

D. H. PIQUOTTE.
LOCK FOR SLIDING DOORS.

APPLICATION FILED NOV. 2, 1907,

2 SHEETS—SHEET 1.

Fig. 1.

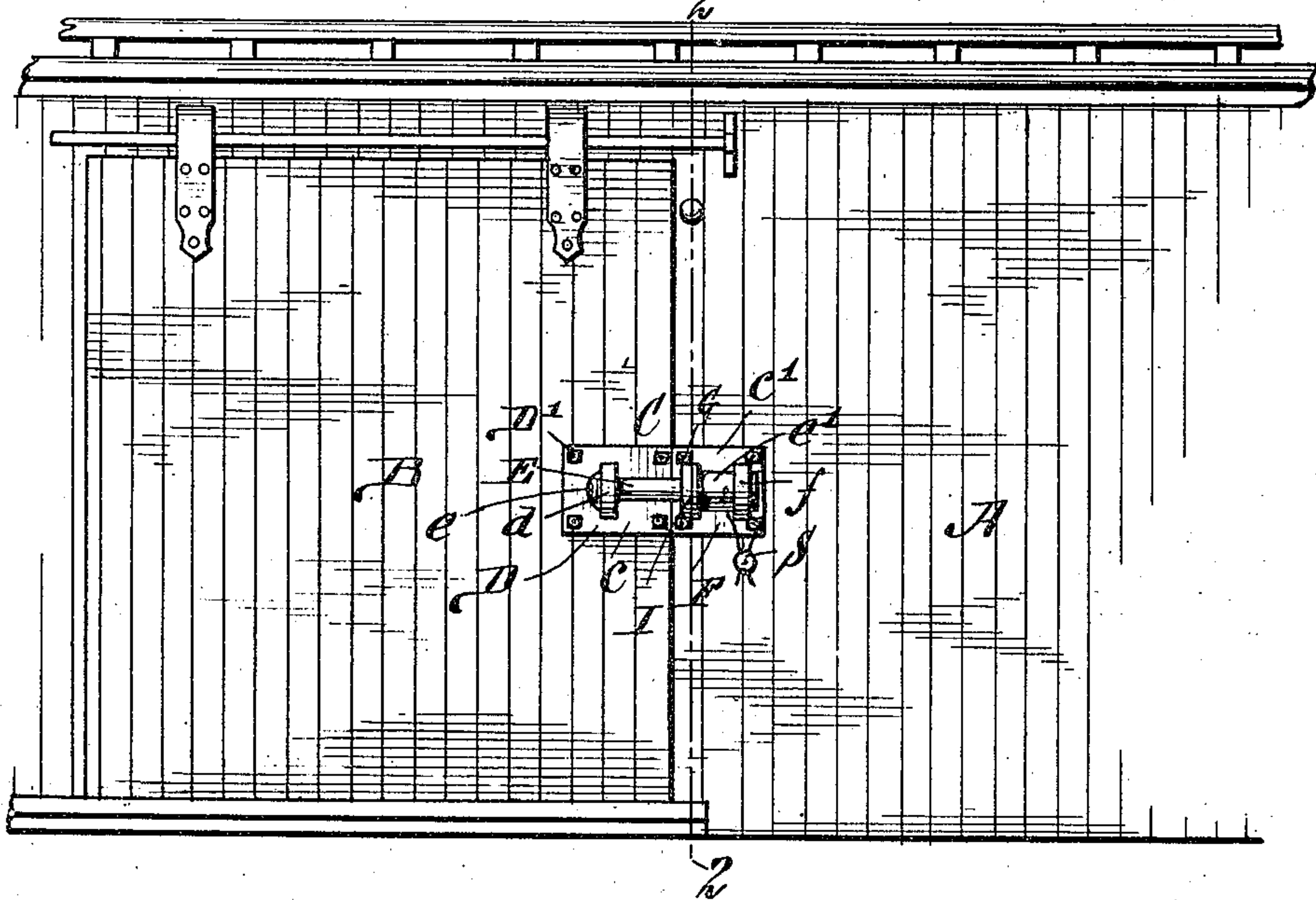


Fig. 2.

