M. OF F. DESIGNS (CONTINUED.)

(P.10)

CALIBRE	M. OF F. DESIGN N°	BURSTING CHARGE	CAVITY DEPTH(INCHES)	EXPLODER CONTAINER	EXPLODER	T.N.T. SURROUND	SMOKE AGENT.	TRACER	FUZE	REMARKS.
B.L. 2 IN. HOW. CONT°	DD (L) 11562	AMATOL 70/30, 72/28 OR 50/50	9.2	YES	$\frac{B}{A}$	YES	1½ OR 1¼ OZ. SMOKE BOX.	NO	N° 117, 117C, 119 OR 231	OBSOLESCE. 100 LB. S/L SHELL.
	DD (L) 12481	AMATOL 50/50 OR 70/30	6.2	NO	$\frac{B}{A}$	YES	NO	NO	N° 117, 117C, 119 OR 231	DESIGN PROVIDES THAT WAXED PAPER TUBE LINING CAVITY MAY BE OPEN AT LOWER END.
	DD (L) 16879	AMATOL 50/50, 80/20	9.2	YES	$\frac{B}{A}$	YES	1½ OR 1¼ OZ. SMOKE BOX	NO	N° 106E, 119 OR 231	ALL MARKS EXCEPT S/L ISSUED WITH TOP EXPLODER IN POSITION.
	DD (L) 16879	AMATOL 50/50, 70/30 OR 72/28	9.2	YES	$\frac{B}{A}$	YES	1½ OR 1¼ OZ. SMOKE BOX.	NO	N° 117, 117C, 119 OR 231	100 LB. S/L SHELL. ISSUED WITH TOP EXPLODER IN POSITION.
B.L. 2 IN. GUN.	DD (L) 4052 (1)	T.N.T. OR LYDDITE	4.62	NO	26 Dr. C.E. PELLET FOR T.N.T. FILLING OR, 26 Dr. T.N.T. PELLET FOR LYDDITE FILLING.	NO	NO	NO	N° 230 OR 230 P WITH GAINE N° 9 OR 10 OR N° 45 P FUZE AND ADAPTER N° 23 OR N° 119 FUZE.	
	DD (L) 9562	AMATOL 50/50 OR 80/20	6.3	YES	$\frac{B}{A}$	YES	50/50:- SMOKE COMPOSITION IN BOX SET IN FILLING 80/20:- SMOKE MIXTURE INCORPORATED.	NO	N° 119 OR 231	
	DD (L) 9566	T.N.T.	6.3	YES	$\frac{B}{A}$	NO	NO	NO	N° 119 OR 231	
	DD (L) 11557	AMATOL 50/50 OR 80/20	9.2	YES	$\frac{B}{A}$	YES	1½ OR 1¼ OZ. SMOKE BOX.	NO	N° 106E, 119 OR 231	OBSOLESCE.
	DD (L) 11731	T.N.T. OR LYDDITE	4.62	NO	26 Dr. C.E. PELLET FOR T.N.T. FILLING OR 26 Dr. T.N.T. PELLET FOR LYDDITE FILLING.	NO	NO	NO	N° 230 P. WITH GAINE N° 11. (MK. III GAINÉ FOR SHELL FILLED LYDDITE)	FOR AUSTRALIA.

H.E. SHELL. DETAILS OF M. OF F. DESIGNS. (CONTINUED)

(P. II.)

CALIBRE	M OF F DESIGN N°	BURSTING CHARGE	CAVITY DEPTH (INCHES)	EXPLODER CONTAINER	EXPLODER	T.N.T SURROUND	SMOKE AGENT.	TRACER	FUZE.	REMARKS.
BL 6 IN GUN. CONT'.	D.D. (L) 16879	AMATOL 50/50, 80/20	9.2	YES	$\frac{B}{A}$	YES	1/2 OR 1/4 OZ. SMOKE BOX	NO	N° 106E, 119 OR 231	MKS. XXVI/XXB AND XXVIII ISSUED WITH TOP EXPLODER IN POSITION.
BL 7.2 IN HOW.	D.D. (L) 11935	AMATOL 50/50 OR 72/28	6.3	YES	$\frac{B}{A}$	YES	NO	NO	N° 117, 117C, 119 OR 231	OBSOLESCE.
	D.D. (L) 13005	AMATOL 50/50, 72/28 OR 80/20	9.2	YES	$\frac{B}{A}$	YES	1/2 OR 1/4 OZ. SMOKE BOX	NO	N° 117, 117C, 119 OR 231	OBSOLESCE.
	D.D. (L) 16362	AMATOL 50/50 OR 70/30	9.2	YES	$\frac{B}{A}$ $\frac{Z}{Z}$	YES	NO	NO	N° 117, 117C, 119 OR 231	OBSOLESCE.
	D.D. (L) 16817	AMATOL 50/50, 80/20, 72/28	6.3	YES	$\frac{B}{A}$	YES	NO	NO	N° 117, 117C, 119 OR 231	ISSUED WITH TOP EXPLODER IN POSITION.
BL 7.5 IN GUN	D.D. (L) 12554	T.N.T.	4.62	NO	26 DR. CE. PELLET.	NO	NO	NO	N° 230 P. GAINÉ N° 9.	
BL 9.2 IN GUN	D.D. (L) 9564	AMATOL 50/50 80/20 OR 72/28	6.2	YES	$\frac{B}{A}$	YES	9564:- 50/50:- SMOKE BOX SET IN FILLING 80/20:- SMOKE MIXTURE INCORPORATED MK. XVII B. ONLY. 72/28:- SMOKE MIXTURE INCORPORATED, MK. XVIII C ONLY. 9564 A:- 80/20:- SMOKE MIXTURE INCORPORATED. 9564 B:- 80/20:- SMOKE MIXTURE IN BAG INSERTED IN BOTTOM OF CAVITY.	NO	N° 117 OR 119	OBSOLESCE.

H.E. SHELL. DETAILS OF M. OF F. DESIGNS. (CONTINUED.)

(P.12.)

CALIBRE	M. OF F DESIGN NO	BURSTING CHARGE	CAVITY DEPTH(INCHES)	EXPLODER CONTAINER	EXPLODER	T.N.T SURROUND	SMOKE AGENT	TRACER	FUZE	REMARKS.
BL 9-2 IN. GUN CONT:-	DD (L) 9568	T.N.T.	3-2	YES	$\frac{B}{A}$	NO	NO	NO	Nº 117, 117C, 119 OR 231	
	DD (L) 11559	AMATOL 50/50 OR 80/20. AMATOL 72/28 (MK. XVIII C. ONLY)	9-2	YES	$\frac{B}{A}$	YES	1½ OR ¼ OZ. SMOKE BOX.	NO	Nº 117, 117C, 119, 210, 222 OR 231	OBSOLESCE.
	DD (L) 16362	AMATOL 50/50 OR 80/20	9-2	YES	$\frac{B}{A/Z}$	YES	NO	NO	Nº 117, 117C, 119, 210, 222 OR 231	ALL MARKS EXCEPT XVIII C OBSOLESCE.
	DD (L) 16362	AMATOL 50/50 80/20, 72/28	9-2	YES	$\frac{B}{A/Z}$	YES	NO	NO	Nº 117, 117C, 119, 210, 222 OR 231	MK. XVIII C ONLY. OBSOLESCE.
	DD (L) 16817	AMATOL 50/50 OR 80/20	6-3	YES	$\frac{B}{A}$	YES	NO	NO	Nº 117, 117C, 119, 210, 222 OR 231	ALL MARKS EXCEPT XVIII C. ISSUED WITH TOP EXPLODER IN POSITION.
	DD (L) 16817	AMATOL 50/50, 80/20 OR 72/28	6-3	YES	$\frac{B}{A}$	YES	NO	NO	Nº 117, 117C, 119, 210, 222 OR 231	MK. XVIII C ONLY. ISSUED WITH TOP EXPLODER IN POSITION.
BL 9-2 IN. HOW.	DD (L) 9563	AMATOL 50/50 OR 80/20	6-3	YES	$\frac{B}{A}$	YES	SMOKE BOX SET IN FILLING.	NO	Nº 106E, 119 OR 231	
	DD (L) 9567	T.N.T.	6-3	YES	$\frac{B}{A}$	NO	NO	NO	Nº 106E, 119 OR 231	
	DD (L) 11558	AMATOL 50/50 OR 80/20	9-2	YES	$\frac{B}{A}$	YES	1½ OR ¼ OZ. SMOKE BOX.	NO	Nº 106E, 119 OR 231	OBSOLESCE.
	DD (L) 11618	AMATOL 72/28	9-2	YES	$\frac{B}{A}$	YES	1½ OR ¼ OZ. SMOKE BOX.	NO	Nº 117, 119 OR 231	OBSOLESCE.
	DD (L) 16362	AMATOL 50/50 OR 80/20	9-2	YES	$\frac{B}{A/Z}$	YES	NO	NO	Nº 106E, 119 OR 231	ALL MARKS EXCEPT 315 LB MK. I.D. OBSOLESCE.
	DD (L) 16362	AMATOL 72/28	9-2	YES	$\frac{B}{A/Z}$	YES	NO	NO	Nº 117 OR 231	315 LB. MK. I.D. ONLY. OBSOLESCE.
	DD (L) 16817	AMATOL 50/50 OR 80/20	6-3	YES	$\frac{B}{A}$	YES	NO	NO	Nº 106E, 119 OR 231	ALL MARKS EXCEPT 315 LB. MK. I.D. ISSUED WITH TOP EXPLODER IN POSITION.
	DD (L) 16817	AMATOL 72/28	6-3	YES	$\frac{B}{A}$	YES	NO	NO	Nº 117 OR 231	315 LB. MK. I.D. ONLY. ISSUED WITH TOP EXPLODER IN POSITION.

H.E. SHELL : DETAILS OF M. OF F. DESIGNS. (CONTINUED)

(P.13)

CALIBRE	M. OF F. DESIGN N°	BURSTING CHARGE	CAVITY DEPTH(INCHES)	EXPLODER CONTAINER	EXPLODER	T. N. T. SURROUND	SMOKE AGENT.	TRACER	FUZE	REMARKS.
B.L. 12" HOW	D.D.(L) 11559	AMATOL 50/50 OR 80/20 (HOT MIXED)	9.2	YES	$\frac{B}{A}$	YES	$\frac{1}{2}$ OR $\frac{1}{4}$ OZ. SMOKE BOX.	NO	No. 117, 117 C, 119 OR 231.	
	D.D. (L) 11559 A	AMATOL 80/20 (COLD PRESSED)	9.2	YES	$\frac{B}{A}$	YES	$\frac{1}{2}$ OR $\frac{1}{4}$ OZ. SMOKE BOX.	NO	No. 117, 117 C, 119 OR 231	OBSOLESCE.
	D.D. (L) 16362	AMATOL 50/50 OR 80/20	9.2	YES	$\frac{B}{A}$ $\frac{Z}{Z}$	YES	NO	NO	No. 117, 117 C, 119 OR 231	OBSOLESCE.
	D.D.(L) 16817	AMATOL 50/50 OR 80/20	6.3	YES	$\frac{B}{A}$	YES	NO	NO	No. 117, 117 C, 119 OR 231	ISSUED WITH TOP EXPLODER IN POSITION.
B.L. 18" HOW	D.D.(L) 10927	AMATOL 50/50 WITH STEEL CONTAINER IN NOSE FILLED T.N.T.	DEPTH OF STEEL CONTAINER IN MAIN FILLING	DEPTH OF EXPLODER CAVITY IN STEEL CONTAINER		EXPLODER	NO	NO	No. 231	EXPLODERS WRAPPED IN PAPER TUBE AND INSERTED IN EXPLODER CAVITY OF STEEL CONTAINER.
			9.8" FOR MK. I.D. OR 10.3" FOR MK II D.	6.2"		$\frac{B}{A}$				

1095. SHELL, Q.F., H.E. 40 mm. - SPRAY PAINTING

Approval has been given for spray painting of the abovementioned H.E. shell, including the driving band.

