

ARRANGEMENT FOR LAUNCHING SMOKE HAND GRENADES

The scope of the invention

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The present invention relates to a device for launching smoke hand grenades, in particular launching in salvos for own protection of vehicles.

- 10 More specifically, the invention relates to that kind of device which is described in the preamble of the attached patent claim No. 1.

Background to the invention

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- The present invention relates to a smoke launcher which was developed in connection with a user need for battle vehicles which are not originally fitted with smoke grenade launchers. A main requirement is for a low-cost, light and
20 free-standing launcher which may be mounted on e.g. tracked vehicles, lorries etc. without cost consuming modifications of the vehicles itself. The launcher will moreover be able to use a type of smoke ammunition already existing which is simple and cheap to make.

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Brief description of the invention

- The aim of the present invention was to provide a lightweight smoke launcher which which can be produced at
30 low cost and which may rapidly establish a smoke cloud to screen vehicles not equipped with their own smoke screen equipment.

- The principles behind the invention is firing of a smoke
35 hand grenade from a launcher. This is something new and

quite special. The aim may be achieved simply by throwing the grenades out by means of the high pressure gases from a gas generator. One advantage is that smoke hand grenades are a relatively cheap ammunition compared with the type of
5 ammunition usually intended for launching from today's launchers. A further benefit is achieved through less complex ammunition logistics.

The gas generator of the launcher is a single unit which
10 produces gas by reaction of a standard blank cartridge or a separate base fuze. Two important details of the invention are, firstly, that the grenades are secured by means of a simple function which is integrated in the preferably manually operated firing mechanism and, secondly, that the
15 same operation also activates and fires the gas generator.

More specifically, the invention relates to a device of the kind mentioned initially which is according to the invention characterised by the features evident from the
20 characterising clause of the Attached patent claim No. 1.

Additional features and advantages of the present invention will be evident from the following description of embodiments, taken in conjunction with the attached
25 drawings, as well as from the additionally attached patent claims.

Brief description of the drawings

30 Figure 1 is a schematic plan, partly in section, of a base plate on which is mounted a launching device according to a first embodiment of the invention.

Figures 2A, 2B and 2C show on a smaller scale most of the
35 elements incorporated in Figure 1, viewed, however, from three different angles, i.e. as a sideways view, a base plan (partly) and an end-on view, respectively.

Figure 3 shows on the same scale as in Figure 1 an end-on view, partly in section, further details of the device according to the invention where elements forming part of the device are shown in a passive position.

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Figure 4 is a sketch, partly in section, similar to Figure 3 where elements forming part of the device are shown in a starting, activating position.

10 Figure 5 shows in details by a sketch similar to Figures 3 and 4, and shows some elements of the device in a further activated position.

Figures 6A and 6B show in an expanded sketch details
15 respectively of a threaded socket and a bayonet socket comprising a breech block.

Figure 7 shows in an expanded view details of a hammer /
striker cock.

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Figure 8 shows together with Figures 9A and 9B as well as with Figures 10A and 10B how several launching devices may be activated simultaneously.

25 Figure 11 shows an outline of principle for an example of transmission of power from motor to base pipe by means of an electric motor.

Figure 12 shows details of the outline of principle
30 according to Figure 11.

Figure 13 shows together with Figure 14 an alternative example of a breech block and attachment of the launching pipe.

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Figures 15A and 15B show a further example of power transmission from motor to base pipe.

Figure 16 shows a schematic plan, partly in section, of a base plate on which is mounted a launching device according to a second embodiment of the invention.

- 5 Figure 17 is an end-on view, partly in section, in which the device is in a closed or passive position.

Figures 18, 19 and 20 are end-on views similar to Figure 17 and show the device respectively in a partially detached
10 position, a partially ready position and a firing position.

Figure 21 is an end-on view similar to Figures 17 to 20 and shows part of the charging procedure for the device.