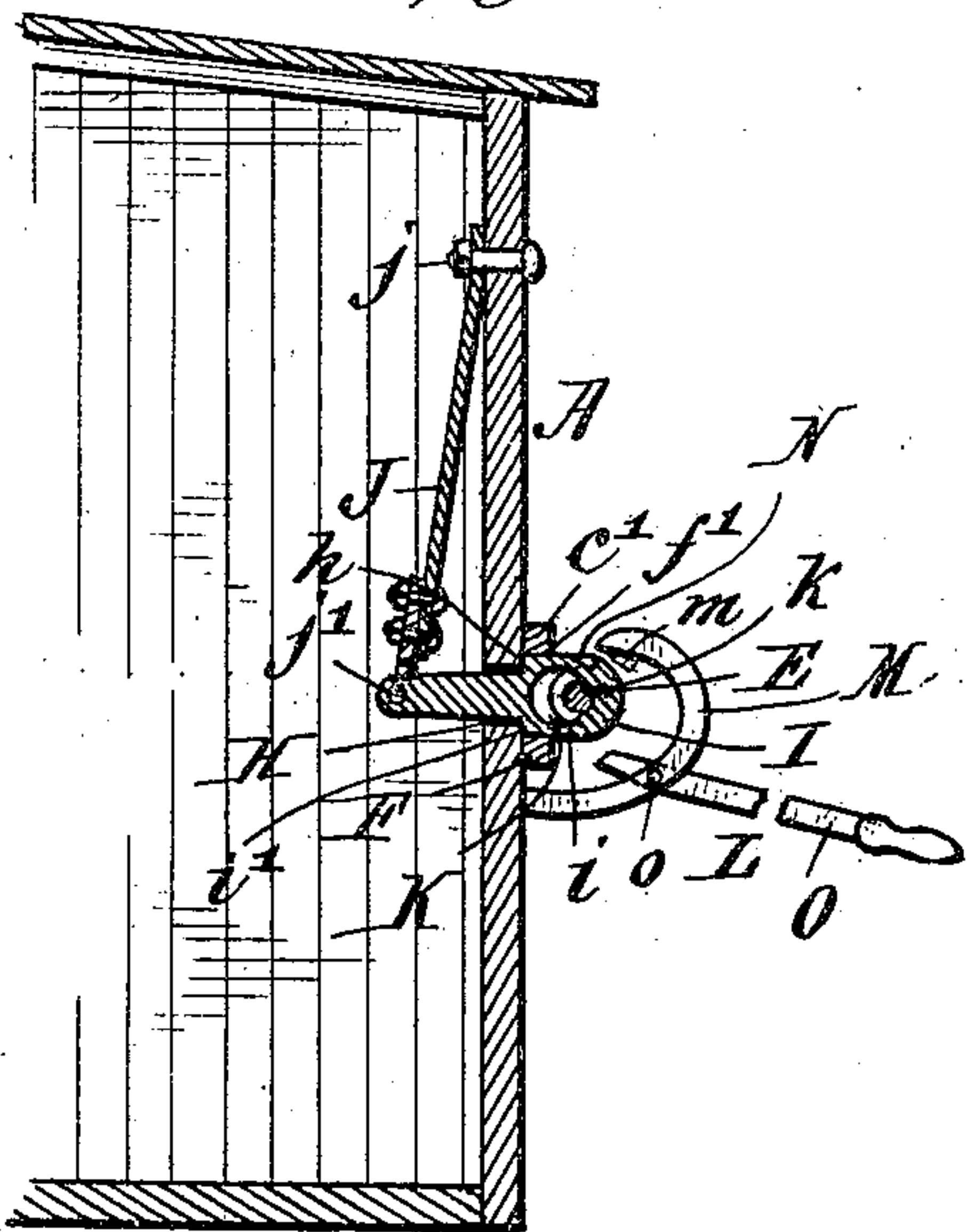
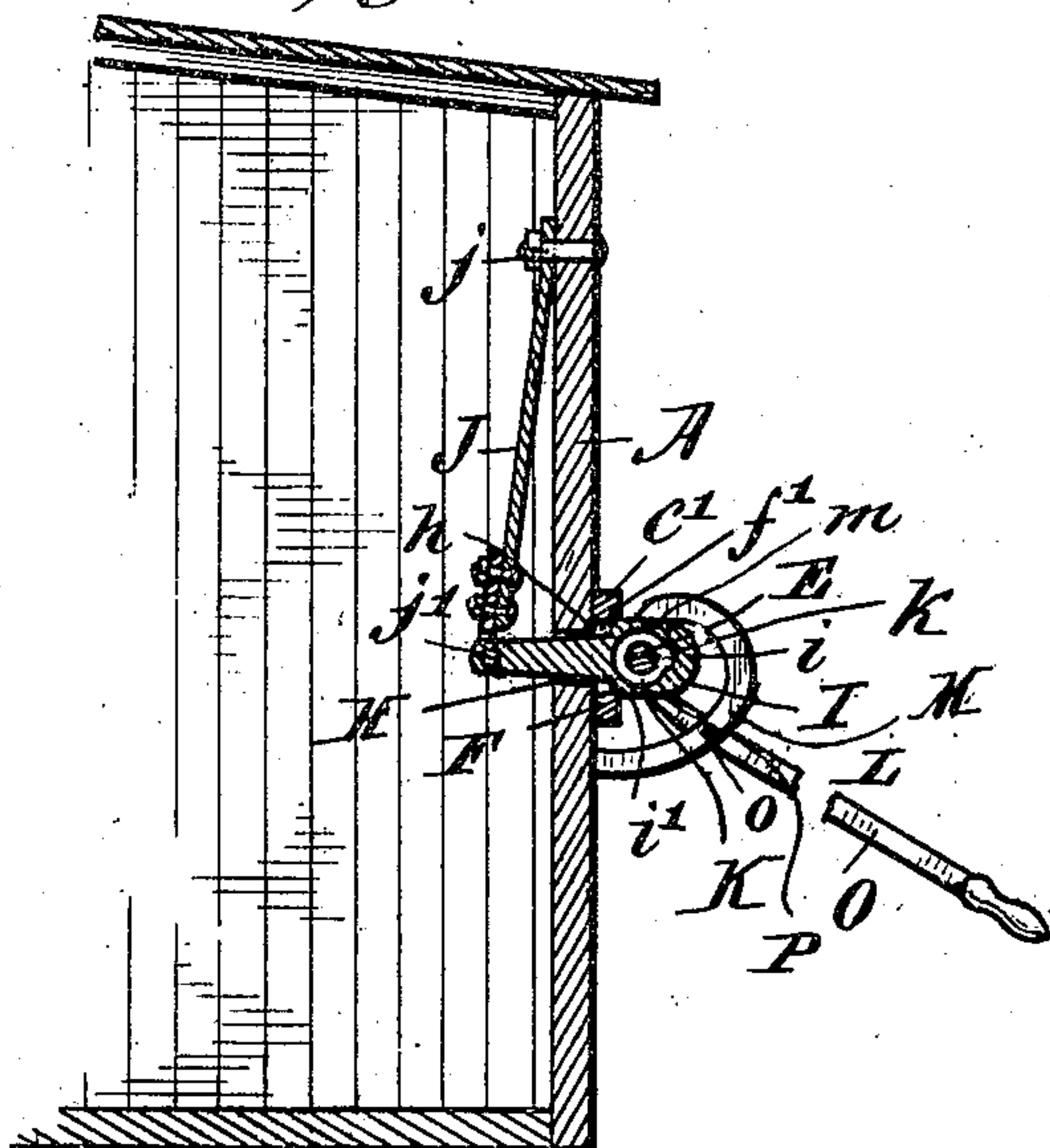


