March 12, 1935. J. WILLIAMS, JR 1,994,294

GUN FOR PROJECTING FINELY DIVIDED NOXIOUS POWDER

Filed March 8, 1934

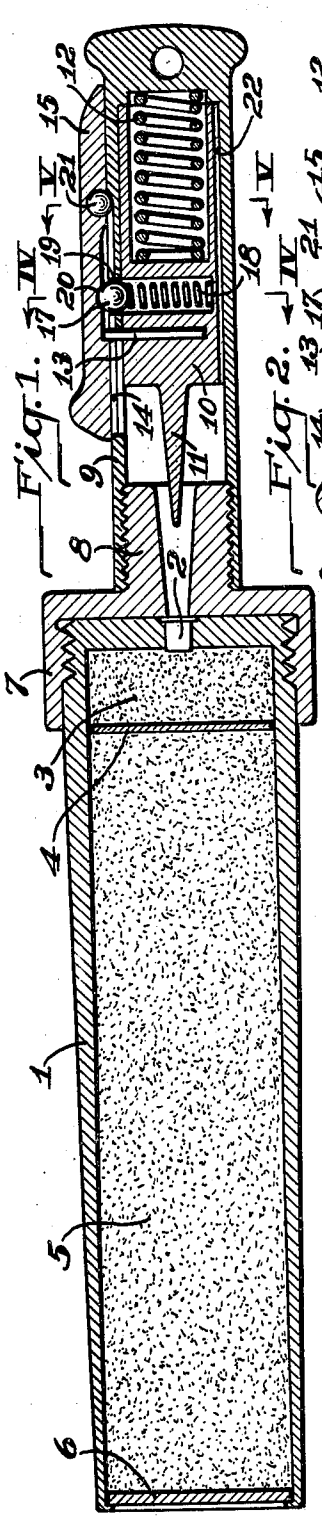

Fig. 1.

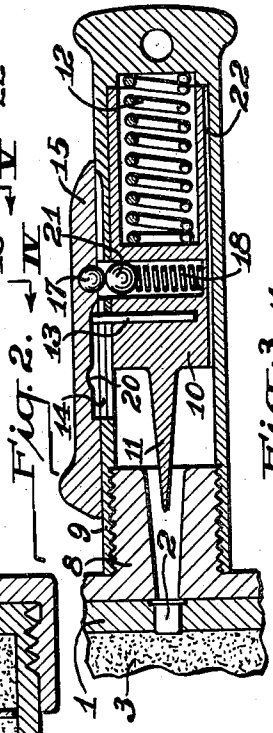

Fig. 2.

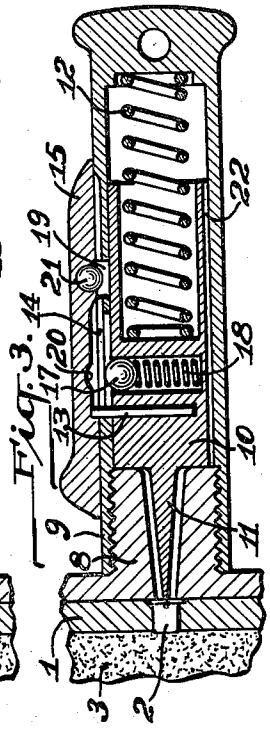

Fig. 3.

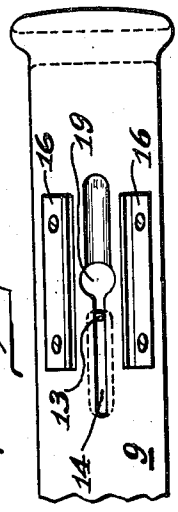

Fig. 6.

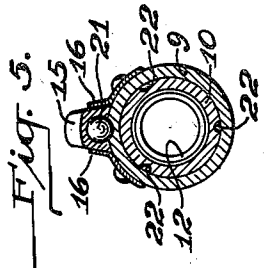

Fig. 5.

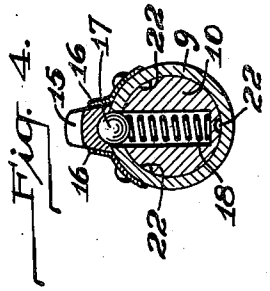

Fig. 4.

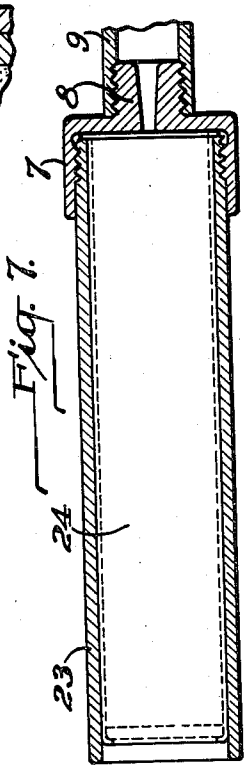

Fig. 7.

