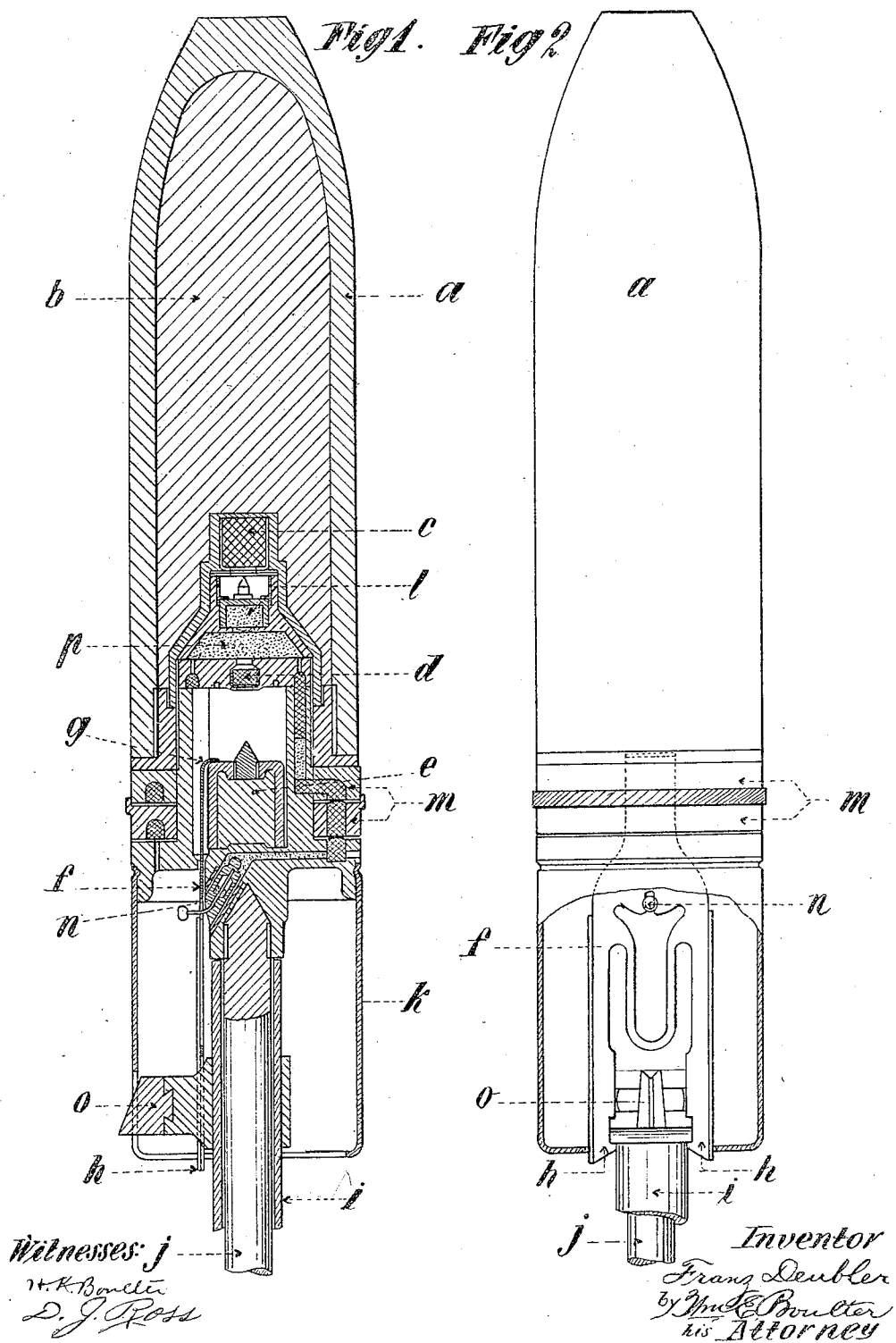


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 GRENADE PROJECTED FROM SMALL ARMS.
 APPLICATION FILED DEC. 16, 1912.

1,058,563.

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UNITED STATES PATENT OFFICE

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GRENADE PROJECTED FROM SMALL-ARMS.

1,058,563.

Specification of Letters Patent.

Patented Apr. 8, 1912.

Application filed December 16, 1912. Serial No. 736,993.

To all whom it may concern:

Be it known that I, FRANZ DEUBLER, a citizen of Austria, and resident of Vienna, in the Province of Lower Austria and Empire of Austria-Hungary, have invented certain new and useful Improvements in Grenades Projected from Small-Arms, of which the following is a specification:

This invention relates to grenades projected from small arms, and its object is to utilize the safety device, which is provided on such a grenade for retaining the percussive plunger, for the further purpose of initiating the operation of a time fuse, provided on the grenade.

