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J. F. MEIGS, H. G. JAKOBSSON & F. A. SULLIVAN.

BALANCING MECHANISM FOR GUNS.

APPLICATION FILED SEPT. 19, 1905.

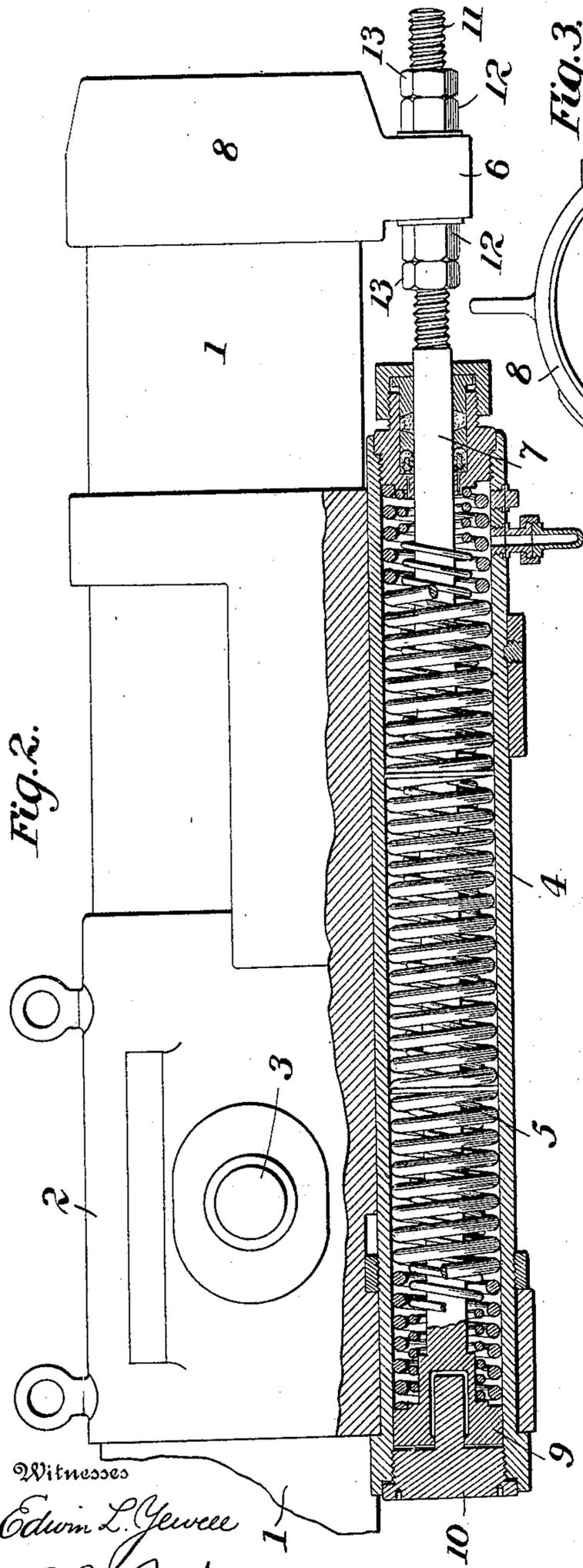


Fig. 2.

Witnesses
Edwin L. Jewell
B. C. Rust

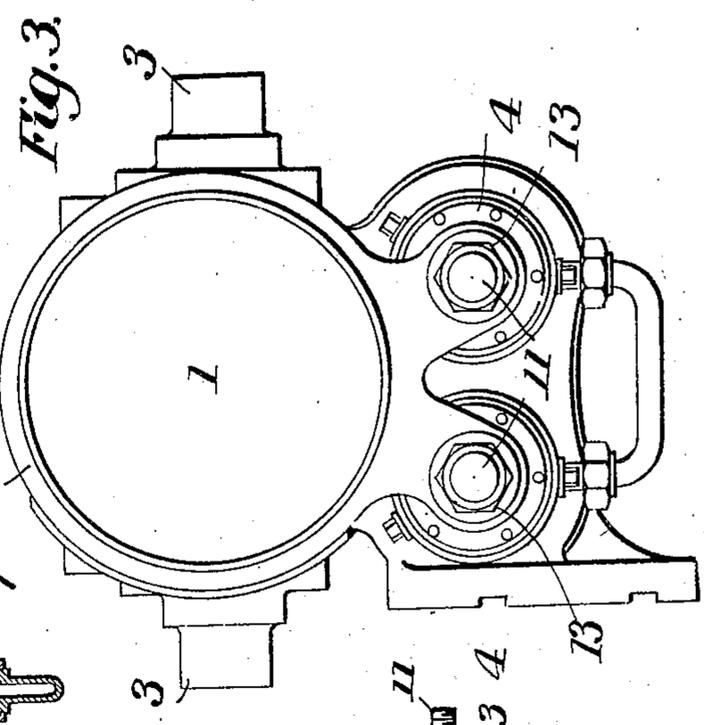
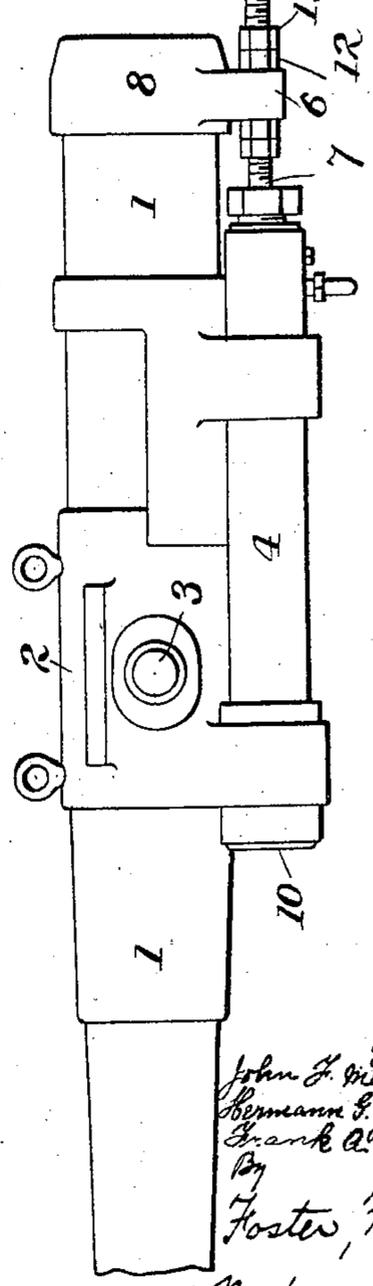


