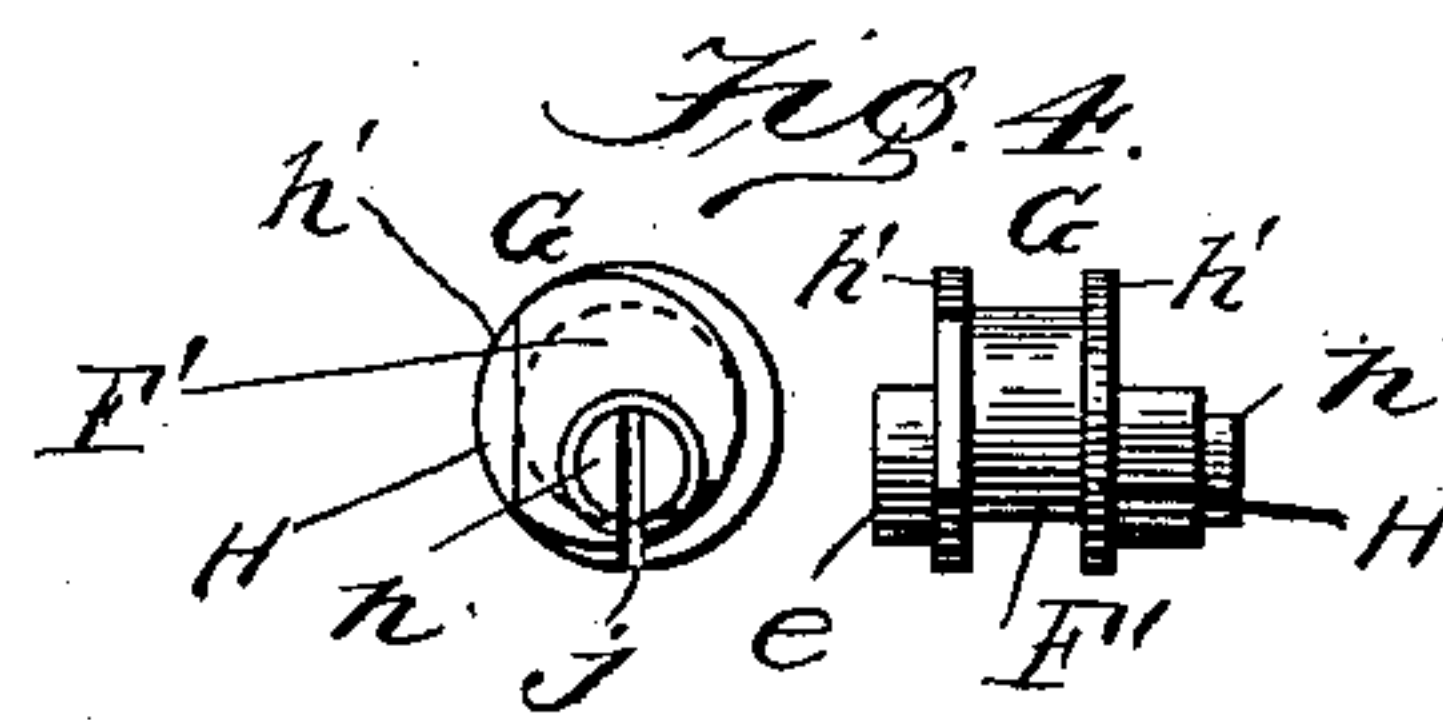