Fig. 3.

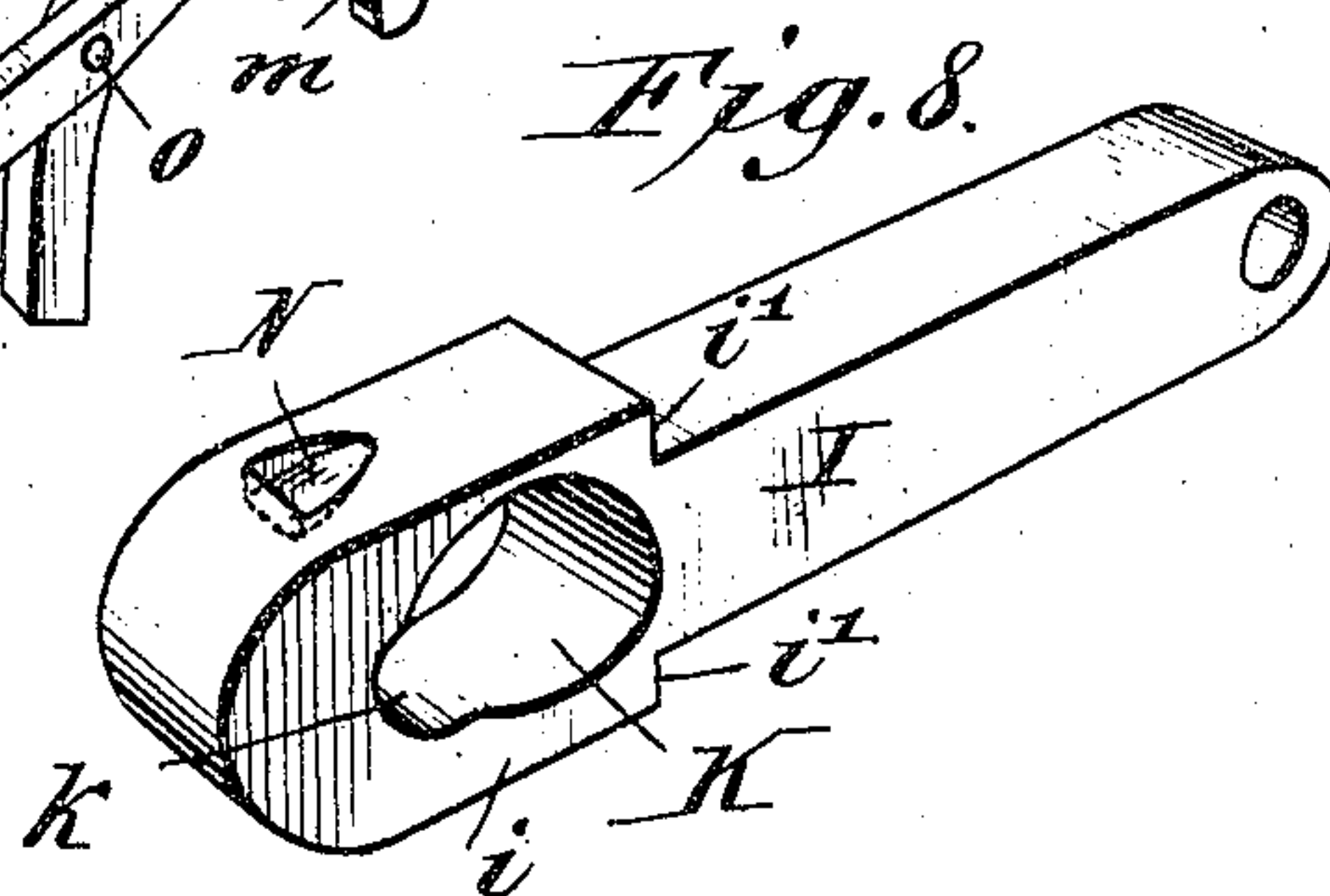
