

No. 704,107.

Patented July 8, 1902.

C. J. REYNOLDS.

SEAL LOCK.

(Application filed Oct. 2, 1901.)

(No Model.)

2 Sheets—Sheet 1.

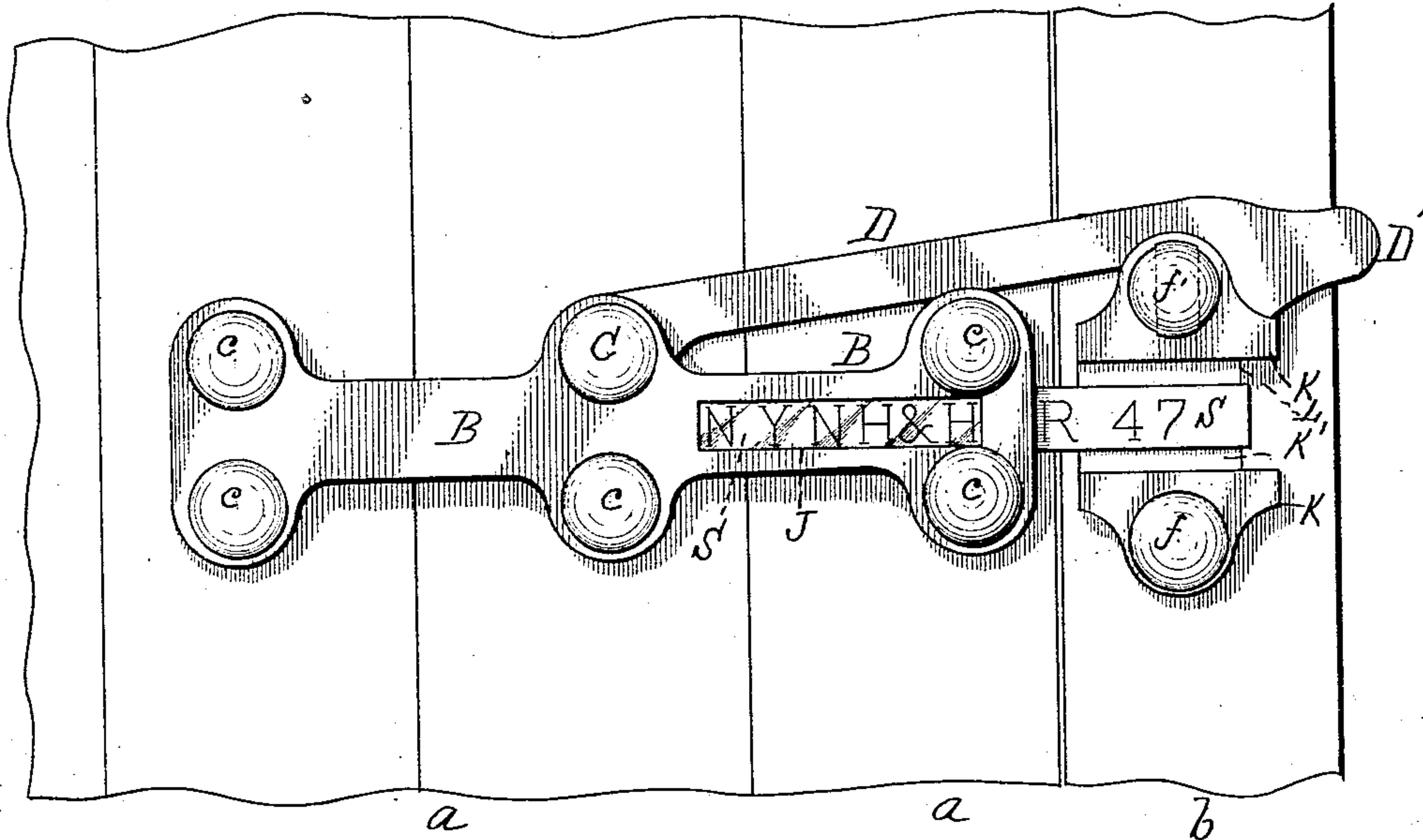


FIG. 1.