- 15 Figures 22A and 22B show respectively in sketches viewed from below and sideways how an embodiment of the firing mechanism may be executed.

Figure 23 is a perspective sketch showing a further
20 embodiment of the device according to the invention, with a special form of base plate.

Figure 24 shows on a larger scale a sideways view partly in section of details of the embodiment according to Figure
25 23, in particular as regards the individual launching pipes.

Description of embodiments of the invention

- 30 A first embodiment of the invention according to the invention will now be described under reference to Figures 1 to 5.

The device itself is attached to a base plate 1, see in
35 particular Figures 1, 2, 3, 4 and 5. The base plate 1 shown in the figures are designed for mounting on the roof at the front of a tracked vehicle, in particular of the type

Bv 206. In a serial production a base plate which may be of standard design, will be attached to a mounting plate specifically designed with a view to the type of vehicle on which the launcher is to be used.

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On the base plate 1 and associated with each launching pipe 3, arches/hooks 2 are attached, see Figures 1, 3, 4 and 5, into which the ring connected to the safety pin is to be hooked when charging. The launcher may e.g. consist of
10 four launching pipes 3, see Figures 1, 3, 4 and 5, connected to a base pipe 4, Figures 1 and 2. For each launching pipe 3, a ring is fitted having a protrusion 5, see Figure 1, into which the safety arch of the hand grenade 6 indicated in Figure 1 is to be guided when
15 charging.

The launching pipes 3 are attached to the base pipe 4 by a transition pipe 7, see Figures 1 and 2. At the underside of the base pipe 4 are attached two round irons 8, Figure 2
20 being hinged in two bearings 9, see Figures 2, 3 and 5 so designed that when the launching pipes 3 are turned backwards (by more than 90°, a wing being attached to the axle will slip over an edge 10, see Figures 2 and 5, so that the base pipe 4 with the launching pipes 3 may be
25 detached / dismantled from the base plate 1.

Attached at one end of the base pipe 4 is a gas generator comprising a chamber 11, see Figure 1, and a breech block 12, see Figures 1, 2 And 6. Mounted in the breech block 12
30 is a ignition pin 13, which is retracted by means of a spring 14, see Figure 6. Also mounted on the breech block 12 is a wing 15, see Figure 6, for tightening a hammer mechanism mentioned below. This will rest in its correct position when the breech block is locked by means of a
35 locking device on the chamber 14a, see Figures 2, 3 and 4. The breech block 12 is attached to the chamber 14a either by means of respectively threads 16 or a bayonet socket 17, see Figure 6A respectively 6B.

The device is protected from outside effects by a cover 18, see Figures 2, 3 and 4, having a spring loaded lid 19, see Figures 3 and 4, which is tipped upwards when the pipes are raised/turned up into their firing position. At its front
5 the lid 19 is protected by a branch guard 20, see Figures 3 and 4. The cover 18 is fitted with a hinge 21, see Figure 1, at one end. At its other end an angle profile 22 is arranged, see Figure 2, which will, at the pull of a handle 23 in a locking arch 24, Figure 2, slip under a crossbar in
10 the locking arch 24, see Figure 2, which will subsequently lock the lid/cover when the springs 25, Figure 2, pull back the locking arch 24.

At the inside of the lid/cover 18 against the breech block
15 there is mounted in a bracket a striking device 26, see Figure 1. The striking device 26 comprises a hammer/cock 27, see Figures 1, 2, 3, 4 and 10 which is attached to an axle 28, see Figures 1, 2, 4 and 7 and will by means of a striking spring 29, Figures 1, 4 and 7, provides the cock
20 with a striking direction towards the ignition pin. At the other end of the axle a tension wing 30 is attached, see Figures 1, 2, 3, 4 and 7, which turns the axle and the cock up into its strike position when the wing of the breech block which lies below the tension wing, is forced upwards
25 by the turning movement of the base pipe/breech block.

