

GRENADE

Type.	A. How Recognised when issued.	B. Description.	C. Type of Fuse and Ignition.	D. When, Where and How Grenade should be used.
1 No. 36 Mills Grenade (Head and Cup Discharger).	Live: Dark Brown, Black in colour, Varnished, Red and/or Green marks round top of body. Practice: Gray-White.	Barrel shaped. Serrated to assist fragmentation on explosion. Weight 1 1/2 lbs.	TIME. 22 Rim Fire Cap. 4-second Fuse. White (Hand-thrown) E.Y. Cup Discharger 7-second Fuse. Buff Fuse is fixed to detonator. Filled Baratol.	Anti-Personnel. Generally bowled over- arm from cover. For clearing Buildings, Trenches, M.G. Nests, etc. Fired from Discharger Cup at 45° unless in certain types of town fighting. Propellant, Ballistite Cartridge only. Recoil con- siderable. Use shock absorber at butt.
2 No. 36. Fired from Northover with gas check (I.F.E.Y. Cup Discharger not available).	As above—see 1A.	As above—see 1B.	As above—see 1 C. 7-second Fuse, but tests have proved that 4-second Fuse can be used.	As above—see 1 D. Propellant—5 drams Powder. Remove Rubber Shock Pad from Propellant.
3 No. 48. Ant-Tank Rifle Grenade.	Painted Buff, with Red and Green Band round Body. Must not be Stripped. Practice: White.	Tail Unit screws into the Body. Tail Unit has a central Sleeve and Four Vanes. Fixed Gas Check. Weight 1 1/2 lbs.	Detonates instantly when head of grenade impacts on solid object. Special H.E. or 81-oz. Lyddite.	Fired from Discharger (Ballistite Car- tridge only) against all armoured fighting vehicles, lorries, etc. Some forms of Demolition. Propellant 30 grain Ballistite Cartridge, half a length of which for .303 is black. For .300 cartridge has open end crimped. Recoil considerable. Use shock absorber.
4 No. 69. Bakelite Hand Grenade issued complete except for priming. Must not be stripped.	Black Bakelite. Red Band or X's round top of body. Practice: White.	Barrel shape. Similar to 36 M. Weight approximately 1 lb.	"All-ways" percussion. In- stantaneous on impact. Amatol or Lyddite.	Anti - Personnel (Blast). Morale generally. Confined spaces best effect. Useful in dry weather for making dust cloud if smoke not available. Can be thrown any method as situation demands. Can be used under certain conditions as "Aid to Realism" in exercises and battle practice.
5 No. 73. A. T. Grenade.	Painted Buff with Red Band, and Stenciled 73 A.T. Practice: White.	Cylindrical. 10 ins. high 3 ins. diameter Thermos Flask. Weight 4 lbs. approx.	"All-ways" instantaneous. Per- cussion. Gallinite, 1 1/2 lbs. approximately.	Against all Lorries, A.F.Vs., etc. Can also be used in numbers as Mines, etc., in street fighting, with correct Fusing. Above from Buildings. Generally thrown over-arm, held with fingers either side of safety tap.

SUMMARY CHART.