1096. BOX, AMMUNITION, S.A.H. 31. EXTENSION OF USE TO PACK M.L. 3 in. MORTAR PRIMARY CARTRIDGES

The abovementioned box has been approved for packing bulk supplies of M.L. 3 in. Mortar primary cartridges (90 Grains smokeless) for issue overseas for replacement purposes. The box holds 294 cartridges which are packed in layers separated by millboard packing strips.

Stencilled markings, as under, are applied to the box, stowage dimensions of which are 21.15 x 9.15 x 10.2 inches :-

On both sides. Number, nature and Mark of cartridges.
Filled Lot number
Date of filling (month and year)

On both ends. Nature of cartridges.
Filled Lot number.

1097. CONTAINER, CARTRIDGE, NO. 226 MK.I FOR Q.F. 40 mm.

This cylindrical container, for use in the Far East, is designed to pack 1 round Q.F. 40 mm., H.E., A.P. or Practice. The body is of waterproof paper board fitted internally at one end with a collar secured to the body with a suitable adhesive, and the end closed by a black plate cap.

The rim of the opposite end is fitted with a steel collar and two semi-circular holes, $\frac{1}{2}$ " in radius, are cut out of the body to facilitate removal of the cartridge. This end of the container is closed by a chipboard washer and a steel cap, the latter fitting over the container body.

External dimensions are Length 18.45 inches, Diameter 2.66 inches.

1098. CARTRIDGES, Q.F. 95 mm. TANK HOWITZER.

The following method of filling designs for the propellant charge of this fixed Q.F. ammunition have been approved to date :-

(a) FOR H.E. SHELL

DD(L)16011 (Type 1).

Full Charge. 12 oz. 4 dr. cordite W.M.042. ("HE" stencilled on base of cartridge case.)

DD(L)16011 (Type 4)

Reduced charge. 3 oz. 8 dr. cordite W.T. or W.M.T. 154-136. ("HE" "RED" stencilled on base of cartridge case).

(b) FOR SMOKE EMISSION SHELL

DD(L)16011 (Type 2). 1800 grains cordite WT or WMT. 154-136, or MDT 15-13. (SMK" stencilled on base of cartridge case).

(c) FOR H.E.A.T. SHELL

DD(L)16011 (Type 3). 1 lb. 3 oz. cordite WM.042 ("HE/AT" stencilled on base of cartridge case).

The Primer, percussion, No.1 is used with each of the above designs. The cartridge case is attached to the projectile by coning and four indents, the body of projectile in rear of the driving band being coated with an approved cement.

Packing

Box, ammn. C.306, Mk.I. This wood box holds 2 rounds H.E., each in Container Ctge. No.72. Stowage dimensions are 27.2 x 11.375 x 6.45 inches.

Box, ammn. C.307, Mk.I. This wood box holds 2 rounds smoke emission or H.E.A.T., each in Container, Ctge. No.88. Stowage dimensions are 22.95 x 11.375 x 6.45 inches.

Box, ammn. C.308, Mk.I. This steel box holds 2 rounds H.E., each in Container, Ctge. No.72 or 212. Stowage dimensions are 27.75 x 11.5 x 6.5 inches.

1099. CARTRIDGE, Q.F. 95 mm. S.P. & INF. HOWITZER, 13 oz.11 dr. CORDITE WM.029.

This cartridge is filled to design DD(L)15521. The propellant charge is contained in 3 cambric bags as follows:-

No.1 Section (Red bag)	3 oz.12 dr.	Cordite W.M.029....	Charge 1	} 2 } } 3
" 2 " (White bag)	4 oz.13 dr.	" " "	Charge	
" 3 " (Blue bag)	5 oz. 2 dr.	" " "	Charge	
	13 oz.11 dr.			

No.1 Section, positioned in the centre of the cartridge case, is cylindrical in shape and the cordite is arranged in the bag in two bundles, one surrounding the other, to form a recess for the primer. A skirt formed at the base of the bag is well shellacked to the interior of the base of the cartridge case.

Nos. 2 and 3 sections are flat rectangular shaped bags of loose cordite and are positioned around No.1 section. The bag of No.3 section is provided with a small becket to facilitate removal.

The mouth of the cartridge case is closed by a glazedboard cup and the primer used is the Primer, percussion, No. 1.

Marking.

Each bag is stencilled with the empty Contractor's initials or recognised trade mark; Mark and Designation; Weight of increment; Nature and size of propellant; Lot No. of propellant; Monogram of filling station or initials of firm filling; Date of Filling (month and year). The base of the cartridge case bears the usual stampings.

Packing.

Box, ammn. C.316 Mk.I. This wood box holds 2 cartridges, each in a tinned plate cylinder No.239, and 2 shell H.E. or Smoke, B.E. Stowage dimensions are 26.5 x 11.625 x 7.25 inches.

Box, ammn. C.318, Mk.I. This wood box holds 2 cartridges, each in tinned plate cylinder No.239, and 2 shell H.E.A.T. Stowage dimensions are 20.75 x 11.625 x 7.375 inches.

1100. PROJECTILES, PRACTICE, Q.F. 40 mm. Mk:VET and IXT MARKING:

Reference Bulletin No.32, Item 659: To avoid confusing the tracer marking, i.e. a figure inside a complete circle, in red, denoting time of burning to self destruction, with the figure inside a circle, also in red, distinguishing the filled lot, the latter marking will in future be stencilled on the abovementioned projectiles in WHITE.

1101. SHELL, Q.F., SMOKE, B.E. 95 mm. S.P. and INF. HOW. MK.IA.
EXTENSION OF USE.

Reference Bulletin No.35, Item 828. Approval has been given for the use of the shell described therein to be extended to the Q.F. 95 mm. Tank Howitzer. The shell will be provided with a cannellure for the

attachment of the cartridge case and filled as for the S.P. and Inf. How. projectile, i.e. to M. of F. design DD(L)14663 which, for the Tank How. only, will be succeeded by a M. of F. providing for 2 smoke containers instead of 4. Details will be given in a later Bulletin.

Fuze, Time, No.390, Mk.I, will be used in the Tank How. shell instead of the No.221B which will continue to be used in the S.P. and Inf. How projectile.

1102. TRACER AND IGNITER, NO.14, SHOT, A.P. Q.F. 6 pr. 7 cwt.

Approval has been given for 10 lots of the abovementioned Tracer, igniter and Shot tracer cavity to be closed by the "jam" washer method. Details of this method are shown in Bulletin No. 41, FIG.417.

1103. SHELL, Q.F., SMOKE EMISSION, 3 inch HOW. MK.I "OBSOLESCEMENT".

Reference Bulletin No.26, Item 440. The abovementioned shell has been declared "OBSOLESCEMENT".

1104. FUZE, D.A. and PERCUSSION, NO.119B, MK.IV - MODIFICATION. (FIG.440)

Reference Bulletin No.36, Item 878 and FIG.342. Approval has been given for the abovementioned fuze to be modified by the addition of a striker raising spring, as used with the No.117 fuze, and a new striker head.

Fuzes modified as above will become "Mk.X". Details are shown in Fig.440 this Bulletin.

1105. FUZE, MINE, CONTACT, A.T., NO.3, MK.IIIB. - FITTING OF SOLID TOP PLATE (FIG.441)

Reference Bulletin No.35, FIG.322. The modification of the abovementioned fuze to incorporate a solid top plate has been approved. The new top plate, details of which are shown in FIG.441 this Bulletin, replaces the separate top plate and cup washer shown in FIG.322.

Fuzes incorporating this modification will become "Mk.VI" and the following Marks have been declared "OBSOLESCEMENT":- I, III, IB and IIIB.

1106. IMPLEMENTS, AMMUNITION, Q.F. 75 mm.

Key, removing jammed Q.F. cartridges, No.13 Mk.I, 75 mm. Gun, has been approved for the Q.F. 75 mm. Tank gun.

1107. AMMUNITION PACKAGES, VARIOUS MARKING.

It is notified for information that all ammunition packages which are not completely filled will have the word "FRACTION" added to the package markings and the quantity packed will also be shown

1108. M.L. 2 inch and 3 inch MORTAR AMMUNITION. PACKAGES FOR FAR EAST USE.

The undermentioned packages for 2 inch and 3 inch Mortar ammunition for use in the Far East have been approved :-

(1) M.L.2 inch MORTAR

(a) Container, amm. No.215 Mk.I.

This cylindrical container is designed to hold two 2 inch Mortar bombs. The body is of waterproof rolled paper and is fitted internally with a centre partition secured in position with glue. The ends are closed by two blackplate caps which are a push fit over the body. Each round is inserted into the container nose end first.

External dimensions are Length 19.54 inches, Dia. 2.55 inches.

Marking

The body bears the following stencilled particulars:- No. and Mark of container; Contractor's initials or recognised trade mark; Year of manufacture. Filled marking details are not yet available.

(b) Carrier, amm. M.L. 2 inch Mortar, No.9 Mk.I.

The carrier, of steel, is rectangular in shape and holds 6 rounds in 3 Containers No.215 packed horizontally in a single tier. It comprises a lid, two end plates and a bottom plate.

The lid is provided with a handle and two webbing guides, the latter for use when carrying the carrier slung from the shoulder. It is hinged to one end plate and held in the closed position by a spring clip secured to the other end plate.

The two end plates are spot welded to the bottom, the latter being prepared with a number of drainage holes.

External dimensions of the carrier are 20.05 x 2.7 x 8.6 inches.

Marking.

The carrier is painted Service colour and one end is embossed with the following particulars:- No. and Mark; Contractor's initials or recognised trade mark; Year of manufacture.

(c) Box packing

3 Carriers No.9, each holding 3 Containers No.215 i.e. 18 rounds, are packed in the steel Box B.167A stowage dimensions of which are 21.8 x 9.5 x 9.35 inches.

(2) M.L. 3 inch MORTAR

(a) Container, amm. No.216 Mk.I.

This cylindrical container is designed to hold one 3 inch Mortar H.E., Smoke or Practice round. The body is of waterproof rolled paper fitted internally at one end with a block suitably shaped to locate the nose of the round, the end being closed by a blackplate cap secured to the body. The other end is closed by a $\frac{3}{8}$ " thick paper disc provided with a tape lifting becket to facilitate removal and a blackplate cap, the cap being a push fit over the body.

External dimensions are Length 18.25 inches, Dia. 3.875 inches.

Marking.

The body bears the following stencilled particulars:- No. and Mark of container; Contractor's initials or recognised trade mark; Year of manufacture. Filled marking details are not yet available.

(b) Carrier, amm. M.L. 3 inch Mortar, No.10, Mk.I.

The carrier is generally similar in construction to the Carrier No.9 (see (1)(b) above), but is provided with an extra handle fitted to one end plate. It holds 2 rounds H.E., Smoke or Practice, each in Container No.216

External dimensions are 19.45 x 4.05 x 8.5 inches.

Marking

The carrier is painted Service colour and one end is embossed with the following particulars:- No. and Mark; Contractor's initials or recognised trade mark; Year of manufacture.

(c) Box packing

2 Carriers No.10, each holding 2 Containers No.216 i.e. 4 rounds, are packed in the steel Box B.167A stowage dimensions of which are given at 1 (c) above.

1109. GENERATOR, SMOKE, NO.25 Mks. I & II.

The abovementioned smoke generators have been declared "OBSOLESCEMENT".

1110. BOXES C.206 and C.267. ADDITIONAL MARKING

When Q.F. 25 pr. cartridges with steel cases are packed in the above boxes the boxes will be stencilled "STEEL CASES" in $\frac{3}{4}$ " letters on one side or one end, as convenient.

1111. BOX, AMMUNITION, C.312 MK.I. GENERAL PURPOSES

The above general purposes steel box has been approved. Stowage dimensions are 29.75 x 13.75 x 9.5 inches.