When the turning has completed a certain angle, the tension wing slips under the wing of the breech block, and the hammer will strike against the ignition pin. This becomes
30 possible when the breech block/the base pipe move into the imagined vertical plane in which the hammer lies since the turning axis 31, see Figures 3 and 5, lies below the centre line of the base pipe. When the launching pipes are lowered towards the base plate again, the wing of the
35 breech block which now lies above the tension wing, will force the latter downwards against a spring force 30a, see Figure 7, until it slips past and again remains resting in its starting position.

The pipes 3 in a launcher may be raised by means of a mechanical device from the inside of a vehicle by pulling down a lever, e.g. as shown in Figure 3.

- 5 For mechanically activating two launchers on one vehicle also just one lever may be used. This may be done as e.g. shown in Figures 8, 9A, 9B and 10. The arch 31, Figure 3 can then be connected to the struts 32a and 32b, Figures 8, 9A, 9B and 10 connected by a lever 33, Figure 8, which is
10 turned 60° in one direction or the other, depending on the launcher which it is desired to activate.

The lever 33 which may be operated from inside the vehicle, is attached to an axle 34, passing through the roof of the
15 vehicle and through a coupling housing 35, Figure 10, and continuing to two stable bearing supports 36, Figures 9 and 10, attached to a box enveloping the coupling housing. In the coupling housing which can move on the axle, the axle passes through three discs where the primary disc 37,
20 Figures 9 and 10, is attached to the axle. By turning the handle 33, Figure 9B, anti-clockwise, Figure 10A, the primary disc will still engage with the secondary disc 38a, Figures 8, 9 and 10, and turn it in the same direction. The strut 32a, being hinged to the lifting arch 31, Figures
25 3 and 4, will then be given a movement inwards towards the launcher 39, Figure 8, whereby the pipes are raised and the launching activated.

In the course of that movement the primary disc will slip
30 from its engagement with the secondary disc 38b, Figure 10A and will press the latter and hence the coupling housing downwards while compressing the coupling housing spring 40, Figures 9 and 10. When the handle is being returned to its starting position the barrier 41a, Figures 9 and 10, will
35 prevent the strut 32b, Figure 10A, from shifting towards the launcher 42, Figure 8. Turning the handle 33, Figure 9 anti-clockwise, Figure 10B, will cause the launcher 41, Figure 8, to be activated in that the primary disc 37,

Figure 10B, engages with the secondary disc 38b, Figure 10B, while at the same time disc 38a slips out of engagement and is pressed up against the force from the spring 40, Figure 10B. The said spring presses the coupling housing upwards, so that the underside of the housing during the turning movement presses disc 38b towards engagement with disc 37. When the handle is moved back, the barrier 41b will prevent movement of strut 32a, see Figure 8.

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Activating the launcher by means of an electric motor can e.g. be done as shown in the outlines of principles in Figures 11 and 12. An eccentric tap on a wheel from a gear box will at one rotation turn an arm 50 connected to the end of the base pipe 4, up into a position for launching of the grenades, and back again, in one continuous movement (2 to 3 secs.). The movement of the raiser arm, i.e. the pipes, when the latter are in their launching position, is so slow that launching will take place in the course of fractions of a second. The actual control of that movement may be done in a simple manner e.g. with an electrical mechanical device with a twist switch controlled by the wheel on the gear box as well as a starter button/change-over switch and a power switch on a panel in the vehicle.

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Figures 13 and 14 show an alternative example of a breech block and attachment of launching pipe.

Figures 15A and 15B show an example of power transmission from motor to base pipe.

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Shown in Figures 16 to 22A and 22B is a second embodiment of a device according to the invention.

