

No. 607,432.

Patented July 19, 1898.

J. H. GIESEY.

HINGE.

(Application filed Dec. 29, 1897.)

(No Model.)

4 Sheets—Sheet 1.

FIG. 1.

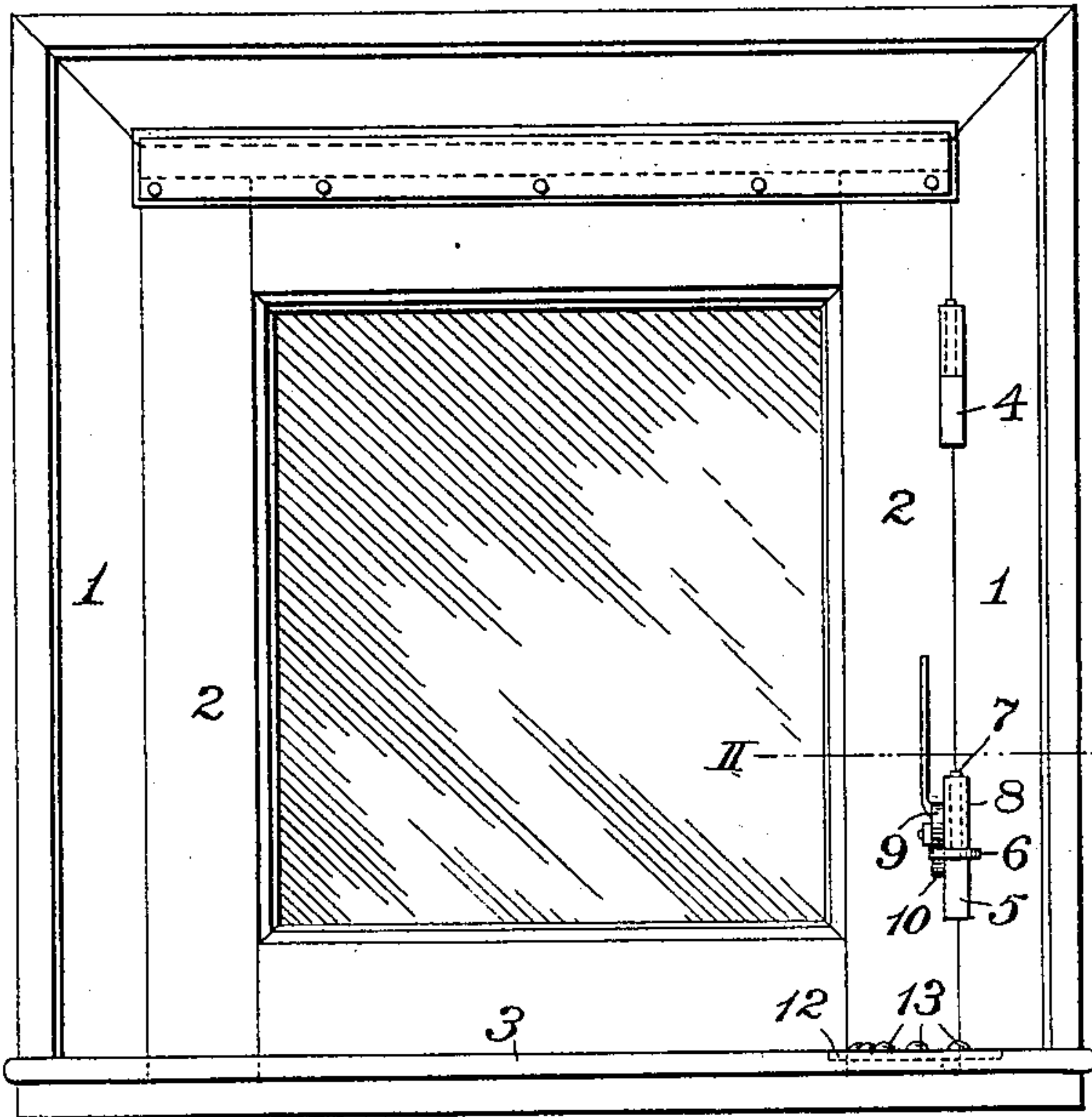


FIG. 2.

