

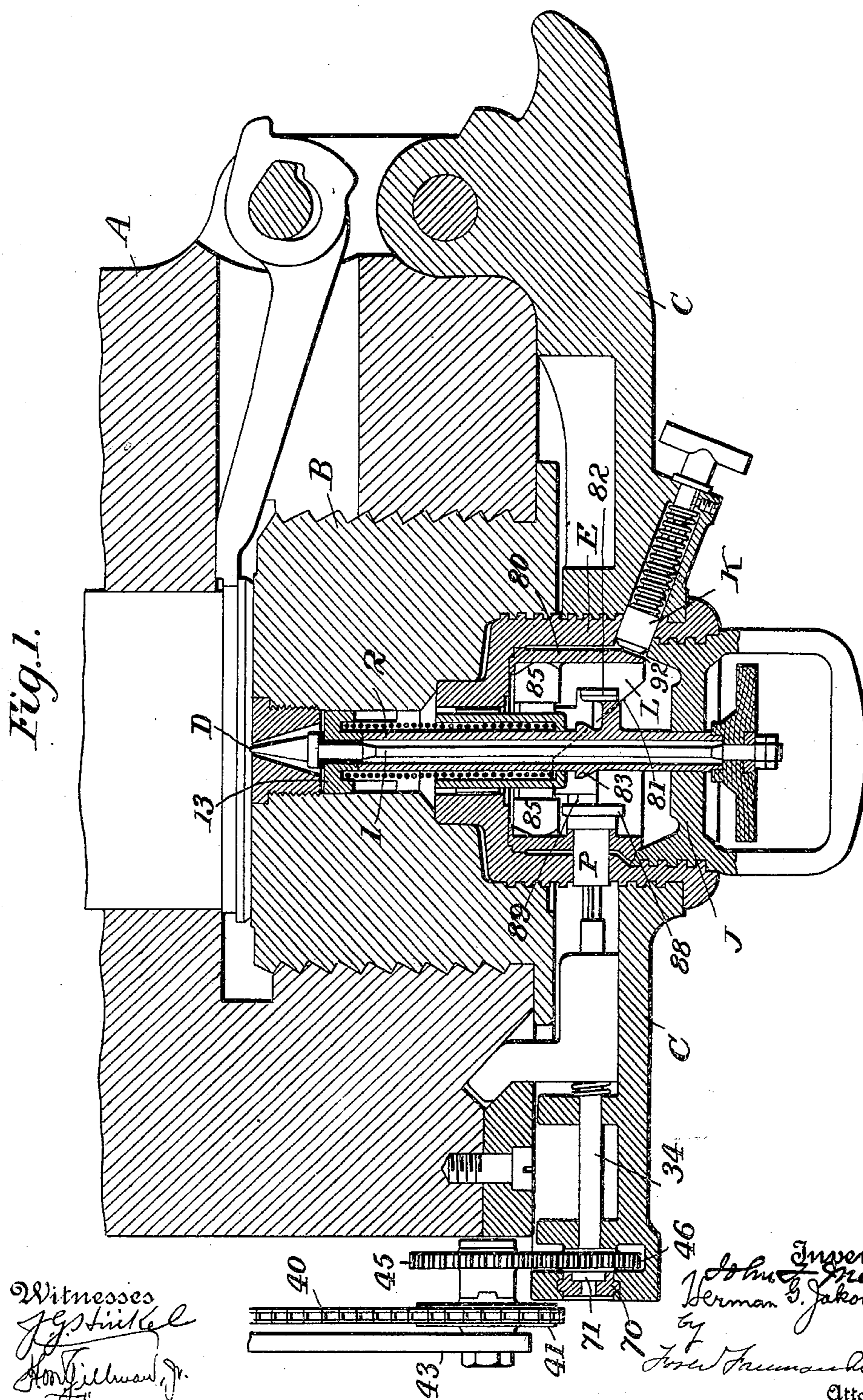
No. 812,432.

PATENTED FEB. 13, 1906.

J. F. MEIGS & H. G. JAKOBSSON.
FIRING MECHANISM FOR GUNS.

APPLICATION FILED FEB. 6, 1905.