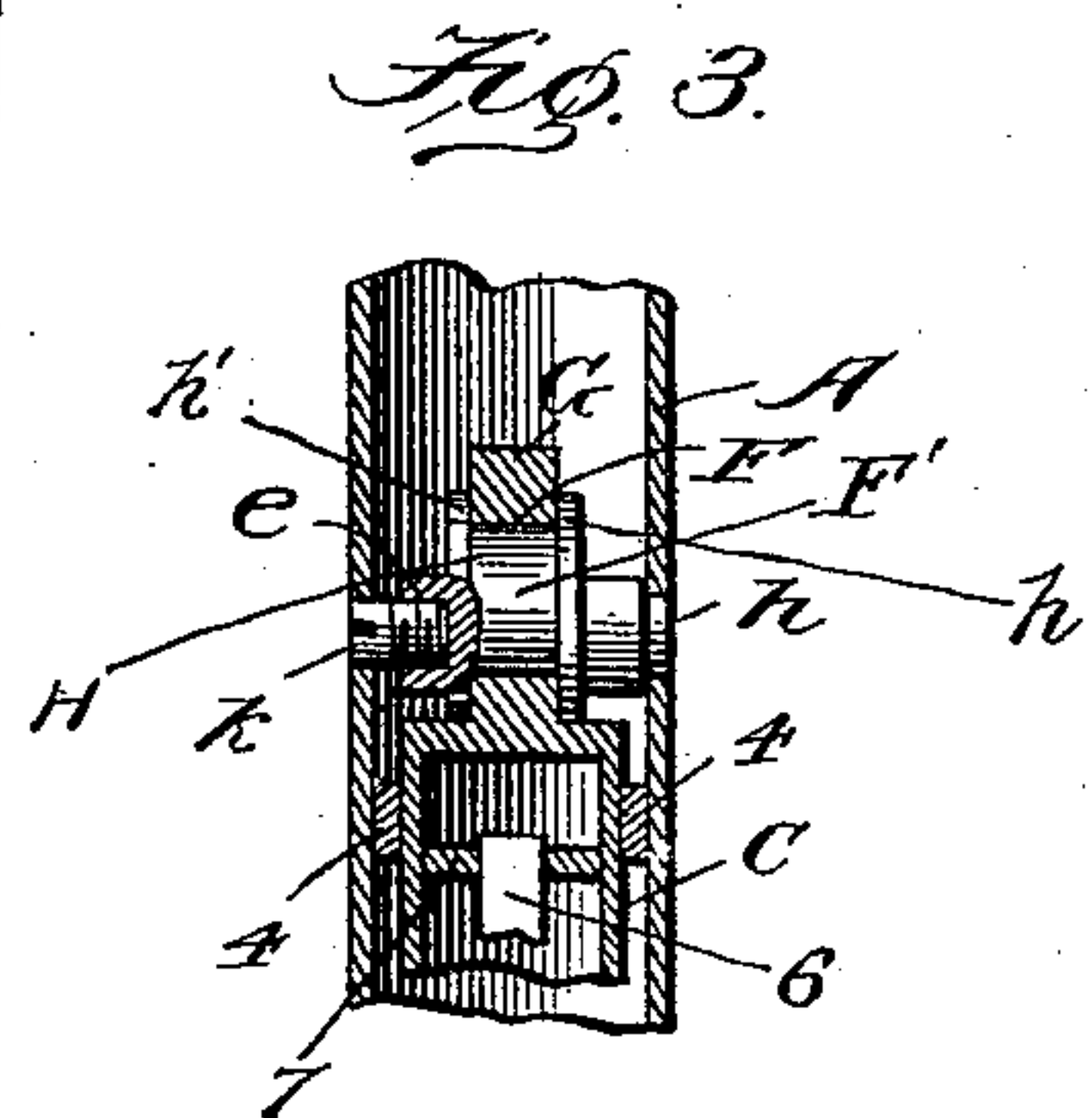