1112. EMPTY SHELL IN TRANSIT - USE OF WASHERS.

Approval has been given for the use of Washers, waxed, board as an alternative to Washers, leather, lubricated, on the flange of Fuze-hole transit plugs in shell (other than chemical), in lieu of Mk.IV Luting (thick).

1113. S.A.A. 7.92 mm. METAL-cum-FABRIC BELTS.

It has been decided that the nomenclature of the present belt with Mk.II top clips and Mk.III bottom clips will be "Mk.IIC".

1114. Q.F.40 mm. BOFORS AMMUNITION. EXTENSION OF USE TO AIR SERVICE.

Approval has been given for the extension of use to Air Service of all designs of Q.F. 40 m.m. Bofors ammunition, boxes, packages and service gauges.

1115. NOBEL'S RIFLE NEONITE. EXTENDED SYSTEM OF NOMENCLATURE

Reference Bulletin No. 38, Item 937. Approval has been given for the extended system of nomenclature for Nobel's rifle Neonite as set out in the following table. (The word "uncoated" should not be used to describe an unmoderated propellant):-

FLAKE POWDERS

Die size	Additional ingredients	Uncoated	Coated
inch			
0.019 x 0.070	Nil	N.R.N. No. 9	N.R.N. No. 12
0.019 x 0.070	Tin	N.R.N. No.19	N.R.N. No. 22
0.019 x 0.070	Tetra-butyl stannane.	N.R.N. No.29	N.R.N. No. 32
0.019 x 0.070	Potassium sulphate	N.R.N. No.39	N.R.N. No. 42
0.019 x 0.070	Tin + potassium sulphate	N.R.N. No.49	N.R.N. No. 52
0.024 x 0.097	Nil	N.R.N. No.109	N.R.N. No.112
0.024 x 0.097	Tin	N.R.N. No.119	N.R.N. No.122
0.024 x 0.097	Tetra- butyl stannane.	N.R.N. No.129	N.R.N. No.132
0.024 x 0.097	Potassium sulphate	N.R.N. No.139	N.R.N. No.142
0.024 x 0.097	Tin + potassium sulphate.	N.R.N. No.149	N.R.N. No.152

TUBULAR POWDERS

Die Size	Additional ingredients	Uncoated	Coated
inch			
0.014/0.047 - 0.055	Nil	N.R.N.No.10	N.R.N. No.11
0.014/0.047 - 0.055	Tin	N.R.N.No.20	N.R.N. No.21
0.014/0.047 - 0.055	Tetra - butyl stannane.	N.R.N.No.30	N.R.N. No.31
0.014/0.047 - 0.055	Potassium sulphate.	N.R.N.No.40	N.R.N. No.41
0.014/0.047 - 0.055	Tin + potassium sulphate	N.R.N.No.50	N.R.N. No.51
0.014/0.060 - 0.086	Nil	N.R.N.No.110	N.R.N.No.111
0.014/0.060 - 0.086	Tin	N.R.N.No.120	N.R.N.No.121
0.014/0.060 - 0.086	Tetra- butyl stannane	N.R.N.No.130	N.R.N.No.131
0.014/0.060 - 0.086	Potassium sulphate.	N.R.N.No.140	N.R.N.No.141
0.014/0.060 - 0.086	Tin + potassium sulphate	N.R.N.No.150	N.R.N.No.151

Notes

Numbers based on 9 indicate an uncoated, flake powder; numbers based on 12 indicate a coated, flake powder; numbers based on 10 indicate an uncoated, tubular powder; numbers based on 11 indicate a coated, tubular powder.

For any change in the additional ingredients increase the number by 10.

For large bore machine gun powders add 100 to the corresponding number for rifle powder.

ENEMY AMMUNITION

1116. GERMAN FUZE Kl.A.Z.23.

Fig. 442

This combined graze and direct action fuze with an optional delay of 0.15 or 0.2 second is a smaller size of the normal A.Z.23 and is used in H.E. shell for the following equipments:-

7.5 cm. Kw.K. (Tank gun)
 Stu.G. 7.5 cm. K. (S.P. assault gun)
 7.5 cm. Geb.36 (Mountain gun)
 7.5 cm. Kw.K.40 (Tank gun)
 7.5 cm. Pak.40 (Anti-tank gun)
 7.62 cm. Pak.36 (Anti-tank gun)

The weight of the fuze is 4 oz.14 drs. and its dimensions compare with the A.Z.23 as follows:-

<u>Fuze</u>	<u>Protrusion</u>	<u>Intrusion</u>	<u>Diameter of screwthreads</u>	<u>Pitch of Threads</u>
Kl. A.Z.23	1.99 inches	0.7 inches	1.3 inches	1.5 mm.
A.Z. 23	3.75 "	0.65 "	1.96 "	3 mm.

The fuze differs from the Kl.A.Z.23 Nb mainly in the addition of the optional delay arrangement and the magazine which contains a perforated pellet of gunpowder weighing approximately 53 grains.

The construction and action of the fuze, as shown in the drawing is the same as that of the normal A.Z.23 fuze, described in Bulletin No.41, Item 1080.

1117. GERMAN FUZE A.Z.23 umg. 0,15

Fig. 443

The A.Z.23 umg. fuzes differ externally from the A.Z.23 fuzes in having a much shorter coned head and are longer between the flange and the base. This lower part, which enters the fuze hole in the shell, has only a few screwthreads below the flange, the remainder being plain. Three types of the "umg" fuze have been found. These are :-

A.Z.23 umg. 0,8
 A.Z.23 umg. 0,15
 A.Z.23 umg. m.2V.

The "0,8" fuze with an optional delay of 0.8 of a second is described in Bulletin No.12, Item 124. This description was based on a French report. Fuzes of this type of later manufacture are made of steel with a rustproofed surface.

The "0,15" fuze with an optional delay of 0.15 of a second is here described and differs from the later type of "0,8" fuze only in the time of delay.

The "m.2V" fuze is also an optional delay fuze with two alternate delays. Details of this fuze are not yet available.

Each of these fuzes can be identified by the designation stamped above the flange and is used in the H.E. shell "15 cm. Gr.19" for the 15 cm. medium howitzer s.F H.18. The weight of fuzes of this type is approximately 1 lb.10 oz. 2 drs.

The A.Z. umg 0,15 has the usual combined D.A. and graze mechanism consisting of a steel graze pellet carrying the detonator and an aluminium needle pellet held apart by a creep spring and five brass centrifugal segments encircled by an expanding spring ring. The graze pellet is contained in a central recess in the body which has two flash channels at the base. One channel leads direct to the magazine through an open channel in the delay holder, the other leads to the magazine through the delay composition in the delay holder. The needle pellet with a steel sleeve surrounding it and a wooden hammer above it is carried in the head of the fuze. The steel head is

retained in the body by a retaining ring which screws into the top of the body and engages an external flange near the lower part of the head. The circumferential rim at the bottom of the head varies in depth to act as a cam which positions the spring loaded locking bolt of the shutter. Thus when the head is rotated to bring the deepest portion of the rim over the locking bolt the bolt is pressed down into the radial recess containing the shutter in the lower part of the fuze and prevents the shutter from opening. The setting positions of the head are marked on its protruding part by two lines at right angles which are set to an index line on the retaining ring and body. The setting line for delayed action is marked "MV" and that for "non-delay", "OV".

The delay holder, shutter assembly and magazine are all of the same type described for other fuzes of the A.Z.23 type.

ACTION

The fuze is set for "delay" or "non-delay" by turning the head to bring the appropriate setting marking into coincidence with the index line. When set to "MV" the locking bolt is pressed down by the deep part of the rim at the bottom of the head and locks the shutter in the closed position. When set to "OV" the short part of the rim is over the locking bolt thus permitting the bolt to be raised clear of the shutter recess by its spring.

During flight the coil of the expanding spring ring is enlarged and the segments swung clear of the graze pellet by centrifugal force. If set for "non-delay" the shutter is also thrown outwards and the open flash channel in the delay holder is exposed. Forward movement of the graze pellet is prevented by the creep spring.

On graze the detonator is carried forward by the graze pellet and pierced by the needle. When suitable impact is obtained the hammer and needle pellet are driven in as the graze pellet moves forward thus accelerating the action. With the head set for "non-delay" the flash from the detonator passes direct to the magazine. If set for "delay" the open channel in the delay holder is masked by the shutter so the flash has to burn through the delay composition to reach the magazine.

1118. GERMAN FUZE A.Z. 23/28 v (0,1)

Fig. 444

This fuze is of the same construction, dimensions and weight as the normal A.Z.23 fuze with optional delay (See description of A.Z.23 v (0,15) in Bulletin No.41 Item 1080) but is fitted with a stronger spring between the graze and needle pellets instead of the normal creep spring. The load required to bring the mechanism into the fired position is between 99 and 106 ounces as compared with a load of 16 to 19 ounces for the normal A.Z.23.

The fuze is identified by the designation "A.Z.23/28" stamped above the flange where the time of the optional delay, 0.1 second, is also stamped.

The fuze is used in H.E. shell for the 8.8 cm. Flak 18 and 36 (8.8 cm. multi-purpose guns).

1119. GERMAN FUZE A.Z. 23/42 v (0,15)

Fig. 445

This fuze is of the same construction, dimensions and weight as the normal A.Z.23 fuze with optional delay (See description of A.Z.23 v (0,15) in Bulletin 41, Item 1080) but the centrifugal segments and the expanding spring ring encircling them are designed to arm at a lower rotational speed. The fuze is armed by centrifugal force at rotational speeds between 3000 and 4200 r.p.m. and the A.Z.23 v (0,15) between 4500 and 5500 r.p.m.

The fuze is identified by the designation "A.Z.23/42" stamped above the flange. The fuze examined had been stamped to indicate a delay of 0.25 second but this had been barred out and 0.15 stamped above.

According to a German document the fuze can be used instead of the A.Z.23 v (0,15) in every type of shell for the 10.5 cm. I.F.H.18 in which the latter is used.

1120. GERMAN FUZE Wgr. Z.36.

Fig. 446

This igniferous nose fuze, used with a gaine in the H.E. bomb fired from the 20 cm. light spigot mortar, is designed to arm in an unrotated projectile and has a combined graze and direct action with an optional delay. The arming device is operated by the burning of a delay composition which is ignited by a second detonator and delays the arming for a period of approximately 0.6 of a second after firing.

The body of the fuze is of aluminium alloy with a flat topped conical head which has the usual metal sealing disc at the top and is fitted with a safety pin secured by a lead seal. The abbreviated designation "Wgr.Z.36" is stamped near the lower part of the coned head. On the opposite side of the head there is a delay setting plug inscribed with an arrowhead. Stamped in the head at one side of the plug is a graduation lettered "M". On the opposite side a similar graduation is lettered "O". The arrowhead is set to "M" graduation for delay or the "O" graduation for non-delay action.

The weight of the fuze is 6 oz.