4 SHEETS—SHEET 1.



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Fig. 2

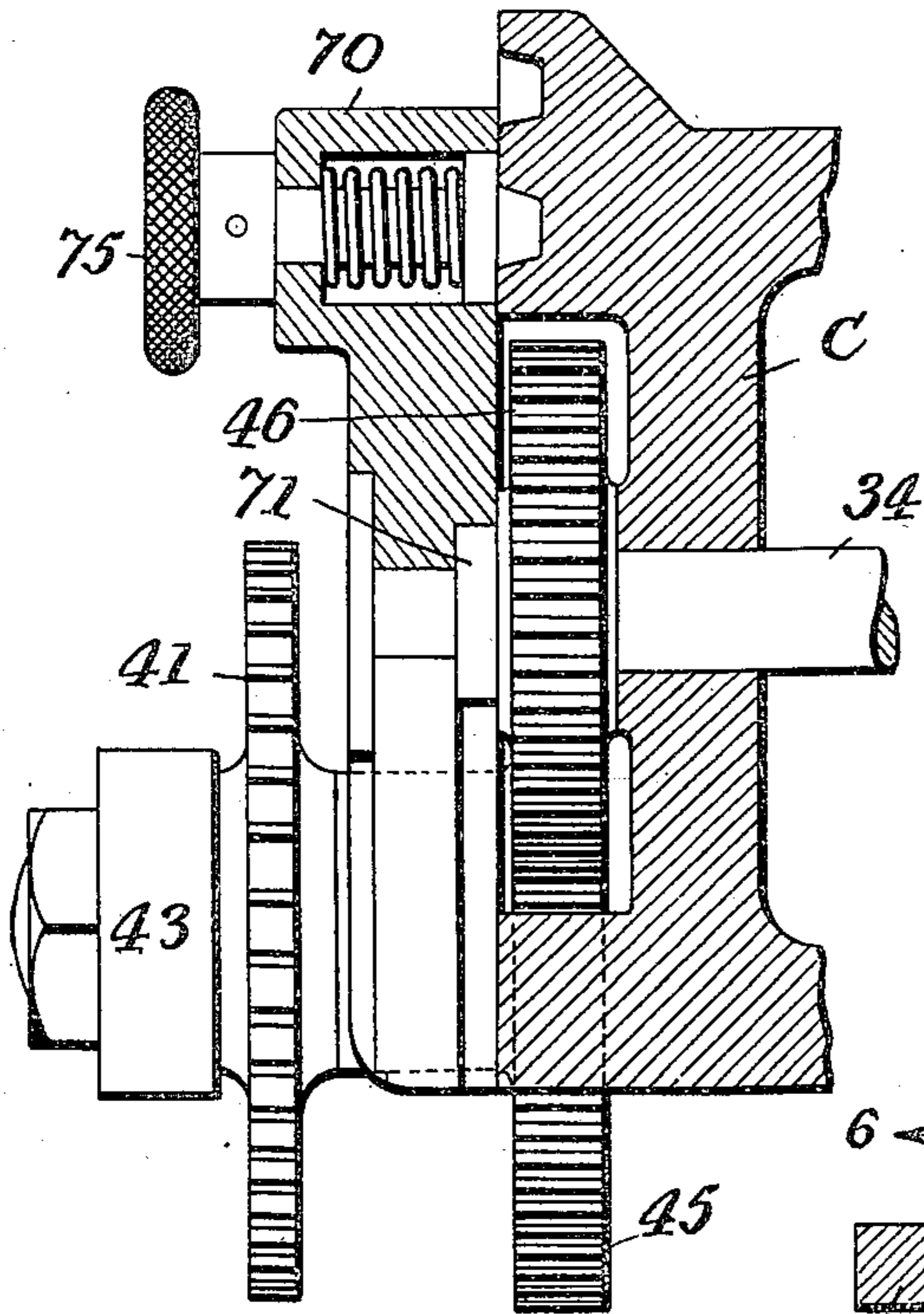


Fig. 5.

