

(No Model.)

A. N. MONTEER.
LOCK.

No. 582,871.

Patented May 18, 1897.

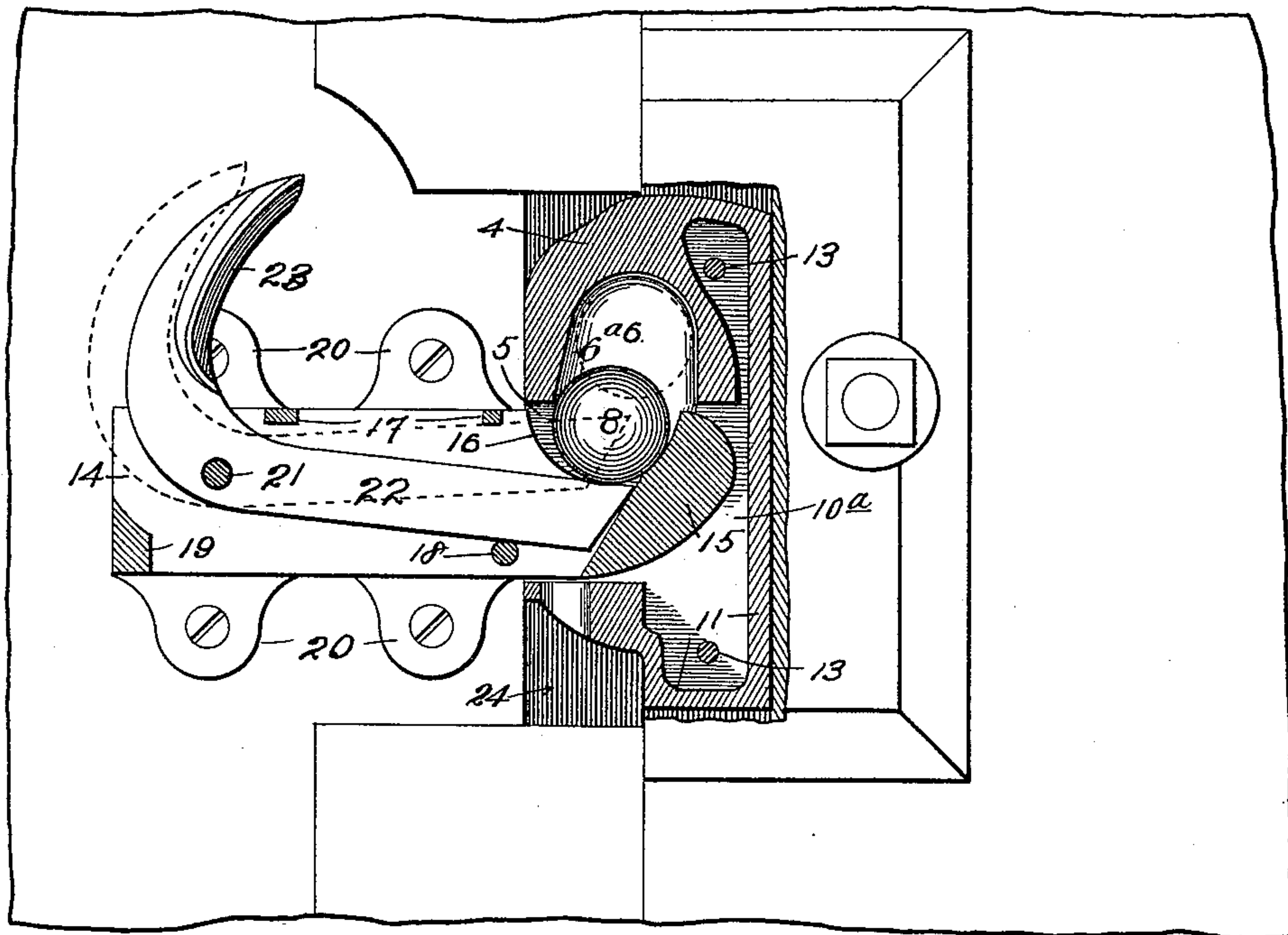


Fig. 1.

Fig. 2.