E. Range and Danger Area.	F. Type of Effects.	G. To Prepare and Prime.	H. Mechanism in Operation.
<p>Hand, 25-35 yards. Can inflict wounds up to 100 yards.</p> <p>Cup Discharger, Gas Port fully open, 80 yards at 45° Gas Port fully closed, 200 yards at 45°.</p>	<p>Anti-Personnel. Fragments in all directions parallel to ground and upwards. Shrapnel effects can be obtained if thrown to burst about 6 feet or more above objective. Disto Cup Discharger.</p>	<p>Remove Base Plug, clean and examine carefully. Test Spring for tension: if weak reject. Ensure Striker moves freely in sleeve. Insert Igniter Set without using force. Attach Gas-Check for use with E.Y. Cup.</p>	<p>Withdrawal of Safety Pin leaves hand (or Cup Discharger) in control of Lever. When Grenade is thrown or fired, Lever flies off and releases striker, which is forced on to the Cap of Igniter Set by the Spring and Ignites Fuse, which burns for 4 seconds (7 seconds E.Y. Cup), explodes detonator which explodes Grenade. Keep Lever in palm of hand when throwing.</p>
<p>As above—see 1 E. 75-150 yards.</p>	<p>As above—see 1 F. But Shrapnel effects easier to obtain.</p>	<p>As above—see 1 G. But Northover.</p>	<p>As above—see 1 H. But read "Breech" instead of Discharger.</p>
<p>50-100 yards. Special Sight. Gas Port on Discharger fully closed always. Blast concentrated in limited forward area but pieces of tail will fly considerable distances.</p>	<p>Penetration. On impact will perforate armour of light, medium, and sometimes parts of heavy Tanks.</p>	<p>Ready for use when issued.</p>	<p>Pull out Safety Pin. Place Grenade, Gas Check and Fin first, into Cup. Shear Wire breaks on firing leaving Striker free. When fired from Northover, Shear Wire does not break until target is struck with sufficient force to do this, therefore, only use Northover when Cup Discharger not available.</p>
<p>Generally up to 50 yards. Hand only. Small Radius, approx. 10 yards. For exercises consider 35 yards radius as danger area. In Practice all "Blinds" must be found and destroyed, as will explode if trodden on.</p>	<p>Anti-Personnel. Blast. Lethal under some conditions. Momentary Shock. Morale.</p>	<p>Remove Base Plug, Insert Detonator open end first. Replace Base Plug.</p>	<p>Remove Safety Cap, Safety Tape being held in position by thumb and finger of throwing hand. When thrown, Safety Bolt on Tape falls out. Upon Impact Creep Spring is overcome, Striker fires Cap and explodes the Detonator, which in turn explodes the Grenade. Designed to explode on impact of any part of the exterior of this Grenade.</p>
<p>Hand only, 12-15 yards. Thrower must have adequate cover owing to terrific blast.</p>	<p>High penetration. Great Morale and Blast effect. Material effect is considerable on objects at point of burst.</p>	<p>Remove Lid, Insert Detonator closed end first. Replace Lid.</p>	<p>Remove Safety Cap of "All-ways" Fuse, Tape will unwind and pull out Pin during flight leaving Striker free to overcome Creep Spring. Explodes when any portion of Grenade strikes on firm material.</p>

GRENADE

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<p>6</p> <p>No. 74. S.T. Hand Grenade. (Sticky).</p>	<p>Ball shaped, about five inches in diameter, enclosed in Khaki painted Tin Outer Casing. Black Bakelite Handle.</p> <p>Practice : Wood Model, painted white, with steel band for correct weight.</p>	<p>Glass Flask. Filled with H.E. Protected by Metal Khaki Casing which is removed before using Grenade. Flask is covered by a sticky envelope. Inside neck of Flask is a Tube to hold a Detonator Assembly. A Black Bakelite Handle with a No. 36 type Striker is fitted.</p> <p>Weight 2½ lbs. approximately.</p>	<p>5-second Fuse. Detonator and C.E. Pellet.</p> <p>1½ lbs. Nitro-Glycerine in Glass Flask.</p>	<p>Against all A.F.Vs. etc. Will adhere to target unless surface is steeply sloping, vertical, wet or muddy. Can be thrown from buildings on A.F.Vs. with good effect. Best if placed on target by hand or as a portable demolition set.</p>
<p>7</p> <p>No. 75 & 75a. Known as the Hawkins Grenade or Grenade Mine</p>	<p>Buff in colour with 75 or 75a painted on Striker Plate.</p> <p>75a has 80% explosive only.</p> <p>Practice : Dull Red with White Band at ends.</p>	<p>Is a Talcum Powder Tin fitted with a Metal Striker Plate or Platform on one side.</p> <p>Weight about 2½ lbs.</p>	<p>Instantaneous. Explodes when crushed. (Minimum crushing weight about 2 cwt.). The Detonator Unit consists of an Igniter and Detonator. Two used with each Grenade. The Igniter is a Tin Plate Tube closed at one end by flattening, and is painted Red. A rubber band is rolled on the Igniter. The Detonator is an Aluminium Tube open at one end and smaller in diameter than Igniter. It must be handled carefully. ½ lbs. Ammonel and 1 oz. Victor Powder.</p>	<p>To be placed in the pathway of an oncoming A.F.V. Can be used to form a mine field. Placed up to and within 2 ft. of each other, sympathetic explosion results. Best used in a "Neckplate" to ensure contacting A.F.V. tracks or tyres when pulled across a road.</p>
<p>8</p> <p>No. 76. S.I.P. (Self-Igniting Phosphorus).</p>	<p>Half Pint Clear Glass Bottle.</p>	<p>Red Cap, Hand. Green Cap, Hand or "North-over."</p>	<p>Instantaneous on breaking. (Percussion). Yellow Phosphorus, Benzene, Rubber, Latex and Water.</p>	<p>A.F.V.'s Lorries, etc., and all forms of incendiaries. As temporary smoke screens.</p>
<p>9</p> <p>No. 77. Smoke Grenade.</p>				