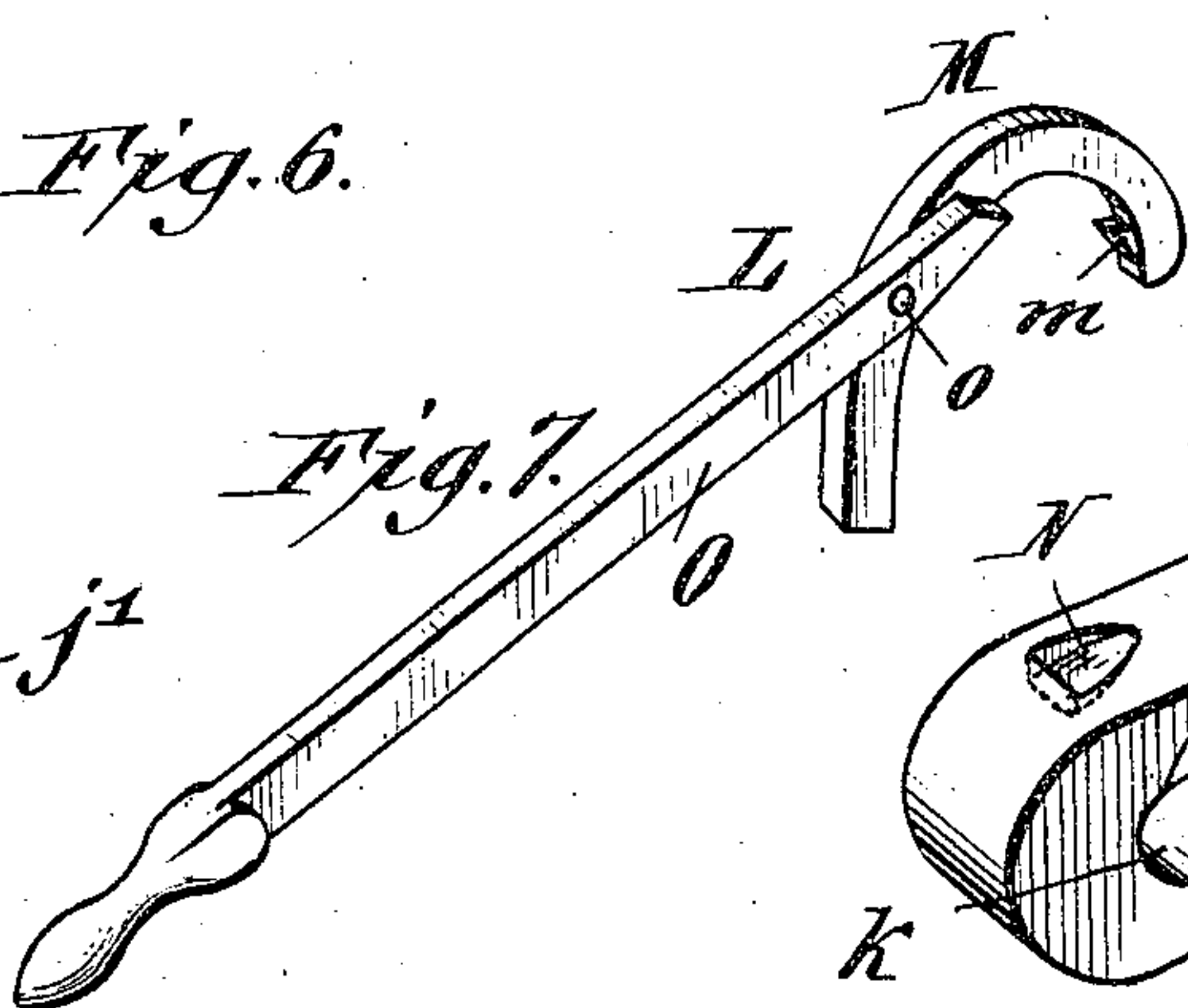
