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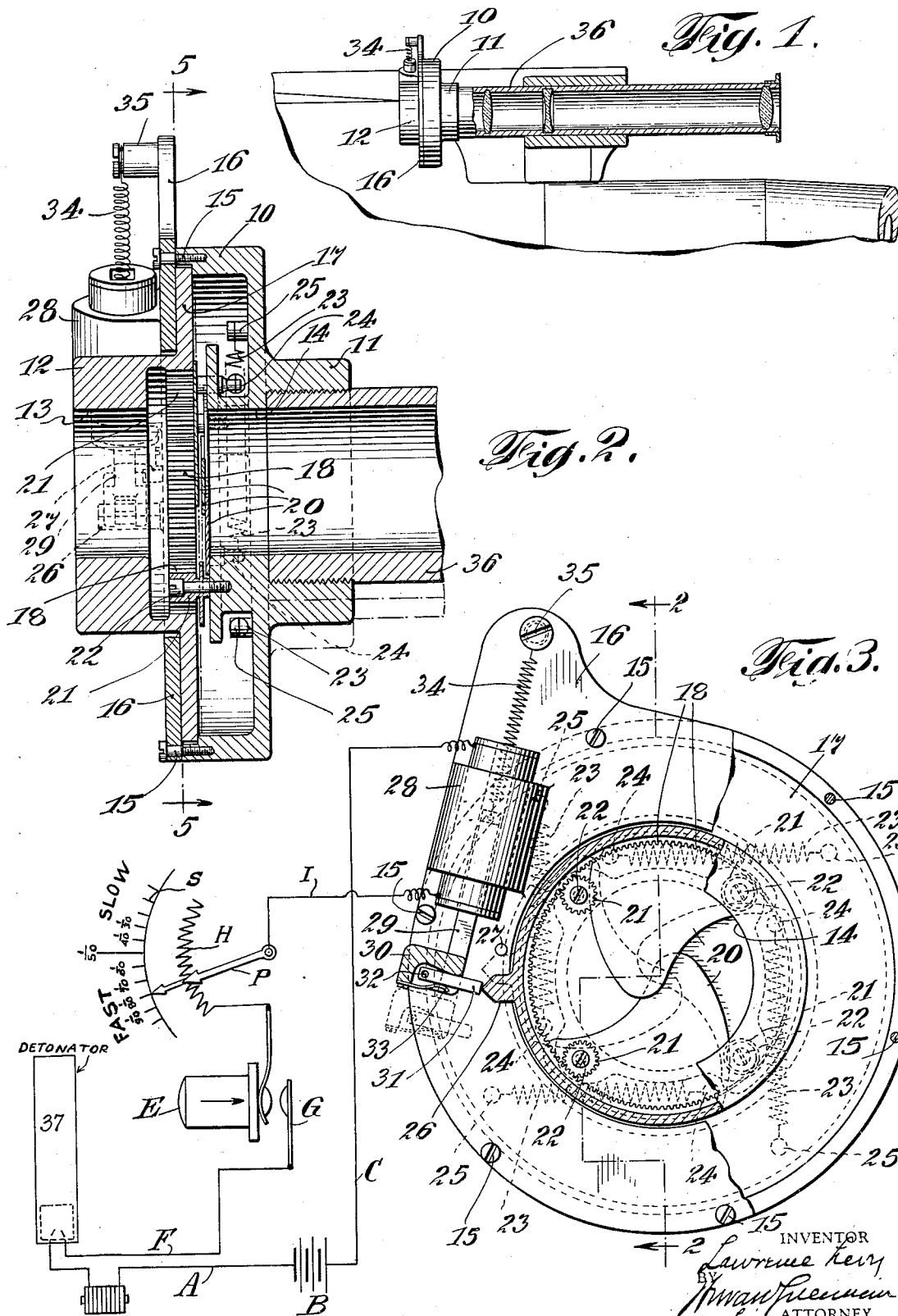
L. LEVY

1,814,756

GUN SIGHT

Filed July 9, 1927

2 Sheets-Sheet 1



July 14, 1931.