Here, too, the device is attached to a base plate 101, Figures 16 and 20, fitted with mounting attachments (not shown) to the vehicle, and arches 10, 1a, Figure 20, for pulling out the safety pin. The actual launcher consists

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of four or more launching pipes 102, Figure 16, with a centred hole 103, Figure 16, in the bottom, furthermore a base pipe 104 supported at each end 104a a gas generator consisting of a breech block 105, and a hammer mechanism 105a, Figure 16 and Figures 22A and 22B. Furthermore there are mounting pieces 106 with a through-going canal 107 to a canal in the base pipe 108. It is all being protected by a lid 109, Figure 17, which can be raised by means of a lever 110 connected to a pulling mechanism 111 which can be pulled back via a wire 112 to raise the lid 109, and the pipes by means of a pulley 113 with a handle 113a mounted e.g. in the driver's cabin of a tracked vehicle.

The launcher is being charged by first opening the lid 109 without the pipes being raised. This is done by first lifting the lid (by means of a handle not shown in the drawing) while at the same time the hook 115 is being pulled forward by hand, so that it does not engage with a deflected sheet 116, attached to one of the pipes. The lid is raised to its vertical position where it is blocked, Figure 21. The grenade is then passed into the pipes while at the same time the safety levers on the grenade are guided into a sheath on the outside of each pipe (not shown). The rings which are fastened to the safety pins of the grenades are then hooked on to the arches 101a, Figure 20, in the base plate. The gas generator is subsequently charged by first removing the breech block with the ignition pin attached to the end of the base pipe. A blank cartridge, e.g. a 7.62 mm red plastic cartridge 117, Figure 16, is passed into the breech block and retained by means of the groove in the metal bushing of the cartridge. The breech block with the driving cartridge is then passed into the chamber 118, Figure 16, on the base pipe and locked in a simple manner by means of a bayonet socket. The cock of the hammer mechanism will during this operation rest 105a, Figure 16 and Figures 22A and 22B, against the bottom plate and will thus be out of the way. The lid is subsequently tipped forwards down towards the bottom plate by a spring.

During firing, the lid is first lifted by means of a pulling mechanism 113, 113a, Figure 17, inside the vehicle. When the hook 115 engages with the plate 116, the launching pipes will also start to rise. When that happens, the

5 safety pins are pulled out of the ignition mechanism of the grenades, and the cock 105a, Figures 22A and 22B, is raised up towards its correct position and simultaneously being tightened by means of a raising and tightening lever 119. When the pipes are raised to the right angle of elevation,

10 the lug 121 tightening the cock will be turned so that it releases the cock which will then hit against the ignition pin 120, Figure 16, in the breech block. The blank cartridge will thereby be reacted, and the grenades are launched by the gunpowder gases creating a high pressure in

15 the base plate and the distribution pipes to the bottom of each launching pipe. The safety lever is then released when the grenades have left the pipe, and the hammer mechanism ignites a retarder which will after a certain time ignite the charge which blows up the grenade in air

20 with subsequent formation of a smoke cloud.

Shown in Figures 23 and 24 is a further embodiment of a device according to the present invention.

25 Used in this embodiment as carrier of the individual launching pipes is a block 238 in which seats have been machined for the individual launching pipes 203, so that the pipes obtain angles which provide a desired sideways spreading of the grenades to be launched from the

30 individual pipes. If the said block 238 is to be attached to a vehicle, a bracket (not shown) will be used, so that the desired angle of elevation is provided. Each launching pipe 203 is protected by a lid 239, see in particular Figure 24, the said lid 239 being attached to an arm 240 in

35 which is incorporated a movable locking pin 241. The arm 240 may turn on an axle 242 to which also a small wing 243 is attached which can be affected by a gas piston 244. The gas piston 244 will provide a torque on the axle 242 which

will entail a opening of the lid 239 which in turn causes a ring 245 with its pertaining safety pin 245A on the hand grenade 206 in the pipe 203 to be pulled out. The safety wing on the grenade 206 will, however, still be retained,
5 because the launching pipe 203 is equipped with double walls while at the same time the safety wing is passed down between the outer and the inner pipe.

