April 12, 1932. C. LEFEBVRE D'HELLENCOURT 1,853,802

PISTOL FOR SIGNALING PURPOSES

Filed Dec. 19, 1928 2 Sheets-Sheet 1

Fig. 1

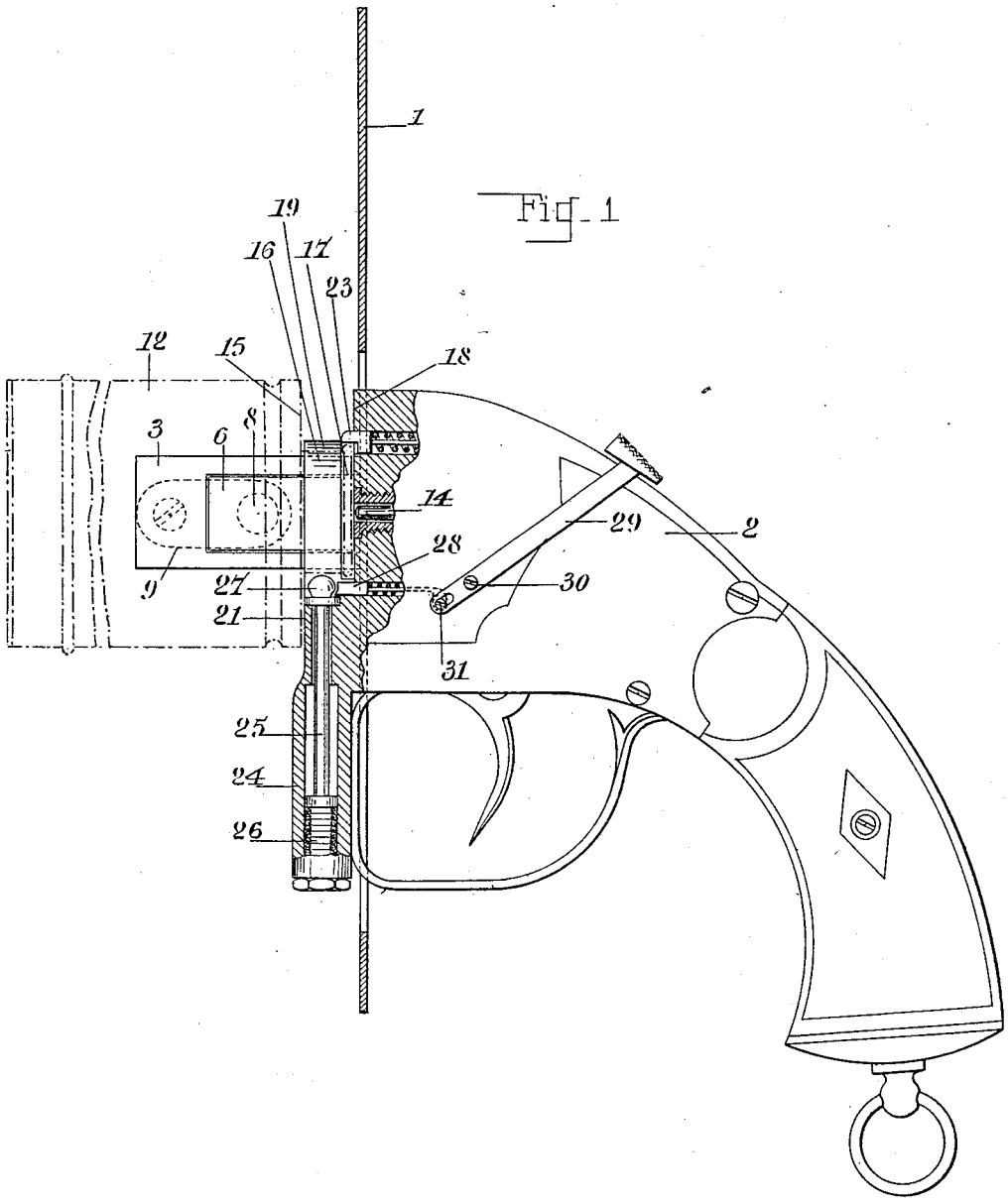

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Fig. 2

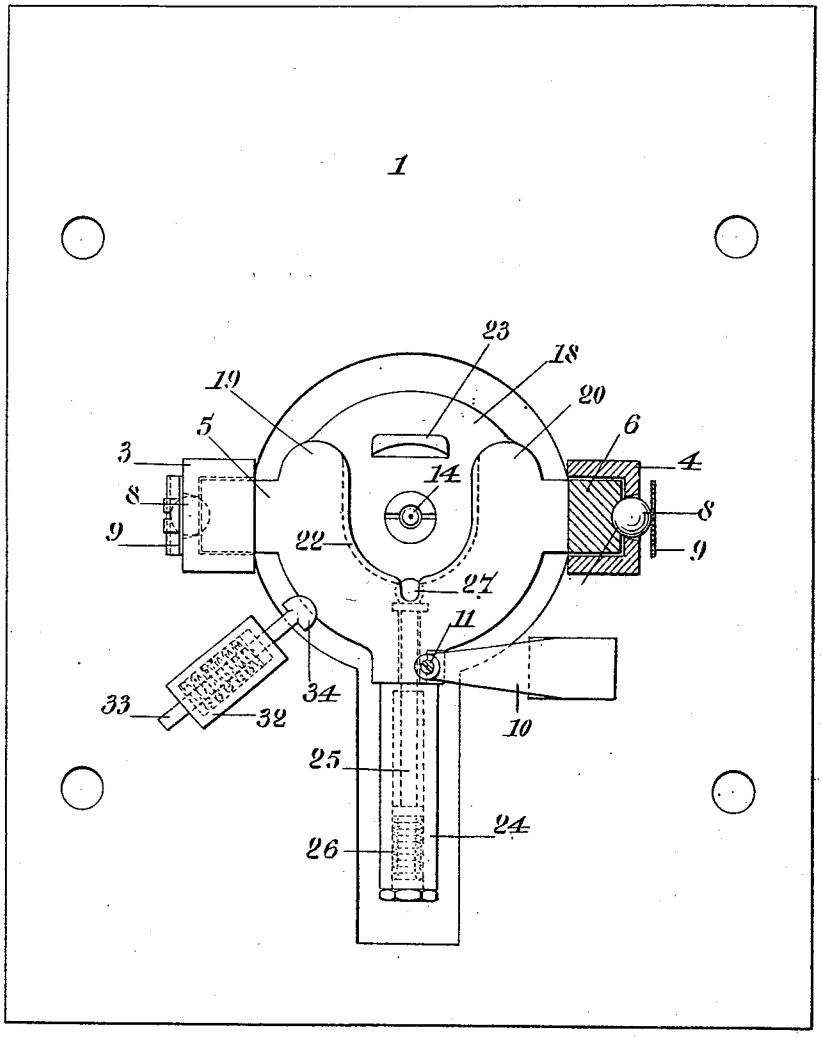
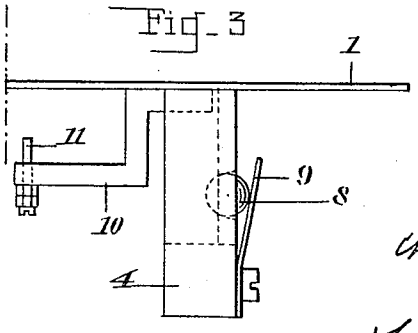


Fig. 3



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UNITED STATES PATENT OFFICE

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PISTOL FOR SIGNALING PURPOSES

Application filed December 19, 1928, Serial No. 327,098, and in France December 19, 1927.

The present invention relates to a pistol which is adapted for signaling purposes, and chiefly for signaling on aeroplanes. The arrangements in use may however be employed to advantage in many other cases, and all such cases are covered by the invention.

The said pistol is not provided with a barrel, and the charge is contained in a cartridge case which is secured to the breech-piece.

According to the invention, the cartridge case and the pistol are so constructed that the two parts can be fitted together by inserting the cartridge case perpendicularly to the firing line, into suitable claws or recesses forming part of the breech-piece. For instance, the cartridge case comprises at the back part a rounded flange engaging in the said securing recesses.