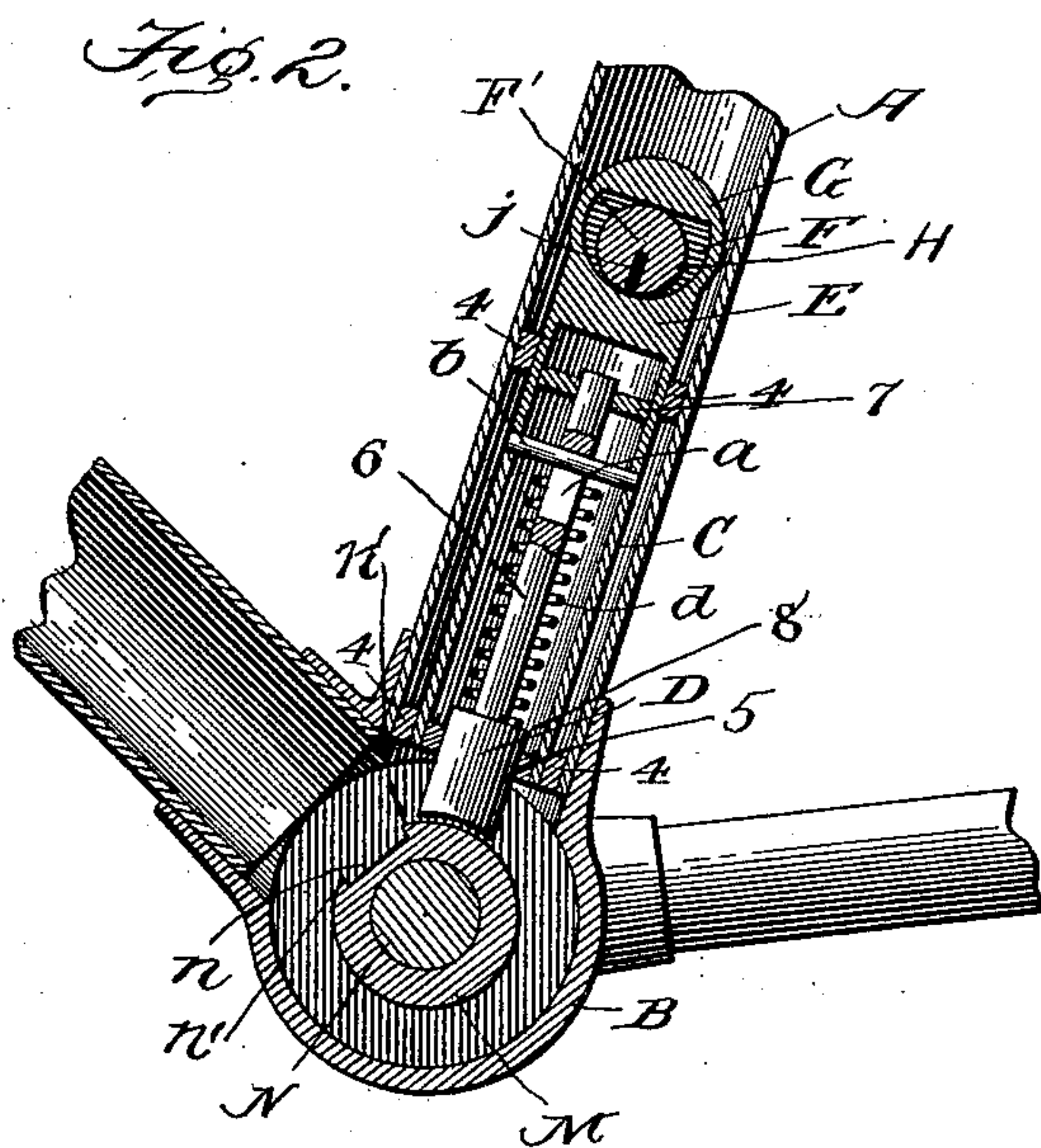