A springy pin 246 will retain the lid 239 in its closed
10 position, preferably with a certain pre-tension. When the gas piston 244 is activated, the springy pin 246 will be displaced and then across a dead point. When the said pin 246 has passed the dead point, it will assist in opening the lid 239 and subsequently ensure that the lid 239 is
15 kept open.

The block 238 may preferably be executed with two gas canals 247 and 248. The first gas canal 247 may have a connection to the launching pipes 203, while the other gas
20 canal 248 may have branches to each gas cylinder or gas piston 244 which is to open the respective lids 239 which in turn will pull out the ring 245 and pertaining safety pin 245A for the respective grenade 206.

25 The two gas canals 247 and 248 each have their own chamber with breech blocks for firing of a blank cartridge. The firing unit for the said gas cylinders or gas pistons 244, here referred to as a a first chamber, may suitably be mounted in a hole 249, while a second firing unit, here
30 referred to as a second chamber, may also be placed between the two middle firing pipes 203 (not shown). A firing unit may consist of a block where the blank cartridge is fastened, an ignition pin, ignition piston, and a solenoid which will make contact with the ignition piston when
35 current is supplied.

The activation initiating launching may appropriately take place from a switch suitably placed inside the vehicle.

Connected to the switch may be two circuits, a first circuit being first activated for firing of the cartridge in the first chamber, following which the lids 239 of all launching pipes 206 are tipped up while at the same time
5 the respective grenades 206 have their safety catch released. Thereafter the second circuit will automatically be activated by means of a time delay for firing the cartridge in the second chamber, which entails that the grenades 203 are ejected from their respective launching
10 pipes 203 by means of the smoke gas from the said second chamber. The lids 209 may thereafter be closed, e.g. manually or by means of other suitable devices.



P a t e n t C l a i m s

1. A device, in particular in a launcher, for launching preferably smoke hand grenades (6, 106, 206) comprising one
5 or several launching pipes (3, 103, 203) each holding a hand grenade (6, 106, 206) the said grenades prior to launching being in a secured state,
c h a r a c t e r i s e d i n that the device comprises a common gas distribution unit (1, 101, 238) which will
10 during launching communicate with the launching pipes (3, 103, 203) for conveying launching gas to each of the launching pipes, and that the device also comprises safety catch release devices (2, 102, 241) which will come into effect upon launching.

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2. A device as stated in claim 1
c h a r a c t e r i s e d i n that the safety catch devices are executed in conjunction with one or several protective covers for the launching pipes (3, 103, 203) and
20 that the protective covers comprise means which upon launching and opening/removal of the cover or covers will release the safety catch of the grenades.

3. A device as stated in claim 1 or 2
25 c h a r a c t e r i s e d i n that the gas distribution unit is in the form of a common base plate comprising two or several launching pipes (3) which are on the base plate (1) mounted at an angle to a common pipe/base pipe (4) having inlet via a transition pipe (7) to each of the said
30 launching pipes (3) and having a gas generator (11) at one end of the base pipe (4) as well as a device for activating the gas generator and raising a protective cover (18, 19).

4. A device as stated in one of the claims 1-3
35 c h a r a c t e r i s e d i n that the device comprises a lever or a push button which is operated e.g. from inside



a vehicle and will via a mechanism of struts, or a cable to an electrical activator, or a hydraulic, pneumatic or wire connection, start raising the pipes (3) which push upwards the said cover (18) or a lid (19) at the top of the cover, while at the same time the pins in all the hand grenades (6) are pulled out, and that the gas generator (11) is activated when the pipes (3) are turned up to their correct launching angle whereby the grenades are ejected by the gas pressure.

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5. A device as stated in one of the claims 1-4 characterised in that the transition pipes (7) are so designed, e.g. by individual adaptation of the pipe diameter or by pressure valves, that the pressure upon activation from the gas generator becomes approximately equal in all pipes.

