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COMBINED SHOOTING AND MAGAZINE BARREL FOR SPRING AIR GUNS

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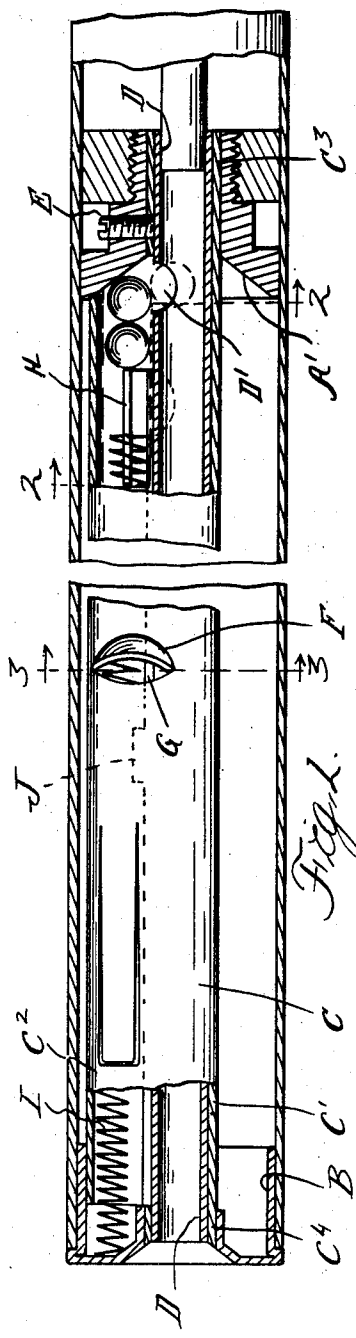


Fig. 1.

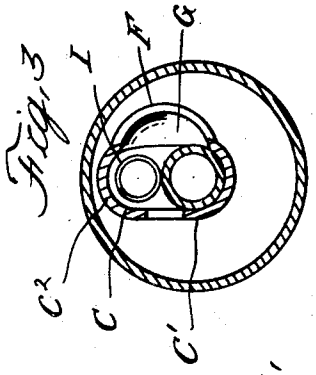


Fig. 3

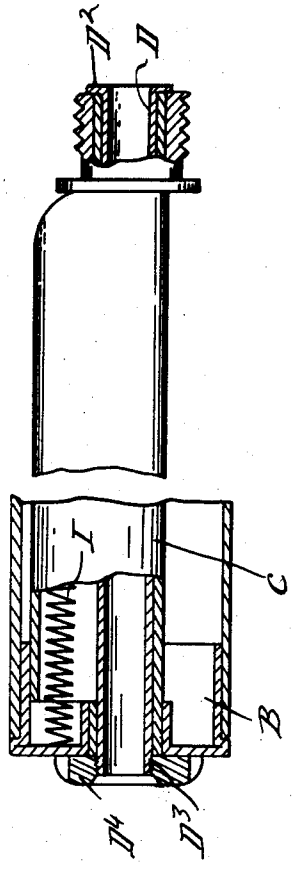


Fig. 4.

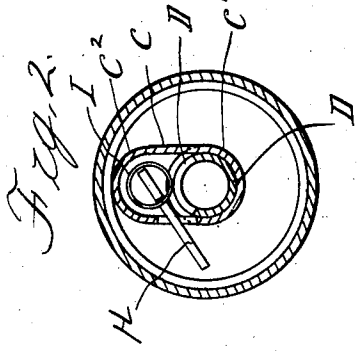


Fig. 2.

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UNITED STATES PATENT OFFICE

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COMBINED SHOOTING AND MAGAZINE BARREL FOR SPRING AIR GUNS

Application filed March 5, 1929. Serial No. 344,428.

The invention relates to combined shooting and magazine barrels for spring air guns of that type in which the two barrels are formed from an integral sheet metal blank bent about two parallel axes with a liner tube inserted within the shooting barrel. In such constructions it is usual to attach to one end of this integral blank a screw threaded plug concentric with the axes of the shooting barrel and which is engageable with a spring abutment of the gun, while at the opposite end of the blank is attached a cap for closing the muzzle end of the false barrel of the gun. The liner tube for the shooting barrel is provided with an aperture in the side wall thereof which must register with the discharge end of the magazine barrel so as to permit the passage of shot from the magazine into the shooting barrel. It is, however, necessary in the assembling of the parts to use great care in securing proper registration, as otherwise the magazine would fail to function. It is further necessary to provide deflecting means for directing the shot in the magazine through the aperture in the liner tube, further to peen over the ends of the liner tube so as to hold the same from displacement and to make provision for the insertion of shot into the magazine barrel during loading.

My improvement provides a simplified construction for accomplishing these results and facilitates assembling of the parts, and to this end the invention consists in the construction as hereinafter set forth.

In the drawings:

Figure 1 is an enlarged sectional elevation of the combined shooting and magazine barrel;

Figure 2 is a cross section on line 2—2 of Figure 1;

Figure 3 is a cross section on line 3—3 of Figure 1;

Figure 4 is a similar view of Figure 1 showing a modified construction.