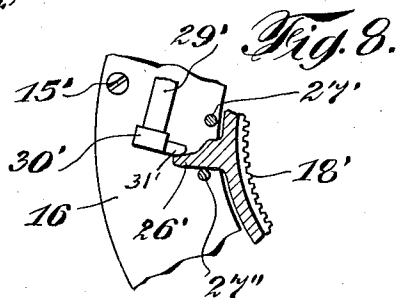
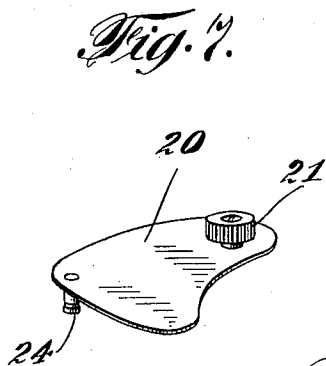
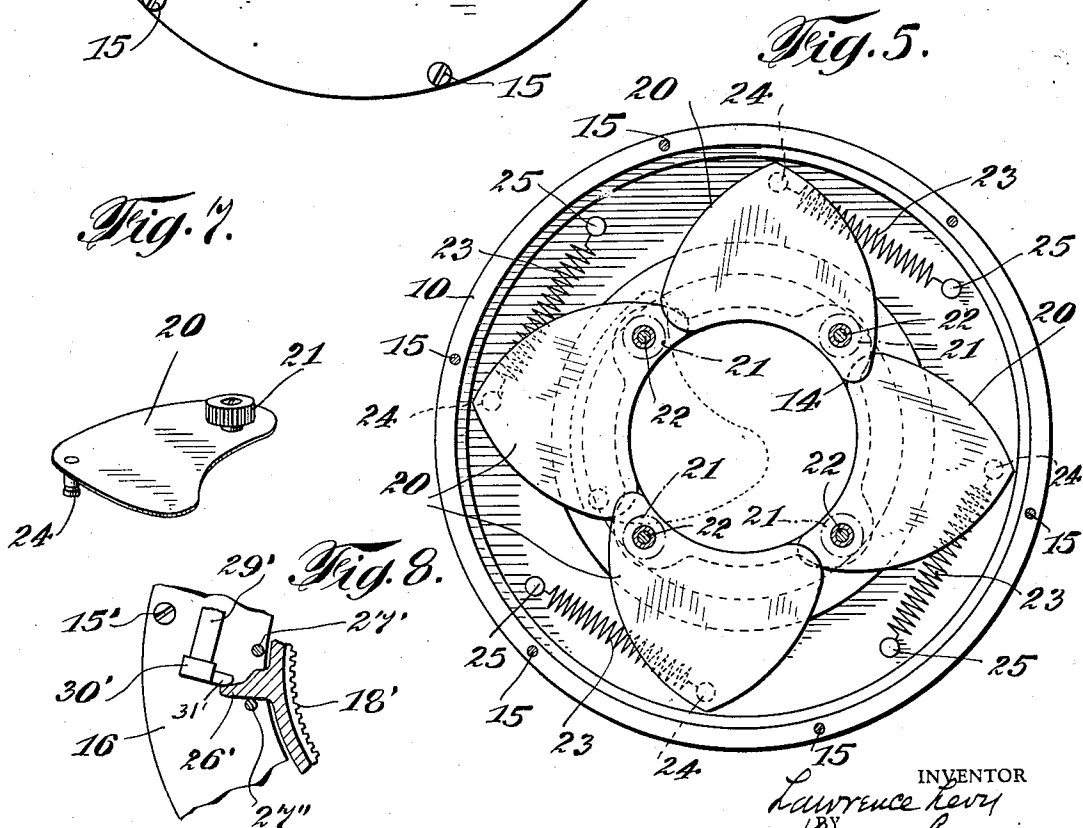
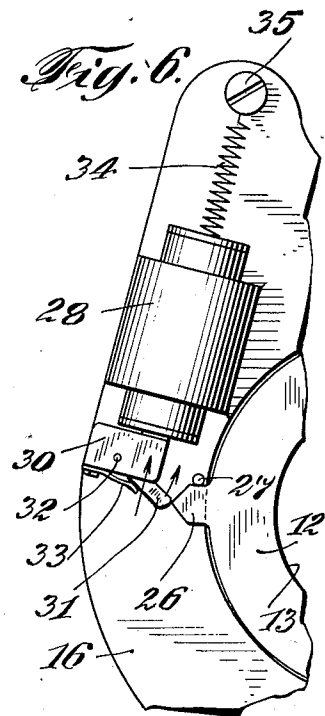
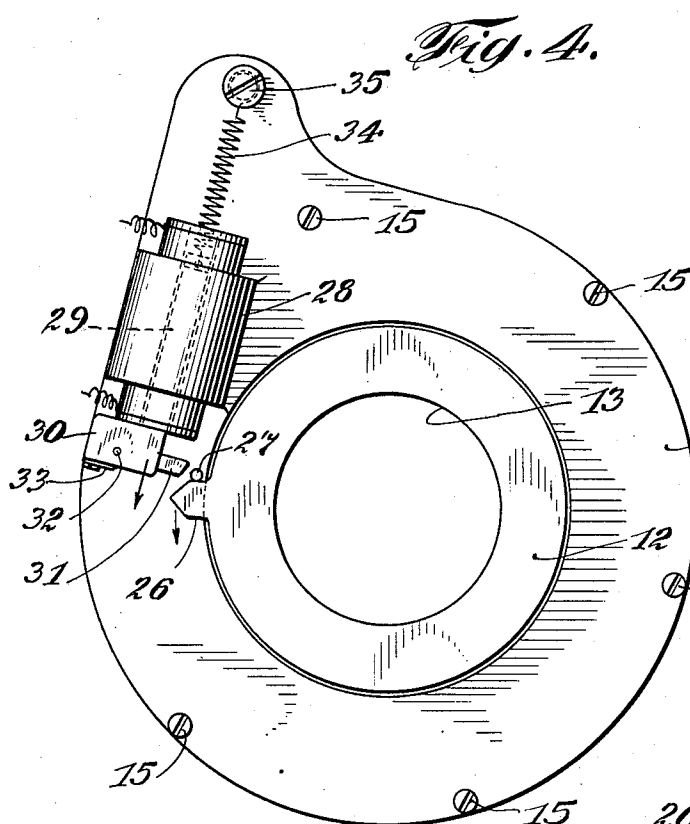
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GUN SIGHT