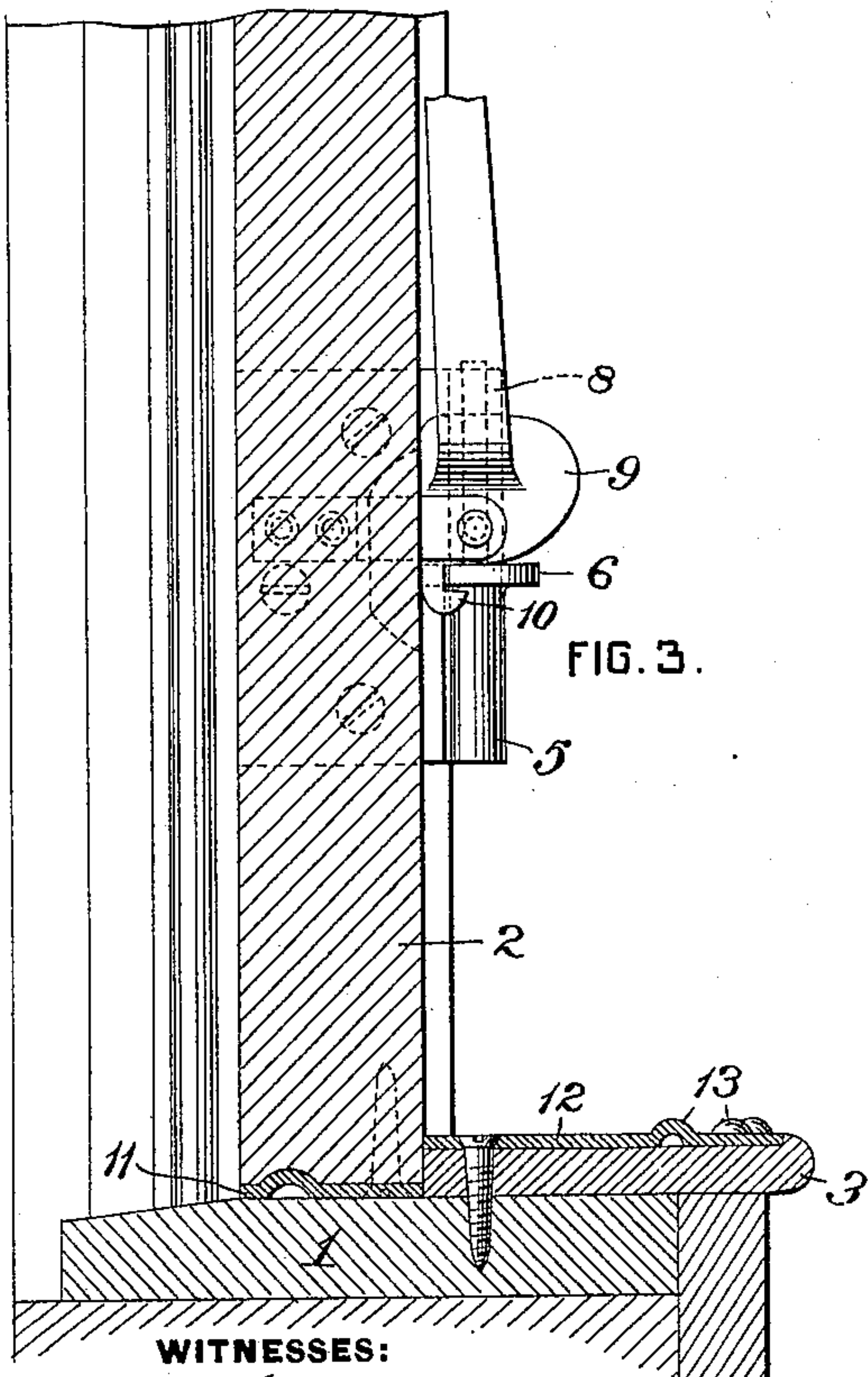