INVENTOR

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GUN FOR PROJECTING FINELY DIVIDED NOXIOUS POWDER

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Application March 8, 1934, Serial No. 714,612

1 Claim. (Cl. 42—2)

The invention relates to a gun designed for the projection to a substantial distance of a volume of a finely divided noxious or irritating powder, such as diphenylaminechlorarsine, which has reactions physiologically somewhat similar to those produced by a noxious gas, but which is not transformed into a gas by the discharge of the gun. The invention has for one of its objects the provision of a construction which is simplified and cheapened as compared with prior structures, by utilizing the cartridge employed as the barrel of the gun, and by combining the cartridge holder and breech block into one integral member. Further objects are the provision of improved means for releasably holding the thumb piece or slide in retracted position, and for by-passing the air from one side of the firing plunger to the other, so that the resistance to its movement is reduced, permitting the use of a less powerful operating spring than would otherwise be required. Certain embodiments of the invention are illustrated in the accompanying drawing, wherein:

Figure 1 is a longitudinal section through the gun with the firing plunger in cocked or retracted position. Fig. 2 is a partial section showing the position of the thumb piece when pushed forward far enough to cause the release of the plunger. Fig. 3 is a partial section showing the plunger in firing position. Figs. 4 and 5 are sections on the line IV—IV and V—V respectively of Fig. 1. Fig. 6 is a plan view of the grip or handle with the thumb piece removed. And Fig. 7 is a section showing a modification.

Referring to the drawing, 1 is a cartridge shell or container which acts as the barrel of the gun and is provided at its rear end with a percussion cap 2. The shell carries at its rear end a body of gun powder 3, and forward of the wad or disc 4, the body of noxious powder 5 which is to be projected from the gun when the cartridge is fired, such powder being retained at the front end of the shell by the wad 6 held in place by the crimping at the end of the shell. The powder 5 is preferably diphenylaminechlorarsine, but various other noxious, irritating powders may be used, such as chloroacetophenone, veratrine, Spanish pepper or the like.

The shell 1 fits at its rear end into a socket member 7 with which it has the threaded engagement, as shown, so that the shell may be quickly removed and replaced. Integral with the socket is a breech block 8 which is threaded and has screwed thereto the hollow grip or handle 9. A plunger 10, provided with a firing pin 11, is mounted for reciprocation in the handle and is pressed forward by a spring 12. The plunger carries a pin 13 extending through a slot 14 in the wall of the grip, and the other end of this pin is engaged by a shoulder at the end of a slot on the under side of the thumb piece 15. This thumb piece is secured to the grip, so that it is free to slide longitudinally thereof by means of the plates 16 (Fig. 6). When the thumb piece is moved to the right to the position of Fig. 1, it moves the plunger to retracted or cocked position, compressing the spring 12. The plunger is locked in this position by means of the ball 17 mounted in a slot in the plunger, and pushed out to locking position by the spring 18. In such position, the ball lies in the perforation 19 (Fig. 6) through the wall of the grip and locks the plunger against forward movement. The ball also fits into a recess 20 on the under side of the thumb piece, so that the thumb piece is locked yieldingly against movement to the left from the position of Fig 1.

To release the plunger, the thumb piece is moved to the left to the position of Fig. 2, where release is secured by the action of the ball 21, secured in a socket on the under side of the thumb piece. The ball turns loosely in its socket, but is held therein by the edges of the socket which are peened in sufficiently to prevent the ball from dropping out when the thumb piece is removed from the grip. When the ball 21 pushes the locking ball 17 down, as indicated in Fig. 2, the plunger is snapped forward to the position of Fig. 3, firing the cap 2, and causing the discharge of the gun. To cock the device again, the thumb piece is moved to the right from the position of Fig. 3 to the position of Fig. 1.

In order to permit the plunger to reciprocate freely in the grip with a minimum of air resistance, by-pass means are provided from one side of the plunger to the other in the form of the grooves 22 (Figs. 4 and 5). This permits the use of a much lighter operating spring for the plunger than would otherwise be the case.

Fig. 7 illustrates a modification in which the socket member 7 carries a barrel 23 in place of the cartridge shell 1 of Fig. 1. In this case, the usual paper cartridge shell 24 is used in the barrel, such shell carrying charges of gun powder and noxious powder arranged in the same manner as shown in Fig. 1. The shell 1 of the Fig. 1 construction is preferably of some rela-

tively light metal, such as aluminum, and such shell may be, if desired, subject to recharging and reuse.

What I claim is:

In combination in a noxious powder gun, a socket member, a discharge barrel secured releasably in the member, a hollow handle secured to the other end of the socket member and having a slot in its side, a breech block at the rear end of the barrel, firing mechanism in the handle comprising a plunger, a spring for moving the plunger forward, a pin carried by the plunger and extending through said slot, a thumb slide mounted over the slot and having a slot on its lower side into which the end of the pin fits slidably, a spring pressed locking member working in the plunger transversely thereof, a locking recess extending through the wall of the handle for receiving the locking member and holding the plunger in retracted position when the slide and plunger are moved back to firing position, placing said first mentioned spring under compression, a locking recess on the inner face of the slide adapted to be engaged by the locking member when such member is in locking position, and a release element movable with the slide, and adapted to engage and release the locking member when the slide is moved forward.

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