

(No Model.)

F. S. MASON.
SLIDING DOOR LOCK.

No. 356,724.

Patented Jan. 25, 1887.

Fig. 1.

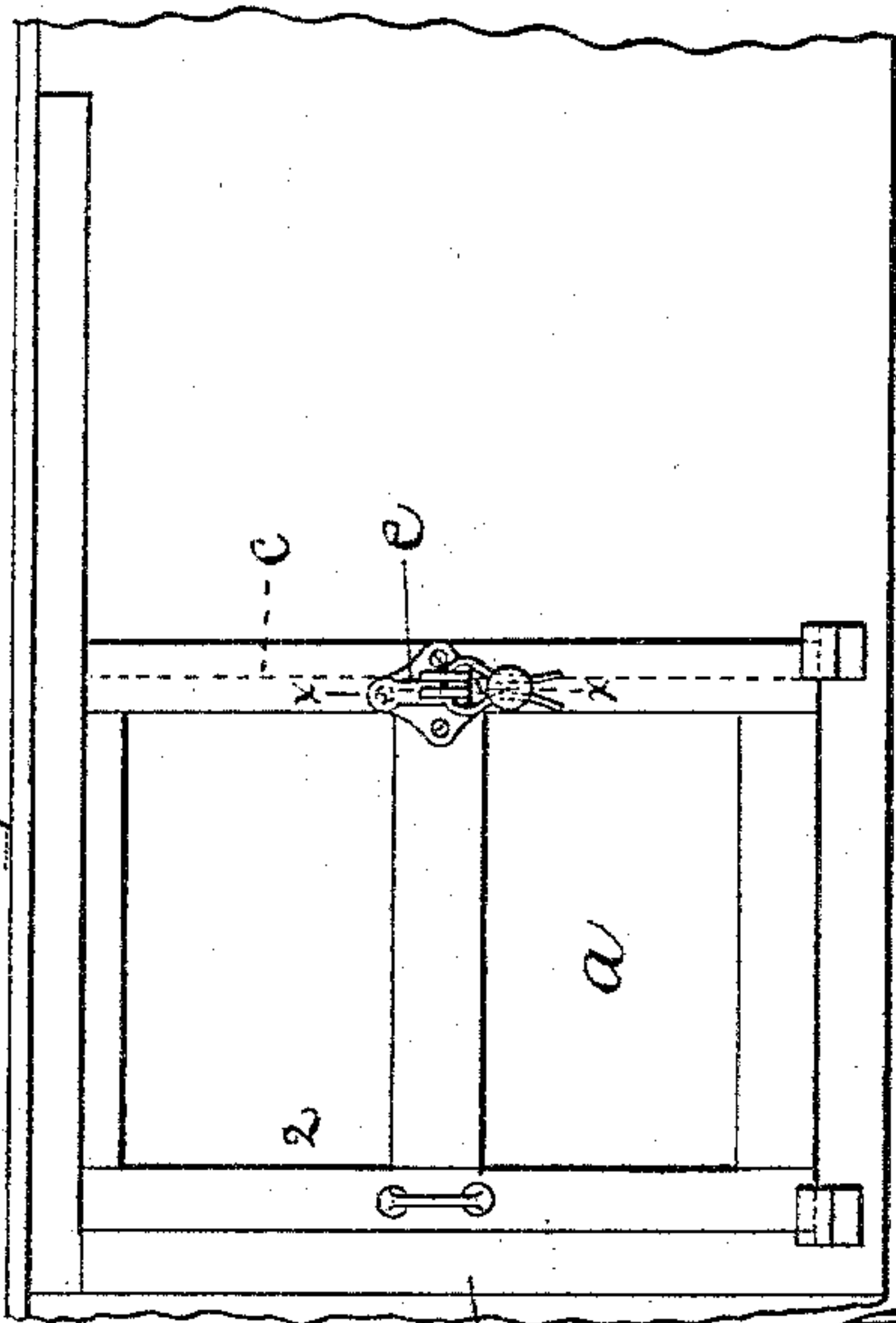


Fig. 2.