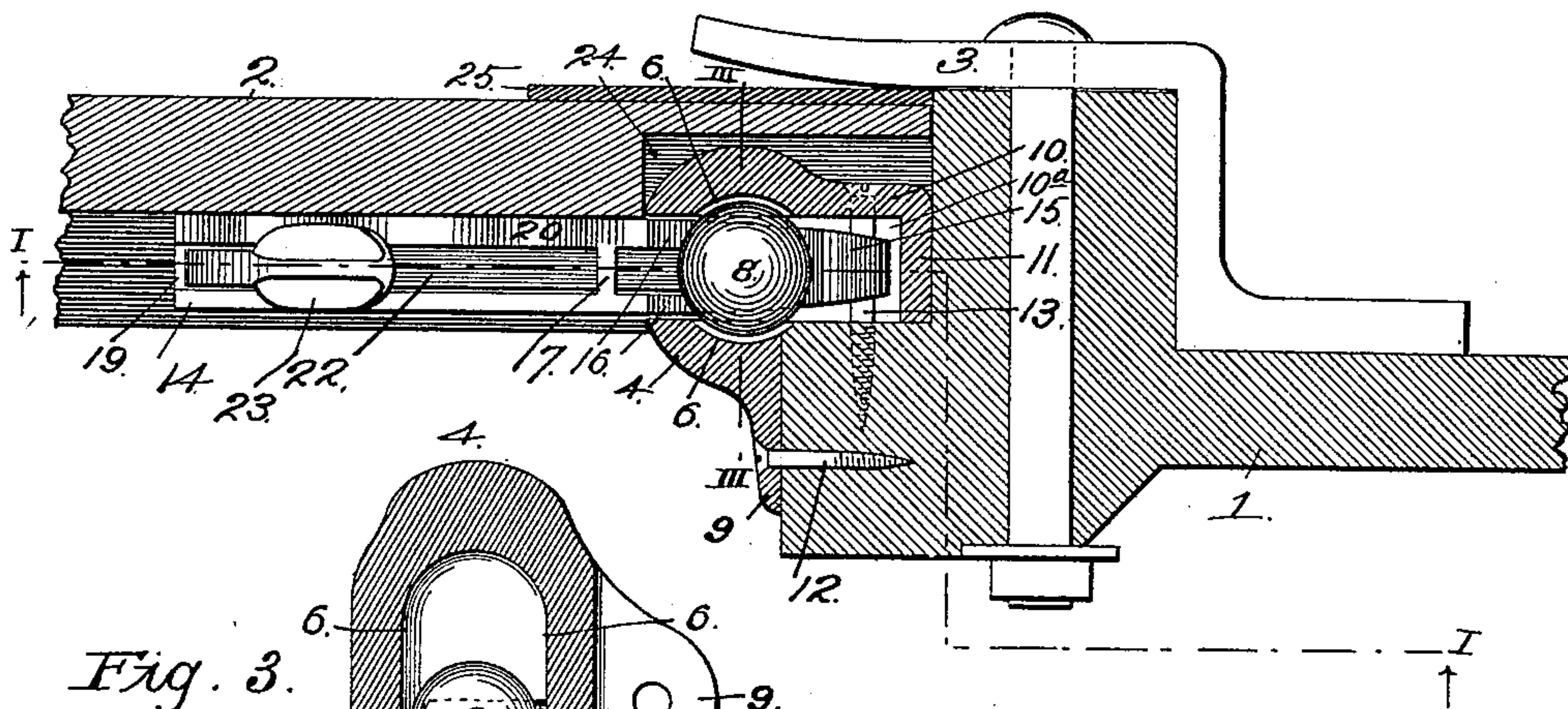
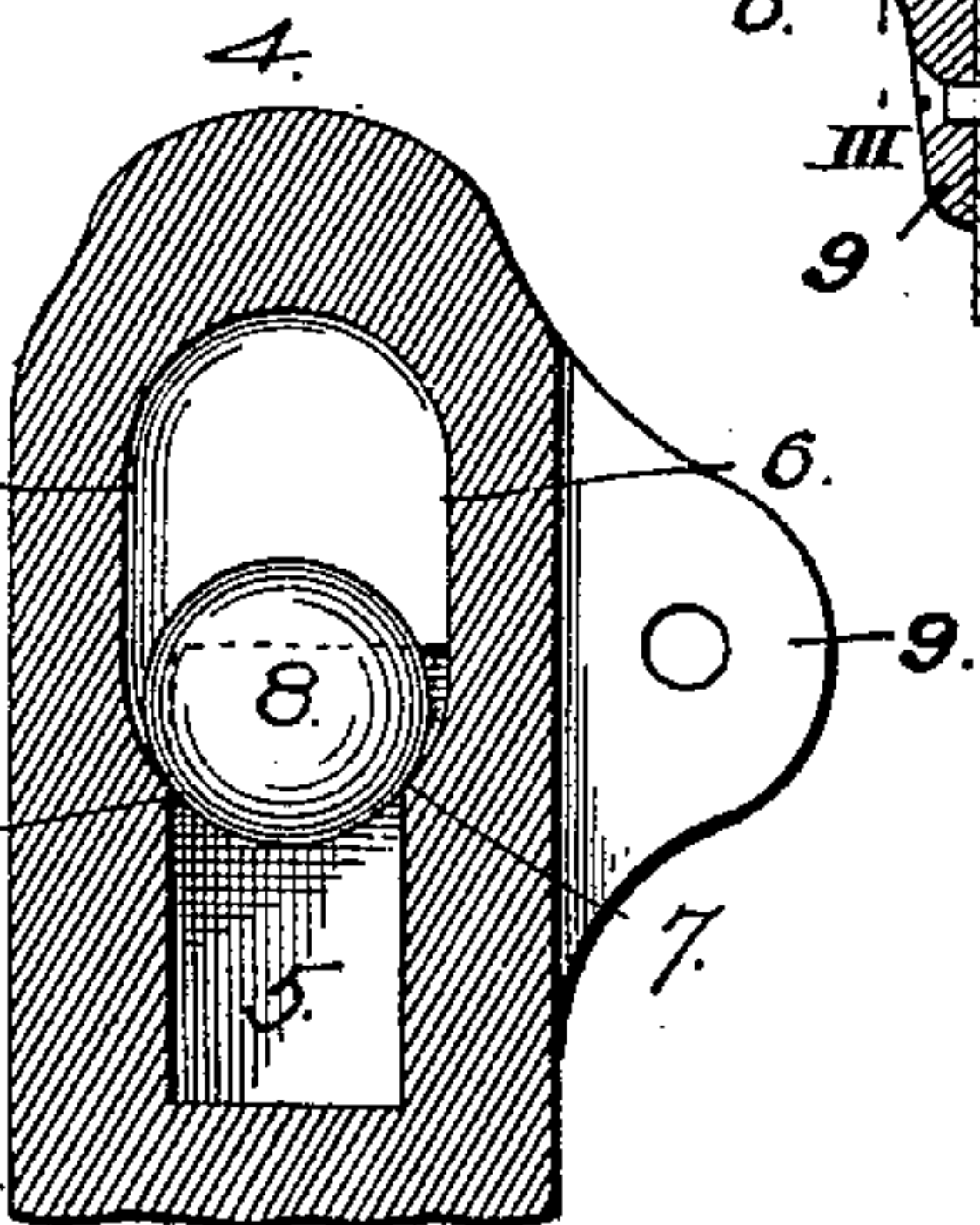