It has been found, that small arm grenades, which hitherto have been fitted with percussion fuses only, do not always operate effectively or even fail entirely especially when the grenades strike upon soft or marshy ground, and in order to insure the operation of the grenades in all circumstances, or even to cause an explosion thereof in the air above the object, the grenades according to the present invention are fitted with time fuses, which are set in action at the moment of discharge of the grenade.

In accordance with the invention, a device is employed for starting the time fuse, which has already been provided on grenades for preventing the percussive plunger accidentally or prematurely moving forward against the priming of the grenade, and this safety device is so combined with the igniting device of the time fuse, that on projection of the grenade the safety device for the percussion plunger thereof, positively sets this igniting device in action.

A constructional form of the subject of the invention is illustrated on the accompanying drawing, in which:—

Figure 1 is a longitudinal section, and Fig. 2 a side elevation, in which a strip is used as a safety device for the percussive plunger, which strip on projection of the grenade remains hanging on the barrel of the small arm and thereby releases the percussive plunger for causing ignition on impact.

In this drawing, *a* indicates the body of the grenade, *b* the bursting charge thereof, *c* the detonator and *d* a percussion cap, by means of which the ignition of the bursting charge is initiated on impact of the gre-

nade; *e* is the percussive plunger of the grenade and *f* the safety device for the latter which in the illustrated example consists of a flat strip, which with its inclosed inner hooked end *g* engages over the percussive plunger, and with its forked rear end formed as inwardly directed hooks *h*, engages around the base of the fore-sight of the small arm and thereby retains the percussive plunger *e* until projection of the grenade. The guide-rod of the grenade is denoted by *j*, by means of which it is inserted in the barrel of the small arm, and *k* is a protective casing, for protecting the safety device of the percussive plunger against accidental or unintentional actua-

tion. The base of the grenade in accordance with the invention, is fitted with a time fuse, which in the known manner consists of two mutually rotatable priming rings *m*, which in accordance with their relative positions provide a longer or shorter priming channel. The priming rings surround the percussive plunger *e* and in addition are provided with a friction igniter *n* for the ignition of the priming of the time fuse. In the simplest form of construction, illustrated, this igniter consists of a friction wire *n*, which is embedded in a small tube filled with friction priming and coupled to the safety strip *f* of the percussive plunger. In the illustrated example, this coupling is effected by the strip *f* engaging by means of a notch the thickened and bent end of the friction wire *n*. On projection of the grenade, the friction wire *n* is retained by and as well as the strip *f*, which remains on the barrel, and the wire as a result is drawn out of the priming tube and ignites the priming. The ignition travels along the priming channel in the priming rings *m* to a propelling charge *p* located in the body of the grenade, in which a plunger *l* is embedded. On the propelling charge being fired, it propels the plunger *l* into the detonator *c* embedded in the bursting charge *b*, and thereby ignites and explodes the latter. In order to insure the firing of the charge when the percussive fuse becomes operative, the percussive plunger *e* is not arranged to strike the detonator *c*, but strikes against the percussion cap *d*, embedded in the propelling charge *p* whereby the former ignites

the latter, which then propels the plunger *l* against the detonator. In this manner a properly timed explosion of the grenade is insured under all circumstances. The two
5 priming rings *m*, which are graduated on the outside, enable in the usual manner the time fuse to be adjusted with precision.

I claim:

1. In a grenade projected from a small
10 arm, a percussion fuse, a plunger for said percussion fuse, a time fuse, an igniter for said time fuse and combined means for retaining said plunger until projection of the
15 grenade and for actuating said igniter on projection of said grenade.

2. In a grenade projected from a small arm, a percussion fuse, a plunger for said percussion fuse, a strip engaged with said plunger and with the small arm, a time fuse

and a friction wire for said time fuse engaged by a notch of said strip.

3. In a grenade projected from a small arm, a percussion fuse, a plunger for said percussion fuse, a strip, a hook on the inner end of said strip engaged with said plunger, 25 inwardly directed hooks on the forked outer end of said strip, a time fuse and a friction wire for said time fuse engaged by a notch of said strip.

Signed at Vienna, in the Province of 30 Lower-Austria and Empire of Austria-Hungary, this 4th day of December, A. D. 1912.

FRANZ DEUBLER.

Witnesses:

WILHELM BERGER,
AUGUST FUGGER.