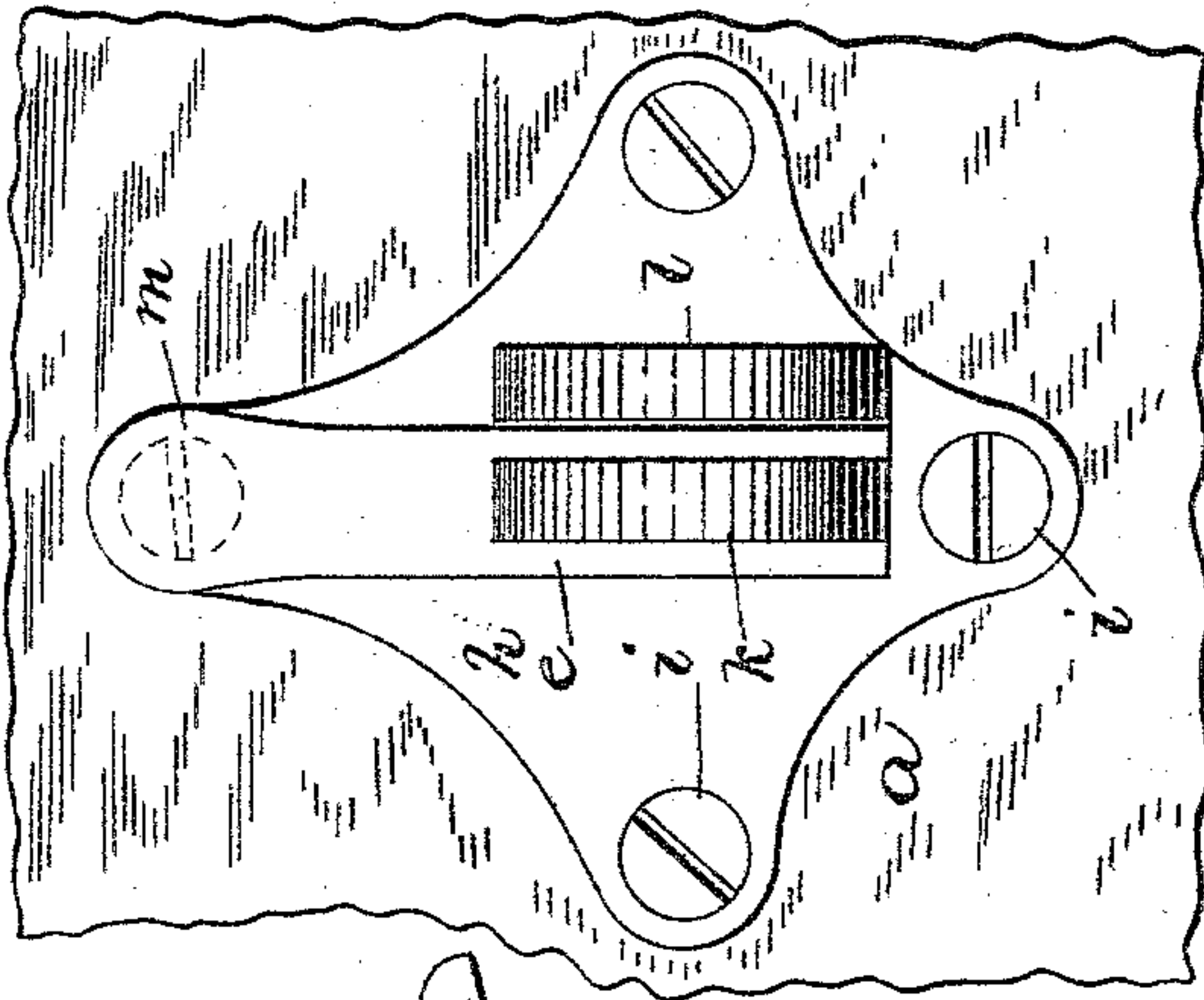


Fig. 4.

