July 10, 1934. O. W. FREDERICH ET AL 1,965,637

REVOLVER

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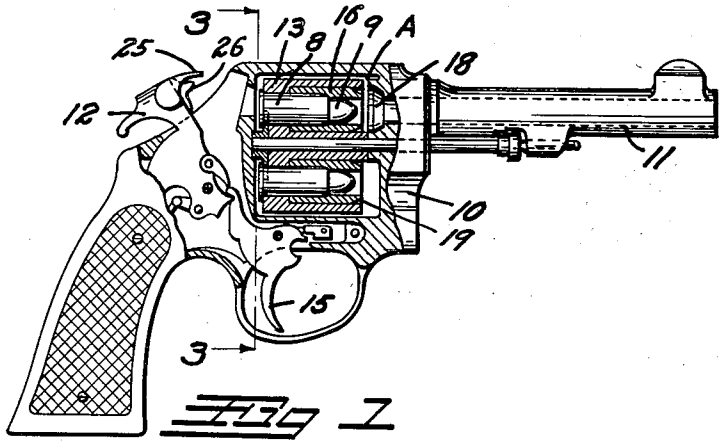


Fig. 1

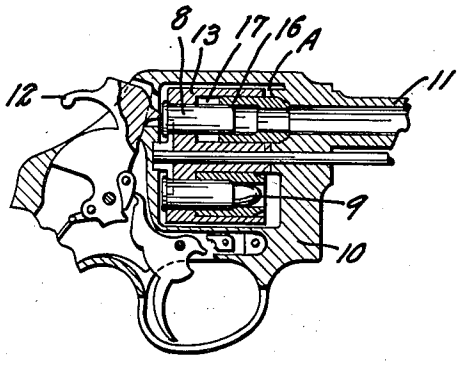


Fig. 2

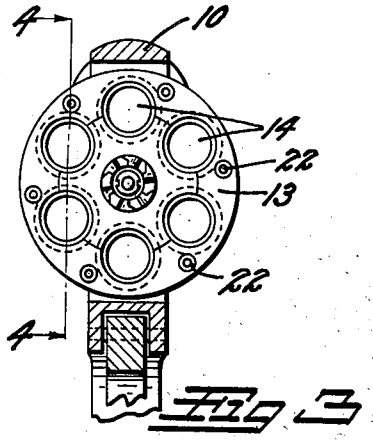


Fig. 3

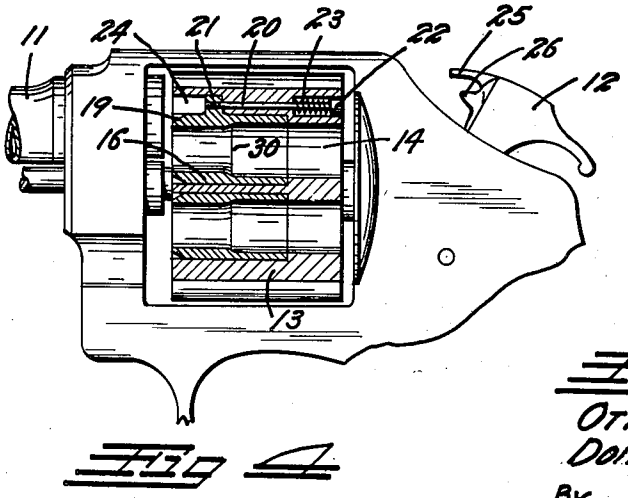


Fig. 4

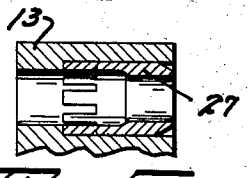


Fig. 5

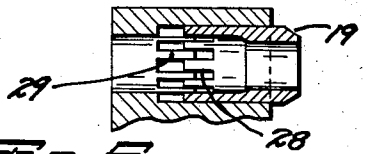


Fig. 6

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REVOLVER

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Application January 3, 1933, Serial No. 649,932

4 Claims. (Cl. 42—59)

In the usual gun of the revolver type, there must of necessity be a slight space left between the cylinder and the barrel in order to allow the cylinder to freely rotate. At the time of firing, the combustion gases escape through this space so as to decrease the barrel pressure and the bullet velocity.

The principal object of this invention is to provide means for sealing this space between the cylinder and barrel at the time of firing so as to prevent the escape of gases at this point and increase the barrel pressure and bullet velocity.

Another object of the invention is to provide means in the cylinder of a revolver which will act to automatically position the firing chamber in perfect alignment with the barrel at the time of firing. This feature is especially important as a revolver becomes worn from use. In a badly worn revolver, the firing chamber will not perfectly align with the barrel. This causes the bullet to strike the barrel edge, resulting in deformation of the bullet and irregular flight thereof, as well as retarding the flight velocity.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing;

Fig. 1 is a side elevation of a typical revolver partially broken away to show the cylinder construction and the invention applied thereto. In this view the operating parts of the cylinder are shown in the "cocked" or normal position.

Fig. 2 is a similar broken away view of the cylinder illustrating the parts in the firing position.

Fig. 3 is a cross section taken on the line 2—2, Fig. 1, illustrating the cap end of the cylinder.

Fig. 4 illustrates a section through the cylinder taken on the line 4—4, Fig. 3.

Fig. 5 is a detail section illustrating an alternate form of sealing sleeve in the normal position.

Fig. 6 is a similar view illustrating the sleeve of Fig. 5 in the firing position.