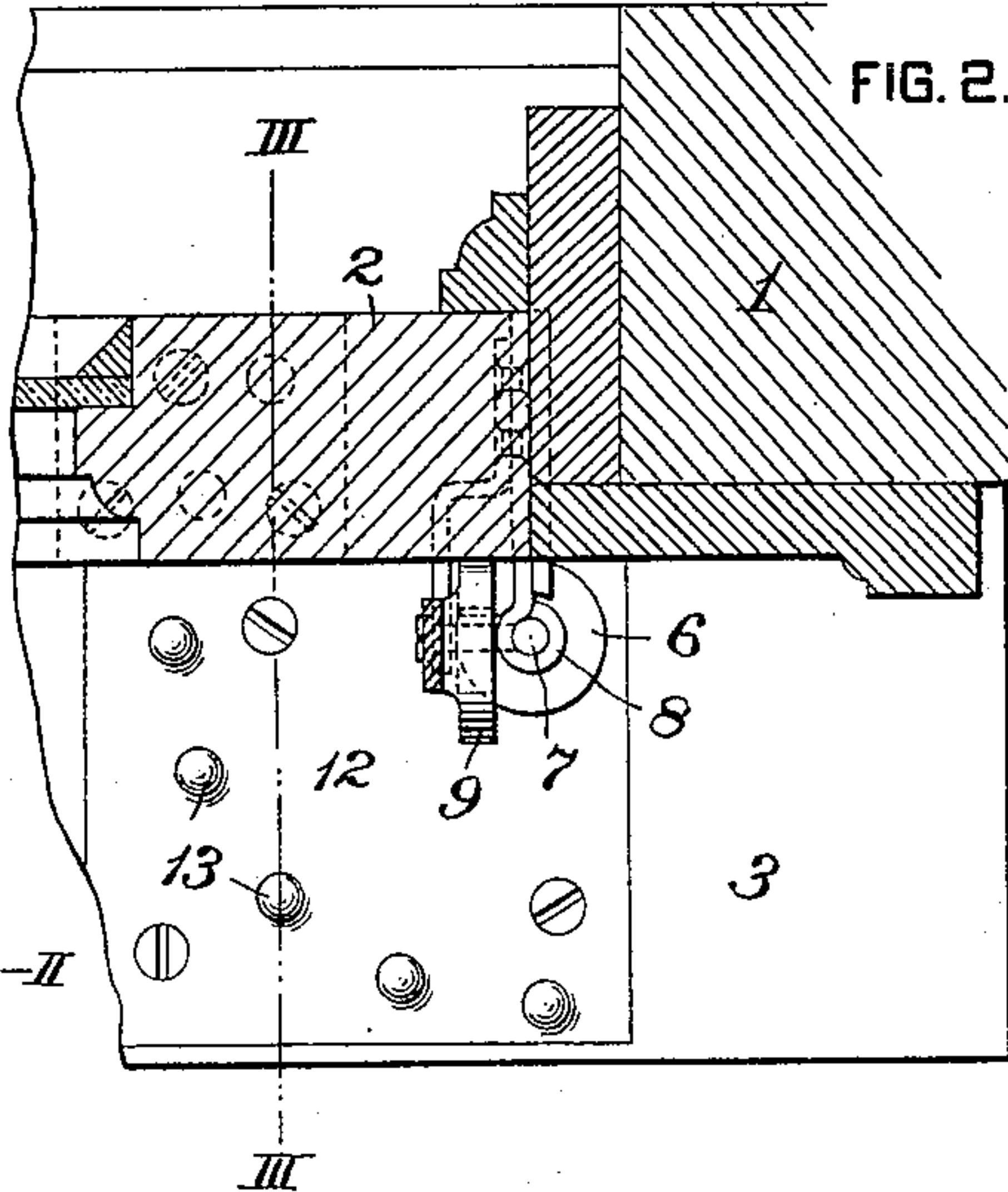