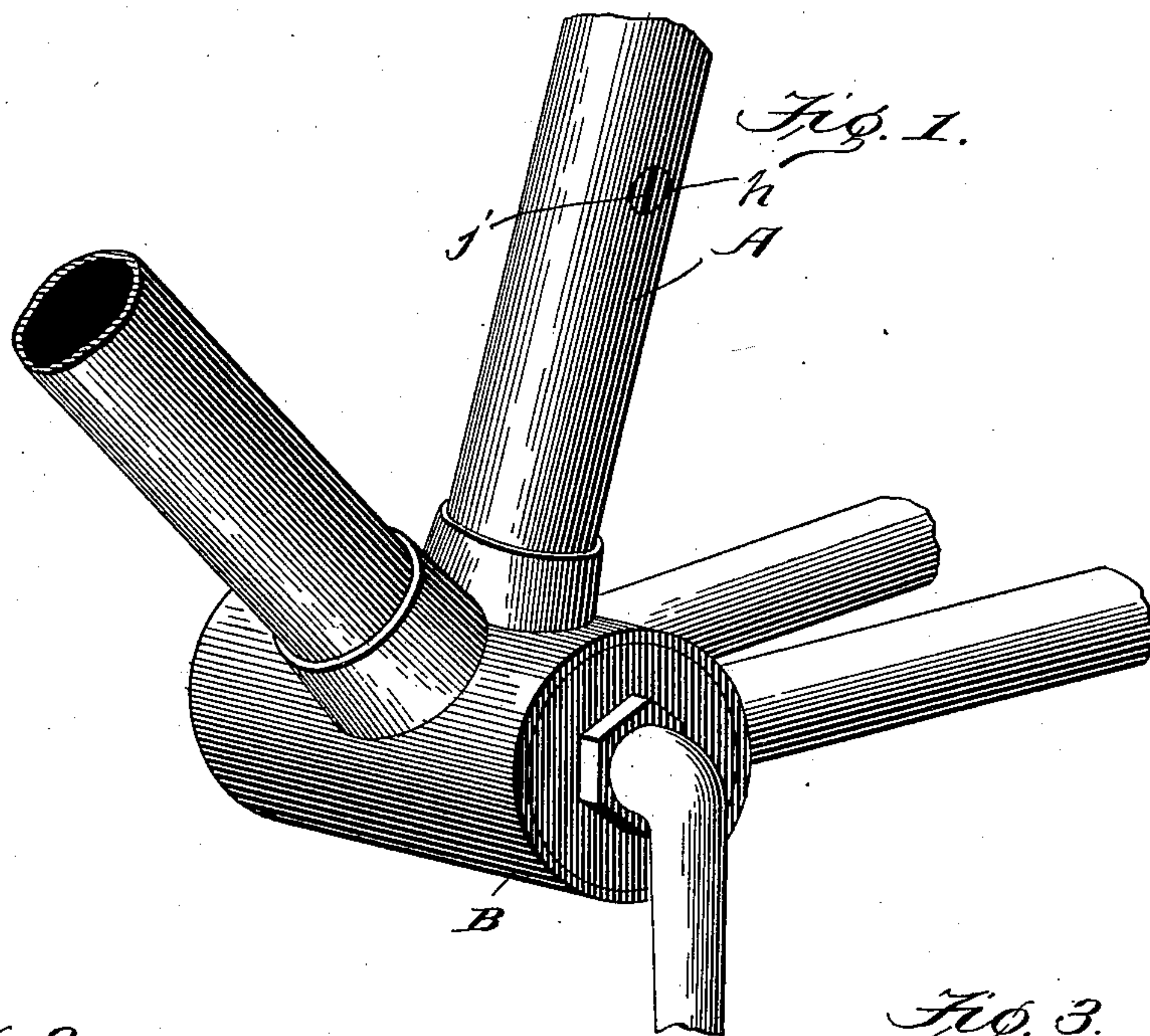