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

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GUN SIGHT

Application filed July 9, 1927. Serial No. 204,527.

The object of my invention is a device to protect the eyes of a gunner from the flash incident to the firing thereof, and is especially adapted for use in conjunction with fixed guns.

In operating guns of the character described, the gunner aims the gun by looking through the gun-sight and pressing the firing-key when the proper position has been obtained. The detonation of the charge and the consequent flash at the gun mouth are practically instantaneous with the pressure upon the firing-key and as the sight of the gunner is directed toward the mouth of the gun, his sight is seriously affected by the flash seen through the gun-sight.

So serious is this flash effect upon the sight that a gunner can fire a gun but a few times before he must be removed temporarily in order that his sight may return to normal.

The object of my invention is a device which may be readily attached to the gun-sight and which is of such construction and operation that it will not interfere with the ordinary aiming of the gun but which will prevent the return of the flash through the gun-sight to the eye of the gunner.

Another object of my invention is a device of the character described which will be operated by the pressure of the firing-key to close the sight passage through the gun-sight and thus protect the gunner's eye from the effect of the flash.

Another object of my invention is a device of the character described in which the time of closure of the gun-sight may be regulated with regard to the detonation of the charge and also as to the period of time in which the gun-sight remains closed.

The above, and other, valuable properties of the device of my invention will be evident upon a consideration of my specification and its accompanying drawings.