Fig. 3.

Witnesses:
F. G. Fischer
G. Thorpe.



Inventor
A. N. Monteer.
By Higdon & Higdon
Attys.

UNITED STATES PATENT OFFICE.

ALEXANDER N. MONTEER, OF SPRINGFIELD, MISSOURI, ASSIGNOR OF ONE-HALF TO WILLIAM A. NETTLETON, OF KANSAS CITY, MISSOURI.

LOCK.

SPECIFICATION forming part of Letters Patent No. 582,871, dated May 18, 1897.

Application filed December 21, 1896. Serial No. 616,568. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER N. MONTEER, of Springfield, Greene county, Missouri, have invented certain new and useful Improvements in Gravity-Locks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to gravity-locks for doors, windows, &c.; and it consists in certain novel and peculiar features of construction and combinations of parts, which will be hereinafter more fully described and claimed.

The object of the invention is to produce a lock of this character which is positive and reliable in operation, which cannot be opened by an outsider, and which is simple, strong, durable, and inexpensive of manufacture.

In order that the invention may be fully understood, I will proceed to describe it with reference to the said accompanying drawings, in which—

Figure 1 represents a vertical section of a sliding door and lock embodying my invention, such section being taken on the dotted line I I of Fig. 2. Fig. 2 is a horizontal section of the same. Fig. 3 is a vertical section taken on the line III III of Fig. 2, the bolt, however, being omitted in this figure.

In said drawings, 1 designates the door-casing of an ordinary freight-car. 2 designates a sliding door in said casing, such door being located in the end of the car. The casing at one side is provided with a vertical groove, within which the front edge of the door snugly fits when the door is closed, as shown in Fig. 2 most clearly.

3 designates a guard-plate which is bolted to the casing in the customary manner and projects beyond the base of said groove, so as to prevent any tendency of the door to move outward.

My improved lock comprises a member carrying a gravity-bolt and secured permanently to the door-casing, and a recessed plate to engage said gravity-bolt secured to the door and provided with a trip-lever for disengaging said recessed plate and the bolt.

Referring first to the detail construction of the part secured to the casing, 4 designates a casting of vertical elongated form and pro-

vided with a slot or opening 5, extending from front to rear or parallel with the door movement. Above said slot or opening 5 and communicating therewith the casting is formed with an approximately cylindrical chamber 6, which is wider than the slot or opening 5, so as to form the shoulders 7 at their points of connection; which shoulders are adapted to limit the downward movement of the bolt 8, which preferably is of spherical form and constructed of iron or other metal.

In order that the jolting of the car may not cause the accidental unlocking of the door by throwing the bolt 8 upwardly and out of engagement with the recessed plate on the door, as hereinafter more particularly referred to, I preferably incline the front wall of the chamber 6, as shown at 6^a. By this arrangement it is obvious that if the bolt is thrown upwardly by such jolting movement it will come into frictional contact with the said wall and its upward progress more quickly terminated than would be the case if no such obstruction was placed in its path.