Fig. 3.

Fig. 1.



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UNITED STATES PATENT OFFICE.

JOHN F. MEIGS, OF SOUTH BETHLEHEM, AND HERMAN G. JAKOBSSON AND FRANK A. SULLIVAN, OF BETHLEHEM, PENNSYLVANIA, ASSIGNORS TO BETHLEHEM STEEL COMPANY, OF SOUTH BETHLEHEM, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BALANCING MECHANISM FOR GUNS.

No 810,662.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed September 19, 1905. Serial No. 279,158.

To all whom it may concern:

Be it known that we, JOHN F. MEIGS, a citizen of the United States, and a resident of South Bethlehem, and HERMAN G. JAKOBSSON, a subject of the King of Sweden and Norway, and FRANK A. SULLIVAN, a citizen of the United States, both residing at Bethlehem, in the county of Northampton, State of Pennsylvania, have invented certain new and useful Improvements in Balancing Mechanism for Guns, of which the following is a specification.

In guns which are pivotally mounted to swing in a vertical direction it is important that the gun should be accurately balanced on its pivots or trunnions when charged with ammunition, so that the gunner may change the elevation of the gun with the least possible expenditure of force. Heretofore it has been difficult to accurately adjust the gun in the first instance and to provide for a readjustment in case of change in the weight of ammunition.

The present invention relates to simple and inexpensive means for securing accurate balance of the gun upon its trunnions.

The invention will be described with reference to the accompanying drawings, in which—

Figure 1 is a side view of the gun and so much of its appurtenances as is necessary to illustrate the present invention. Fig. 2 is a side elevation, partly broken away, of a portion of the gun on an enlarged scale, and Fig. 3 is an end view of the cradle and the means for adjusting the gun in the cradle.

Referring to the drawings, 1 indicates the gun, and 2 the cradle, both of which may be of any desired construction. The gun is arranged, as usual, to slide freely in the cradle during its recoil. The cradle is provided with the usual trunnions 3. Rigidly connected to the cradle in any suitable manner are the recoil-cylinders 4 4, provided internally with the usual springs 5 or with any suitable recoil mechanism. Rigidly connected with the gun is a bracket or extension 6, to which the pis-

ton-rods 7 of the recoil-cylinders are adjustably connected. As shown, the bracket is an integral extension of a belt or band 8, which is shrunken upon or otherwise securely connected to the gun.

When the gun is in normal position in the cradle, the piston-rod always occupies a given position in the recoil-cylinder. As shown, this position is determined by the abutment of the piston 9 upon the inner face of the head 10 of the cylinder. To provide for adjusting the gun relatively to the cradle, the projecting portion of the piston-rod, or a sufficient length thereof, is threaded, as at 11. This portion of each piston-rod extends through the bracket 6 and is provided on each side of said bracket with adjusting-nuts 12. Lock-nuts 13 are also preferably provided. By means of these threaded piston-rods and the adjusting-nuts the gun may be adjusted longitudinally in the cradle, and thus balanced accurately on its trunnions. Before effecting the adjustment a full charge of ammunition is placed in the breech of the gun and the breech closed ready for firing. If the gun is then not in proper adjustment, it is moved forward or rearward in its cradle, as may be necessary to balance it. The adjusting means are then locked by the lock-nuts, and the gun will remain in adjustment so long as the weight of the charges of ammunition does not vary.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination with a gun and a cradle in which said gun is free to slide longitudinally, of means for adjusting the gun to any desired normal position relative to the cradle.

2. The combination with a gun and a cradle in which said gun is free to slide longitudinally, of a recoil-cylinder connected with the cradle, a rod movable in said cylinder and projecting therefrom, and an adjustable connection between said rod and the gun.

3. The combination with a cradle and a

gun movable longitudinally therein, of a re-
coil-cylinder connected with the cradle, a pis-
ton in said cylinder, a piston-rod projecting
from the cylinder and provided with a thread-
ed portion, a bracket on the gun through
5 which said threaded rod passes, and adjust-
ing-nuts on said rod on both sides of said
bracket, whereby the gun may be adjusted
relatively to said rod.

In testimony whereof we affix our signa- 10
tures in presence of two witnesses.

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