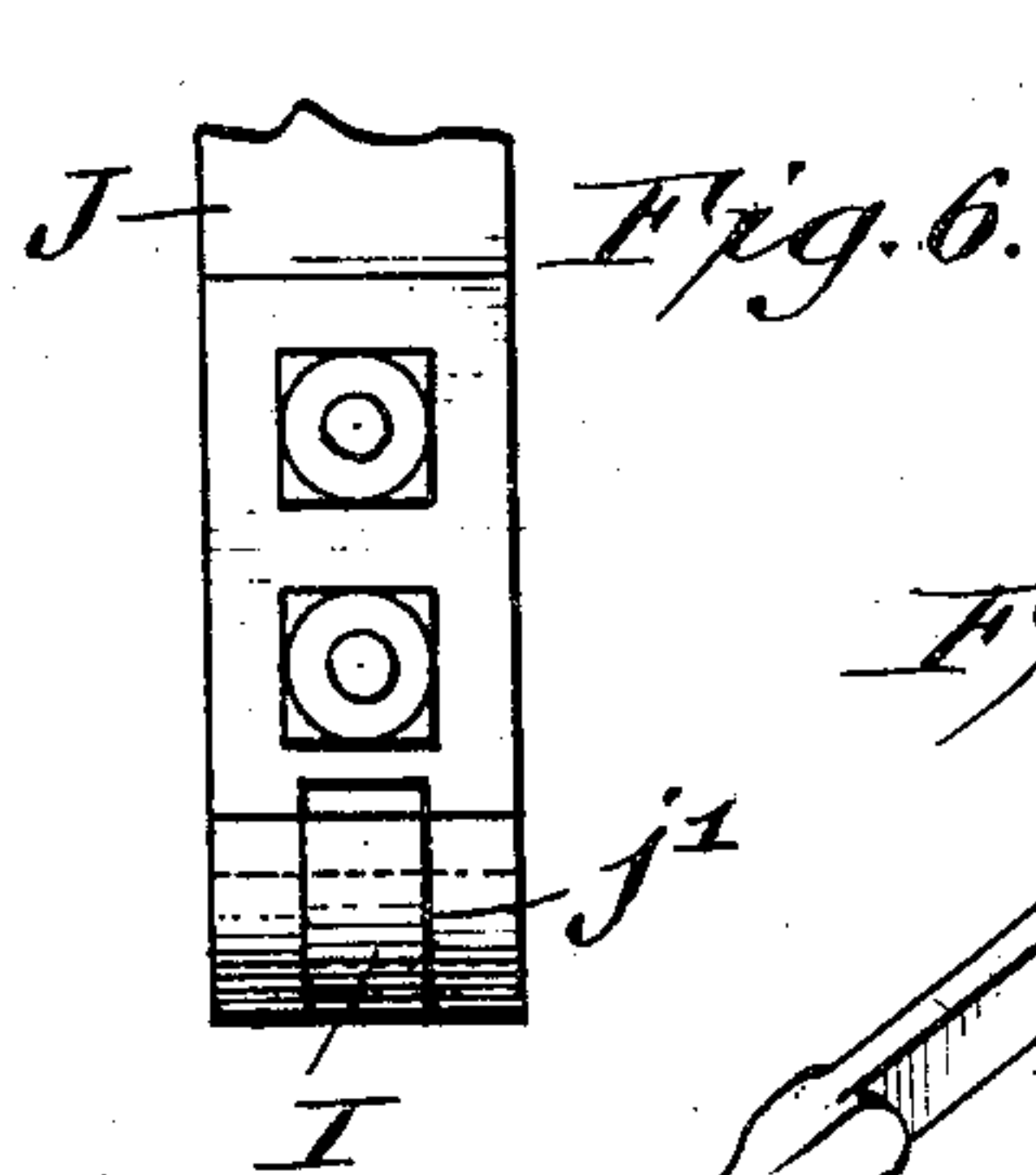
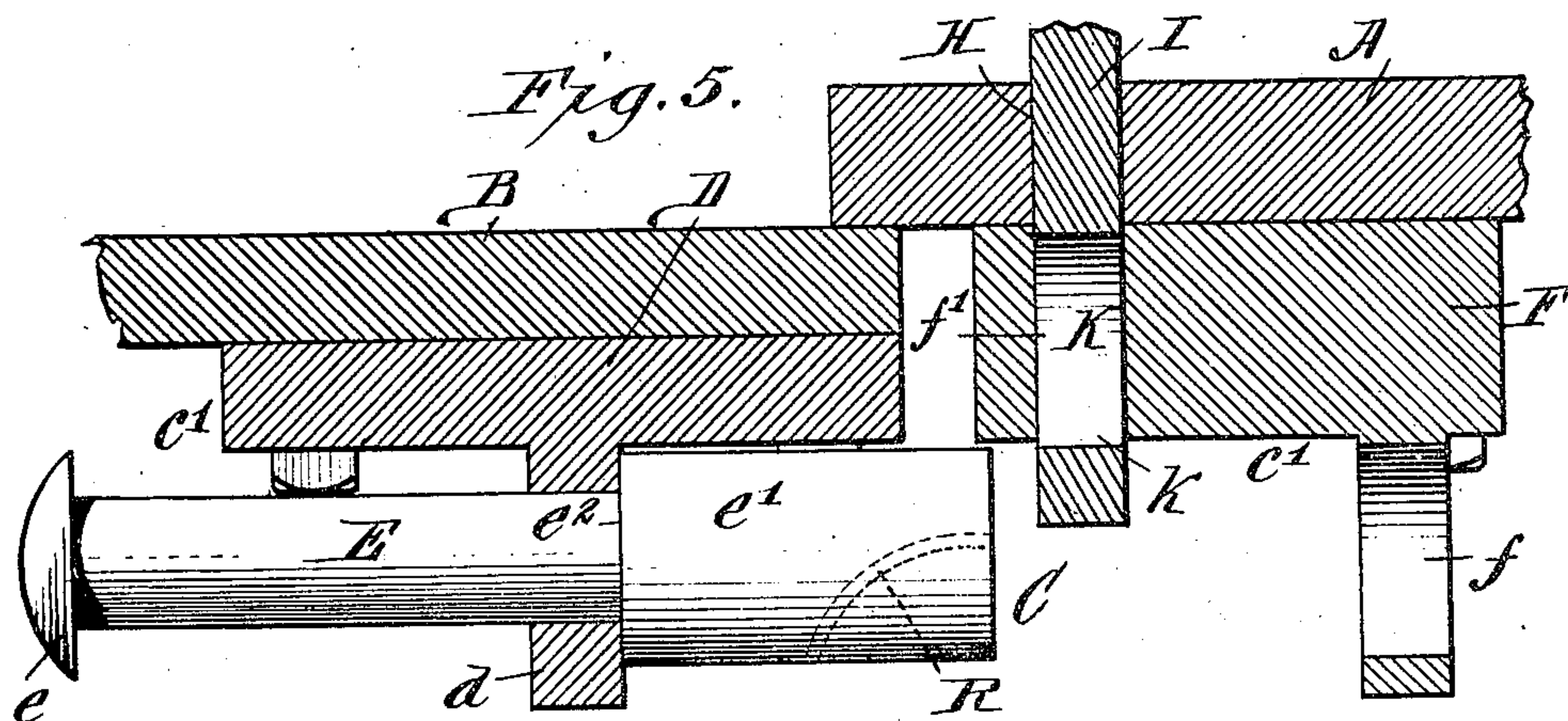