SUMMARY CHART.

E. Range and Danger Area.	F. Type of Effects.	G. To Prepare and Prime.	H. Mechanism in Operation.
<p>Approx. 20 yards hand thrown. Blast highly concentrated forward unless explodes in mid-air. Ensure adequate cover available within 5-seconds.</p>	<p>Penetration, Lethal Blast, Morale. If sticking to target will generally cut hole approximately its own diameter on reasonably heavy Steel.</p>	<p>Undo Bakelite Neck Ring to remove handle. Take out Plug and insert Detonator Assembly. Make sure Rubber Bands are in correct position on Detonator Set. Replace Handle ensuring Bakelite Ring is fully tightened, otherwise handle may break when thrown.</p>	<p>Hold Grenade head downwards. Remove Pin holding outer casing which falls off. Pull out Safety Pin marked "Danger." Lever flies off when thrown. Then same as 36 but Fuse 5-seconds. Make certain that the small circular Knurled Brass Nut in top of Handle is firmly in position before pulling Pin.</p>
<p>Hand only. About 20 yards. Container is light and disintegrates completely. Blast is Heavy. Danger area may be up to 75 yards.</p>	<p>Penetration, Blast Lethal, and Morale. Blast effect sideways and upwards.</p>	<p>Insert Igniter and Detonator, square cut end first. Do not remove Cap at end of Body.</p>	<p>The Grenade is shaped so that when thrown it will come to rest with the Striker Plate either on top or underneath. It will operate equally well in both positions. Is safe until run over and Striker Plate crushed.</p> <p>Do not touch to reclaim Grenade if dented or damaged. Remove ignition set when reclaimed.</p>
<p>Hand about 20-30 yards. Northover, 75-150 yards. Immediately dangerous to wherever Liquid splashes.</p>	<p>Incendiary and Smoke.</p>	<p>Ready for use when issued.</p>	<p>If used for Incendiary purposes in Blitzed house, should have Detonator and Safety Fuse attached to side of the Bottle to ensure breaking.</p>

CLASSIFICATION OF GRENADES.

Grenades can be classified into four classes.

(a) INSTRUCTIONAL GRENADES.

The use of these are for explanation of the mechanism of grenades, are very similar to drill grenades, very often sectioned, empty component parts being utilised, and the grenade is not weighted to bring it up to live weight.

To distinguish them they are painted similarly to live grenades, except that the red filling ring is not painted. They are packed in packages of service pattern over-stencilled with the following marks: (No. in each package), Grenades (Type), Instructional (), Mark ().

(b) GRENADES FOR DRILL PURPOSE.

These are prepared either for practice firing from a rifle or for throwing practice; they are in every way similar to an actual live grenade, but sometimes have inert filling to obtain the correct weight.

For distinguishing purposes their colour is white, with the exception of No. 75 drill grenade, which is dull red. They are packed in boxes which have the following marks stencilled on them either in white or yellow: (No. in package), Grenade (Type), Drill No. (), Mark ().

(c) PRACTICE GRENADE.

The purpose of this grenade is that there should be an opportunity to use a grenade which can simulate the action of a live grenade. The variation from a live grenade is the charge, which is considerably reduced to avoid the possibility of serious accidents. This type has not been generally issued, therefore, special markings are not yet published.

(d) LIVE GRENADES.

Every type of live grenade which is filled with a charge for service use has a painted red band around it; this may be either in the form of a series of red X's or alternatively a continuous band. The former type of marking denotes that the filling is suitable for storage in hot, humid climates without fear of deterioration taking place.