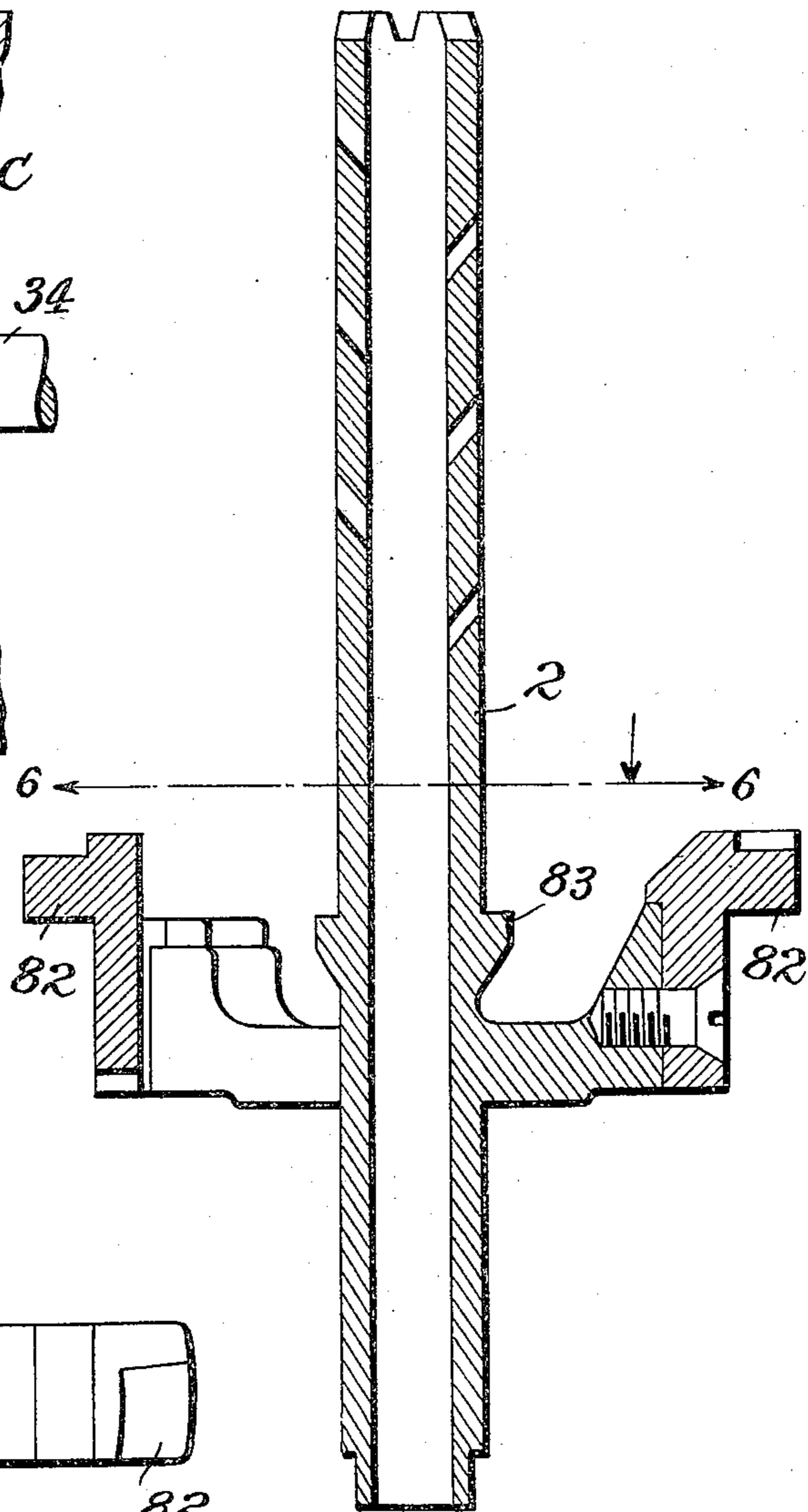