(No Model.)

C. R. EBERLE.
BICYCLE LOCK.

No. 592,242.

Patented Oct. 26, 1897.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES R. EBERLE, OF PHILADELPHIA, PENNSYLVANIA.

BICYCLE-LOCK.

SPECIFICATION forming part of Letters Patent No. 592,242, dated October 26, 1897.

Application filed September 19, 1896. Serial No. 606,014. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. EBERLE, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Bicycle-Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in bicycle-locks, and more particularly to that class of locks which are concealed in the frame of the machine and form a permanent fixture.

The object of the invention is to provide a simple, cheap, and effective device for locking the crank-shaft in its hanger and thereby prevent the rotation of the driving-wheel. To these ends the novelty consists in the construction, combination, and arrangement of the same, as will be hereinafter more fully described, and particularly pointed out in the claim.

In the accompanying drawings the same reference-characters indicate the same parts of the invention.

Figure 1 is a perspective view of the crank-shaft hanger and seat-post tube in which is located my improved lock, the keyhole of which is seen in the upper part of the seat-post tube. Fig. 2 is a longitudinal section of the same. Fig. 3 is a transverse section of the upper part of the seat-post tube and lock. Fig. 4 is a front elevation and side view of the lock-barrel removed from the tube.

A represents the seat-post tube, and B the crank-shaft hanger, of an ordinary safety-bicycle.

N represents the crank-shaft, journaled in the hanger B and provided with a fixed central collar M, having a rectangular transverse groove *n*, the parallel sides of which are formed with radial shoulders *n'* *n'*.

4 4 represent annular guide-rings fixed on the tube A, and in the rings is concentrically mounted the tubular lock-case C. The upper end of this tubular lock-case C terminates in a longitudinal flat head G, formed with a transverse slot F, which receives the cylindrical hub F' of the barrel H, on which said hub is eccentrically mounted the side

flanges *h'* *h'*, extending on each side of the flat head G to retain the same in place. This hub F' is provided with a journal *h*, which has a bearing in an alined orifice in the seat-post tube, and a similar journal *e* on the opposite end of the hub has a bearing in the opposite wall of the tube. A flat key-slot *j* extends longitudinally through the journal *h* and into the hub F', and by means of a flat key (not shown) the barrel may be rotated to raise or lower the lock-case C in the guide-rings 4 4.

D represents a circular bolt, the diameter of which corresponds to the width of the groove *n* in the crank-shaft N, into which it is adapted to enter and prevent said shaft from rotating. This bolt D reciprocates in an annular guide-collar 5, fixed in the lower end of the tubular lock-case C.

The shank 6 of the bolt D extends upwardly through a guide-collar 7, fixed in the upper end of the lock-case, and it is provided with a transverse guide-slot *a*, through which passes a limit-pin *b*, the outer ends of which are riveted in the opposite walls of the tubular lock-case C. A spiral spring *d* encompasses the bolt-shank 6, one end resting on the shoulder 8 and the other end against the cross-pin *b*. The office of this spring is to normally project the outer end of the bolt D beyond the downward limit of movement of the lock-case, so that when the groove *n* is not in line with the bolt the barrel H may be rotated to project the lock-case, in which event the end of the bolt will come in contact with the periphery of the collar M, which checks the movement of the bolt, while the spring *d* allows the lock-case C to continue to the downward limit of its movement. If the bicycle be now moved backward or forward to bring the groove *n* in the crank-shaft into line with the end of the bolt D, the spring *d* forces the bolt into the groove and locks the shaft in the hanger.

To release the crank-shaft, the key is inserted in the barrel and given a one-half turn. This rotates the eccentric hub F and raises the lock-case C, the pin *b* coming into contact with the upper end of the slot *a* in the bolt-shank, at the same time withdrawing the end of the bolt from the groove in the crank-shaft.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent of the United States, is—

5 The tubular seat-post A, and the crank-shaft hanger B, the crank-shaft, N, journaled therein and provided with the collar M, having the transverse slot *n* formed with parallel radial walls *n' n'*, in combination with the
10 annular guide-rings 4 4 fixed in said seat-post B, the tubular lock-case C, mounted in said guide-rings, and provided with the internal annular guide-collars 5 and 7, and the transverse pin, *b*, and the bolt, D, mounted in the
15 guide-collar 5, its shank 6 provided with a

transverse slot, *a*, through which the pin *b* passes and having the end of the shank mounted in the guide-collar 7, the spiral spring *d* encompassing said bolt-shank, one end in contact with the pin *b* and the other 20 end resting against the shoulder 8 on the bolt, and means substantially as described for reciprocating said tubular bolt-case and bolt, as and for the purpose set forth.

In testimony whereof I have hereto set my 25 hand in the presence of two witnesses.

CHARLES R. EBERLE.

Witnesses:

THOS. WILKINSON,
JOSEPH THOMASSON.