✱ "That's only a practice grenade!" ✱

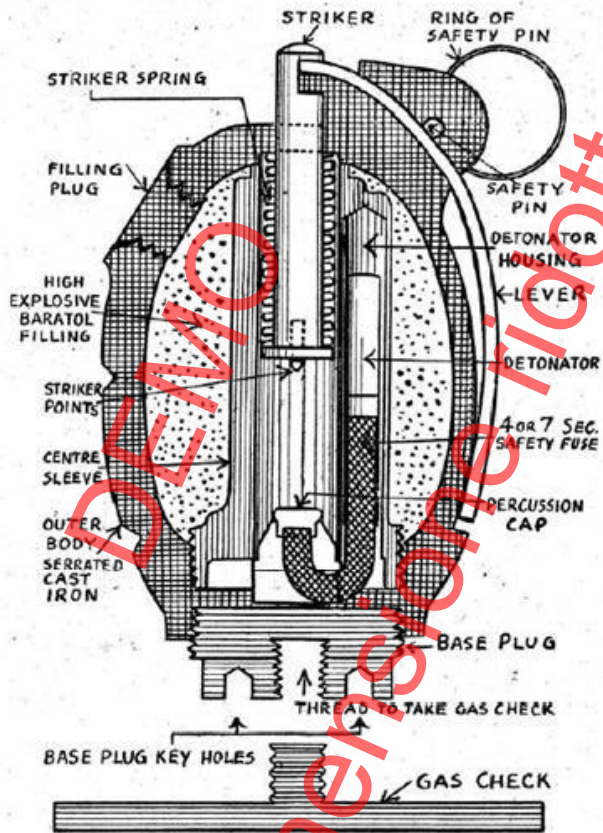
Occasionally live grenades have a band of another colour or other markings on them, in addition to the above, the purpose of this being for the information of the technical expert, to tell him the type of filling, etc.

No 36 MILLS GRENADE. (see sketches 1 and 1A).

Action: Anti-Personnel. **Fuse:** Time, 4 and 7 secs.

No. 36 Mills Grenades are issued packed 12 in a wooden box, marked with the words "Hand Grenade" and "4 secs.". A base plug key is usually clipped on the inside of the lid. In each box, separately packed, will be found a tin containing 12 Igniter Sets.

When grenades are intended for use with cup dischargers, the wooden case is marked "7 secs." In the case are the necessary gas checks, also 14 ballastite cartridges as propellants for use in a specially strengthened rifle fitted with an E.Y. cup, and a tin containing 12 Igniter Sets separately packed.



No 36. M. GRENADE.
 SKETCH I.

This grenade can be used for a number of purposes, mainly anti-personnel, for killing the crews of A.F.V.'s, clearing enemy dug-outs and other forms of similar cover, clearing buildings, trenches, machine gun nests, etc. It proved itself in the 1914-1918 war, and is probably the best known and most successful of all grenades. The fuse timing and explosive content have been altered for the present war.

The grenade consists of an outer cast-iron body, serrated to assist fragmentation on explosion. Can be recognised from its similarity to a very small pineapple. In the middle of the body is a centre piece, which contains a spring and striker, with space for the igniter set. These two are maintained in place by a lever fitted in a slot at the striker top. The lever is held by a safety pin passing over it, through two holes in the two shoulders, which project from the outside of the body. The grenade is painted black, varnished, and has a red and/or green band of X's.

GENERAL

The No. 36 Mills Grenade is charged with baratol. The grenade is intended generally for the killing or wounding of personnel, being most dangerous in a radius of approximately 20-25 yards from the point of burst. Fragments have been known to cause casualties up to a distance of 100 yards from the point of bursting, particularly if a shrapnel burst is obtained.

The grenade weighs approximately 1½ lbs. and can be thrown by hand about 30 yards. It is extremely useful in all types of close-quarter fighting, either in town or country areas. Before throwing, make absolutely certain you and members of your section or platoon are well under cover, or have taken cover immediately available after throwing. If the situation is such that no such cover is within reach, then the thrower must go flat, preferably feet towards explosion, hands protecting neck and back of skull, choosing if possible an indentation or hollow in the ground.