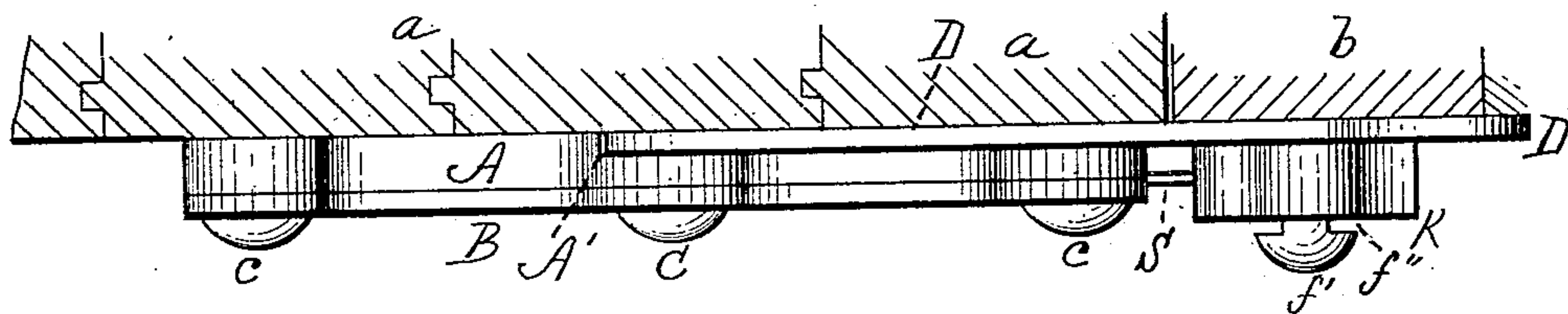


FIG. 2.

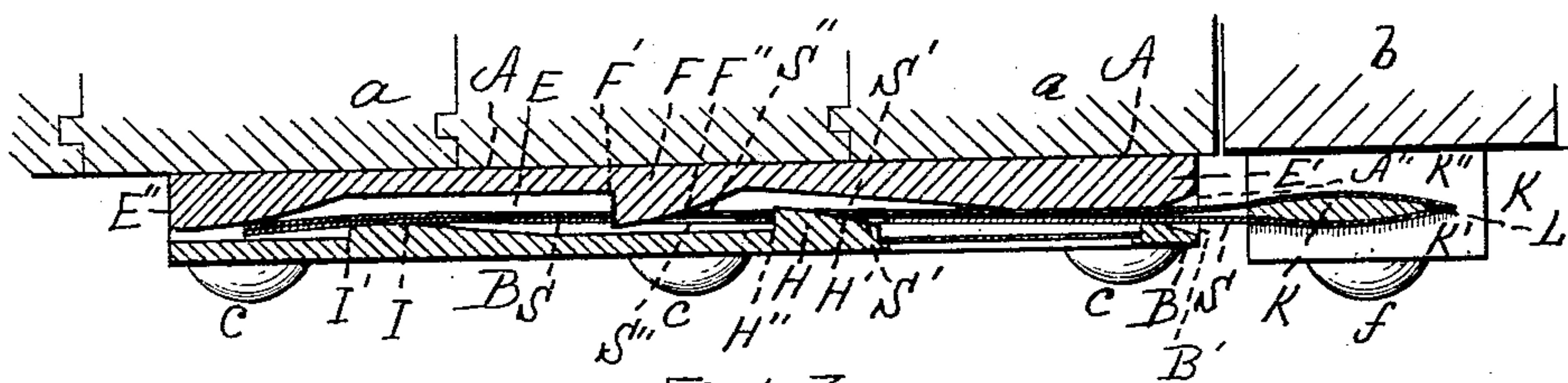


FIG. 3.

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2 Sheets—Sheet 2.

