(No Model.)

J. P. ONDERDONK.

RECOIL MECHANISM FOR FIRE ARMS.

No. 294,402. Patented Mar. 4, 1884.

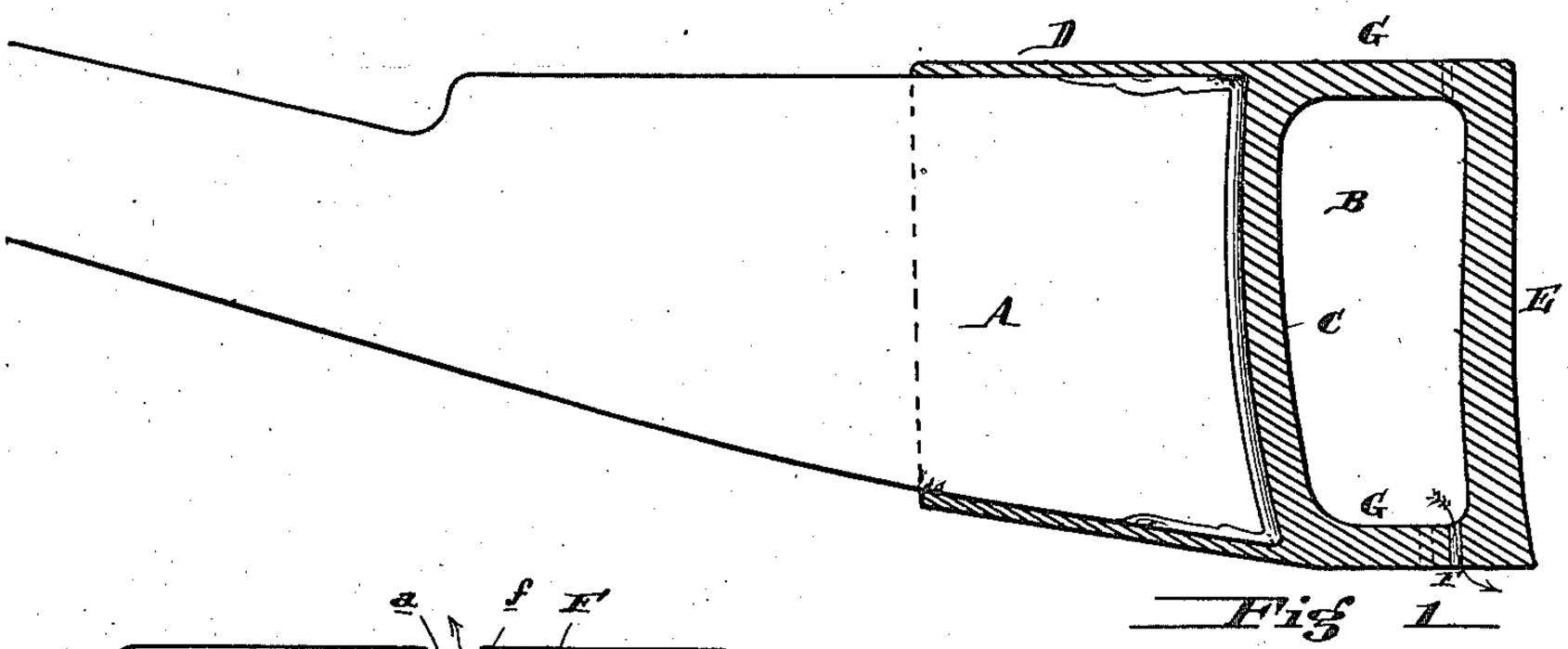

Fig. 1