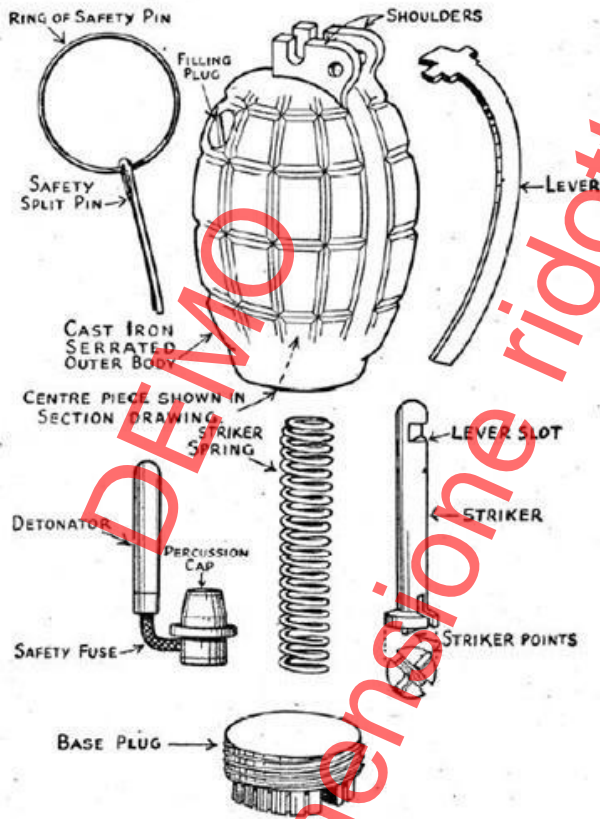
✱ "O.K. sir, Bill told me these are not primed!" ✱

STRIPPING THE GRENADE.

Remove the base plug to ensure grenade is not primed, take out pin after closing the points, maintaining a firm hold on the lever to prevent it rising from its flush position in the body. Place the base plug end of the grenade against the body, and permit the lever to rise under control; shake out spring and striker. Remove all traces of wax (use paraffin in cold weather if available) from the striker, spring, body and central sleeve, making sure to see that the striker is quite straight and has two nipples with a vertical gap between them.

✱ "Nobody's looking, you can smoke!" ✱

To check the striker for operation, fit with spring into the centre sleeve, with the slot at the striker top towards the shoulders. Force the striker through the grenade top, insert the lever in the slot, holding it down firmly with the base of the grenade against the body. Move the lever up and down several times, then release under control. This movement is to ensure the striker moving freely, also that the spring has enough tension to force the striker down to detonate the .22 cap. Always reject a weak spring or one which tends to jam in the sleeve.



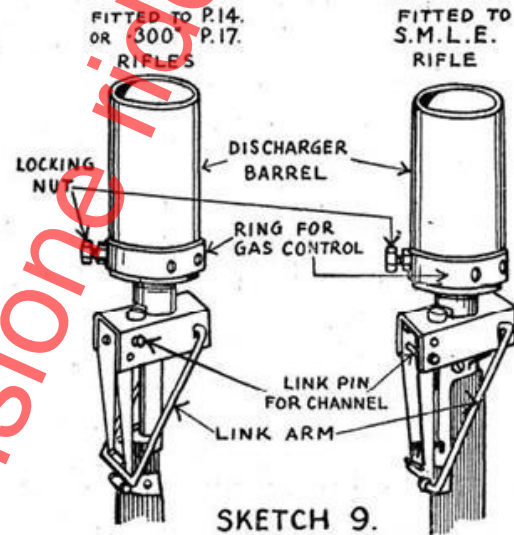
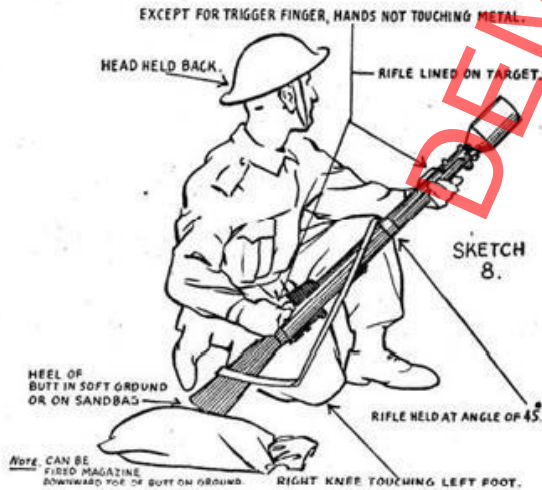
COMPONENT PARTS OF THE
 N° 36. M. GRENADE.