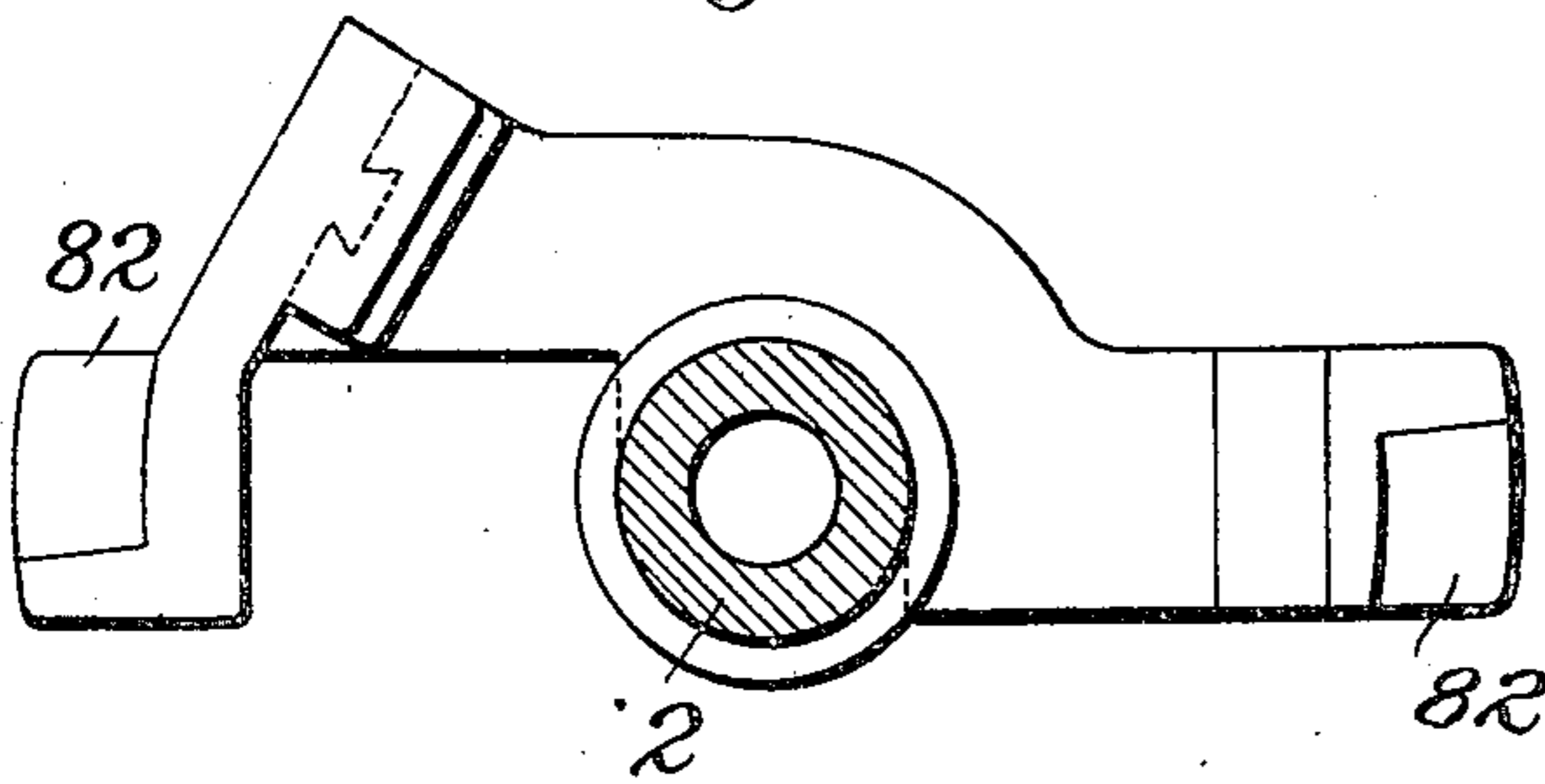