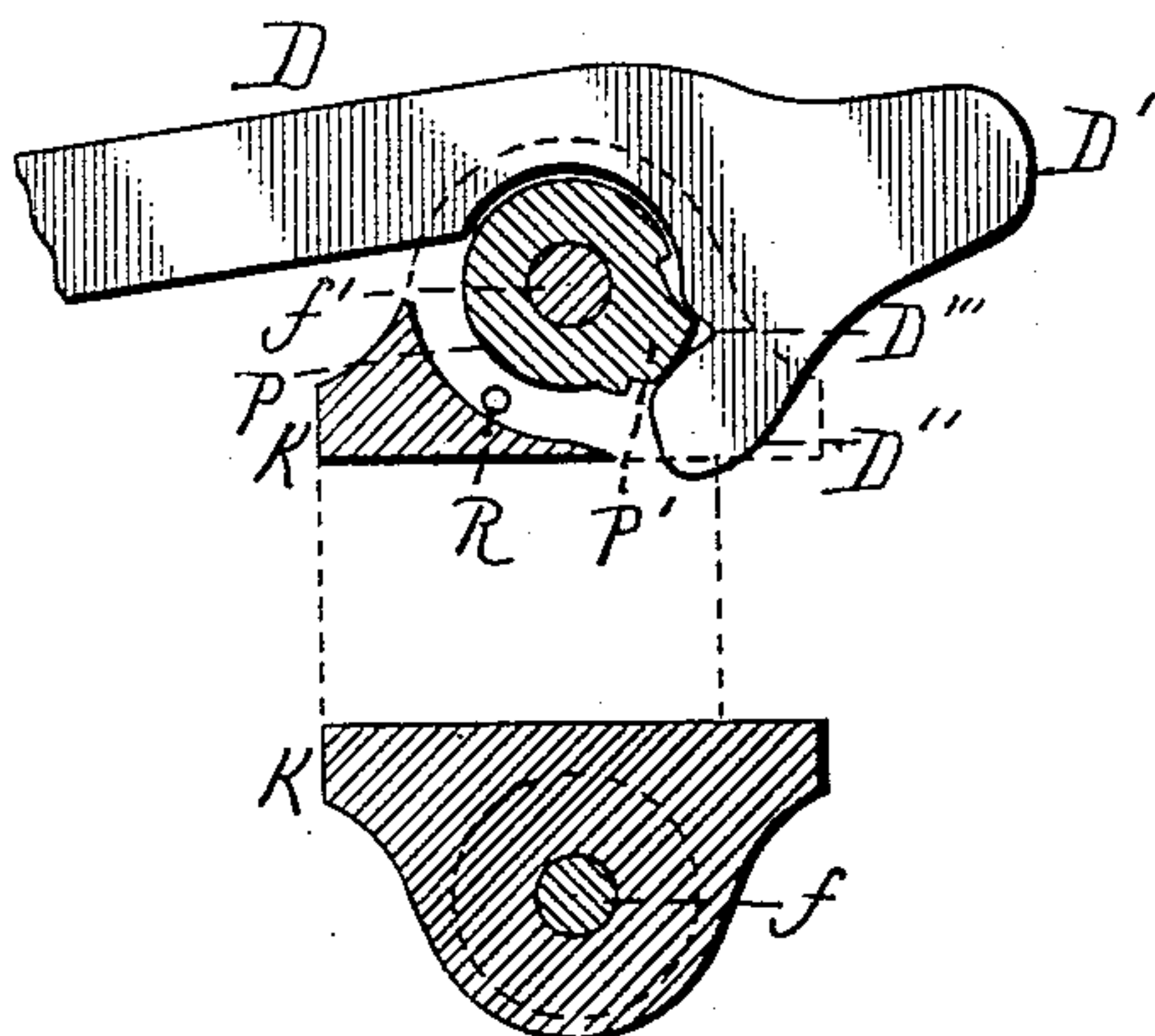


Fig. 4.