SKETCH 1A

DEMO dimensione ridotta

Set out below are the approximate ranges which may be obtained when the rifle is leaning at the above angle, and the variations in them that are possible by closing or opening the gas port :—

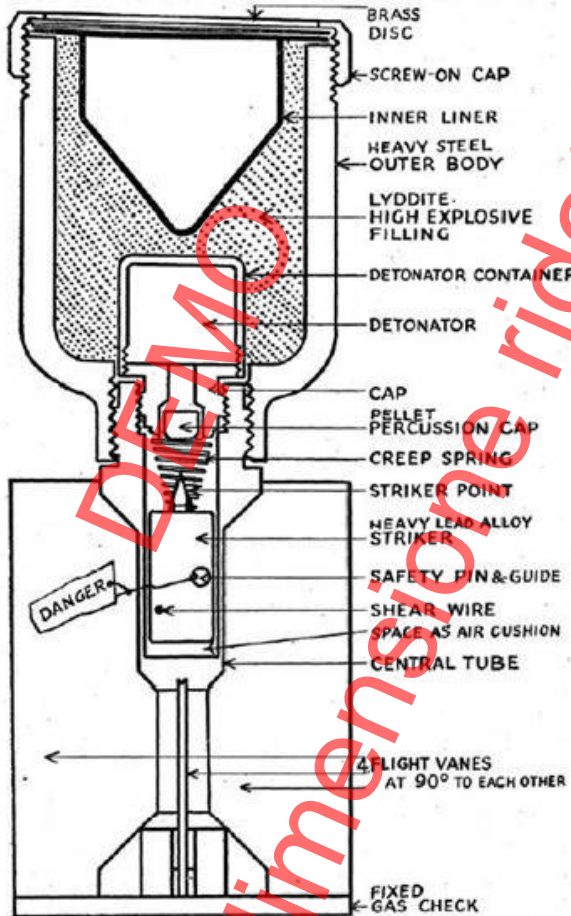
75-85 yards approximately.			Gas port fully open.
105-115	"	"	one-quarter closed.
130-150	"	"	one-half closed.
165-180	"	"	three-quarters closed.
195-210	"	"	fully closed.



№2 MARK 1 CUP DISCHARGER

dimensione inotta

Nº 68 GRENADE



21

SKETCH 10.

DESCRIPTION OF GRENADE.

The top of the grenade is filled with H.E., or 6½ ozs. of Lyddite, contained in a thick metal alloy casing sealed at its root by means of a brass disc held in place by a screwed ring. It is painted buff with red and green bands around the body.

DETAILS AND MECHANICAL ACTION.

The tail portion or unit has vanes fitted to it, to enable the grenade to maintain accuracy in flight to ensure the explosive container striking the target first. This is necessary as the striker in this type of instantaneous fuse will only function if it can move suddenly forward towards the head of the grenade. The tail also contains a hollow central sleeve in which is fitted a creep spring and the striker. The striker itself is maintained in place by a safety pin, which has a label attached to it, marked "To be withdrawn from grenade before firing"; secondly, by means of a shear wire, both fitted to and through the sleeve. A gas check is usually bolted to the end of the tail fins. The grenade must always be placed in the discharger with gas check FIRST, otherwise the grenade will burst instantaneously when the ballistite cartridge is fired.