In a preferred form of construction, the cartridge case is terminated at the rear end by a cartridge case head of smaller diameter which makes contact with the breech piece itself, and the said head is provided with a rounded flange engaging in a recess whose plane is perpendicular to the firing line. The said head is surrounded by a boss which is formed in one with the breech-piece and is terminated by a trimmed surface in contact with the rear end of the cartridge case properly so called. The cartridge case is thus held in an approved manner, and the effort due to the recoil upon the end of the cartridge case is distributed over a large surface of the breech-piece. It should however be observed that the whole rear end of the cartridge case is not held by the boss of the breech-piece, since the said boss must be cut out for the insertion of the cartridge case provided with the said flange.

A device which is advantageous for holding the cartridge case consists of a tenon which after the cartridge case has been inserted will maintain the head of this latter and thus prevents its removal.

The ejection may be performed in a very simple manner by means of a push-piece provided with a spring which is compressed by the insertion of the cartridge case to the end of the recess, or by means of a lever thus used, and the said push-piece is then held by a stud. For the ejection, it is simply necessary to push back the said stud by a simple control, and preferably, the said control effects at the same time the release of the tenon which also holds the cartridge case.

The present invention further relates to the disposition of a signaling pistol on an aeroplane, it being mounted on a firing plate provided with a device which prevents the pistol from operating if the pistol is not secured to the plate. Upon the said plate may also be mounted a fastening device in such manner that when the pistol is loaded, that is, provided with its catridge case, and is placed in position on the said plate, it can not be removed from the plate unless the cartridge (or case) has been ejected.

The device adapted to hold the piston upon its plate may consist of two tenons mounted on the breech-piece, which engage in slots formed on the said plate and provided with stopping notches or the like.

A safety device is provided on the pistol stock, by which the insertion is automatically prevented or blocked when the piston has been removed from the plate. When mounting the pistol on the plate, a stud upon the plate will drive down the safety device, and the pistol can then be employed.

A blocking is effected by a rod which serves to prevent any movement of the cartridge case to the rear, so that the pistol cannot be removed until the cartridge case has been ejected. This will obviate all accidents due to hang fire, such as have been found to occur, for instance a cartridge case which had failed to operate, again entered the cockpit and took fire after a certain time, thus causing a serious accident.

The following description with reference to the appended drawings which is given by way of example shows an embodiment of the invention.

Figure 1 is an elevational view, with partial section, of the pistol mounted on its plate. Figure 2 is a corresponding front view with partial section on the line II—II of Figure 1. Figure 3 is a plan view of the right-hand half of the securing plate.

The pistol 2 (Figures 1, 2 and 3) is secured

to a plate mounted in the cockpit of the aeroplane, in the following manner. The plate 1 is provided with two guiding members 3—4 which extend outwardly on each side of the aperture giving passage to the breech-piece of the pistol. Two tenons 5—6 secured to the breech of the pistol, are engaged in slots in the said guiding members 3—4. In each tenon is formed the lateral recess 7 (Figure 2) in which is engaged a ball 8 (Figures 1, 2 and 3), urged by a spring 9. This arrangement provides for the maintenance of the pistol upon the plate when in the firing position.

The safety device is mounted at the lower part of the breech-piece. It is actuated by pushing down a small rod, not shown, which is thus inserted into the breech. The striker can operate only in the lowered position of the safety device. On the member 10 (Figures 2 and 3) secured to the plate 1, is mounted a stop 11 which may be lowered in the breech-piece and drives down the rod of the safety device, so that the pistol can only be operated when it is properly secured to the plate 1.

The cartridge case 12 is shown in Figure 1 in the form of a cylinder, closed by a cover 13. The end part 15 is provided with a cylindrical head 16 of smaller diameter, whose rear part carries a rounded flange 17.

Upon the part 18 of the breech is cast the boss 19—20 which has practically a horseshoe form when viewed from the front (Figure 2). The end 15 of the cartridge case 12, makes contact with the trimmed face 21 of the said boss. On the contrary, the end of the head 16 is in contact with the face 18 of the breech-piece itself.

The cartridge case is downwardly inserted, in such manner that the breech-piece 16 will pass through the cut-out part of the horseshoe-shaped boss 19—20. The rounded flange 17 is slidable in the semicircular groove 22 in the boss 19—20.