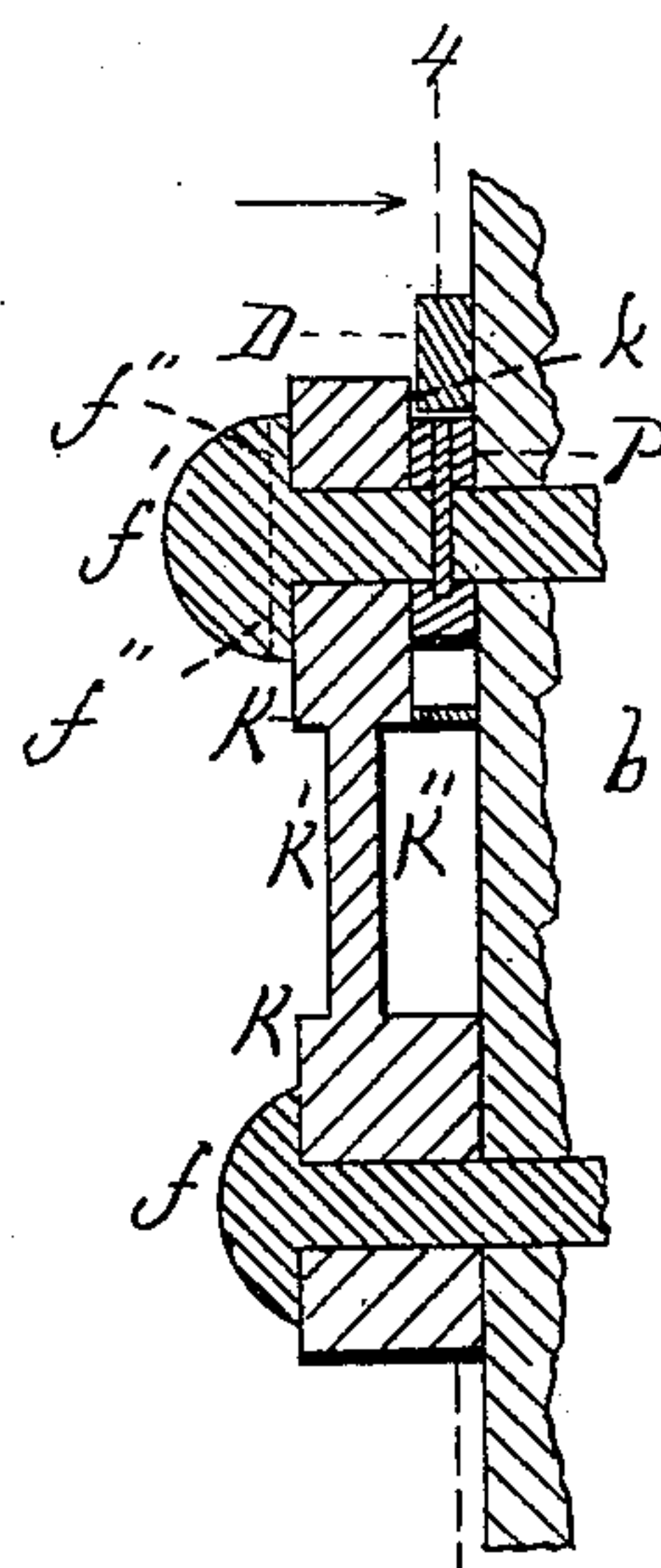


Fig. 5.