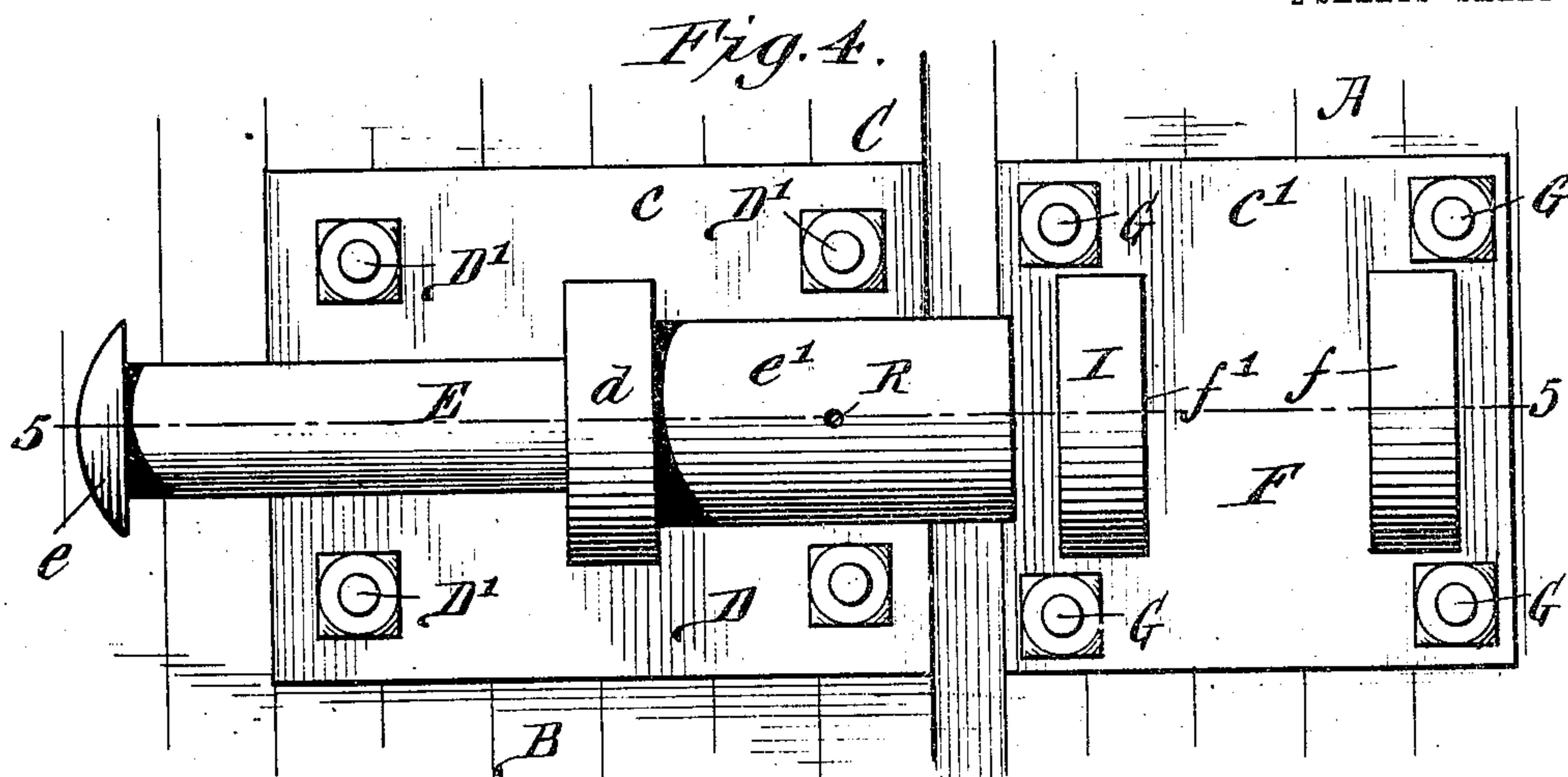