As illustrated, A is the screw threaded plug for engagement with the spring abutment of a gun and B is the cap member for engaging the muzzle end of the false barrel, C is a sheet metal blank which is bent to form cylindrical segments about two parallel axes, one for the shooting barrel and the other for the magazine barrel As shown in Figure 2 the blank C is a cross-sectional form of an elongated loop having the cylindrical segment C′ for the firing barrel and the cylindrical segment C^2 for the magazine barrel. The portion C′ is extended at the ends beyond the portion C^2 for engagement with the plug A and cap B as indicated at C^3 and C^4. The portion C^2 is bevelled at its inner end to engage a conical recess A′ in the forward end of the plug A and the anchoring surface of this cone is used as a closure for the end of the magazine barrel and a deflector for directing the shot therefrom into the firing barrel.

To complete the firing barrel a seamless liner tube D is inserted therein to extend from end to end. This tube may be made of light gauge metal as it is reinforced and supported by the surrounding segment C′, while the oblong cross section of the member E forms a truss for adding additional stiffness. It is, however, necessary to secure the liner tube D in position to provide it with an aperture for communication with the end of the magazine barrel and to insure that this aperture is in proper registration when the parts are assembled. Heretofore, the method of securing the liner tube has been the peening over of the ends thereof on the plug A and cap B, but if this is done where the feed aperture is out of registration it is practically impossible to make correction. Furthermore, it frequently happens in commercial manufacture that a barrel is found to be untrue and where the liner is permanently attached to the surrounding blank, the whole structure must be scrapped. I have therefore devised a construction in which the liner tube is adjustably and attachably secured in position to permit either correction of an error or replacement where found untrue, the construction being as follows:

The tube D has cut therein the feed opening D′ which is of a sufficient size to permit the passage of shot from the magazine barrel

into said tube. Through the wall of the plug A there is formed a screw threaded aperture for receiving a set screw E, the inner end of which will engage with the liner tube D and clamp it from movement. Thus during assembly after the insertion of the tube D the aperture D′ thereof is registered with the inner end of the magazine barrel after which the set screw E is tightened to secure the parts in this position. If, however, the alignment is not perfect, adjustment can be easily made and in case the barrel D is found to be untrue it may be quickly removed and replaced by another.

For introducing the shot into the magazine barrel an aperture through the side wall thereof is required. I have formed this aperture and further provided a guide for directing the shot therethrough, as shown in Figures 1 and 3 in which F is a struck out portion of the blank C forming a conical guide adjacent to the aperture G through which the shot is inserted. The blank C centers between the portion C′ C^2 thereof, and is preferably slightly depressed to form a shallow groove or channel and this also assist in guiding the shot through the barrel.

The magazine is provided with the usual follower H which is under the tension of a spring I for forcing it in a rearward direction to discharge the shot. During the loading of the magazine this follower is drawn forward beyond the entrance aperture G and is anchored against the tension of the spring by engagement with a notch as indicated by dotted lines at J.

As a modified means of holding the liner tube D in position, I form the inner end thereof with a shoulder D^2 and thread the outer end thereof as indicated at D^3 to engage a clamping nut D^4 adjacent to the cap member B. This construction also permits of either adjusting or detaching the liner tube.

What I claim as my invention is:

1. In an air gun, a magazine barrel and a shooting barrel formed from an integral sheet metal blank, a liner tube for said shooting barrel apertured for communication with said magazine barrel and means for adjustably and removably securing said liner tube in position.

2. In an air gun, a combined magazine barrel and shooting barrel formed from a single sheet metal blank bent into a loop shaped cross section, a liner tube in one portion of said loop forming the shooting barrel and having an aperture in the side wall thereof, an apertured plug for threadedly engaging the piston abutment of the gun and surrounding a projecting end portion of said shooting barrel, said plug having a conical recess in its forward face against which the end of the magazine barrel abuts and forming a deflector for directing the shot from said magazine barrel through the aperture in said liner tube into the same.

3. In an air gun, a combined shooting and magazine barrel comprising an integral sheet metal blank bent into loop form and forming cylindrical segments about spaced parallel axes, the portion surrounding one axis being extended beyond the end of the portion surrounding the other axis, an apertured plug surrounding said projecting portion, said plug having a conical recess in its forward end and abutting against a bevelled end of the eccentric portion of said loop, a liner tube for the portion concentric with said apertured plug having an aperture in the side wall thereof for communication with the magazine barrel, and a set screw in said plug for engaging said liner tube to adjustably and detachably hold the same in position.

4. In a gun, a combined magazine and shooting barrel formed of an integral sheet metal blank bent into a loop cross section, a liner tube inserted in one portion of said loop cross section to form the shooting barrel, and a portion struck out from said loop at one point in the length thereof for forming a feed aperture for shot into the said magazine barrel and a conical deflector for guiding said shot thereinto.

5. In an air gun, a combined magazine and shooting barrel formed of a single sheet metal blank bent into loop form having cylindrical segmental portions eccentric to parallel axes, said blank having a struck out portion at one point in its length forming a feed aperture for receiving shot and a deflector for guiding the shot into the barrel, and a liner tube inserted to be concentric with one of said parallel axes to constitute a shooting barrel, the space outside of said liner tube and within said loop constituting the magazine barrel.

In testimony whereof I affix my signature.

CHARLES F. LEFEVER.