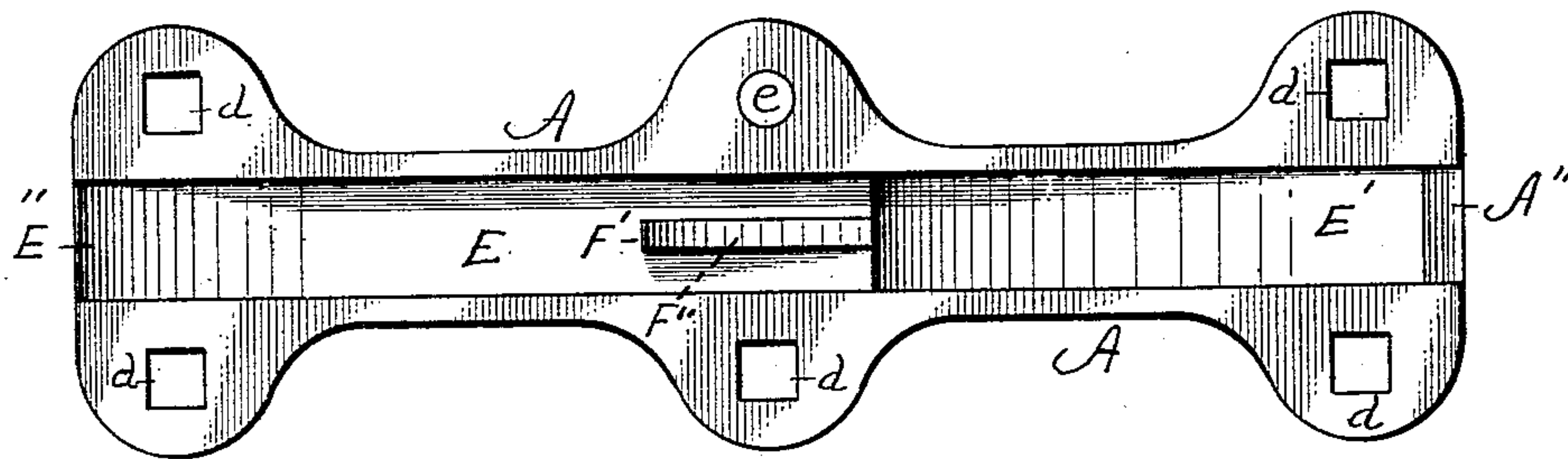


Fig. 6.

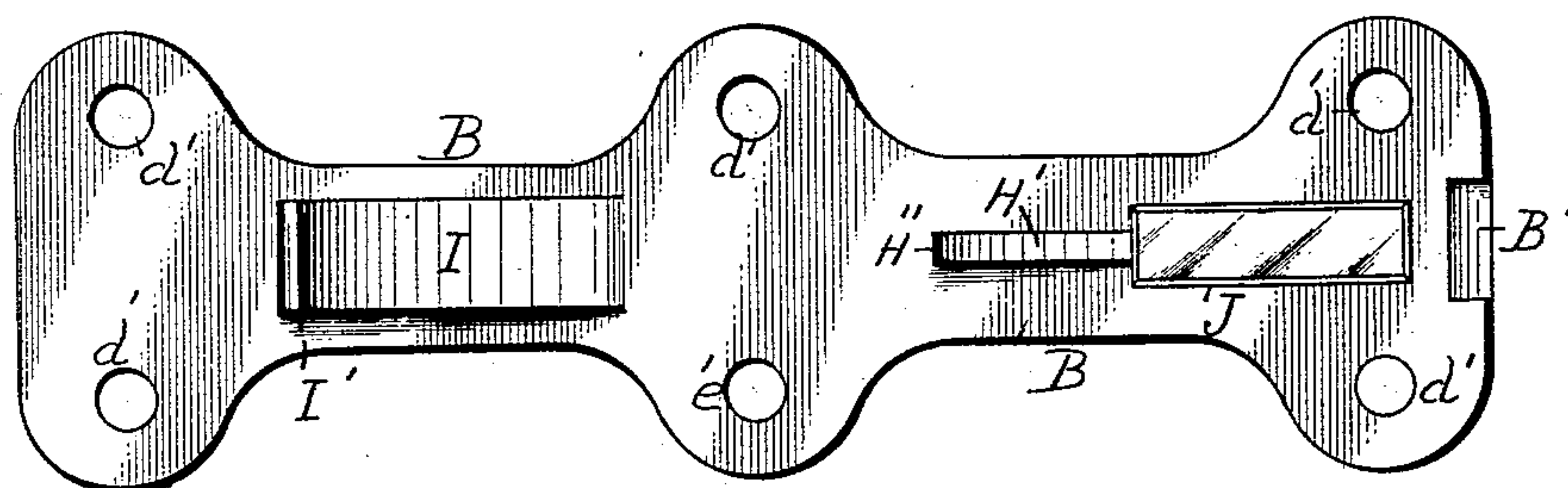


Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## SEAL-LOCK.

SPECIFICATION forming part of Letters Patent No. 704,107, dated July 8, 1902.

Application filed October 2, 1901. Serial No. 77 322. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES J. REYNOLDS, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Seal-Locks, of which the following is a specification.

This invention relates to seal-locks, such as are adapted particularly for application to freight-cars, although I propose to use the lock in any connection in which it may be of service. In using the lock in connection with freight-cars it is preferably rigidly attached to the car; but it may be attached in a non-rigid manner, if desired, as by means of a chain, for example.

The invention or improvement is of that class in which a seal (preferably metallic) extends from a portion of the device which is attached to the door of the car to another portion which is secured to the jamb or body of the car, and the car is opened legitimately by unlocking the latch and then pulling the door open, and thereby severing the seal by cutting it. A thief or other unauthorized person attempting to enter the car must first break the latch and afterward break the seal.