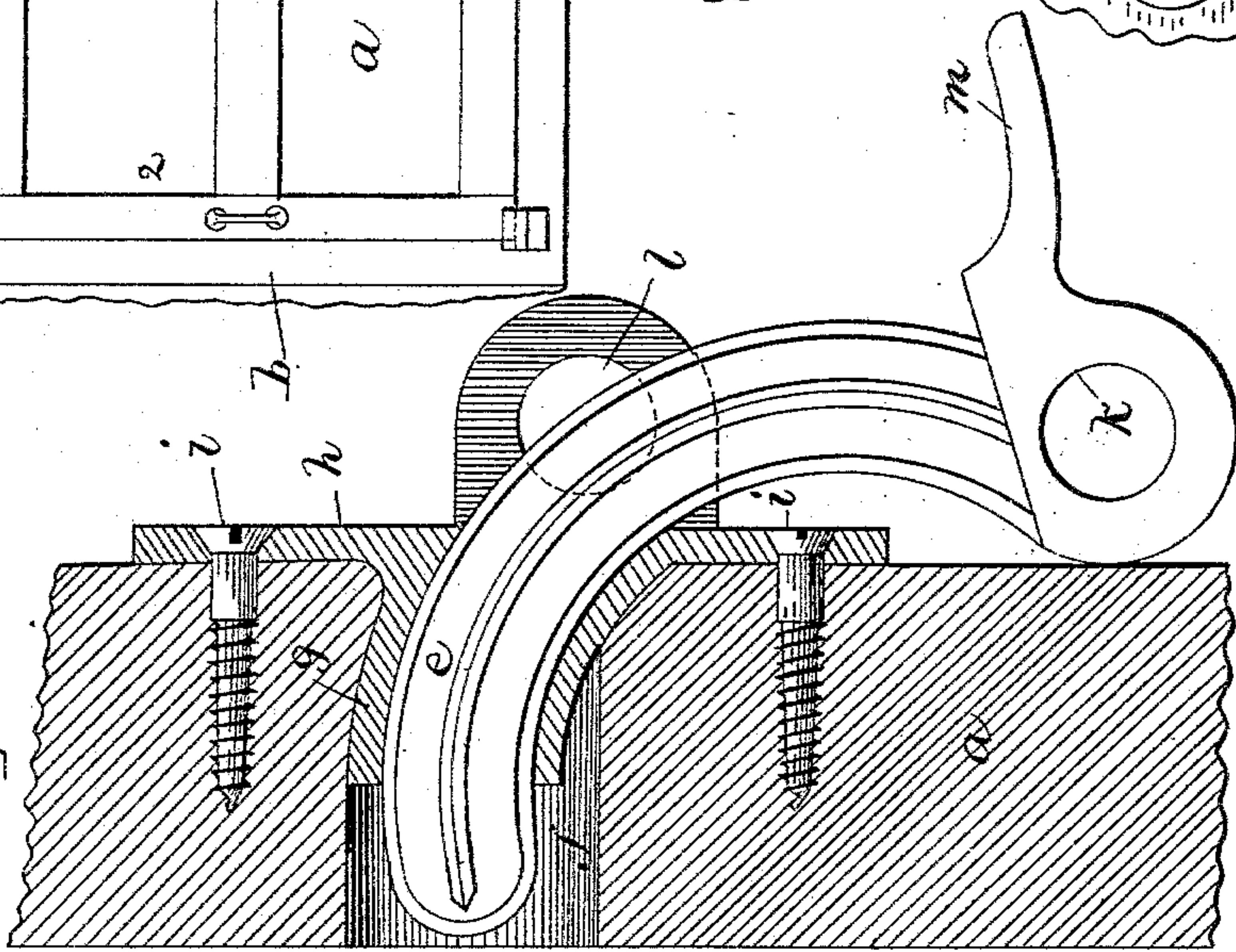


Fig. 5.

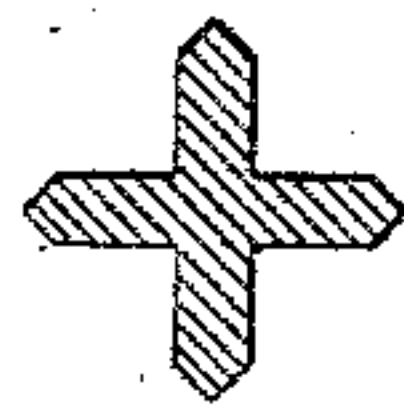


Fig. 3.