Witnesses
Harry D. Rapp.
Christ Feinle

Daniel H. Piquotte, Inventor.
By Emil Neuhart,
Attorney

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UNITED STATES PATENT OFFICE.

DANIEL H. PIQUOTTE, OF BUFFALO, NEW YORK.

LOCK FOR SLIDING DOORS.

No. 896,149.

Specification of Letters Patent.

Patented Aug. 18, 1908.

Application filed November 2, 1907. Serial No. 400,394.

To all whom it may concern:

Be it known that I, DANIEL H. PIQUOTTE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Locks for Sliding Doors, of which the following is a specification.

My invention relates to locks for use on sliding-doors; it being particularly designed for locking the doors of baggage or freight-cars.

The primary object of my invention is the production of a lock so constructed that a tool of special design is used in connection therewith for locking or unlocking the sliding-bolt of the lock.

Other objects are to provide a lock which is simple and durable in construction, positively reliable in action, and wherein one of the coöperating locking-members passes through the wall of the car and is controlled by means of a powerful spring within the car.

This invention consists in the construction, arrangement and combination of parts to be hereinafter described and particularly pointed out in the subjoined claims.

In the drawings,—Figure 1 is a side elevation of a portion of a freight-car equipped with my improved lock. Fig. 2 is a vertical section through a portion of the car taken on line 2—2, Fig. 1; the lock-bolt being held in locked position by the spring-controlled lock-bar, and the tool whereby the lock-bar is actuated being illustrated as about to engage said lock-bar for releasing it from the sliding-bolt. Fig. 3 is a similar view showing the locking tool engaging the lock-bar and the latter drawn outward to permit the slide-bolt to be disengaged from said lock-bar. Fig. 4 is an enlarged side elevation of the lock and a portion of the car. Fig. 5 is a horizontal section, taken on line 5—5, Fig. 4, the inner end of the lock-bar being broken away. Fig. 6 is an enlarged view of the lower end of the spring and the lock-bar attached thereto. Fig. 7 is a perspective view of the tool whereby the lock-bar is actuated. Fig. 8 is an enlarged detached perspective view of the lock-bar.

Referring now to the drawings in detail, like letters of reference refer to like parts in the several figures.

The letter A designates a car and B the car-door which is slidably supported in any approved manner.

C designates the lock comprising two parts c , c^1 ; part c being attached to the car-door and part c^1 to the car. When opening and closing the car-door, part c is moved from and toward part c^1 and is adapted to be engaged and locked by the latter.

Part c comprises a plate D secured to the door by means of bolts D^1 and it has an eye d extending outward therefrom and a lock-bolt E slidable in said eye and provided with a head or enlargement e at one end and an enlarged locking portion e^1 at its other end; said locking portion providing a shoulder e^2 which limits the extent of movement of the locking-bolt in one direction, while the head or enlargement e limits the extent of movement of said bolt in the other direction.

Part c^1 comprises a plate F secured to the wall of the car by means of bolts G, and it has an eye f projecting outward therefrom and an opening f^1 which coincides with an opening H in the wall of the car; a locking-bar I extending through said coinciding openings and a spring J secured at one end to the wall of the car, as at j ; and at its other end to said lock-bar, as at j^1 ; said spring serving to retain said lock-bar in its innermost position.