Fig. 6.



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Fig. 3.

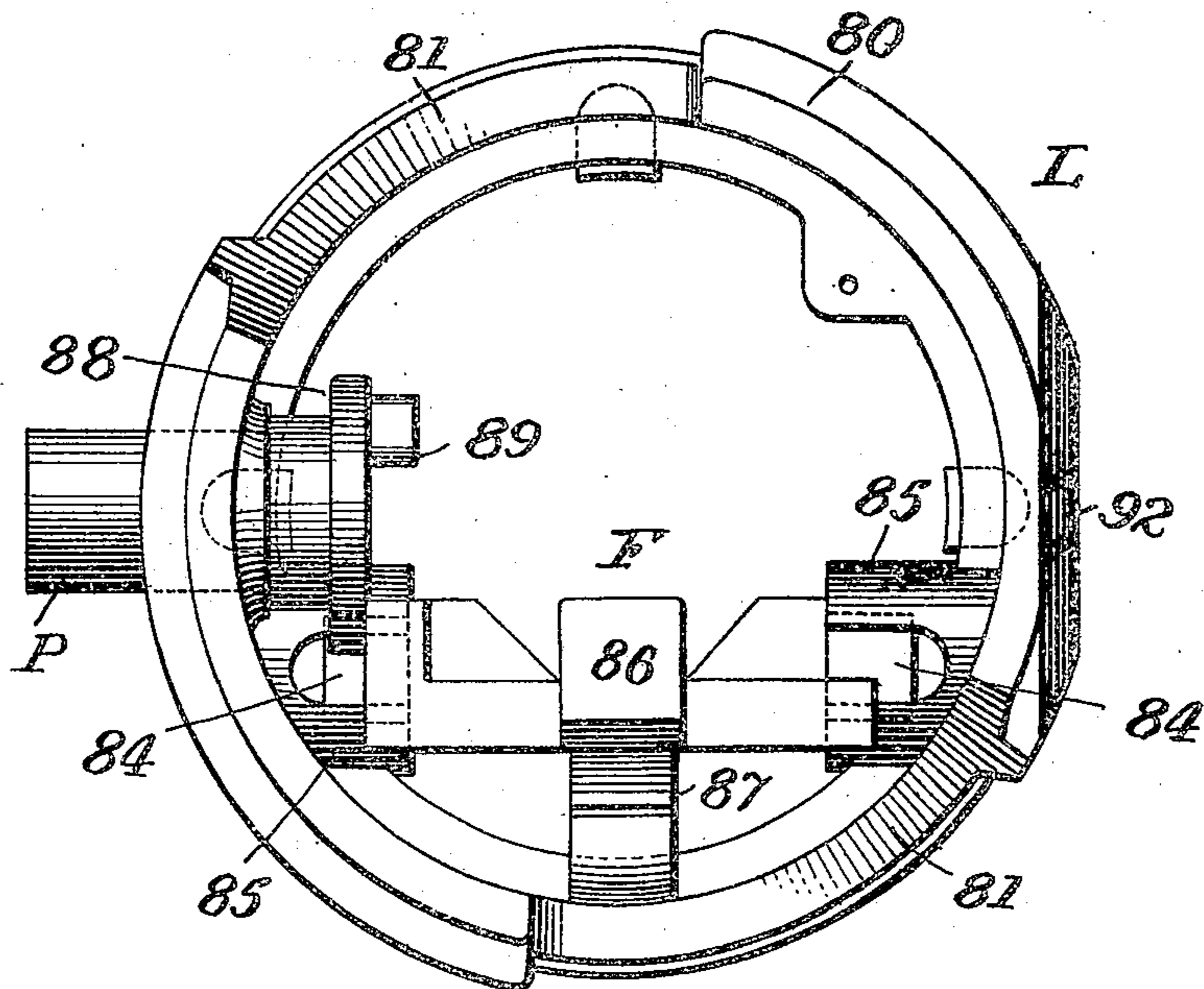
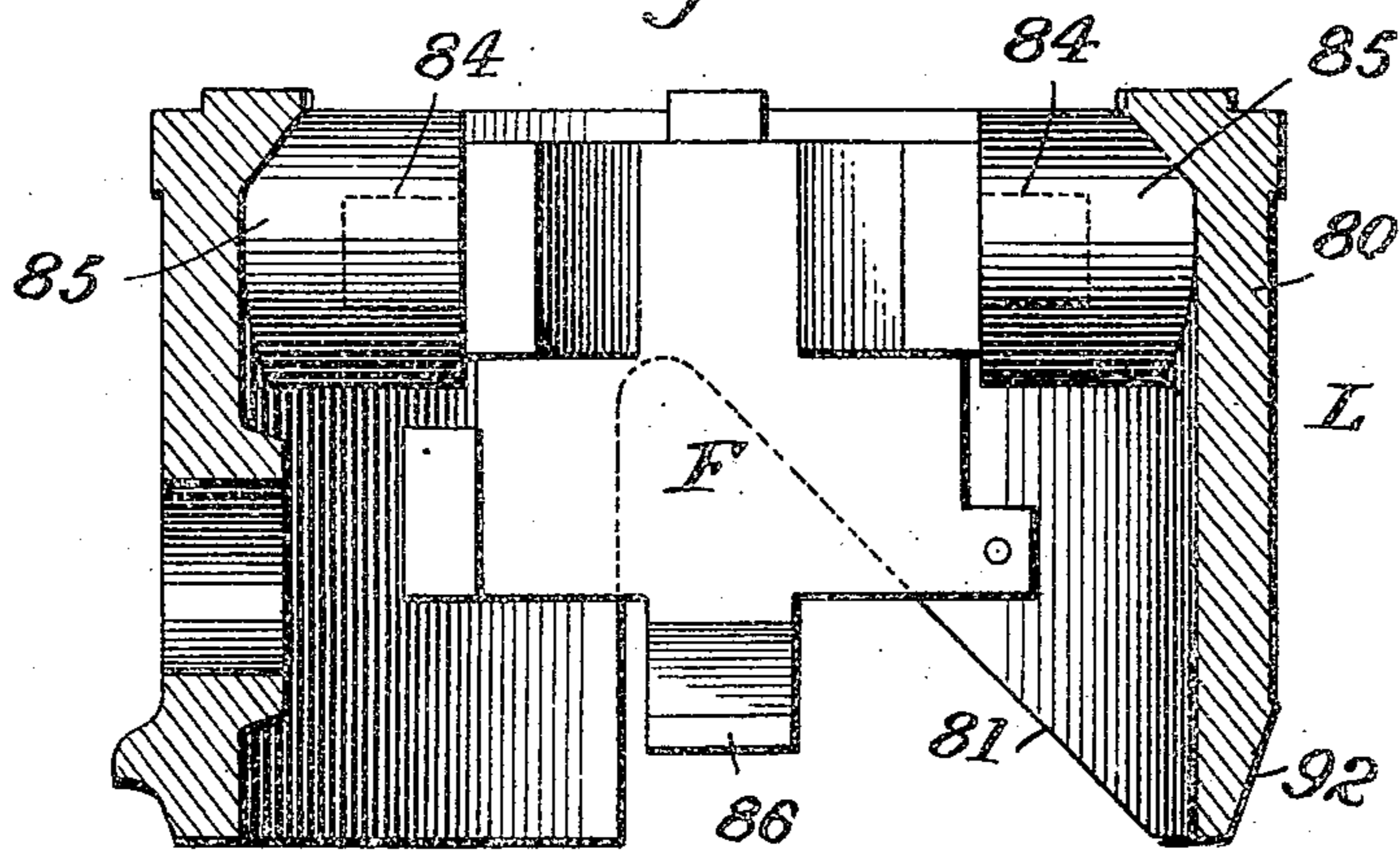