The casting is formed at its inner side with an inwardly-projecting flange 9, bearing against the inner side of the casing, and at its rear side is provided with an extension 10, having an inwardly-projecting flange 11, to bear against the front side of the portion of the casing engaged by the flange 9. By providing this extension a chamber 10^a is formed, communicating with the slot or opening 5, for a purpose which will hereinafter appear, and by flanging said extension the casting gets a firm and reliable bearing against the casing, to which it is secured by means of the screw 12, extending through the flange 9, and the screws 13, extending through the extension 10 and into the casing, as shown clearly in Figs. 1 and 2.

Referring now to the mechanism carried by the door, 14 designates a bifurcated plate. Such plate preferably consists of two parallel and similar parts connected together at their front ends by the integrally-cast portion 15. Said plates are also provided rearward of said portion 15 with recesses 16, and are connected at their upper edges by the cross-bars 17 and near their lower edges by the cross-bars 18 and 19, cross-bars 17 and 19 being cast in-

tegrally with said plates, preferably, while the cross-bar 18 is in the form of a bolt, as it is advisable to make this cross-bar stronger, owing to the fact that it is adapted to receive transversely the impact of the trip-lever here-
 5 in before referred to. The plate is provided above and below with the integrally-formed ears or lugs 20, which are secured by screws, as shown, or in any other suitable manner,
 10 to the inner side of the door so that the plate shall be arranged horizontally. Near its free end said plate is bridged by the bolt 21, and mounted pivotally thereon is the lever 22, resting normally upon the cross-bolt 18.

15 Said lever is provided with an upwardly-projecting handle 23, which is grasped by the operator when the door is to be unlocked.

The door is recessed, as shown at 24, so as to receive the member 4 of the lock, as shown
 20 clearly in Fig. 2, and in order to protect the lock from being tampered with from without the car a metallic plate 25 is by preference secured to the door in the position shown in Fig. 2.

25 In practice when the door is open the gravity-bolt 8 occupies the position shown in Figs. 1 and 3—that is to say, it rests upon the shoulders 7. As the door is closed, the front end of the plate 14, which is beveled or rounded
 30 in the manner customary in lock constructions, enters the slot or opening 5, and striking the bolt 8 below its center forces it upwardly into the chamber 6. Immediately afterward the continued movement of the
 35 plate disposes its recess 16 below said chamber, and the bolt drops therein and locks the door in its closed position automatically.

It will be noticed in this connection that the recess 16 in depth exceeds the radius of
 40 said spherical bolt, in order that any attempted endwise movement or opening of the door will not be able to force the bolt upwardly. When said bolt drops down, it rests just above the free end of the trip-lever, so
 45 that when the door is to be opened it is only necessary for the attendant to grasp the handle 23, swing the lever to the position indicated by dotted lines in Fig. 1, and thereby throw the bolt upwardly, as also indicated
 50 by dotted lines in the same figure, and at the same time slide the door open. In practical operation the unlocking and sliding move-

ment of the door may be accomplished in one movement.

This gravity-lock may be applied for a win- 55
 dow-fastening with slight modifications in the form of the castings and also in many other connections not necessary to enumerate herein. Therefore it is to be understood that slight changes in the form, proportion, and 60
 detail construction and arrangement of its parts will not be considered a departure from the spirit and scope or sacrifice any of the advantages of the invention.

Having thus described the invention, what 65
 I claim as new, and desire to secure by Letters Patent, is—

1. A gravity-lock, comprising a member secured to the casing, having a vertical slot or opening, and a vertical chamber above, of 70
 greater width than, and communicating with, said slot, and a bolt, having a rounded lower end at and depending below the upper end of said slot, in combination with a plate se- 75
 cured to a sliding frame having a rounded front end to receive the bolt, and a cavity inward thereof, and a lever pivoted to said plate with its free end disposed vertically 80
 below the bolt, substantially as shown and described.

2. A gravity-lock, comprising a casting adapted to be secured to a casing, and com-
 85 prising a slot or opening, and a chamber above, communicating with and of greater width than said slot or opening, and a gravity-bolt therein, in combination with a bifurcated plate adapted to be secured to a frame, and 90
 having its front end beveled or rounded, and recessed in its upper edge to receive the bolt when said plate projects through said slot or 95
 opening, a lever pivotally carried by said plate and having its front end disposed below said bolt and provided with a handle at its rear end, and cross-bars above and below said lever forward of its pivot to receive the im-
 pact of and limit its upward and downward movement, respectively, substantially as de-
 scribed.

In testimony whereof I affix my signature in presence of two witnesses.

ALEXANDER N. MONTEER.

Witnesses:

M. R. REMLEY,
 G. Y. THORPE.