The fuze body is recessed at the top to receive the needle pellet and safety arm and screwthreaded internally for the insertion of the closing cap. At the base of this recess four vertical recesses are formed. The central and largest recess contains the steel graze pellet and has two flash channels at the base. One of these channels is central, the other is displaced from the centre and is inclined. Of the other vertical recesses, two are formed side by side and are connected near the base ends by an inclined flash channel, which continues to the exterior of the body where it emerges at the screwthreaded portion and is closed by a screwed plug. One of these recesses contains a brass detonator pellet carrying a No.37 igniferous detonator, the pellet being supported above a steel needle by a spiral spring and a safety pin. The pin is inserted through the head of the fuze and engages in a circumferential groove in the side of the detonator pellet. This recess is closed at the top by a screwed plug. The connected vertical recess contains, at its lower end, two small pellets of delay composition beneath a sleeve filled with a similar composition. An inclined channel leads from the base of the recess to the head of the fuze where it is lightly closed by a metal disc secured by stabbing. The sleeve is of aluminium or aluminium alloy and is screwthreaded externally for insertion in the recess. A detent positioned above the sleeve is supported by the delay filling contained in the sleeve. The detent has a collar formed around its centre which supports a spiral spring held under compression between the collar and a screwed ring at the top of the recess. The upper end of the detent passes through the screwed ring and retains the safety arm in the safe position i.e. partly covering the central recess which contains the graze pellet and closing the fourth recess. The fourth vertical recess has a channel at its base leading to a radial channel containing the shutter bolt in the lower part of the fuze. This recess contains a locking bolt for the shutter. The bolt is supported by a spring and has a collar formed near its head. The collar is engaged by an eccentric projection on the inner end of the delay setting plug which is contained in a radial channel in the head of the fuze. When the plug is set to the "M" graduation the eccentric projection, bearing down on the collar, pushes the locking bolt down into the shutter bolt channel and prevents the bolt moving outwards. When the plug is set to "O", the eccentric projection is raised and the locking bolt is free to be raised clear of the shutter bolt when the safety arm moves clear of the recess. The safety arm, in the form of a curved aluminium arm, is pivoted at one end where a spring is fitted which tends to swing it clear of the path of the graze and needle pellets and clear of the recesses containing the locking bolt.

The lower part of the fuze contains the shutter assembly, the delay holder and a magazine of gunpowder. The shutter assembly consists of a copper shutter attached to an aluminium bolt and a spiral spring which is fitted to the inner end of bolt and is under compression when the shutter is held in the closed position by the locking bolt. The delay holder is of the usual type used in German fuzes and is in the form of a solid aluminium cylinder with a central flash channel with a groove for the shutter above it and a displaced channel containing delay composition. A perforated tin disc is placed over the holder and the shutter. The magazine screwed into the base of the fuze is in the form of a cup shaped closing plug with a central

flash hole and contains a perforated pellet of gunpowder. The flash hole is closed by a paper disc on the inner side.

ACTION

The safety pin is removed and the fuze set for delayed or non-delayed action before firing. If set for "delay" the locking bolt is held down to engage the shutter bolt by the eccentric projection on the setting plug. If set for "non-delay" the locking bolt is held down only by the safety arm.

On acceleration, the detonator pellet in the side recess sets back, compressing its spring, and the detonator is pierced by the needle. The flash passes through the connecting channel into the recess containing the delay composition and the detent. The pressure set up by the burning of the delay composition escapes by the inclined channel leading to the exterior at the head of the fuze. When the delay composition supporting the spring loaded detent has been destroyed, the detent is forced down by its spring and the safety arm is thus released. The arm is then swung clear of the graze and needle pellets and the recess containing the locking bolt by its pivot spring. If set for "non delay" the locking pellet is then free to be raised by its spring and the shutter is released to be pushed out by its compressed spring to the open position. If set for "delay" the locking bolt cannot rise as it is held by the projection on the setting plug and the shutter remains closed leaving only the delay channel in the holder exposed. Forward movement of the graze pellet during the period of deceleration is prevented by the creep spring.

On graze the pellet overcomes the spring and carries the detonator on to the needle. When suitable impact is obtained, the needle pellet is driven in at the same time as the pellet moves forward and direct action results. The path of the flash from the detonator to the magazine is governed by the setting. If set for "delay" the central channel in the delay holder is closed by the shutter and the flash can pass only through the channel containing the delay composition. If set for "non delay" the central channel is exposed and the flash passing by this route will be the first to reach the magazine.

DETONATOR AND DELAY COMPOSITIONS

The detonator carried in the graze pellet is No.26 which is in common use in German fuzes. The No.37 detonator contained in the side recess has a layer consisting of mercury fulminate, potassium chlorate and antimony sulphide over a filling of black powder.

The delay compositions in the sleeve supporting the detent and the pellets beneath the sleeve consist of the following :-

	<u>Sleeve</u>	<u>Pellet</u>
Nitrocellulose	3.9 per cent.	2.7 per cent.
Red lead	75.5 " "	72.0 " "
Silicon	20.6 " "	25.3 " "

The delay composition used in the channel in the delay holder has been found to be gunpowder in a fuze dated 1940. In a fuze dated 1941 a composition similar to that in the sleeve and pellets has been found. This composition has also been found in the delay holder of the A.Z.35K fuze described in Bulletin 40, Item 1035.

1121. GERMAN MECHANICAL TIME AND PERCUSSION FUZE S/90K. (Dopp.Z.S/90K)

Fig. 447

The fuze has a mechanical time action with a maximum time of running of 90 seconds and a graze action of the normal German type. The construction and action are the same as described and illustrated for the Dopp.Z.S/90/45 in Bulletin No.40, Item 1036.

The fuze is used in the H.E. shell (K.Gr.39) and the H.E.B.C. shell (K.Gr.38 (Hb)) for the 17 cm. gun (17 cm. K.Mrs.Laf.)

The weight of the fuze is approximately 1 lb. 12 oz.

1122. GERMAN GAINIE 36 FILLED P.E.T.N./WAX
(Zdlg. 36 Np)

Fig. 448.

Brief details of this gainie are included in the description of the 15 cm. high velocity H.E. shell in Bulletin No. 40, Item 1034. The gainie has also been found in the H.E. shell for the A.A. gun 12.8 cm. Gerat 40 and the H.E.B.C. shell (K.Gr. 38 (Hb)) for the 17 cm. gun (17 cm. K. Mrs. Laf.)

The overall length of the gainie is 4.36 inches and the diameter, 1.27 inches. The weight complete is approximately 4 oz. 10 drs. The gainie is identified by the abbreviated designation "Zdlg. 36 Np" stencilled in black on the side of the aluminium cylindrical body. Also, unlike any of the other gainies met with, it has a convex base.

Details of the construction and the method of filling are shown in the drawing.

1123. GERMAN PRIMER, ELECTRIC, Q.F. AND MORTAR CARTRIDGES, C/23.

Fig. 449

This is a smaller model of the C/22 electric primer described in Bulletin No. 26, Item 464, and is used in the cartridge for the 20 cm. light spigot mortar and in the fixed Q.F. cartridge for the 3.7 cm. Kw.K. (Tank gun). The primer corresponds to the percussion primer C/13 in dimensions and is identified by the designation "C/23" stamped in the base. The contact plug is visible in a chamfered hole in the base.

The brass body has two key flats formed at the base and is screwthreaded for insertion in the cartridge. The diameter over the threads is .52 inch and the threads 18 to the inch.

The brass contact plug, contained inside the lower part of the body, is cylindrical in shape with a stem at the bottom which emerges through a chamfered hole in the base of the body for contact with the firing mechanism. A small lug is formed near the top of the plug which fits into a recess in the body to prevent rotation. A layer of light brown insulating composition coats the side wall of the plug including the stem and the greater part of the top. The top of the plug is recessed to contain gunpowder and the electric fuze head which extends radially across the plug. The fuze head consists of an upper and a lower contact strip with insulating material between them and a bridge wire at one end surrounded by a blob of ignition composition. The lower strip is in contact with the top of the contact plug whilst the upper strip is in contact with a projection inside the brass contact washer assembled above, but insulated from, the plug. The washer, in addition to this projection, has two external projections or lugs which engage in recesses inside the body and prevent rotation. A screwed plug with a central flash hole and a concave underside is screwed into the body to secure the contact washer and cover a priming of gunpowder surrounding the fuze head. The magazine in the top of the primer contains a pellet of gunpowder and is closed by a thin metal disc. The weight of the pellet is approximately 7 grains.

The path of the firing current is from the firing mechanism, through the contact plug to the lower strip of the fuze head, through the bridge wire to the upper strip thus heating the wire and igniting the composition and thence by the contact washer, through its inner projecting piece, through the body to earth.

1124. GERMAN 20 cm. LIGHT SPIGOT MORTAR H.E. ROUND
(1. Ldg. W.Gr. 40)
Figs 450 and 451

The 20 cm. H.E. bomb, Model 40, is fired from the 20 cm. Leichter Ladungswerfer (a spigot mortar with a 9 cm. spigot) with a separately loaded cartridge.

The streamlined bomb has an ogival head with a W.Gr.Z.36 fuze, or a plug with a lifting loop, at the nose and has a tail tube carrying six vanes. The exterior is painted the normal deep olive green and stencilled in black. The stencilling includes the H.E. numeral "13" near the nose (indicating Amatol) and the weight class on the cylindrical part of the body. A fused bomb bearing the weight class marking "IV" weighed 48.75 lb. The overall length, including the fuze, was 31.15 inches and the maximum diameter, approximately 20 cm. The bomb is supplied plugged and fitted with a cylindrical cover of cardboard and steel for the protection of the tail vanes.

The cartridge is short and cylindrical, the lower part being of steel with a partially flanged adapter for the C/23 electric primer at the base and a bakelite upper part. The approximate dimensions are : length 2.2 inches, diameter 3.5 inches. A label giving details of the igniter and propellant charges is affixed to the top of the cartridge.

BOMB

The bomb body is of pearlitic malleable cast iron with a screwthreaded fuze hole at the nose and a tubular extension formed at the base for the attachment of the tail unit. A large hole in the base of the body, within the tubular extension, is closed by a steel screwed plug. A steel fuze hole adapter, inserted at the nose, carries an exploder container of mild steel.

The tail unit consists of a short outer tube and an inner tube which carries the vanes. The outer tube is of chromium-silicon steel with a V.D. hardness figure of 262 and is closed at the front end where the thickness is increased to correspond to a recess in the base plug. A small central hole in the closed end is formed probably for the escape of air during assembly. The inner tube is of mild steel and is also closed at the front end. The two tubes are retained in the tubular extension of the body by two grub screws inserted at diametrically opposite positions in the extension. The rear part of the inner tube protrudes from the inner tube and has six vanes welded to it in pairs.

The weight of the empty bomb is 30.97 lb., the body alone weighing 16.65 lb.

METHOD OF FILLING.

The bursting charge consists of 15 lb. 12½ oz. of cast Amatol 65/35 with a thin surround of T.N.T. to the exploder cavity. The exploder container carries the larger size of the C/98 P.E.T.N. gainc.

FUZE AND GAINC

The Wgr.Z.36 fuze is described in this Bulletin as a separate item.

The gainc "Gr. Zdlg. C/98 Np" is described in Bulletin No.32, Item 669.

CARTRIDGE

The cartridge is in the form of a short cylindrical box consisting of a steel cup-shaped body with a cover of moulded plastic. The propellant charge, in three sections, is contained inside with a steel igniter containing gunpowder.

The steel body has a hole in the base for the assembly of an adapter which carries the primer and around its exterior has a groove which is connected to the interior by a ring of radial holes and is covered by a steel obturating cup fitted over the base. The cup is expanded by the pressure of propellant gases through the holes. Inside the body there are three equally spaced steel studs protruding from the base for the support of lowest section of the propellant charge. The obturating cup is supported at the base by a steel disc and the adapter. The steel adapter has an interrupted flange to enable the cartridge to be inserted in the top of the spigot and to be locked to the spigot by turning. A screwthreaded primer hole is formed in its base and at the front end it is screwthreaded externally to receive the steel igniter which secures it to the body.

The steel body of the igniter is in the form of a perforated cylinder which is closed at the top where it is shaped to form two flat surfaces for the tool used in screwing it to the front end of the adapter.

The plastic cover is an inverted cup with a cylindrical centre piece formed inside which is shaped to fit over and surround the igniter and has corresponding perforations. The centre piece is screwthreaded near the top to receive a screwed plastic spider which supports one of the charge sections. A second spider without a screwthread is used as a distance piece between the top of the charge section and the cover. The top of the cover is recessed and carries a white paper label giving the particulars of the propellant.

Both the body and the cover are stepped so that the cover fits into the body and the junction is sealed with a wrapping of adhesive tape.

METHOD OF FILLING

The igniter contains a 55 grain, paper wrapped annular pellet of gunpowder inside of which there is a 20 grain filling of small grain gunpowder.