Fig. 4.



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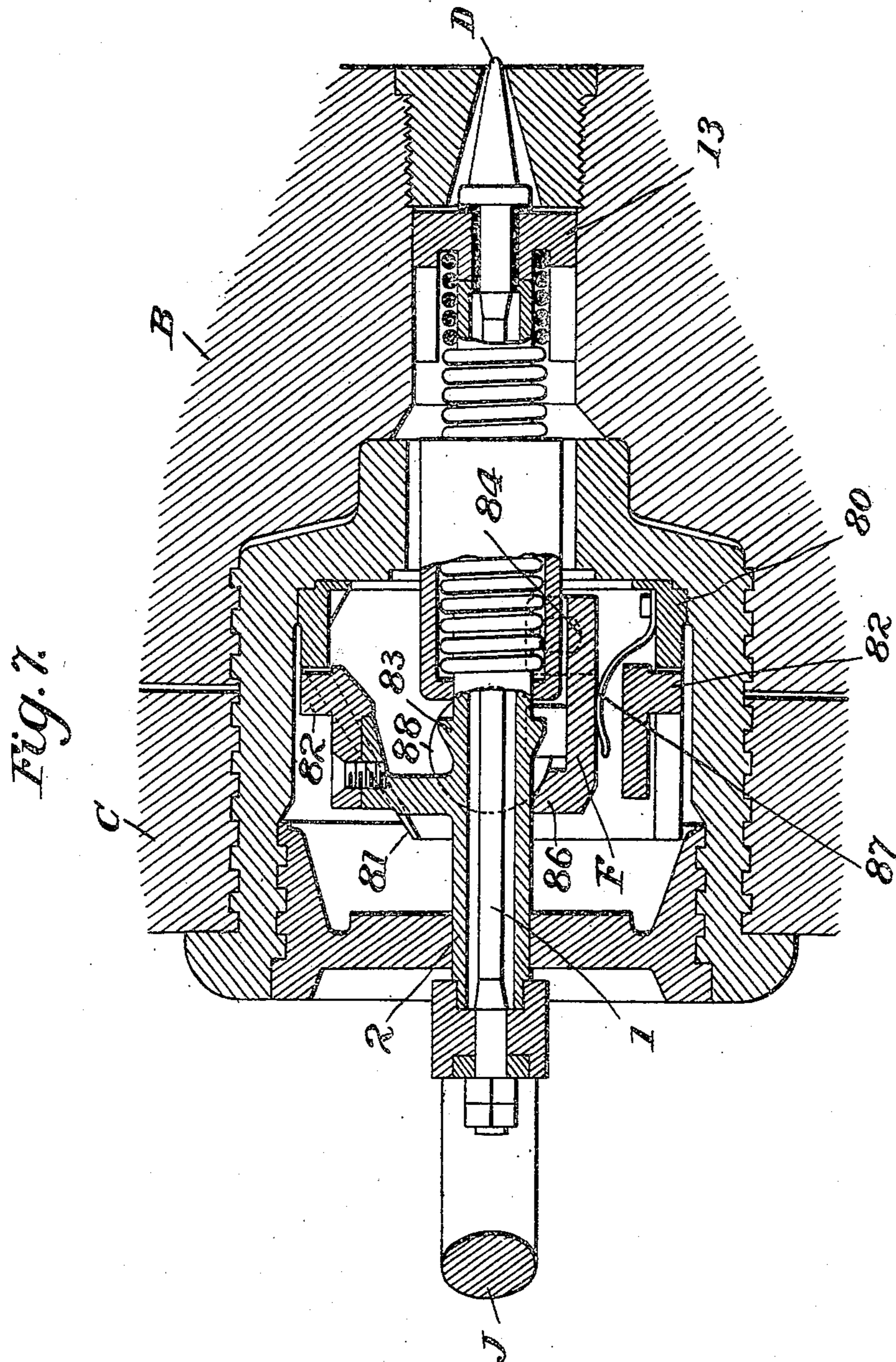
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UNITED STATES PATENT OFFICE.