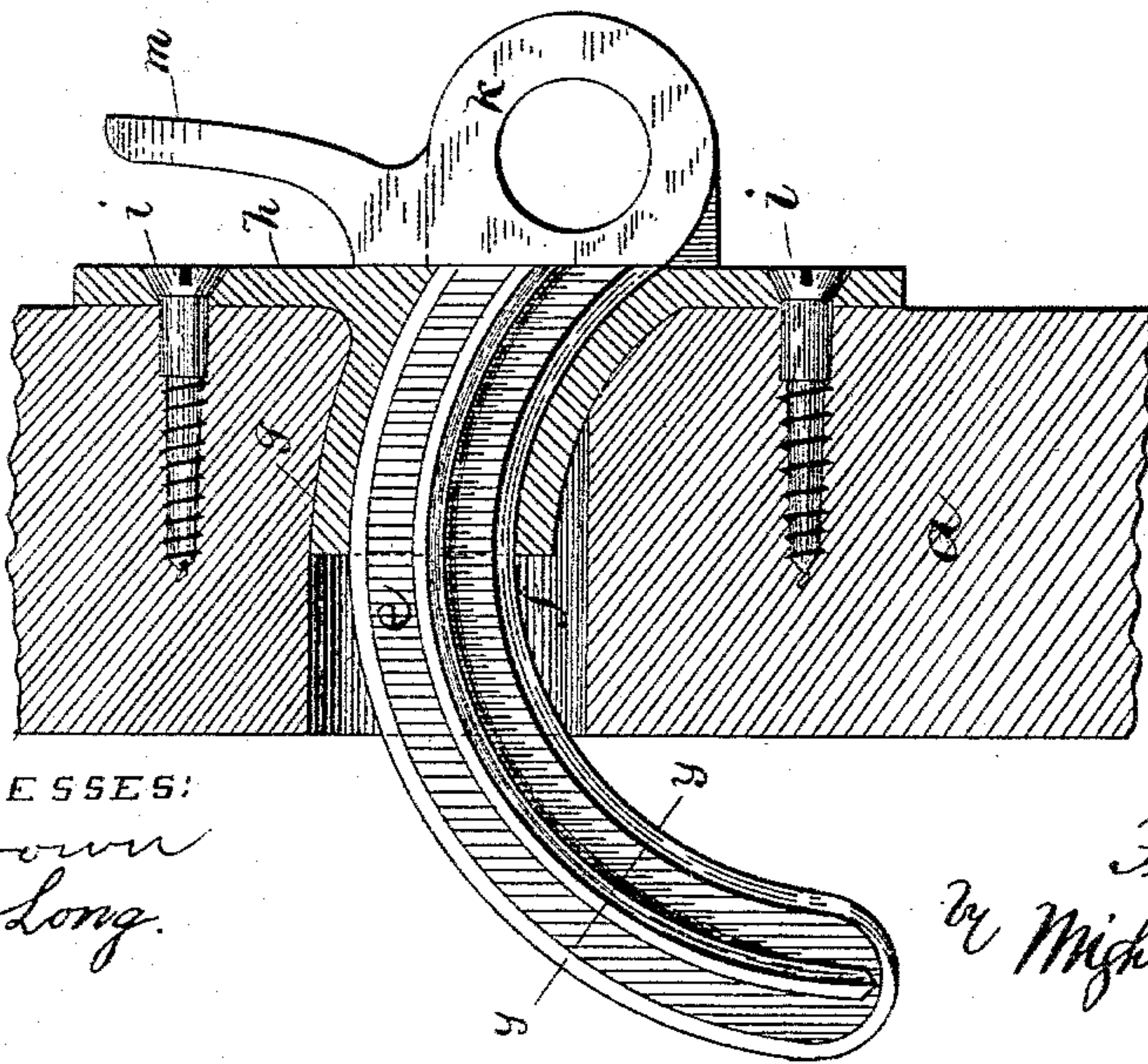
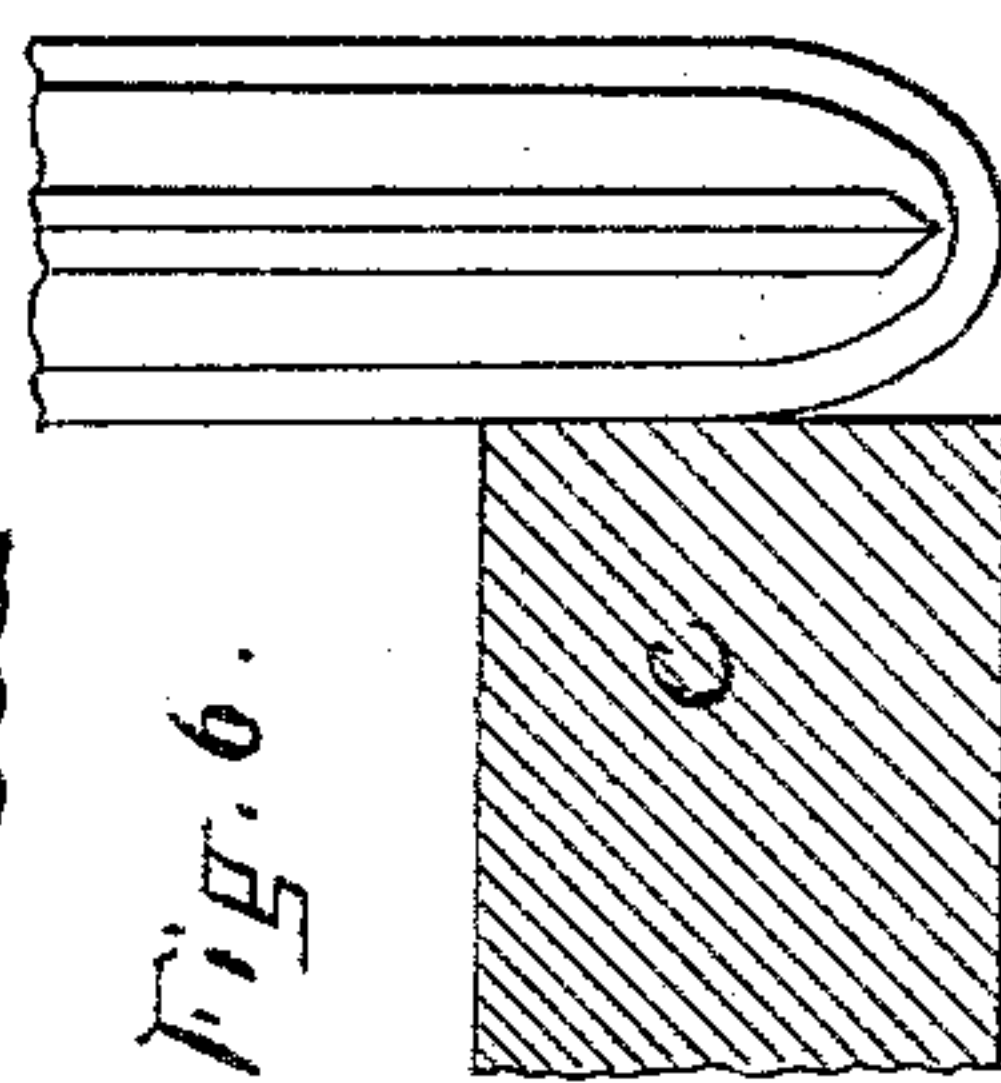