The 36 gram propellant charge of "Ngl. Rg. P.-12.5-(0,4.72/36)", a double base nitroglycerine propellant in ring form, is divided into three sections of equal weight. Each section in the cartridge examined weighed 186 grains and consisted of a number of annular discs perforated with two rings of holes and roughened by an impressed pattern on both sides. The discs are secured by silk ties threaded through the perforations in three places. Each of the discs is between 0.014 and 0.018 inch thick and has a diameter of 2.8 inches. The diameter of the central hole is 1.4 inches. One section of the charge, with another placed on top of it, is supported on the three studs inside the steel body. The third section is carried inside the plastic cover where it is separated from the cover by a spider of plastic and supported by a similar spider screwed to the centre piece.

PRIMER

The electric primer C/23 is described in this Bulletin.

125. GERMAN NOSE FUZE WITH SELF DESTROYING ARRANGEMENT FOR 3.7 cm H.E. SHELL (3.7 cm Kpf.Z.Zerl P.) Fig 452

The fuze is used in the 3.7 cm Pak (anti-tank gun) H.E./Tracer shell described in Bulletin No. 31 and is of aluminium alloy with a body tapering towards the flat topped nose. The tip of the fuze is red and the stamping, "3.7 cm Kpf.Z.Zerl P" on the side of the body, is also coloured red. The fuze is of the direct action type and includes a safety device which is released by the disintegration of a pellet of gunpowder. The detonator which ignites the powder pellet also ignites a delay composition which connects with the magazine of the fuze and provides a self destroying action, when direct action does not occur.

The direct action mechanism is contained in a central recess in the body and consists of an aluminium hammer supported by a steel pellet which is integral with the needle. The needle pellet is supported by a centrifugal bolt which protrudes from a radial channel in the body. The hammer consists of a circular disc with a stem which passes through a guide screwed into the body recess. The recess is closed at the top by a thin brass disc and has a hole at the base for the stem of the needle which enters a guide in the magazine adapter.

The brass centrifugal bolt is slotted at its inner end to fit round the stem of the needle and has a collar formed round its centre which limits its inward movement. A stem formed on its outer end bears against a pellet of gunpowder contained in an aluminium perforated capsule attached to the inner side of the closing plug of the radial channel. The capsule is

cylindrical with a concave wall with perforations equally spaced around it. The inner end of the capsule, which bears against a lead washer supported by a shoulder in the radial channel, has a hole in the centre to receive the stem of the centrifugal bolt. The screwed closing plug carrying the capsule has a lightly closed vent at its centre, for the escape of pressure when the powder is ignited. Two inclined flash channels connect the radial channel with a recess containing a detonator and needle assembly.

The recess containing the detonator with its spiral supporting spring and screwed needle is displaced from the centre of the fuze. The two inclined flash channels connecting the recess with the radial channel are located one near the top of the recess and the other near the bottom. An additional inclined flash channel, also near the bottom of the recess, connects with the channels containing the delay composition for the self destroying action.

The delay composition for the self destroying action is contained in two vertical channels with a transverse connecting channel. The flash channel from the detonator recess leads into the closed lower end of the first vertical channel. This channel is filled from the upper end with delay composition and closed at the top by a plug which is machined to correspond with the tapering body of the fuze. Near the top of the channel a transverse channel containing pressed gunpowder leads into the upper end of the second vertical channel which also contains delay composition and is open at the base where it is in contact with a circular disc of pressed gunpowder carried in a recess in the top of the magazine adapter.

The magazine adapter screws into the underside of the body and carries a magazine similar to that of the A.Z.39, as described in Bulletin No.26. The circular recess in the top of the adapter has a cylindrical projection in the centre which is drilled to form a guide for the needle. The pressed pellet of gunpowder contained in the recess is in the form of a washer to fit over the needle guide.

ACTION

On acceleration the igniferous detonator in the displaced recess sets back on the needle. The flash from the detonator passes through the flash channels to the powder pellet in the radial channel and to the lower end of the delay filling in the first of the vertical channels. When the pellet in the radial channel disintegrates the bolt is thrown outwards by centrifugal force leaving the needle held off the detonator in the magazine by the creep action resulting from deceleration. On impact the needle is driven in by the hammer and pierces the detonator in the top of the magazine. During flight the burning of the delay composition in the first vertical channel is transmitted by the gunpowder in the transverse channel to the delay composition in the second vertical channel. When direct action does not occur before the composition burns to the base of the second channel the disc of gunpowder confined in the top of the magazine adapter is ignited and explodes and thus initiates the detonation of the magazine.

FIG. 44I (ITEM 1105)
FUZE, MINE, CONTACT. A.T. N° 3 MK III B.
FITTING OF SOLID TOP PLATE.

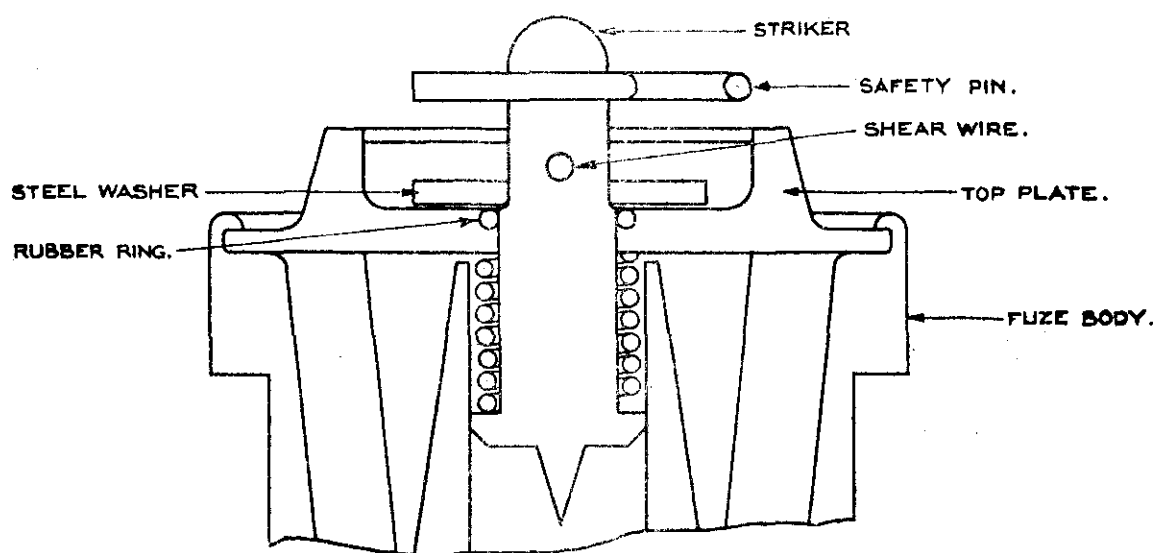
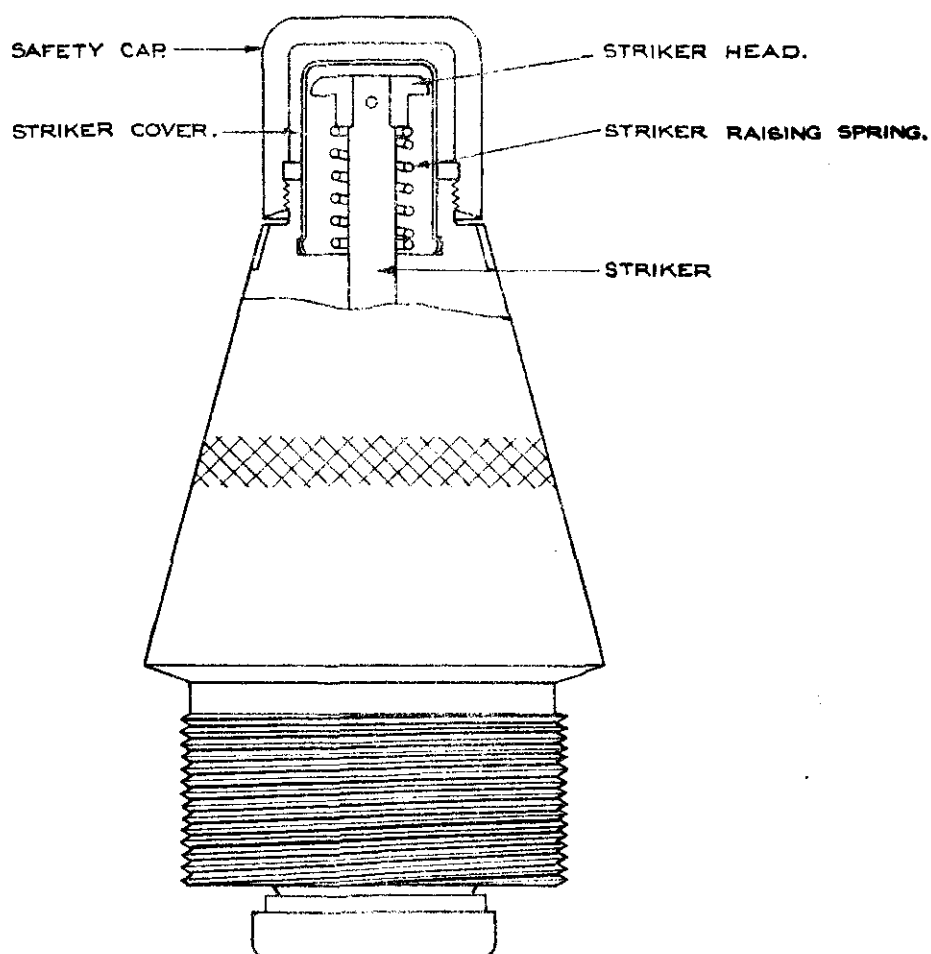
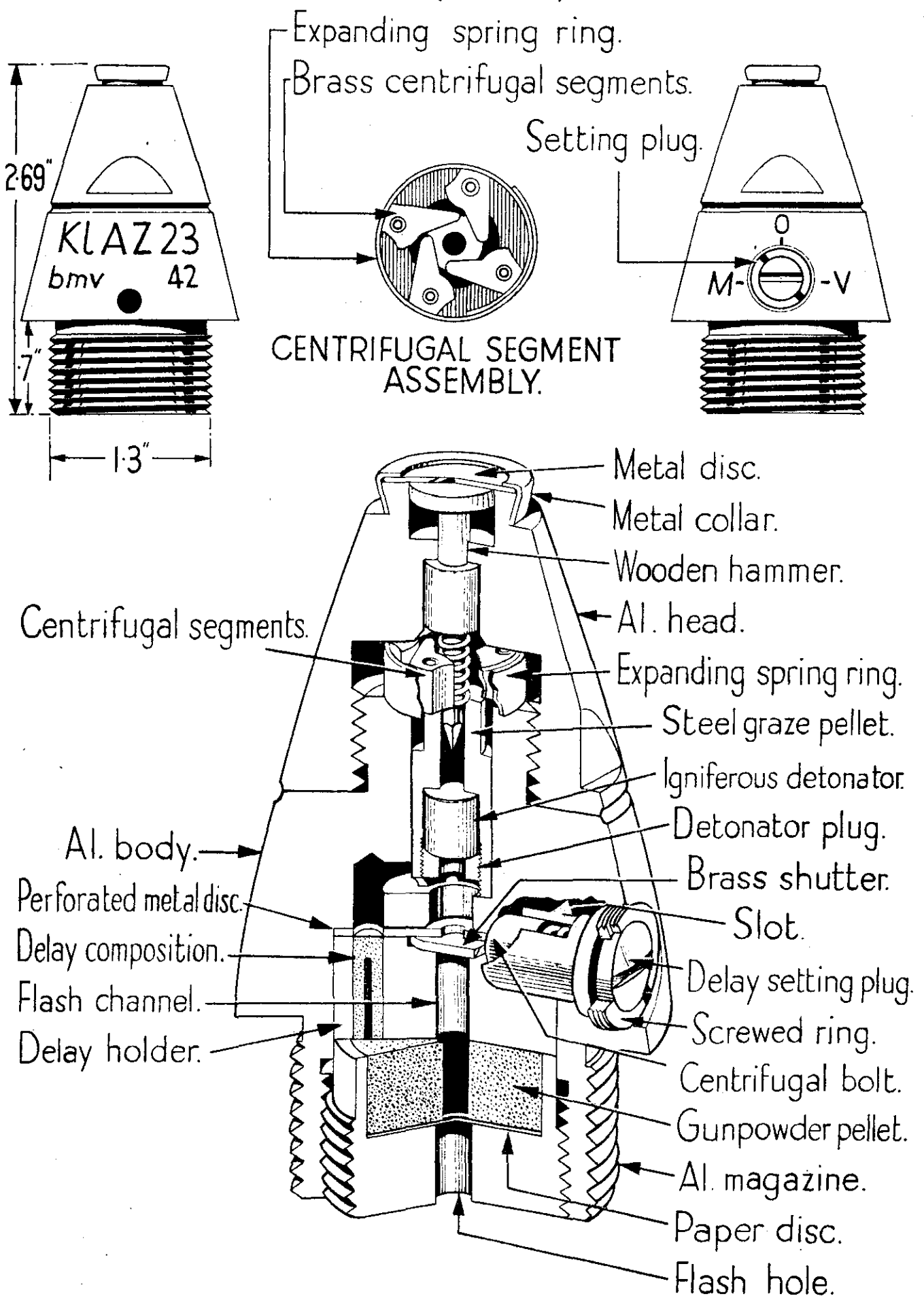


FIG. 44C (ITEM 1104)
FUZE, D.A. AND PERCUSSION, N° 119 B. MK IV
ADDITION OF STRIKER RAISING SPRING.