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6. A device as stated in one of the preceding claims 1-5 characterised in that the protecting cover (18) has a spring loaded lid (19) at its top which is being raised by the launching pipes (3) when the latter are turned up into their firing position, and which will close when, after firing, the pipes are lowered back into the cover.

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7. A device as stated in one of the preceding claims characterised in that the base pipe (4) to which the launching pipes (3) are attached with the transition pipe (7), may be turned in brackets attached to the base plate (1), and so that in their resting position the pipes are vibration dampened e.g. by resting against vibration dampers on the base plate.

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8. A device as stated in one of the preceding claims characterised in that the transition pipes (7) between the base pipe (4) and the launching pipes (3) are positioned so that each launching pipe (3) on being

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raised, fall into the right position with regard to elevation and azimuth angle.

9. A device as stated in one of the preceding claims
5 characterised in that a lock at one end of the base plate (1) may be neutralised after which the cover (18) which is hinged to the base plate (1) at its other end may be tipped upwards and remains standing in its vertical position to uncover the pipes (3) which are lying in their
10 lowered resting position.

10. A device as stated in one of the preceding claims
characterised in that hand grenades (6) during charging of the launcher, are passed into the pipes
15 (3) while at the same time the safety arch is passed into slots on the outside of the pipes (3), and that rings (5) connected to the safety pin, are hooked on to pertaining arches in the base plate (1).

20 11. A device as stated in claim 10 characterised in that the distance from the arches (2) to the point of attachment in the base plate (1) is different and adapted so that upon raising/turning of the pipes (3), the splints will be pulled out in sequence.

25 12. A device as stated in one of the preceding claims characterised in that the cover (18) may be tipped back over the pipes (3) and locked to the base plate (1) while at the same time spring loaded contacts, e.g.
30 attached to the inside of the cover or on the launching pipes, exert a pressure on the grenades (6) high enough to cause them, when exposed to outside influences, not to move inside the pipes.

35 13. A device as stated in one of the preceding claims characterised in that the gas generator (11,12) may comprise a blank cartridge / a red plastic



cartridge, e.g. of a NATO standard calibre such as 7.62 mm, 9 mm or 12.7 mm, placed in a chamber (11) attached to one end of the base pipe (7) and a breech block (12) with a spring loaded ignition pin attached to the chamber 11 by
5 e.g. a bayonet or a threaded socket.

14. A device as stated in claim 1 and 13
c h a r a c t e r i s e d i n that ignition pins (13) can be struck against the ignition cap of the blank cartridge
10 by means of a device which is being activated by the turning movement of the pipes (3) and released when the pipes are in the launching position, e.g. by a hammer mechanism (26) consisting of a vertically positioned arm / cock (27) attached and spring loaded to a horizontal axle
15 (28) hinged on the inside in the end wall of the cover (18) by the breech block (12), and with a tension wing (30) attached to the other end of the axle so that, when the launching pipes are raised, an adapted wing on the breech block will engage with and force the tension wing of the
20 hammer mechanism to slip underneath the wing of the breech block whereby the cock will hit against the ignition pin in the breech block when raising the pipes has displaced the base plate with the breech block which is hinged at its underside to the base plate, into the imagined vertical
25 plane in which the cock moves.

15. A device as stated in claim 14
c h a r a c t e r i s e d i n that the wing (30) on the breech block (12) after firing, is lying on top of the
30 tension wing of the hammer mechanism (26) but that upon raising of the cover to which the hammer mechanism is attached, the tension wing in the hammer mechanism will be turned down towards the base plate (1) until, by means of a spring (30a) it will slip back over the wing of the breech
35 block and release the cover (18) with the hammer mechanism (26).