Referring to the accompanying two sheets of drawings—

Fig. 1 is an elevational view partly in section showing my improved sight attached to a gun,

Fig. 2 is a sectional view taken on line 2—2, Fig. 3,

Fig. 3 is a view from the muzzle end of the gun, parts being shown in section,

Fig. 4 is a view similar to Fig. 3 showing the parts in non-operating position,

Fig. 5 is a section taken on line 5—5, Fig. 2,

Fig. 6 is a view of the solenoid immediately after de-energization thereof,

Fig. 7 is a perspective of one of the leaf shutters, and

Fig. 8 is a detail of a modified form of shutter-actuating mechanism.

The particular form of the device of my invention shown in Figures 1 to 7 inclusive of the accompanying drawings comprises a rear housing 10 having the internally threaded boss 11. A front revoluble housing 12, having a bore 13 in alignment with the bore 14 of the rear housing 10, is maintained in position within the device by means of a plurality of screws 15, 15, passing through the supporting plate 16 and into the rear housing 10. The portion 17 of the revoluble housing 12 has an annular opening the perimeter of which is formed by a plurality of gear teeth 18, 18.

A plurality of leaves of a diaphragm shutter are positioned within the toothed opening of the revoluble housing 12. Each leaf 20 carries a fixedly attached gear wheel 21 capable of meshing with the teeth 18, 18 of the revoluble housing 12. The gears 21, 21 are maintained in position by means of screws 22, 22 in boss 11 and around which they are revoluble.

The teeth 18, 18 and the gears 21, 21 are so positioned that the revolution of the former will cause the leaves 20, 20 to open and close the opening through the device, thus acting as a shutter operating means.

A spring 23, attached to the pin 24 of a shutter leaf 20 and the pin 25 of the housing 10, tends to hold the shutter in open position.

A rotating pin 26 carried by the rotatable housing 12 is capable of abutment upon the stop pin 27.

Attached to the plate 16 is a solenoid 28 having the slidable core 29, which carries the housing 30, within which is the trip pin 31 pivotally attached at 32 and operated upon

by the spring 33. The core 29 is maintained in normal upward position by means of the spiral spring 34 attached to the pin 35 of the plate 16.

The device is attached to a gun-sight 36 by means of the internally threaded member 11 and the exteriorly threaded end of the gun-sight.

The wire A is connected to the detonating mechanism 37 (Fig. 3), and to the battery B, the latter being connected by the wire C to the solenoid 28. The wire F is connected to the detonating mechanism 37 and to the firing connection G, the latter being attached to the solenoid 28 by means of the wire I. The solenoid 28 is connected by the wire I to the revoluble pointer P which is movable over, and abutable upon, the rheostat H, the end of the pointer P being movable along the calibrated scale S.

The operation of the device is as follows:—

Assuming that the device is in normal position as shown in Figures 4 and 5, the gun loaded and sighted, the gunner presses the firing-key E, thus completing the electric circuit and detonating the powder. At the same time the solenoid 28 becomes operative and the core 29 moves downwardly, the trip 31 abutting upon the rotating pin 26 and causing a revolution of the housing 12, the gears 18 of which cause a revolution of the gears 21, 21 thus causing the diaphragm leaves 20, 20, to move inwardly, closing the operative, and preventing the explosion flash from being visible through the sight 36, the device then being as shown in Figures 2 and 3. As the core 29 moves further downwardly the trip 31 passes beyond the rotating pin 26, thus releasing the housing 12 which is returned to its normal position by the spring 34, the return movement opening the shutter. Upon the release of the firing-key E the core 29 returns into the solenoid 28, the trip 31 being allowed to pass the rotating pin 26 because of its pivotal position at 2.

It is to be noted that in this particular construction, the shutter re-opens although the firing-key may still be in connection position, but the period of time between the pressing of the firing-key and the closing of the shutter may be controlled and predetermined by means of the rheostat H, and the period of time during which the shutter remains closed may be controlled and predetermined by the relative forms and positions of the trip 31 and the rotating pin 26, as the shutter remains closed as long as the trip 31 maintains the pin 26 in its low position.