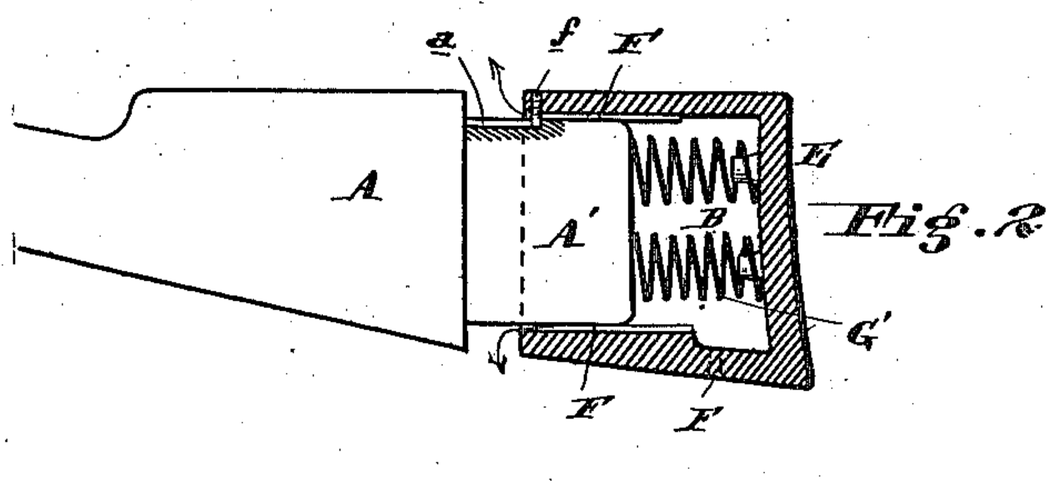

Fig. 2

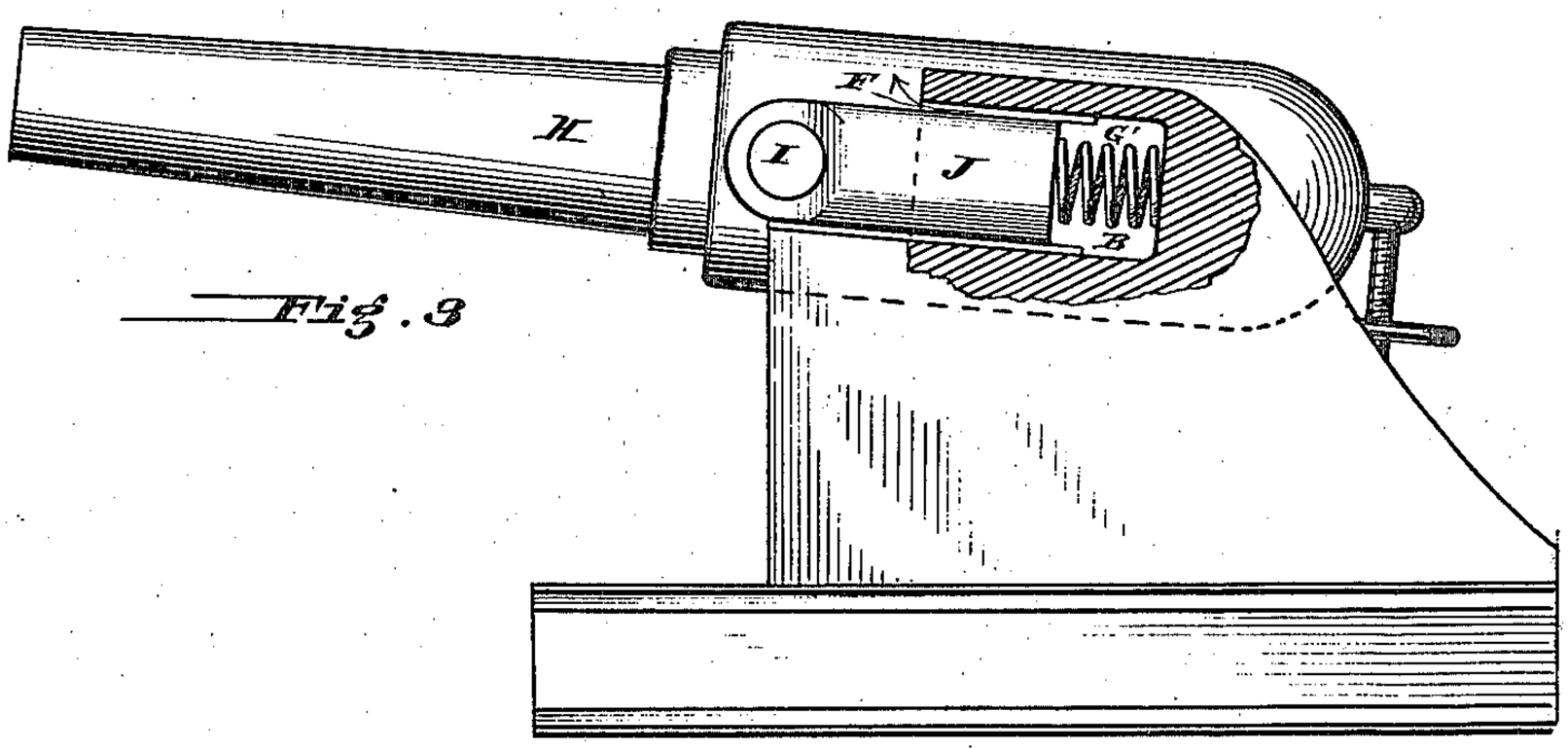

Fig. 3

Attest
Albert M. Ward Jr.
Chas. E. Howlett.