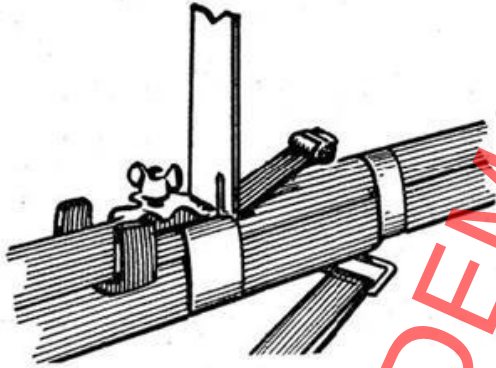
Prior to firing, the safety pin is taken out, leaving the shear wire and creep spring only to hold the striker in position. On being fired from a rifle the shock of discharge jerks the heavy striker backwards, thus cutting the shear wire. Detonation is caused by the sudden stopping of forward flight through striking a solid object, forcing the striker to jerk forward, overcoming the resistance of the creep spring and firing the detonator which explodes the grenade.

It has sometimes been recommended that this grenade be used from a Northover Projector, but the E.Y. cup should always be used in preference if available. More often than not there is insufficient initial shock of discharge from the Northover propellant to cause the shear wire holding the striker to be cut, with the result that unless a direct hit is registered, the fuse will not function. If it is found necessary to use the Northover, do not forget to remove the rubber shock pad from the propellant.

MARK I No. 68 GRENADE SIGHT. (See sketch 9a & 9b).

This is attached to enable accuracy to be obtained when firing a No. 68 Grenade from a rifle fitted with a discharger.

To fit the sight to the rifle, turn the back sight leaf over completely towards the rifle muzzle, undo the wing nuts and place the bar at the sight base in between the ramps of the back sight with the sight fixed leaf facing to the front, the metal band itself passing round the woodwork. Tighten up both wing nuts evenly to obtain the same pressure on the band.



MARK 1 No. 68" GRENADE
SIGHT FOR USE WITH No. 1
RIFLE FITTED WITH E. Y.
CUP DISCHARGER.

SKETCH 9a



VIEW SEEN THROUGH
VEE OF MARK 1 No. 68"
GRENADE SIGHT WHEN
CORRECTLY SIGHTED
ON ENEMY TANK.

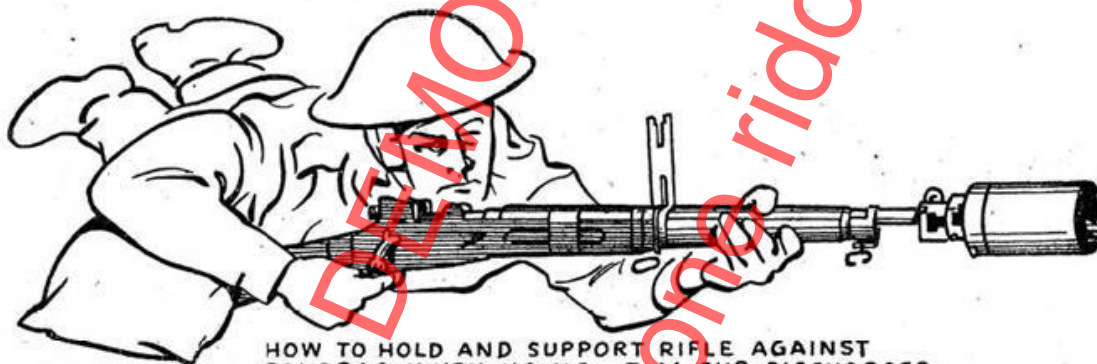
SKETCH 9b

For the P.17 and No. 3 Rifle a Mark II sight is utilised. To fit this, place it in front of the outer band. This type of sight can also be used on the No. 1 Rifle, but to use it for this rifle it should be fitted immediately to the rear of the outer band.

The topmost step is intended for use when aiming with a No. 3 Rifle, and the bottom one when aiming with the P.17 Rifle.

TO LOAD AND FIRE. (See sketch 11).

Take out the safety pin. Do not throw it away, as a moving target often will be out of sight or range before the opportunity to fire occurs. Should this happen, replace the pin and the grenade is ready for further use.

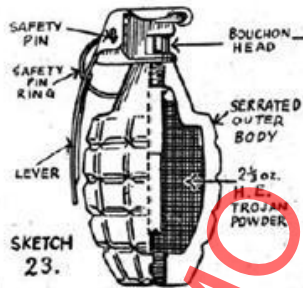


SKETCH II.

HOW TO HOLD AND SUPPORT RIFLE AGAINST
SANDBAG WHEN USING CUP DISCHARGER,
FROM PRONE POSITION FIRING N° '68' GRENADE.