A tenon 23 projecting from the breech-piece will disappear to give passage to the extension piece 16 when the said flange 17 attains the bottom of the recess 22, and the tenon 23 then holds the upper part of the said flange. In this manner, the cartridge case is firmly secured in place. On the other hand, when the deflagration occurs, large surfaces are offered at the back part to support the recoil.

The percussion is effected by a mechanism, not shown, which acts upon the striker 14.

The tube 24 serves to guide an ejection push-piece 25 which is controlled by a spring 26. During the insertion of the cartridge case 12, the head 16 makes contact with the head 27 of the push-piece 25 and drives it into its recess, compressing the spring 26. When at the end of the movement, that is, in the position shown in the drawings, a stud 28 (Figure 1) engages a shoulder on the head 27 of the said push-piece and holds the latter in place.

The ejection is effected by actuating the lever 29, for instance with the thumb, and the said lever pivots on the axle 30, thus drawing to the right the shaft 31 connected with the stud 28. The said stud will move aside, thus releasing the push-piece.

During the same movement, the lever 29, by suitable driving means (not shown) will draw the tenon 23 to the right. The said push-piece will now drive up the cartridge case 12 which thus leaves the recess and drops off. Preferably the tenon 23 disappears before the stud 28.

The device which prevents the loaded pistol from moving in the cock pit is disposed as follows. In a guide piece 32 (Figure 2) is movable a rod 33 controlled by a spring. The head 34 of the said rod forms a fastening member which engages at the rear with the end 15 of the cartridge case 12. In this manner the pistol with its cartridge case cannot be removed from the plate, as the said fastening member which holds the said cartridge case will prevent this removal. The loading of the said pistol requires no other operation than the insertion of the cartridge case and its ejection by a simple movement of the thumb. It provides for the firing of ignition charges of large size, while at the same time the pistol itself is very light and occupies but a small space.

The said pistol cannot be operated unless it is mounted on its plate, and thus all danger of firing in the cock pit or of improper percussion will be obviated.

On the other hand, any ammunition placed in the said pistol, after it has been secured to its plate, will be ejected, whether it has been fired or not, and this obviates all hang fire, as above stated.

The said device provides for the firing, without any inconvenience, of signals which have a rocket effect, or which explode, at a short distance from the aeroplane, and in particular, this will allow the aeroplane producing the signal to be readily distinguished in escadrille flights.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. A signaling pistol comprising a breech, a cartridge case, rabbets forming a guide on the said breech perpendicular to the firing direction for guiding the said cartridge case and a tenon projecting from the breech for fixing the cartridge in its operable position.

2. In a pistol according to claim 1, a firing plate, and additional tenons carried by the breech, the said last-mentioned tenons engaging in slots carried by the firing plate.

3. In a pistol according to claim 1, an

additional tenon carried by the breech, the said tenons being provided with recesses or cavities, a firing plate, and slots carried by the firing plate and comprising stop notches with ball corresponding to the said tenons.

4. In a pistol according to claim 1, a safety device, a firing plate, and a stop on the said firing plate, the position of the stop corresponding to the said safety device, for depressing the safety device when the pistol is in place on the firing plate.

5. In a pistol according to claim 1, a safety device, a firing plate, a fixed finger on the said firing plate, the position of the finger corresponding to the safety device, for depressing the safety device when the pistol is in place on the firing plate.

6. In a pistol according to claim 1, and provided with ammunition, a firing plate and a bolt on the said firing plate and engaging with the rear portion of the said ammunition for immobilizing it so long as the ammunition is not ejected.

7. A pistol as claimed in claim 1, in which the bottom of the channel has for the ejection of the shell a spring plunger whose axis coincides with that of the channel carried by the breech.

8. A pistol as claimed in claim 1, including a locking bolt for the shell, an ejecting pusher and an ejecting tumbler controlling simultaneously said bolt and said pusher.

9. A pistol as claimed in claim 1, in which the channel has at the front a trimmed flat surface against which a part of the bottom of the shell bears.

10. Ammunition for a pistol for signaling purposes according to claim 1, in which the shell has a projecting central part adapted to slide in the channel of the breech and of a diameter notably less than that of the shell, the remainder of the bottom of the shell forming outside said projecting portion an annular part which abuts the front surface of the channel of said breech.

In testimony whereof I have signed this specification.

CHARLES LEFEBVRE d'HELLENCOURT.