Inventor
Jno. P. Onderdonk

UNITED STATES PATENT OFFICE.

JOHN P. ONDERDONK, OF PHILADELPHIA, PENNSYLVANIA.

RECOIL MECHANISM FOR FIRE-ARMS.

SPECIFICATION forming part of Letters Patent No. 294,402, dated March 4, 1884.

Application filed April 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. ONDERDONK, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Fire-Arms and Ordnance, of which the following is a specification.

My invention relates to devices for resisting the recoil of fire-arms and ordnance.

In the drawings, Figure 1 is a vertical sectional view of one form of my device applied to the stock of a gun or rifle, the device being made wholly of india-rubber or other elastic material. A is the stock of the gun or rifle; B, an air-chamber; C, G G, and E, the sides or walls composing the same and forming a false stock. F is a vent for the escape of air from the chamber B.

Fig. 2 is a vertical sectional view of a form of my device constructed of non-elastic or semi-elastic material, in which A is the stock of the gun or rifle; A′, a boss rearwardly extending from the stock, which is cut away to form it. B is an air-chamber inclosed by the false stock E. G′ are springs to hold the false stock in position. F F are vents for the escape of air from the chamber B.

Fig. 3 is a vertical side view, partly in elevation and partly in section, of my device applied to a cannon, H, in which B is an air-chamber; G′, a spring; J, a piston or tongue adapted to fit into and slide within the chamber B and attached to the trunnion I. The device is double, one set being upon each side of the breech. F is a vent for the escape of air from said chamber.

The mode of operation of my invention is as follows: In Fig. 1, when the gun is discharged and the recoil takes place, the sides G G of the chamber B, being of elastic material, (which is strong enough to hold the air-chamber expanded under ordinary pressure against the shoulder,) collapse, and the air in the air-chamber is forced out through the vent F, thereby forming a yielding cushion for the resistance of the recoil of the gun.

The vent for the escape of air may be of any desired form or size, or in any suitable position with respect to the air-chamber. Upon the outside pressure being removed from the air-chamber, the air refills it, and the elastic sides G G bring it back to its original shape

In Fig. 2 the false breech is made of wood or of any non-elastic or semi-elastic material, and the stock A is cut away in such manner that a boss, tongue, or piston is formed, as represented at A′. A false breech or cap, E, of wood or other non-elastic or semi-elastic material is then slipped over the tongue A′. The cap E is retained and permitted to slide upon the tongue A′ by means of the pin *f*, which works in the slide *a*.

F F are channels or grooves for the escape of air from the chamber B. When the gun is discharged, the tongue A′ is forced back into the air-chamber B, and the air therein, being compressed by the recoil, escapes through the grooves F F. The springs G′ serve to adjust the cap E and again extend the air-chamber after the recoil of the gun has taken place and the pressure from the outside of the cap E has been removed.

The operation of the device shown in Fig. 3 is similar to that of the devices shown in Figs. 1 and 2—that is to say, when the cannon is discharged, the force of the recoil acts upon the tongues J, by which they are forced into the air-chambers B, the air therein escaping through the channels or grooves F.

It is obvious that the form of my device, as well as the material from which the same is constructed, may be varied without departure from the spirit of my invention, the essential feature of which is that the recoil of the gun is resisted by the air in the chamber, and is controlled by the escape of the air from said chamber through an air-vent provided for that purpose.

I am aware that recoil mechanisms have been employed in which the recoil of the gun has been resisted by the compression of air in a suitable chamber, and controlled by the ejection of water from a containing-chamber by means of said recoil.

Having thus described my invention, I claim—

A device for resisting the recoil of fire-arms and ordnance, which consists in the combination, with the gun, of an air-chamber provided with an air-vent in such manner that the recoil of the gun is resisted by the air in said chamber and controlled by its gradual escape through said vent to the atmosphere.

Witnesses: JNO. P. ONDERDONK.
ALBERT M. WARREN,
CHAS. E. HOWLETT.