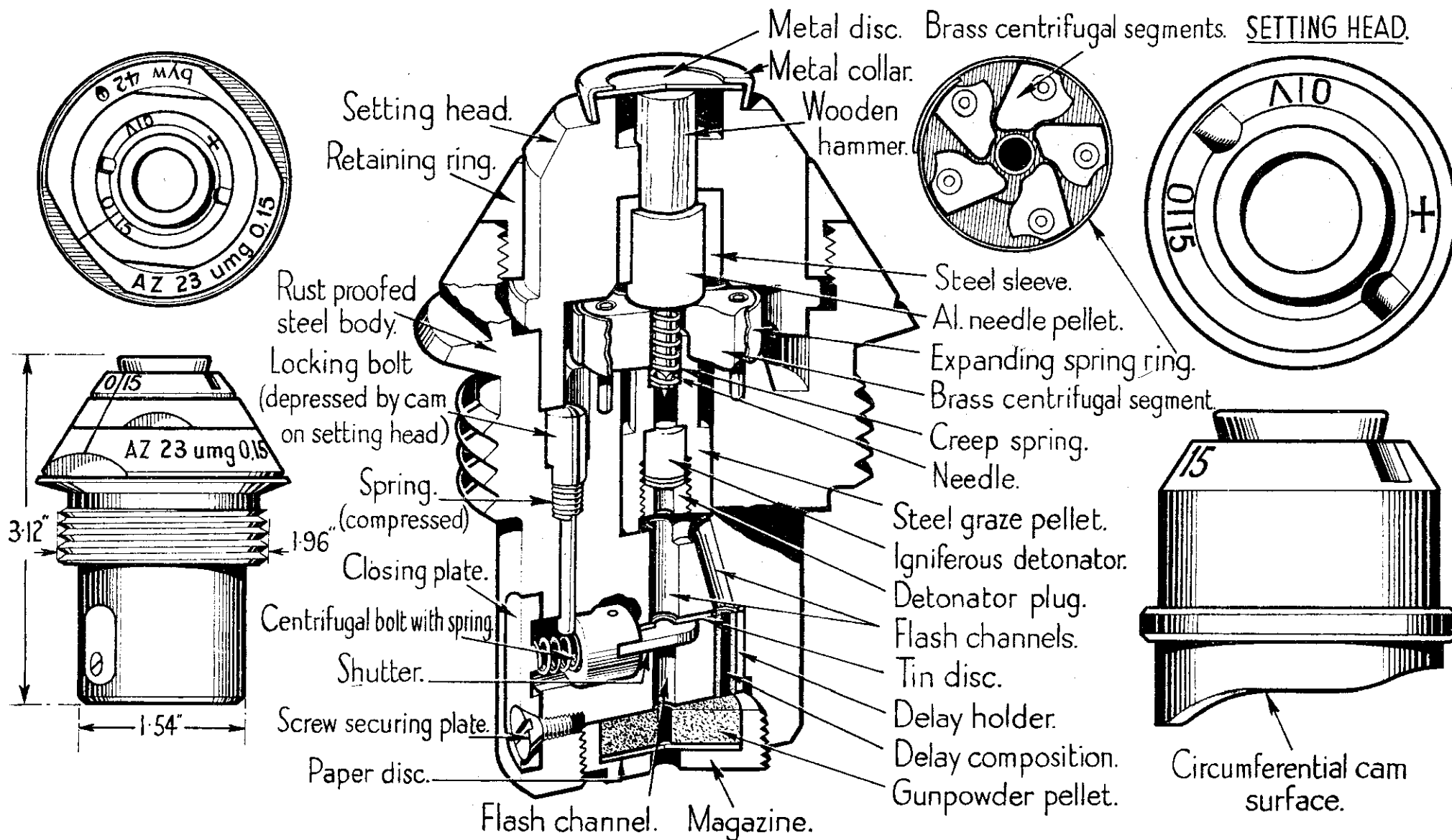
GERMAN FUZE KL. A.Z.23(VO,15)

FIG. 442 (ITEM III16.)



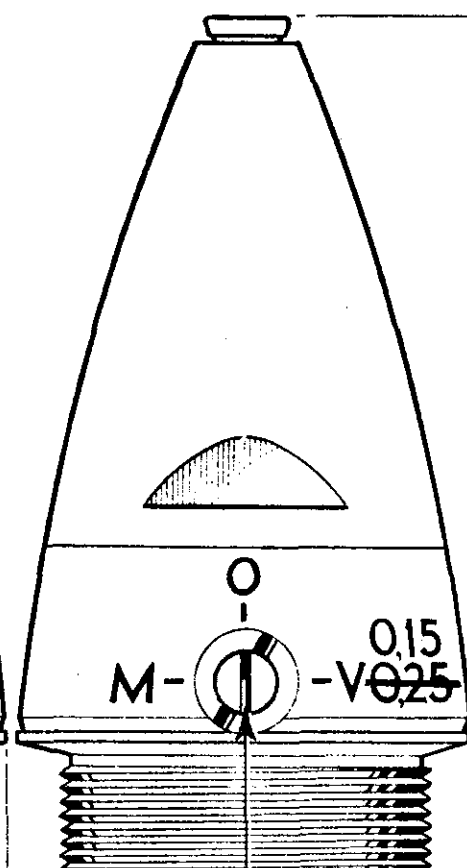
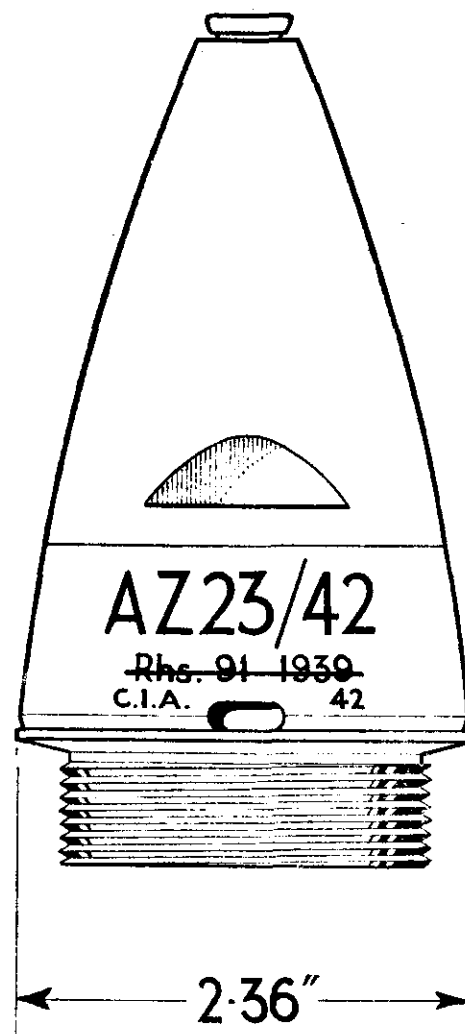
E.A.
FUZES
SK. N° 31.
C.I.A/A. 21-3-44 (I.P.C.)

FIG. 443 (ITEM III7.)

GERMAN FUZE A.Z. 23 umg 0,15

GERMAN FUZE AZ23/42.

FIG. 445. (ITEM 1119.)



GERMAN FUZE AZ23/28.

FIG. 444. (ITEM 1118.)

