

No. 692,819.

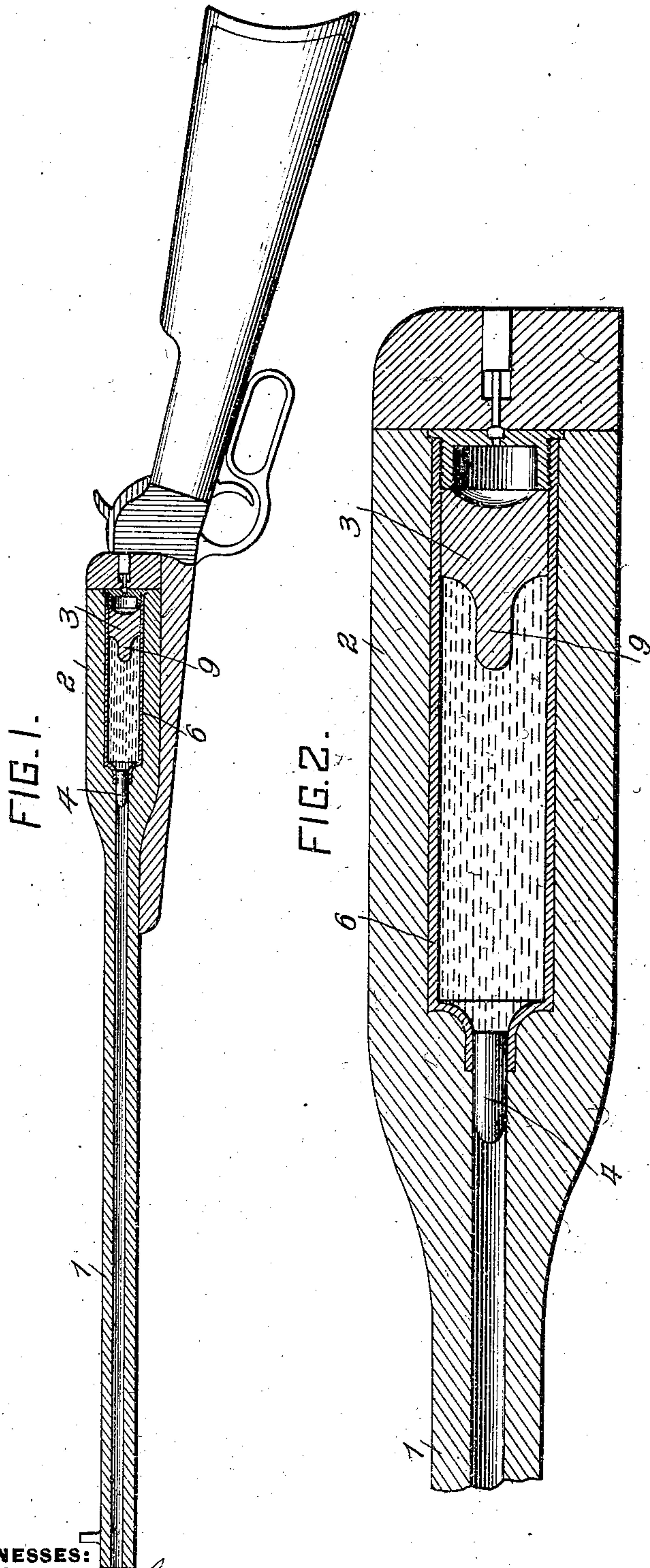
Patented Feb. 11, 1902.

J. E. BISSELL.

MEANS FOR EFFECTING NOISELESS DISCHARGE OF GUNS.

(Application filed Apr. 21, 1900. Renewed July 9, 1901.)

(No Model.)



WITNESSES:

*Herbert Bradley.*  
*J. E. Gaithan*

INVENTOR

*Joseph E. Bissell*  
*by Saml B. Wolcott* Att'y.



# UNITED STATES PATENT OFFICE.

JOSEPH E. BISSELL, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO DAVID G. KNITTEL, OF ALLEGHENY, PENNSYLVANIA.

## MEANS FOR EFFECTING NOISELESS DISCHARGE OF GUNS.

SPECIFICATION forming part of Letters Patent No. 692,819, dated February 11, 1902.

Application filed April 21, 1900. Renewed July 9, 1901. Serial No. 67,689. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH E. BISSELL, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Means for Effecting the Noiseless Discharge of Guns, of which improvements the following is a specification.

The invention described herein relates to certain improvements in guns, and has for its object a construction or arrangement whereby the sudden expansion of the gases at the muzzle of the gun is prevented, thereby insuring a noiseless discharge.

In general terms the invention consists in the interposition of a movable body or piston between the explosive and the projectile, such body or piston also serving to prevent or retard the escape of the gases, and thereby avoid the violent and sudden displacement of air.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view, partly in section and partly in elevation, of a gun and cartridge illustrative of my invention; and Fig. 2 is an enlarged sectional view of the barrel and cartridge.

In the practice of my invention the barrel 1 is constructed so as to provide a piston-chamber 2 at its rear end, the dimensions of such chamber being dependent upon the length and caliber of the barrel beyond such chamber. The explosive material, which may be of any desired character, is preferably contained in a shell, as is customary, said shell being constructed to fit tightly in the rear end of the piston-chamber. A piston 3 is arranged in the chamber 2 in front of the explosive material, and the projectile 4 is placed in the barrel 1. Outward movement is communicated to the projectile from the piston by a non-compressible medium, which may be formed by a liquid, such as water, interposed between the projectile and piston, as shown in Figs. 1 and 2.

When using the liquid-transmitter, the piston-chamber is made of such a size as to contain in addition to the piston and explosive material sufficient liquid to at least fill the barrel 1, so that the projectile will be sub-

jected constantly to a propulsive force until it passes from the barrel.

A desirable manner of practicing my invention consists, as shown in Figs. 1 and 2, in forming the piston chamber or cylinder of a shell 6, constructed as shown, to fit within the chamber 2 and to contain the explosive material, the piston, liquid-transmitter, and the projectile. This cartridge can be prepared so that the loading of the gun is accomplished in the usual manner. The liquid while in the cartridge will serve as a packing to prevent the escape of gases generated by the combustion of the explosive. The escape of gases after the piston has reached the end of its traverse is controlled by a teat 9 on the piston. This is made sufficiently long to project when the piston is in its front position into the barrel and is made of such external diameter as to closely, but not tightly, fit the bore of the barrel or the contracted end of the shell 6, and thereby permit a slow flow of gases through the barrel.

As the liquid which is used as a transmitter between the explosive charge and the projectile is non-compressible, there will not be any sudden explosion and consequent explosive noise when the liquid leaves the gun.

I claim herein as my invention—

1. As a means for effecting the noiseless discharge of guns, the combination of an explosive material, a projectile, a piston interposed between the explosive material and the projectile, means for preventing the escape of gases from the muzzle of the gun, and a liquid-transmitter interposed between the piston and the projectile, substantially as set forth.

2. As a means for effecting the noiseless discharge of guns, the combination of a piston chamber or shell, an explosive material at one end of the shell and projectile at the opposite end of the shell, a piston, means for preventing the escape of gases from the muzzle of the gun, and a liquid-transmitter interposed between the explosive material and the projectile, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOSEPH E. BISSELL.

Witnesses:

DARWIN S. WOLCOTT,  
F. E. GAITHER.