In the drawing typical parts of a revolver are indicated by reference number as follows: frame 10, barrel 11, hammer 12, hammer firing point 26, cylinder 13, chamber 14 and trigger 15. Typical shells are illustrated at 8 with their bullets at 9. It will be noted that there is a slight space between the barrel 11 and the cylinder 13, as indicated at "A". This invention is designed to seal the space "A" at the time of firing.

The invention contemplates positioning a cylindrical sealing sleeve 16 in a counterbore 17 in each of the chambers 14 in the cylinder 13. The forward extremities of the sealing sleeves 16 are designed to be received in a bevelled countersink 18 formed in the inner extremity of the barrel 11. The latter forward extremities are beveled as indicated at 19 to fit into the countersink.

It can be readily seen that if means are provided to force the sleeves 16 forwardly into the countersink 18, a seal will be provided for the space "A". This may be accomplished by means of a push rod 20 which is threaded into an ear 21 on each of the sleeves 16. The push rods terminate in contact buttons 22 at the cap face of the cylinder 13. The openings for the push rods 20 are counter-bored to receive compression springs 23 which act under the buttons 22 to maintain the sealing sleeves 16 in the normal, withdrawn position of Figs. 1 and 4. The chamber cavities are slotted, as indicated at 24, to allow longitudinal movement of the ears 21.

In a revolver of the type illustrated, the hammer 12 is provided with a relatively long prong 25 which, when the hammer is down, contacts with one of the buttons 22 to force its pushrod 20 forwardly and project the uppermost sealing sleeve 16 into the barrel. This prong 25 is in addition to the firing point 26 of the hammer, and is relatively longer than the latter so that the sleeve will be projected into the countersink 18 before the firing point fires the shell.

In revolvers of the type having independent firing pins instead of firing points on the hammer, the same function can be accomplished by forming the prong 25 in combination with the usual firing pin.

It can be readily seen from the above that if the trigger 15 is pulled when the mechanism is in the position of Fig. 1, the hammer will swing downwardly to cause the prong 25 to strike the uppermost button 22. Since this button is connected with the firing sleeve 16 for the chamber 14 which is in alignment with the barrel 11, the sleeve will be projected into the countersink 18. The relative lengths of the prong 25 and the firing point 26 are such that the firing point 26 will strike the cap of the shell just as the sealing sleeve 16 reaches its extreme position. Thus at the time the bullet leaves the shell, a perfect

seal will be maintained at the point "A". As soon as the hammer 12 is lifted, the spring 23 will return the sealing sleeve to its normal position so that the cylinder 13 may rotate to position the next chamber.

It is preferred to have the wall of the sleeve 16 thinner about the shell 8 than about the bullet 9 so as to more effectively seal the bullet to the sleeve and so as to provide a greater thickness of sleeve at the forward extremity to accommodate the bevel 19.

It is possible that the bullet 9 on leaving the shell would engage the sleeve 16 with sufficient friction to carry it forwardly into the countersink without the help of the hammer and push rod. By providing the hammer actuated mechanism however, a more positive action can be obtained.

It will be noted that the bevelled extremities 19 of the sealing sleeves coact with the bevelled sides of the countersink 18 to accurately and automatically align each chamber with the barrel before each shell is fired. Thus, regardless of how worn the cylinder operating mechanism may be, the firing chamber will positively be aligned with the barrel before the bullet leaves the shell.

In Figs. 5 and 6, an alternate form of sealing sleeve is illustrated. In this form, the sleeve which is indicated at 27, is castellated at its rearward extremity as shown at 28. The castellations coact with similar castellations 29 formed in the chamber of the cylinder so that at no time is an annular open space left about the chamber. The castellations 28 and 29 will continue to overlap each other, even when the sleeve 27 is in the projected position of Fig. 6. This construction eliminates any possibility of the shell being expanded by the explosion pressure such as might occur, under some circumstances, with the form previously described.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:—

1. Means for sealing the chamber of a cylinder of a gun to the barrel of said gun comprising: a sleeve fitted into a counter-bore in said chamber and arranged when projected forwardly to enter a countersink in said barrel; and means for projecting said sleeve into said barrel, said means comprising: a pushing member connected with said sleeve and extending toward the rear face of said cylinder; and means actuated by the hammer of said gun for engaging said pushing member so as to project said sleeve forwardly.

2. Means for sealing the chamber of a cylinder of a gun to the barrel of said gun comprising: a sleeve fitted into a counter-bore in said chamber and arranged when projected forwardly to enter a countersink in said barrel; and means for projecting said sleeve into said barrel, said means comprising: a pushing member connected with said sleeve and extending toward the rear face of said cylinder; means actuated by the hammer of said gun for engaging said pushing member so as to project said sleeve forwardly, and spring means for returning said sleeve when the pressure of said hammer actuated means is released.

3. A revolver comprising: a barrel; a cylinder arranged to rotate in the rear of said barrel and provided with shell chambers which successively align with said barrel; a sleeve in each of said shell chambers surrounding the shell space thereof; a countersink in the inner extremity of said barrel; and a push rod connected with said sleeve and extending to the rear face of said cylinder; and hammer actuated means for contacting said push rod to project said sleeve.

4. In a revolver having a rotating chambered cylinder arranged to align with a barrel, a longitudinally moveable sleeve surrounding the bore of each chamber and extending inwardly from the forward face thereof; a push rod extending from each sleeve to the rear face of said cylinder; a spring arranged to hold said sleeves in said bores, said push rods being positioned so as to be struck by the revolver hammer so as to project said sleeves forwardly from the cylinder into said barrel.

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