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FIRING MECHANISM FOR GUNS.

No. 812,432.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed February 6, 1905. Serial No. 244,415.

To all whom it may concern:

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

Our invention relates to the firing mechanism of breech-loading guns; and it consists in means for operating the firing-pin, in firing mechanically to bring it into engagement with the sear on the turning of the breech-block, and in releasing means and means for using the same instrumentalities for firing electrically, as fully set forth hereinafter and as illustrated in the accompanying drawings, in which—

Figure 1 is a sectional plan of the breech of a breech-loading gun, illustrating our improvements in connection with a particular construction of breech mechanism. Fig. 2 is a detached view showing the means for locking the sear when firing electrically. Fig. 3 is an end view of the cam-sleeve and sear. Fig. 4 is a plan of the sear, the cam-sleeve in section. Fig. 5 is a sectional view of the tubular stem-section of the firing-pin and wings; and Fig. 6 is a sectional plan on the line 6 6, Fig. 5. Fig. 7 is a longitudinal section on the line 7 7, Fig. 1.

The breech A, breech-block B, carrier C, and means for turning the block may be of any suitable construction, and with these parts are combined a hollow hub E, supporting the breech-block and provided with a detachable plug J and a firing-pin D, having a stem or rod 1 extending through the sleeve 2 and insulated therefrom, said pin and parts connected to slide therewith constituting a firing-head, and there is a shaft 34, supported by the carrier C and provided with a pinion 46 for engaging a gear 45, connected with a sprocket 41, supported on an arm 43 and driven by a chain 40, so that the shaft may be operated from the side of the gun, all as set forth in my application for Letters Patent, Serial No. 243,552. As set forth in said application, the hollow hub E, provided with a detachable plug J, may be the means of using different appliances for operating the firing-head in connection with the shaft 34,