16. A device as stated in claim 1, 2 or 15
c h a r a c t e r i s e d i n that the cover (18) must be
locked in order for the activating mechanism of the gas
generator to be able to release, e.g. in that the edge of
5 the cover must lie completely down against the base plate,
i.e. in its locked position, in order for the tension wing
of the hammer mechanism to be able to slip under the wing
of the breech block, thereby activating the hammer
mechanism.
- 10 17. A device as stated in one of the claims 1, 13, 14 or
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c h a r a c t e r i s e d i n that the breech block (12)
must engage with a locking mechanism on the base pipe (4)
15 before firing of the gas generator may take place in that
the wing on the breech block (12) must be in its correct
position, i.e. in the position corresponding to locked
breech block, in order that the tension wing of the hammer
mechanism may be able to be released.
- 20 18. A device as stated in claim 1, 3 or 6
c h a r a c t e r i s e d i n that on the base plate (1)
and possibly on the inside of the cover (18), foil elements
are incorporated, connected to a switch, or that, from the
25 vehicle on which the launcher is mounted, a hot air hose is
passed, with its outlet underneath the cover, ensuring
sufficient heating of the launcher so that at low outdoor
temperatures no icing will occur which might block vital
parts of the launcher.
- 30 19. A device as stated in one of the claims 1 or 2
c h a r a c t e r i s e d i n that the gas distribution
unit is in the form of a block or a plinth (238) with
canals (247, 248) for conveying gas to each of a plurality
35 of launching pipes (203) which are substantially mounted
thereon at a pre-determined but possibly mutually different



angle of elevation, and that preferably for each launching pipe (203) a separate cover (241) is arranged.

20. A device as stated in claim 1, 2 or 19
5 characterised in that the launching pipes (203) are mounted by e.g. being threaded into a seat in the plinth (238) with a desired sideways spread, the angle between the two pipes at the centre being allowed to be 17-20° and between the two outermost pipes being 50-60°, and
10 possibly with symmetry around the centre line at right angles to the plinth (238) in the firing direction while at the same time the interspersed launching pipes (293) carry a turnable lid (241).

15 21. A device as stated in claim 1, 2 or 19, 20 characterised in that the lid (241) on each launching pipe (203) comprises a locking pin (241) which when the pipes (293) are being charged will be pushed in from the outside of the lid (239) and up through a ring
20 (245) to a safety pin (245A) on the said hand grenade (206) whereby the latter will be locked to the lid (239), and that each of the lids (239) is attached each to an arm (240) which in turn is attached each to an axle (242) which can rotate by means of a gas piston (244) built next to
25 each launching pipe (203) into the plinth (238).

22. A device as stated in claim 1, 2 or 19-21 characterised in that in the plinth (238) there are two chambers for base fuzes, e.g. for 7.62 mm
30 blank ammunition, and that one chamber has an opening to that canal (247) which is connected to the launching pipes (203), and that the other chamber has an opening to a second canal (248) in the block (238) from which there is a connection to each of the gas cylinders (244) with a piston
35 for each launching pipe (203).

23. A device as stated in claim 1, 2, 19-22 characterised in that a strut (243) which is



attached to the axle (242) for each lid arm (240) the said strut (243) being spring loaded around a pivot point so that the pertaining lid (239) is forced down against the respective launching pipe (203) in its closed position,
5 while the lid (239) remain standing up after firing from the respective launching pipes (203).

24. A device as stated in claim 1, 2 or 22
c h a r a c t e r i s e d i n that a base fuze is
10 discharged by an ignition pin in the breech block being pushed in by means of a solenoid being activated by means of an electric switch.

25. A device as stated in claim 1, 2, 22 or 23
15 c h a r a c t e r i s e d i n that the two chambers with pertaining breech blocks and solenoids are connected each to a power circuit so that when one chamber is fired by means of a switch, the other chamber will be fired automatically after a certain time delay connected to the
20 same switch.

26. A device as stated in claim 1, 2 or 21-25
c h a r a c t e r i s e d i n that the gas from the base fuze in the first chamber upon firing is distributed via
25 canals (248) to gas pistons (244) at each launching pipe (203), and that the gas from the second chamber is distributed via canals (247) communicating at the bottom of each launching pipe (203).