The principal objects of the invention are to prevent an unauthorized person from unlocking the lock and entering the car without breaking the seal, to prevent such a person from entering the car without breaking a portion of the lock itself, to prevent any possibility of the lock being picked, to prevent the seal from being withdrawn, and to produce in other respects an economical, simple, operative, and efficient seal-lock particularly adapted for application to freight-cars.

The nature of the invention is fully described below and illustrated in the accompanying drawings, in which—

Figure 1 is a front view of my improved seal-lock applied to a freight-car and in a locked position thereon. Fig. 2 is a plan view of the same. Fig. 3 is a horizontal section taken centrally through the device and the seal. Fig. 4 is an enlarged section in detail taken on line 4, Fig. 5. Fig. 5 is a cross vertical section taken centrally through the portion of the device which is attached to the jamb. Fig. 6 is a front view of the rear plate making a part of that portion of the device

which is attached to the door. Fig. 7 is an inside or rear view of the front plate.

Similar letters of reference indicate corresponding parts.

*a* represents the door of a freight-car, and *b* the jamb.

*A* represents the rear plate, which lies horizontally next to the outer surface of the door *a*, and *B* is the front plate, which lies against and upon the rear plate and corresponds in shape therewith. The two plates are secured to the door by means of suitable bolts *c*, which extend through corresponding openings *d d'* in the plates. Through the openings *e e'* a bolt or pivot *C* extends, and on this pivot swings a latch *D*, said latch swinging between the rear plate *A*, which may be recessed at *A'*, Fig. 2, for the purpose, and the door *a*. This latch is provided at its free end with the handle *D'* and with the rearwardly-extending hook-shaped projection *D''*, inwardly notched or recessed at *D'''* (see Fig. 4) for the purpose below described.

The rear plate *A* is provided with the longitudinal groove *E*, having parallel sides, as shown. The bottom or floor of this groove is deepest toward the center and at the opposite ends slopes up or forward at *E'* and *E''*, as shown in Fig. 3, until at the opposite ends the front and rear openings produced by the shallow depth of the groove between the rear and front plates are only deep enough to receive the seal *S*, which extends along said groove in a folded condition, as shown in Fig. 3. The thick portion *E'* of the floor of the groove is longer than the thick portion *E''* and extends farther toward the center of the groove. The groove is provided centrally with a longitudinally-placed forward spur *F*, parallel with the sides of the groove, the rear end *F'* of this spur being at right angles with the floor of the groove and its surface *F''* sloping gradually inward and forward toward the rear end of the thickened portion *E'*. The front plate *B* has no groove and is provided on its rear surface with a rearward spur *H*, somewhat similar in shape to the spur *F*. This spur *H* is opposite the rear portion of the incline *E'*, has its surface *H'* sloping gradually toward the front end of the plate *B*, and with its rear edge *H''* cut at right angles to the surface of said plate. Between the spur *H* and



the rear end of the plate B its rear surface is provided with a long shoe or protuberance I, sloping up or rearward gradually from its forward end and with its rear end I' cut off at right angles, as shown. The spurs F and H and the shoe I have their rear ends at substantially right angles with the surfaces of the plates from which they extend. The outer plate B is provided between the spur H and its forward or inner end—that is, the end toward the jamb—with an opening J, preferably glazed and of length and shape to exhibit the seal and the characters thereon when said seal is in position. Preferably the forward or inner ends of the two plates are flared apart a little at A'' and B', thus slightly broadening the mouth.

Secured by suitable bolts  $f f'$  to the jamb  $b$  is a plate K. This plate has the outer surface of its central portion grooved horizontally at K', and the rear surface is correspondingly grooved at K''. These grooves are of such a shape or incline as to bring the outer edge L of the central portion of the plate to a sharp knife-edge, as shown in Fig. 3. The seal S is bent centrally around this knife-edge, and each of the folds thus produced is provided with two slots S' and S'', the two slots S' registering and the two slots S'' registering when the seal is folded and the spur H extending through the two slots S' and the spur F extending through the two slots S'', all as indicated in Fig. 3. The bolt  $f'$  is rotative and has fixed upon it between the upper portion of the plate K and the jamb  $b$  (said plate being recessed at  $k$  for the purpose) a cam-shaped lock P, provided with a locking projection or cam P'. This cam-shaped lock can be rotated toward and from the stop R, Fig. 4, by applying a suitable tool to the head of the bolt  $f'$ , which is recessed at  $f''$  for the purpose.