and in the construction now presented this firing-head is retracted upon the rotation of the breech-block until engaged by a sear, and the said sear is operated to release the head to allow it to be thrown forward under the action of its spring by the action of the shaft 34. Different means may be employed for securing these results; but, as shown, there is a cam L consisting of a sleeve 80, having one or more inclined cam edges 81, adapted to engage one or more wings 82 upon the firing-head sleeve, two cam edges and two wings being preferably employed to prevent side thrust. In the construction shown the cam L is secured in place within the hollow hub by means of a lock-bolt K, the end of which bears on a face 92 of the cam-sleeve, while the flange of the plug J bears upon the edge of the said sleeve. These parts are so constructed that as the block is turned the cam edges 81, bearing on the wings 82, retract the head which can slide in the block but cannot turn independently thereof owing to wings 13 extending into slots in the block, and at the end of the said movement of the head an annular shoulder 83 thereof is engaged by a suitable sear F. The cam can then pass from and release the firing-head when returned to its first position. As shown, the said sear is in the form of a frame having trunnions 84, adapted to sockets or bearings 85 in the cam-sleeve 80, and a lip 86 of which engages the shoulder 83, the end of the sear-frame being elevated by a spring 87.

While any suitable means may be employed for carrying the sear away from the firing-head, we make use of the shaft 34 in the construction described by extending the keyed or angular end of said shaft into a corresponding socket in a hub P, carrying at the inner end a disk 88, from which extends a lug 89, and when the shaft is turned the contact of this lug 89 with the sear-frame will depress the same and carry the lip 86 away from the shoulder 83 and allow the head to move forward under the action of its spring. It will be evident, however, that this firing action cannot take place until the breech-block is turned to fully close the breech, because until this is done the cam L is in such a position that the head, if released, cannot have its full forward movement. The cam-shaft serves not only to withdraw the head and bring it

into engagement with the sear, but it also serves in connection with the rotation of the head with the block to prevent the point of the pin from projecting beyond the face of the block except when the parts are in firing position.

For electrical firing it is necessary to prevent the sear from engaging the head, and we provide for locking the sear away from the stem of the pin by locking the shaft 34 by means of any suitable locking device. For instance, the said shaft has an angular projection 71, and a slide 70, with forks adapted to engage this projection, may be set downward to lock the shaft or lifted to release it, a spring-bolt 75 serving to secure the slide in its different positions.

Although we have described certain features of our invention in connection with the particular construction shown in the afore-said application, it must be understood that they may be used in other constructions.

Without limiting ourselves to the precise construction and arrangement of parts shown, we claim—

1. The combination with the carrier, breech-block, and hollow hub, of a firing-head supported to slide in and turn with the block, a cam connected to the hub and bearing on a projection of the head to retract the firing-pin on turning the block, a sear engaging a shoulder on said head, a shaft extending to the side of the gun, and means for shifting the sear on turning the shaft, substantially as set forth.

2. The combination with the carrier, breech-block, and hollow hub, of a firing-head supported to slide in and turn with the block, a cam connected to the hub and bearing on a projection of the firing-head to retract the firing-pin on turning the block, a sear engaging a shoulder on said head, a shaft extending to the side of the gun, means for shifting the sear on turning the shaft, and means for operating the shaft from the side of the gun, substantially as set forth.

3. The combination of the carrier, breech-block, hollow hub, a cam supported immovably but detachably in said hub, and a firing-

head and appliances for operating the same from said cam, substantially as set forth.

4. The combination of the carrier, breech-block, hollow hub having a removable plug, a cam supported immovably but detachably in said hub, and a firing-head provided with a wing for engaging said cam, substantially as set forth.

5. The combination of the carrier, breech-block, hollow hub, a cam supported immovably but detachably in said hub, a firing-head provided with a wing for engaging said cam, and a sear for engaging a shoulder of the firing-head, substantially as set forth.

6. The combination of the carrier, breech-block, hollow hub, a cam supported immovably but detachably in said hub, a firing-head provided with a wing for engaging said cam, a sear for engaging a shoulder of the firing-head, and a shaft extending into the hub and provided with means for shifting the sear, substantially as set forth.

7. The combination with the carrier, block, hollow hub, sear, cam and shaft, of a firing-head having an insulated rod, and means for locking the shaft when firing electrically, substantially as set forth.

8. The combination with the carrier, block, hollow hub and firing-head, of means for retracting the head on turning the block, and a sear for engaging a shoulder on the head, said sear consisting of a frame with trunnions and a lip, said frame supported within the hub, substantially as set forth.

9. The combination with the carrier, block, hollow hub and firing-head, of a cam for retracting the head, said cam consisting of a sleeve with cam edges, and a sear having a lip to engage a shoulder on the head, and with trunnions adapted to bearings on the cam-sleeve, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN F. MEIGS.

HERMAN G. JAKOBSSON.

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