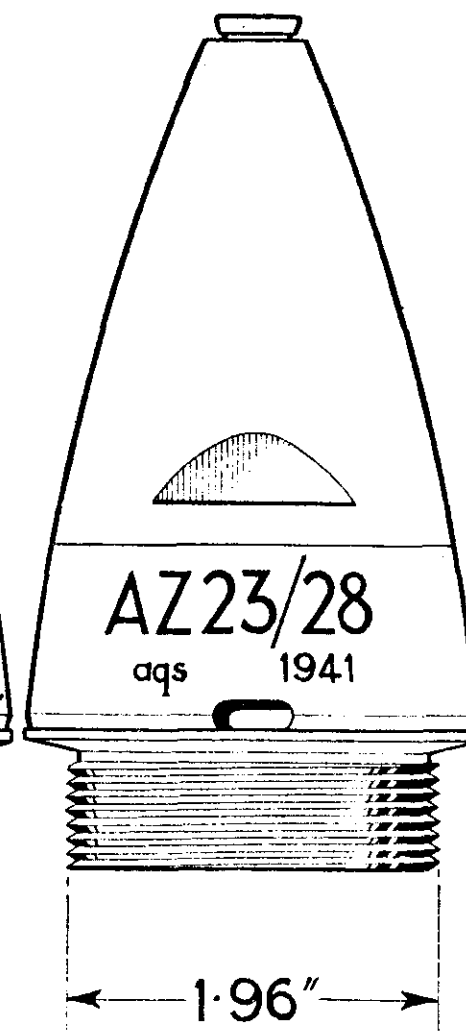
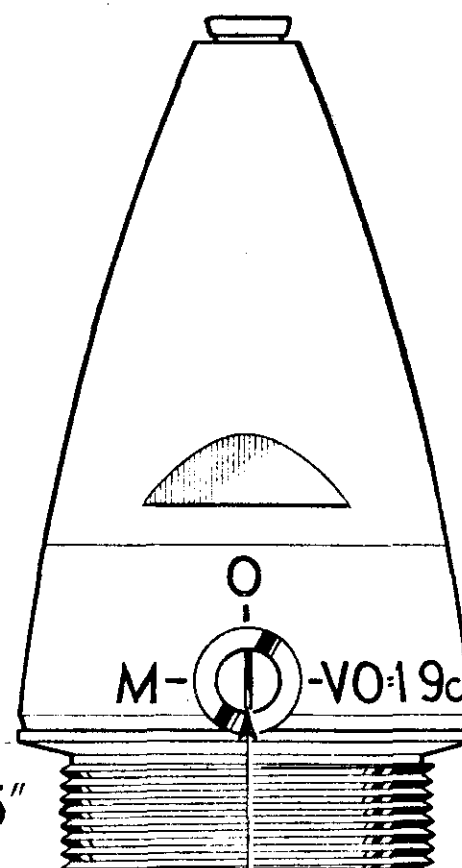
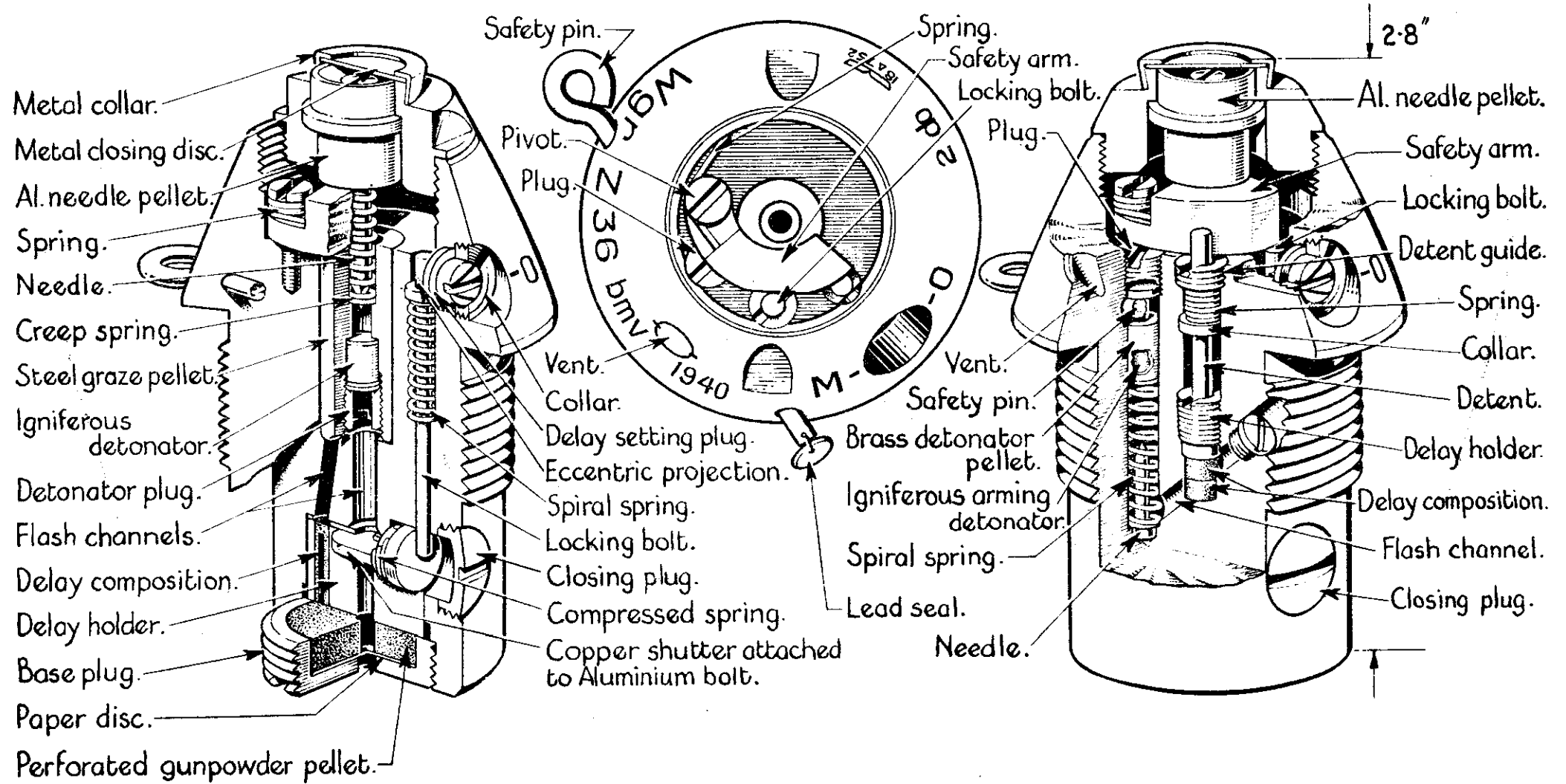


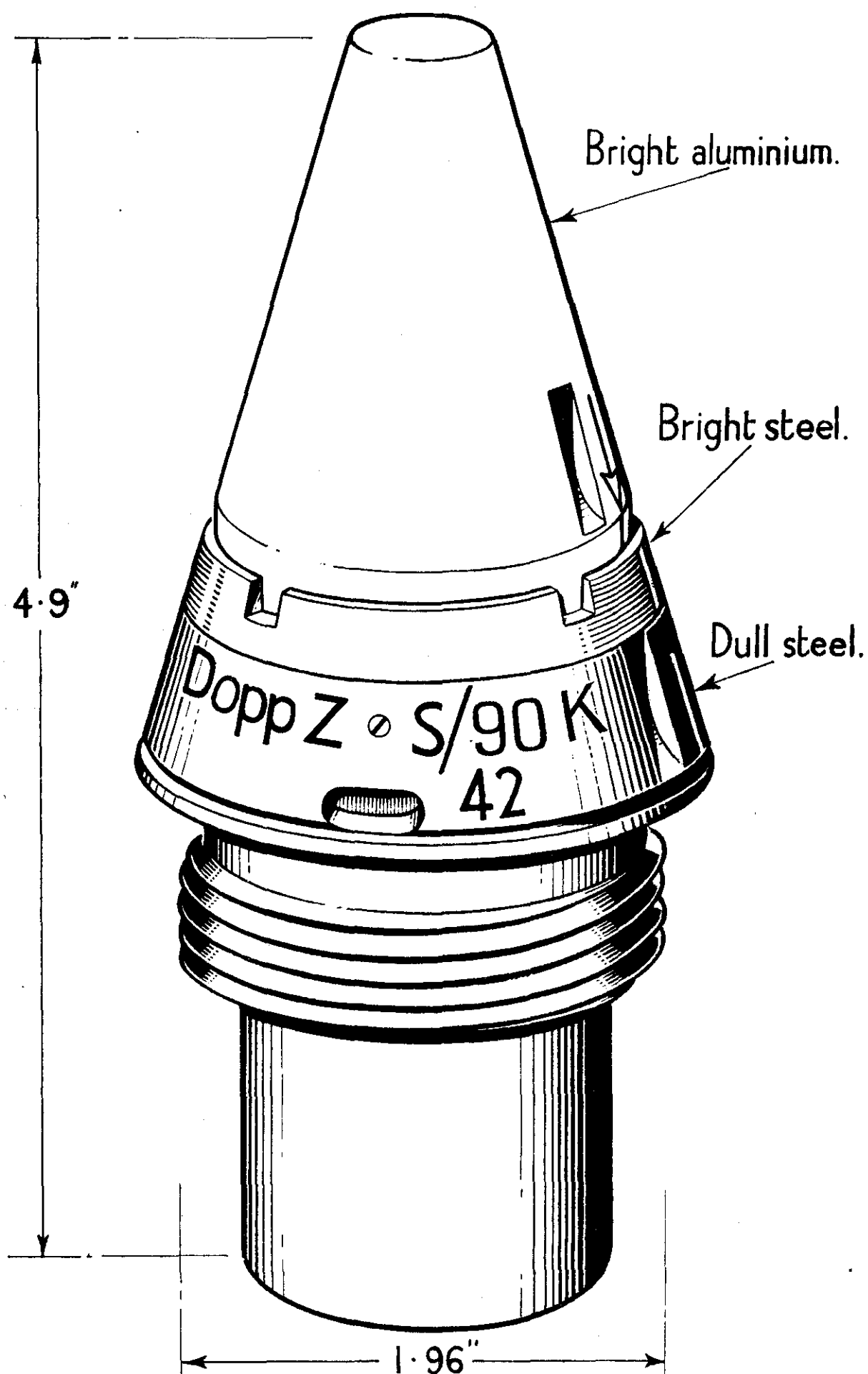
FIG. 446. (ITEM 1120.)

GERMAN MORTAR FUZE 36. (W.gr.Z.36.)



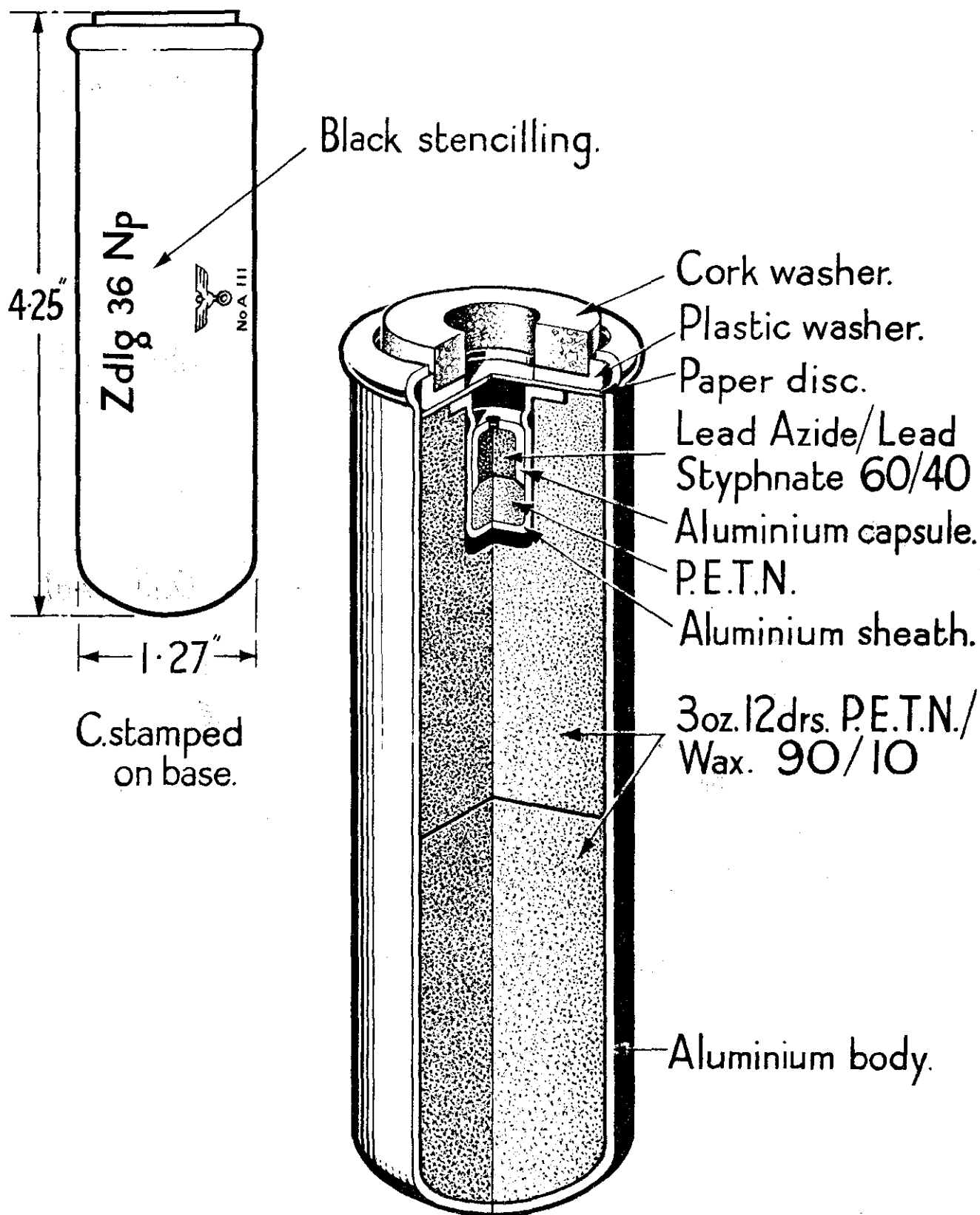
GERMAN MECHANICAL TIME & PERCUSSION FUZE S/90K

FIG. 447 (ITEM 1121.) Dopp.Z.S/90K.