Fig. 6.



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UNITED STATES PATENT OFFICE.

FRANK S. MASON, OF CAMBRIDGE, MASSACHUSETTS.

SLIDING-DOOR LOCK.

SPECIFICATION forming part of Letters Patent No. 356,724, dated January 25, 1887.

Application filed August 16, 1886. Serial No. 211,000. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. MASON, of Cambridge, in the State of Massachusetts, have invented certain new and useful Improvements in Sliding-Door Locks, of which the following is a specification.

This invention relates to a lock placed in the rear edge of a sliding freight-car door, the bolt thereof passing through said door, so that when the door is closed and said bolt pushed in the inner end thereof will engage the rear post of the door-frame and prevent the door from being opened, and at the same time the outer end of the bolt will project outside of the outer surface of the door, so that the seal or lock may be hung upon or secured to it. Heretofore bolts in locks of this class have been straight, and have been arranged to move in the door at right angles to the sides thereof, so that when the bolt is moved outwardly to disengage it from the rear post it projects from the outer surface of the door to such an extent that it is liable to be broken or injured by contact with external objects, and special means are required to prevent the bolt from being entirely withdrawn or separated from the door.

My invention has for its object to obviate the objections above recited; and to this end it consists, mainly, in a lock having a bolt of the class above mentioned, of curved form, and a correspondingly-formed guide for said bolt, adapted to be attached to the door, the arrangement being such that when the bolt is drawn outwardly its movement will be in the arc of a circle, and its outer end will abut against the side of the door after the inner end has been disengaged from the rear post. The bolt is therefore projected only the minimum distance when drawn out to its fullest extent, and no special retaining devices are required to prevent the removal of the bolt from the door, the contact of the outer end of the bolt with the outer side of the door preventing the complete withdrawal of the bolt.