As shown in Fig. 3 the openings f^1 and H vary in length, the opening f^1 being somewhat longer than the opening H so as to form shoulders h . The lock-bar is enlarged at its outer end, as at i , to form shoulders i^1 which normally bear against the shoulder h and limits the extent to which the spring J may draw the lock-bar into the car, and it is provided with a transverse opening K in its enlarged outer end through which the lock-bolt E is to be passed when said lock-bar is drawn outward. By preference said opening is substantially circular and of a size to permit the enlarged locking portion e^1 of the lock-bolt to pass therethrough, and it has a reduced extension at the front, as at k , to receive the reduced body-portion of the slide-bolt when the lock-bar is drawn into the car by the spring J after said enlarged locking-portion of the lock-bolt has passed through said lock-bar.

The spring J is quite powerful so that considerable force must be exerted to draw out the lock-bar against the action of said spring, and for this purpose I provide a specially designed tool L which consists of a grapple or substantially U-shaped member M provided with a tooth m at one end adapted to

enter a notch N in the upper face of the lock-bar; the opposite end of said grapple being adapted to bear against the wall of the car to form a fulcrum on which the grapple may swing. A lever O of considerable length is pivoted to said grapple at a point between its ends, as at o, and the inner end of said lever is adapted to bear against the underside of the lock-bar, as at P, Fig. 3. Said lock-bar is drawn outward against the action of the spring J so as to bring the opening therein in line with the lock-bolt E. Upon sliding the latter forward, the enlarged locking-portion e^1 is passed through the opening in said lock-bar and enters the eye f , after which the force exerted on the tool may be removed to allow the spring J to draw the lock-bar inward. This action causes the reduced portion k of the opening in said lock-bar to be engaged by the reduced body-portion of the lock-bolt with the shoulder e^2 of said bolt bearing against the side of the lock-bar so that the lock-bolt cannot be moved backward until the tool is again applied to draw the lock-bar outward, with a view of bringing the opening K therein in line with the enlarged locking-portion of said bolt.

When the lock-bolt is forced forward and locked into position by the lock-bar I, it positively locks the door so that it cannot be opened without the use of the special tool hereinbefore described. If desired, the lock-bolt may be provided with a curved passage R through which the wire of a seal S may be passed; as in many cases a seal is desired in connection with a positive lock.

Having thus described my invention, what I claim is,—

1. The combination with a car, of a lock-bolt slidable on the door thereof, a lock-bar passing through the wall of the car and adapted to engage said lock-bolt to retain the same in locked position, and a spring within the car acting to retain the lock-bar in locking position.

2. The combination with a car, of a shouldered lock-bolt slidable on the door of the car, a lock-bar in the wall of the car and extending from opposite sides of said wall, said lock-bar having an opening in its outer end into which said lock-bolt is adapted to pass, and a spring supported on the wall of the car and connected to the inner end of said lock-bar to retain it in locking position.

3. The combination with a car, of a lock-bolt slidable on the door of the car and having an enlarged locking-portion forming a shoulder, and a spring-controlled lock-bar arranged at a right-angle to said lock-bolt and

having an opening through which the enlarged locking-portion of said lock-bolt is adapted to pass so that the shoulder formed on said lock-bolt engages the side of said lock-bar.

4. The combination with two members, one movable on the other, a lock-bolt on one of said members and locking-means on the other member to engage and lock said bolt, of a locking-tool comprising a lever and means carried on said lever adapted to engage said locking-means and move the same out of locking engagement with said lock-bolt.

5. The combination with a car having a car-door, a lock-bolt on said car-door and a spring-controlled lock-bar on the car to engage and lock said lock-bolt; of a locking tool comprising a lever and a grapple carried on said lever adapted to engage said lock-bar and move the same to a position to allow the lock-bolt to be unlocked.

6. A lock comprising a shouldered lock-bolt and a spring-controlled lock-bar arranged at a right-angle to said lock-bolt and provided with a transverse aperture at one end and a notch on its upper side, said lock-bolt being adapted to pass through the aperture of said lock-bar with its shoulder against one side of the latter; combined with a tool comprising a lever and a substantially U-shaped grapple pivoted between its ends near the inner end of said lever and having a tooth near one end adapted to enter the notch in said lock-bar, substantially as set forth.

7. A lock for sliding-doors, comprising a plate adapted to be secured to the door and having an outstanding eye, a lock-bolt slidable in said eye and having an enlarged locking-portion providing a shoulder, a second plate secured to the wall and having an aperture therein, a spring supported on the wall, and a lock-bar passing through the wall and through the opening in said last-mentioned plate and having its inner end connected with said spring and its outer end provided with a transverse aperture normally out of line with said lock-bolt; combined with means to move said lock-bar against the action of said spring so as to bring the aperture in said bar in line with said lock-bolt, for the purpose described.

In testimony whereof, I have affixed my signature in the presence of two subscribing witnesses.

DANIEL H. PIQUOTTE.

Witnesses:

ELLA C. PLUECKHAHN,
EMIL NEUHART.