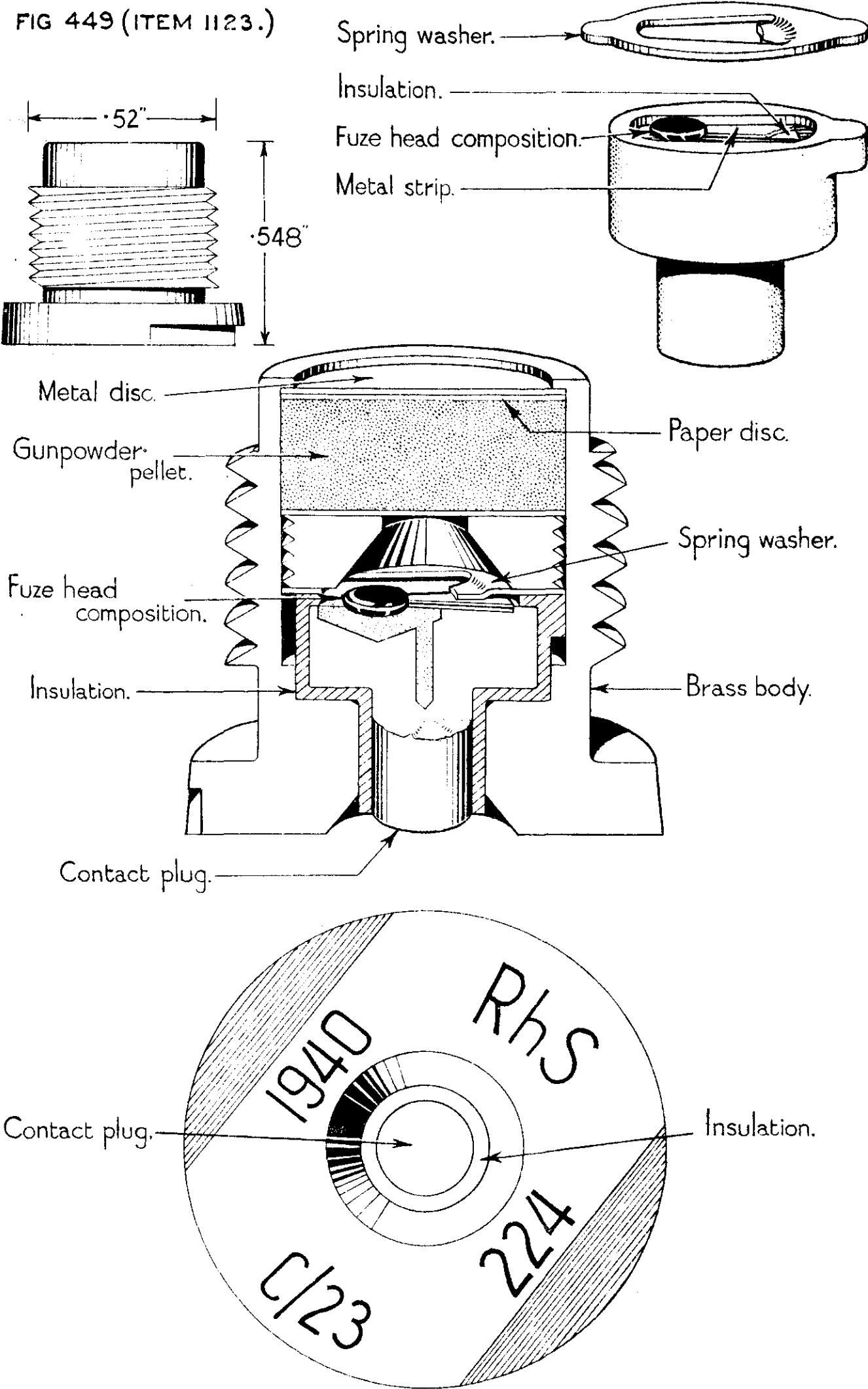
GERMAN GAINE 36 FILLED P.E.T.N./Wax.
(Zdlg 36 Np.)

FIG. 448. (ITEM 1122.)



GERMAN PRIMER, ELECTRIC, Q.F. & MORTAR CARTRIDGES C/23.

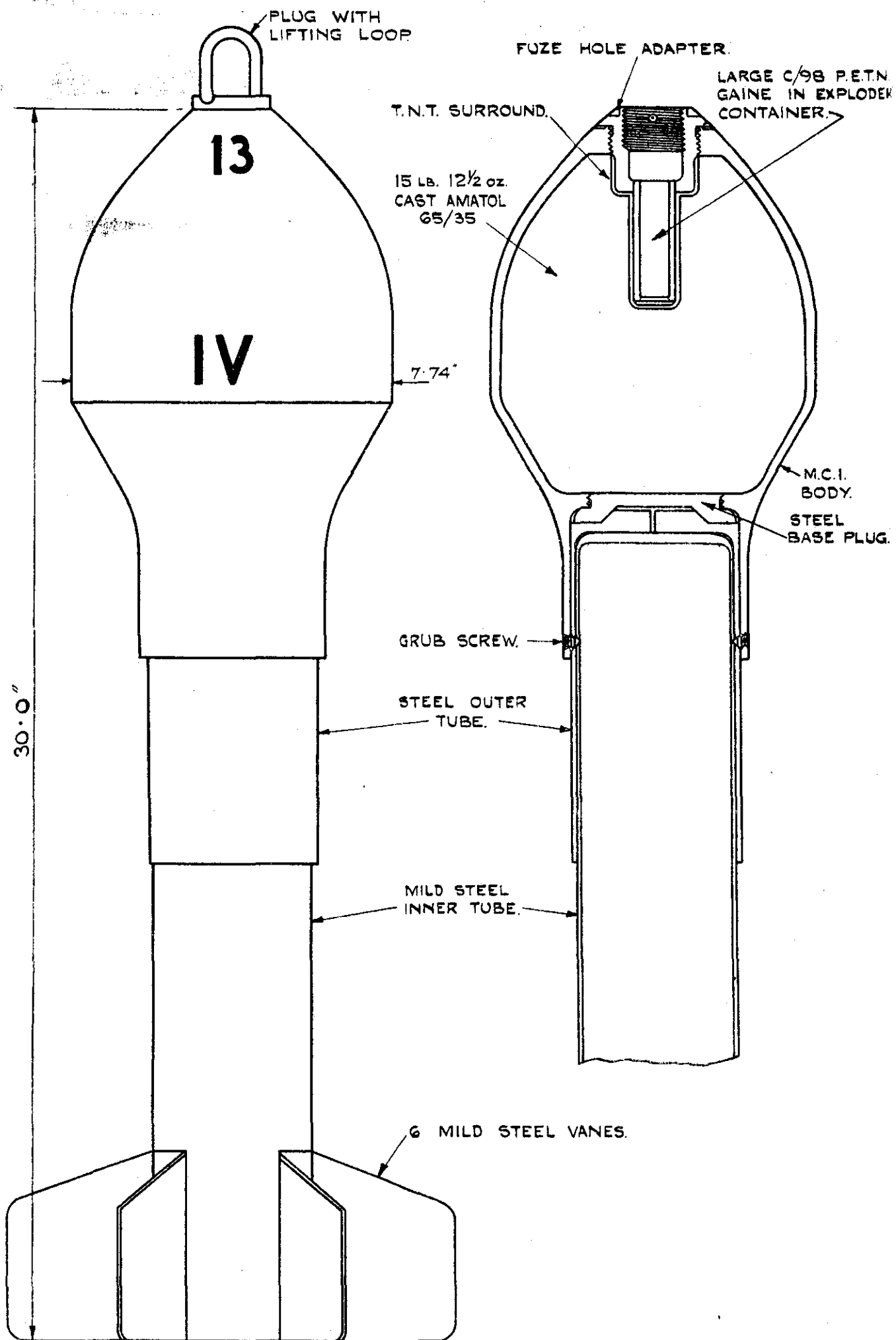
FIG 449 (ITEM 1123.)



GERMAN 20CM. LIGHT SPIGOT MORTAR

FIG 450. (ITEM 1124)

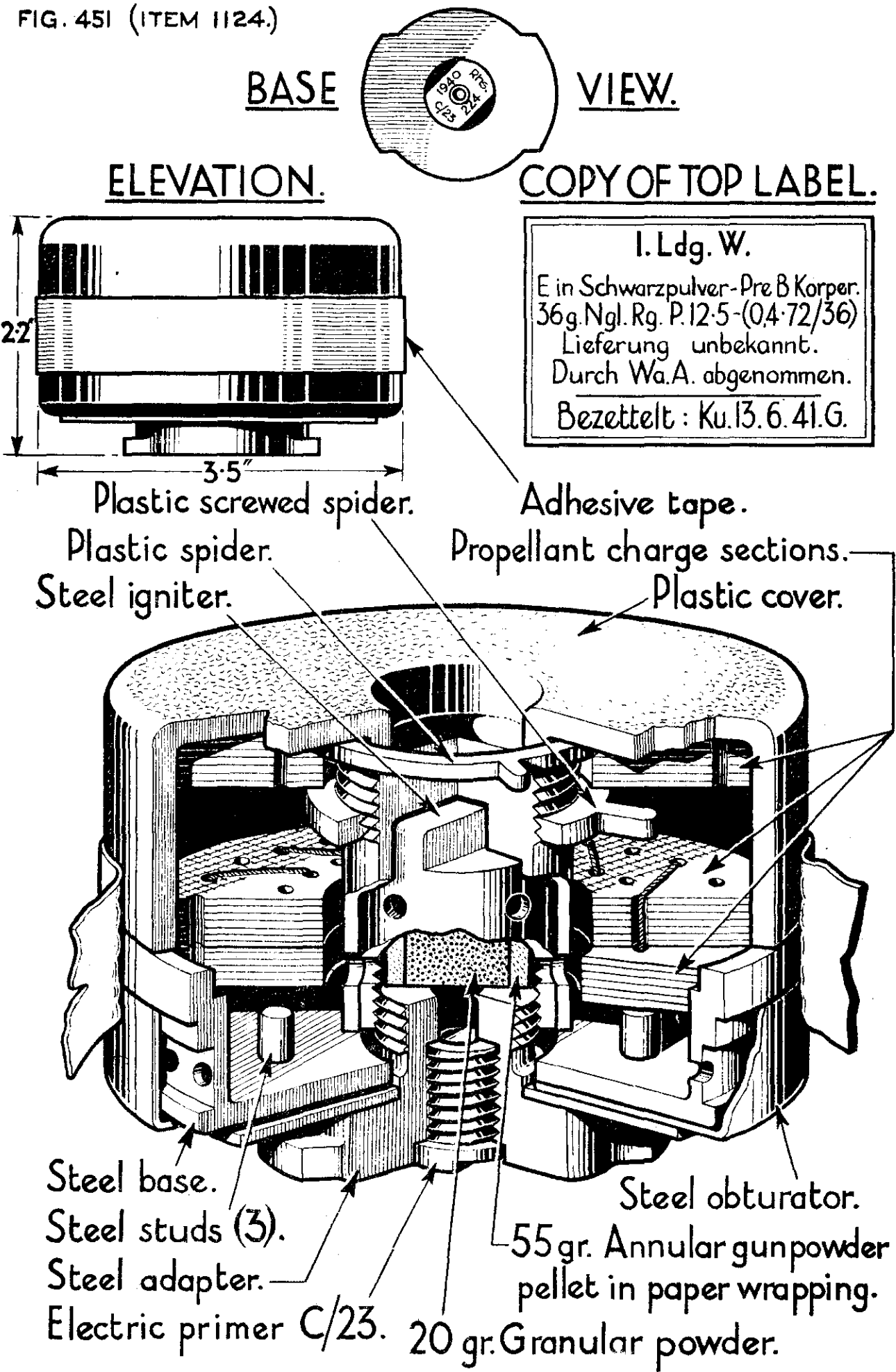
H.E. BOMB 40
(1. Ldg. W. Gr. 40)



BOMB PAINTED DEEP OLIVE GREEN
AND STENCILLED IN BLACK.

GERMAN 20 cm. LIGHT SPIGOT MORTAR CARTRIDGE.

FIG. 451 (ITEM 1124.)



GERMAN FUZE FOR 3.7 c.m. H.E. SHELL. (3.7cm. Kpf. Z. Zerl P)

FIG 452. (ITEM 1125.)