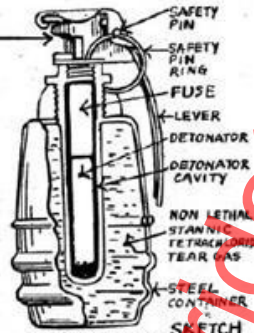
Having removed the pin, fit the grenade into the discharger with THE GAS CHECK IN FIRST; push it fully home without any undue force. When actually firing, place yourself in such a position as to enable the rifle to be held at a flat angle. (See Sketch No. 11.) Probably the best position is for the firer to lie in the prone position with the left hand holding the rifle in front of the outer band. Always use some form of shock absorber for the butt of the rifle, as very considerable recoil shock takes place, due to using the high-powered ballistite cartridge, the resistance of the gas check and grenade against the escape of the expanding gases. It is suggested that a sandbag three-quarters filled should be used to take up the shock; if not available, lumps of earth or a small hole in the ground to take the top of the butt will serve the same purpose. For certain forms of attack, or practice the 68 can be fired from the hip, but make sure no portion of the rifle touches the body. When

✱ "Rot, old boy, grenades don't mean a thing to me!" ✱

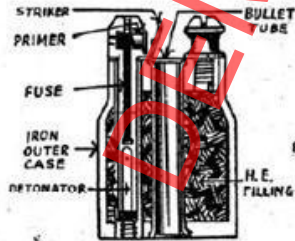


SKETCH 23.

U.S.A. MARK 2 HAND GRENADE



U.S.A. MARK 5 GAS GRENADE SKETCH 25.

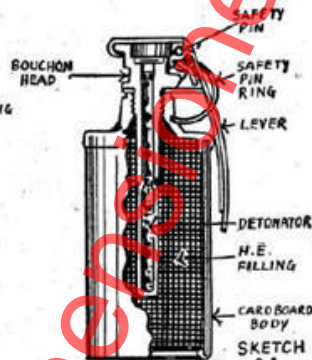


U.S.A. V.B. RIFLE GRENADE



SKETCH 26

TOP VIEW OF U.S.A. V.B. RIFLE GRENADE



U.S.A. MARK 3 HAND GRENADE SKETCH 24.

dimecristo

diotta

lever, detonator and fuse as in all the previously mentioned grenades and the actual gas that it contains is Stannic Tetrachloride, which is a tear producing gas. This pattern is particularly effective when dealing with rioting or clearing badly ventilated enemy strongholds.

THE INCENDIARY HAND GRENADE.

This is exactly similar in appearance and operates in the same manner as the above mentioned Mark II Phosphorous Hand Grenade and the Gas Hand Grenade, except that the body contains Thermite and solid oil.

THE RIFLE GRENADE. (See sketch 26).

This grenade is utilised for a similar purpose to our 36 M when fitted with a gas check and is fired from a Discharger in a similar manner to the British grenades when fired from an E. Y. Cup Discharger. This grenade is known as the VB Rifle Grenade. It is approximately 2½" in length and about 2" in diameter and is fired from the funnel shaped Discharger which is fitted to the American Service rifle. The body consists of a cylinder made of iron which is grooved on its inside so that considerable fragmentation effect takes place on explosion. The bottom of the grenade is flat and a hollow tube runs right through the centre of the grenade. The tube is to enable the bullet of the cartridge to pass through it when it is fired so that no special cartridge is necessary when fired from a rifle. As will be noted, this is contrary to the British practice of it being absolutely necessary to use a ballastite cartridge when firing the 36 or 68 from an E. Y. Cup Discharger fitted to the British Service rifle.

In the VB rifle grenade, a striker projects at an oblique angle over the fire end of the tube so that when the bullet passes through the tube it hits the striker which in turn fires the primer. The base of the primer sets off the fuse which burns for 8 seconds and then in turn sets off the detonator which finally detonates the main explosive charge. This cycle of operations actually takes place whilst the grenade is in flight, because it begins to travel as soon as the bullet enters the central tube in the grenade. The expanding gases from the cartridge act as the propellant on the flat base of the grenade quite effectively as they strike this base before the bullet has passed through the centre of the grenade.