The invention also consists in certain details, all of which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of a part of a car and its sliding door having my improved lock. Fig. 2 represents an enlarged front view of the lock, showing the bolt and its socket or guide, the bolt

being pushed in to engage the rear post of the door-casing. Fig. 3 represents a section on line *x x*, Fig. 1. Fig. 4 represents a similar section, showing the bolt drawn out to disengage it from said rear post. Fig. 5 represents a section on line *y y*, Fig. 3. Fig. 6 represents a top view of the inner end of the bolt.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a car-door, which is adapted to slide on a track or way on the side of a freight-car, in the usual or any suitable manner.

b represents the fixed stop or abutment against which the front edge, 2, of the door strikes when the door is closed.

c represents the rear post of the door-casing, or that post toward which the front edge, 2, of the door moves when the door is being opened.

e represents my improved bolt, which is curved in the arc of a circle, and is of sufficient length to pass entirely through the door and project from both sides thereof, as shown in Fig. 3, a slot, *f*, being made in the door, through which the bolt passes.

g represents a curved socket or guide, which is formed on a plate, *h*, and projects into the slot *f*, said plate being attached to the outer side of the door by screws *i*. The guide *g* has the same curvature as the bolt, and the arrangement of said bolt and guide is such that when the bolt is pushed inwardly, as shown in Fig. 3, its inner end will project within the door and engage with the rear part of the casing, so as to prevent the door from being opened, and when the bolt is drawn outwardly, as shown in Fig. 4, the outer end of the bolt will abut against the outer side of the door just after the inner end has been drawn out of engagement with said post. The outer end of the bolt is provided with an eye, *k*, which, when the bolt is pushed in, coincides with an eye, *l*, formed on the plate *h*, so that the hasp of a padlock or a piece of wire, to form a part of an ordinary seal, may be passed through said eyes to lock the bolt.

It will be seen that when the bolt is withdrawn the movement of its outer end is toward the outer surface of the door, instead of away from said surface, as would be the case if the bolt were straight, which not only reduces the pro-

jection of the bolt to the minimum and correspondingly reduces the liability of breakage when the door is open, but also prevents the bolt from being entirely withdrawn, and therefore obviates the necessity of any special devices to connect the bolt to the door.

The bolt is arranged to swing in a vertical plane, and when it is arranged to move downwardly in being drawn outwardly, as shown in Fig. 4, it is retained by gravitation both in its locking position and in its inoperative position, the weight of its inner end preventing it from jarring open when locked, while the weight of its outer end prevents it from accidentally locking when withdrawn; but it will be readily seen that by inverting the bolt from the position shown it will be caused to assume its locking position by gravitation, and thus operate to lock the door automatically.

I prefer to provide the outer end of the bolt with a lip or guard, *m*, which, when the bolt is pushed in, projects over one or more of the screws, *i*, which attach the plate *h* to the door, and thus prevents the removal of said screw or screws for the purpose of removing the socket and bolt from the door. Such removal, therefore, cannot be effected when the bolt is pushed in and locked. The lip or guard *m* also constitutes a convenient handle by which the bolt may be moved out or in.

I prefer to make the body of the bolt of the form, in cross-section, shown in Fig. 5, for the sake of economy of metal. I also prefer to bevel the inner end of the bolt at the side that bears against the rear post of the door-casing, so that the bolt may act as a wedge in engaging with the rear post, *c*, of the casing, as shown in Fig. 6.

I do not claim, broadly, the combination of a sliding door, the abutment for the front edge thereof, the rear post of the door-casing, and a bolt passing through the door and arranged to engage at its inner end with said rear post and at its outer end with a locking device or seal, such combination being old; but

What I do claim is—

1. The combination, with the sliding door and the rear part of its casing, of a curved guide or socket secured to the door and a correspondingly-curved bolt adapted to slide in said socket, the arrangement being such that when the bolt is pushed inwardly its inner end will engage the rear post and when drawn outwardly its outer end will abut against the outer surface of the door, substantially as and for the purposes specified.

2. The curved socket having the plate adapted for attachment to a car-door, and a fixed eye on said plate, combined with the curved bolt having at its outer end an eye which coincides with the eye on the plate when the bolt is pushed in, as set forth.

3. The curved socket having the attaching-plate *h* and the eye *l* thereon, combined with the curved bolt having the eye *k* at its outer end and a lip or guard adapted to cover one or more of the screws which attach the plate *h* to the door, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 7th day of August, 1886.

FRANK S. MASON.

Witnesses:

C. F. BROWN,
ARTHUR W. CROSSLEY.