As above stated, the lock is shown in the drawings in a locked position. This is accomplished by folding the seal S centrally around the central portion of the plate K and inserting the ends of the seal into the mouth formed by the flared portion A'' and B' and pushing said ends along over the thickened portion E' and along the groove E over and between the spurs H and F and over the shallow shoe I until the spur H extends through the two registering openings S'. The spur F extends through the two registering openings S'', and the ends of the folded seal are near the rear end of the groove E, as indicated in Figs. 1 and 3. After this has been done the latch D is swung down and the lock or cam portion P' swung up by rotating the lock P into the position indicated in Fig 4, said cam-shaped portion P' extending into the recess D''' above the hooked end D'' of the latch. The device is then securely locked, and the seal shows its projecting marks through the window J. To unlock the device, the pivot-bolt  $f'$  is rotated, by means of a suitable tool fitting into the recesses  $f''$  of the head, until

the portion P' strikes the stop R. The latch is then lifted by means of the handle D', and the door  $a$  is slid quickly away from the jamb  $b$ , with the result that the cutting edge L of the portion K' quickly severs the seal S, which moves rearward in the plates A B as the door slides and can be easily removed by pushing it rearwardly along the groove and out at the rear edge of the plates between the thickened portion E'' and the outer plate B.

Should a thief or other unauthorized person endeavor to open the door, he must first break the latch D and then break the seal, as the seal cannot possibly slip along the recess and out at the front or inner end of the plates, inasmuch as it is securely locked by the spurs H and F in the slots S' S''. Should an attempt be made to pick the lock by inserting an instrument into the groove E from the rear end and pressing up the seal, the spur or bolt F holds it by means of the slots S''. Should the operator be successful in pressing forward the seal, the spur or bolt H retains it by means of the slots S'. The shoe or protuberance I, however, makes it practically impossible that an instrument should be inserted in such a manner as to press the seal out of engagement with the spur or lock F, said protuberance tending to force the seal into the groove and its end I' preventing the easy insertion of a picking instrument. The double inclines F'' H', the incline I, and the inclines of the thickened portions E' and E'' all tend to make the picking of the lock by inserting an instrument at either end so difficult as to be, it is believed, practically impossible.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a seal-lock of the character described, the bottom or rear plate A provided with the inwardly-extending spur F, F', F''; and the upper or front plate B provided with the inwardly-extending spur H, H', H'', said plates facing each other and secured together and provided with a passage between them for the seal, and the said plate B being furthermore provided with the inwardly-extending shoe I, I' between the spur F, F', F'' and the outer or rear ends of the plates, whereby a double protection is provided by pressing the seal toward the plate A and preventing the passage of a thin piece of metal into the lock, substantially as set forth.

2. In a seal-lock of the character described, the bottom or rear plate A provided with the inwardly-extending spur F, F', F''; and the upper or front plate B provided with the inwardly-extending spur H, H', H'', said plates facing each other and secured together and provided with a passage between them for the seal, said plate A being formed on its inner surface with the groove E having a straight or level bottom, and located between the spur F, F', F'' and the rear end of said plate A, and the plate B being provided



on its inner surface with the shoe I, I' extending up into said groove in the opposite plate, whereby the seal is pressed toward the straight surface formed by said groove, and  
5 the passage of a wire or piece of metal inserted at the rear end of the device beyond said shoe is prevented, substantially as described.

3. In a seal-lock of the character described,  
10 locking-plates adapted to be secured to the door of a freight-car; a plate adapted to be secured to the jamb thereof; a strip or seal as S adapted to extend from the plate on the jamb and be engaged by the locking-plates;  
15 the cam-lock P, P'; a rotative bolt upon

which said cam-lock is rigidly secured, said bolt being supported by the plate on the jamb; and the latch D pivotally connected at one end to the locking-plates and formed at its opposite end into hook shape D'' 20 whereby it may be engaged by said cam-lock and released by the rotation of the bolt, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of 25 two subscribing witnesses.

CHARLES J. REYNOLDS.

Witnesses:

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A. N. BONNEY.