The modified form of the device of my invention shown in Figure 8 is similar to that shown in the other figures and previously described except that the core 29' carries a member 30' to which the trip 31' is fixedly

attached. The downward movement of the core 29' causes the trip 31' to abut upon the rotating pin 26' forcing it down upon the stop pin 27''. In this form of my device the shutter will remain closed as long as the firing-key E is in electrical contact and hence the gunner can keep the sight closed as long as he desires, thus insuring that the entire flash light will be completely hidden.

From the above it is evident that the device of my invention protects the gunner's eye from the effect of the flash and that the timing of the closure and the time of the closure may be fixed for a predetermined period.

I do not limit myself to the particular size, shape, number or arrangement of parts as shown and described, as these are given simply as a means for clearly describing the device of my invention.

What I claim is:—

1. In a device of the character described, in combination, a gun, a gun-sight carried by said gun, a shutter within said gun-sight, a firing-key, means controlled by said key for closing said shutter at a predetermined time after a pressure upon said firing-key, and means returning said shutter to open position.

2. In a device of the character described, in combination, a gun, a gun-sight carried by said gun, a diaphragm shutter within said gun sight, a firing-key, means controlled by said key for closing said shutter at a predetermined time after said firing-key has been closed, and means returning said shutter to open position.

3. In a device of the character described, in combination, a gun, a gun-sight carried by said gun, a shutter within said gun-sight, a make-and-break firing-key, a detonator, a solenoid, an electric circuit connecting said firing-key with said detonator and with said solenoid whereby a pressure upon said firing-key will energize said solenoid and fire the gun, means operated by the solenoid for closing said shutter and means returning said shutter to open position.

4. In a device of the character described, in combination, a gun, a gun-sight carried by said gun, a shutter within said gun-sight, a make-and-break firing-key, a detonator, a solenoid, an electric circuit connecting the firing-key with said detonator and with said solenoid whereby a closure of the firing-key will energize the solenoid, a rheostat within the key-solenoid circuit, means operated by the solenoid for closing the shutter and means for returning the shutter to open position.

5. In a device of the character described, in combination, a gun, a gun-sight carried by said gun, a diaphragm shutter having a plurality of pivoted leaves within said gun-sight, a fixedly attached gear wheel carried

by each said shutter leaf, an annular revoluble gear meshing with said leaf gears, a firing-key, means controlled by said key for revolving said annular gear to close said shutter, and means returning said shutter to open position.

6. In a device of the character described, in combination, a gun, a gun-sight carried by said gun, a diaphragm shutter having a plurality of pivoted leaves within said gun-sight, a fixedly attached gear wheel carried by each said shutter leaf, an annular revoluble gear meshing with said leaf gears, a firing key, a solenoid, an electric circuit connecting the firing-key and detonator with said solenoid whereby closing said firing-key will energize said solenoid, means causing the energized solenoid to revolve said annular gear closing the shutter and means returning the shutter to open position.

7. In a device of the character described, in combination, a gun, a gun-sight carried by said gun, a diaphragm shutter having a plurality of pivoted leaves within said gun-sight, a fixedly attached gear wheel carried by each said shutter leaf, an annular revoluble gear meshing with said leaf gears, a firing-key, a detonator, a solenoid, an electric circuit connecting said firing-key with said detonator and with said solenoid whereby closing the firing-key will energize the solenoid, a rheostat within said key solenoid circuit, means operated by the solenoid for revolving the annular gear and closing the shutter, and means returning the shutter to open position.

8. In a device of the character described, in combination, a gun, a gun-sight carried by said gun, a diaphragm shutter having a plurality of pivoted leaves within said gun-sight, a fixedly attached gear wheel carried by each said shutter leaf, an annular revoluble gear meshing with said leaf gears, a projection carried by said annular gear, a firing-key, a detonator, a solenoid, a movable core within said solenoid, an electric circuit connecting said firing-key with said detonator and with said solenoid whereby closing the firing-key will energize said solenoid causing an outward movement of said core and causing said core to move said annular gear projection thus causing the closing of said shutter, means returning the core to its inward position and means returning the shutter to open position.

Signed at New York city, in the county of New York and State of New York, this 6th day of July, 1927.

LAWRENCE LEVY.