FIG. 3.

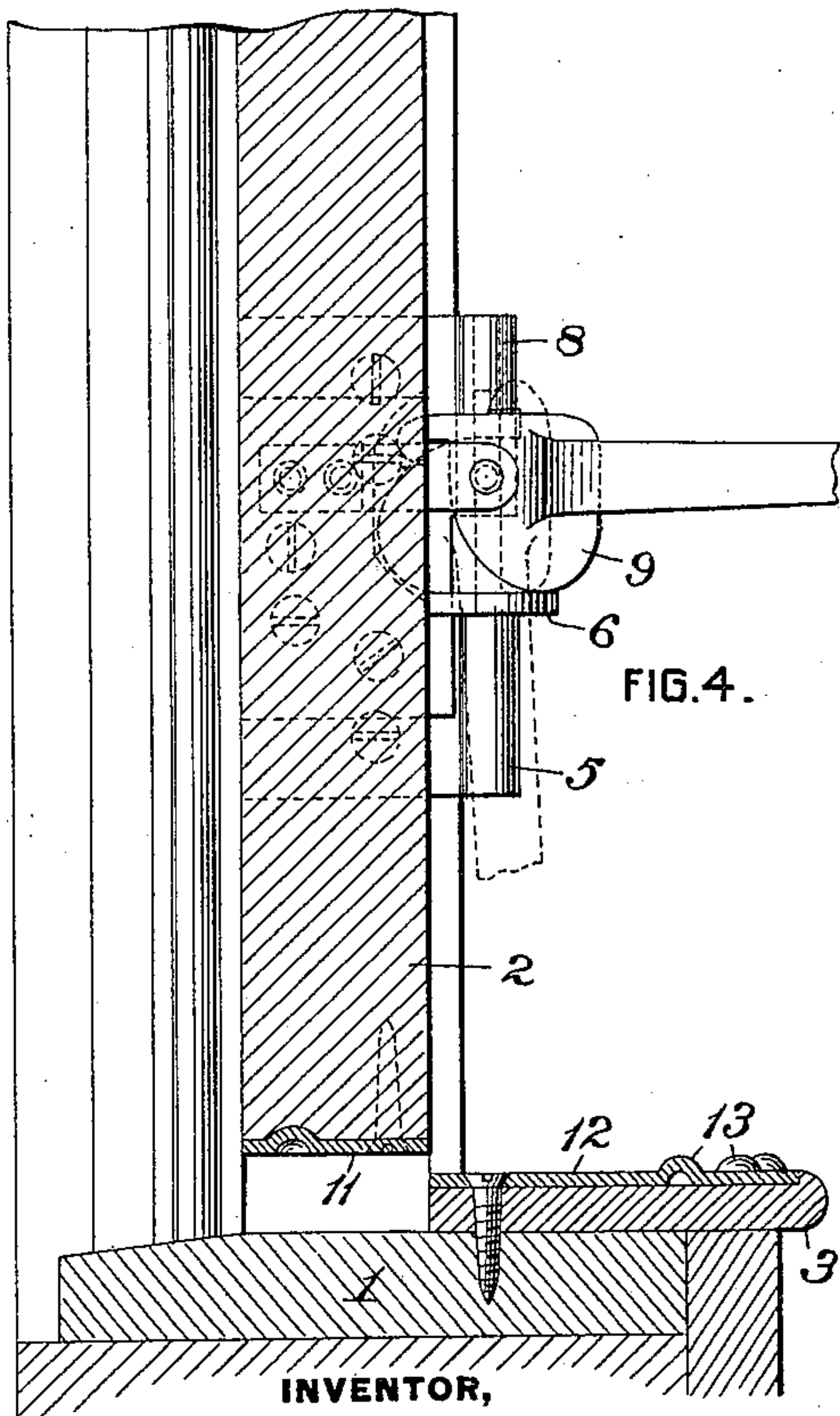


FIG. 4.

WITNESSES:

Chas. F. Miller
Wm. H. Erskine

INVENTOR,

James H. Giesey
by Saml. B. Wolcott

Att'y.

No. 607,432.

Patented July 19, 1898.

J. H. GIESEY.

HINGE.

(Application filed Dec. 29, 1897.)

(No Model.)

4 Sheets—Sheet 3.

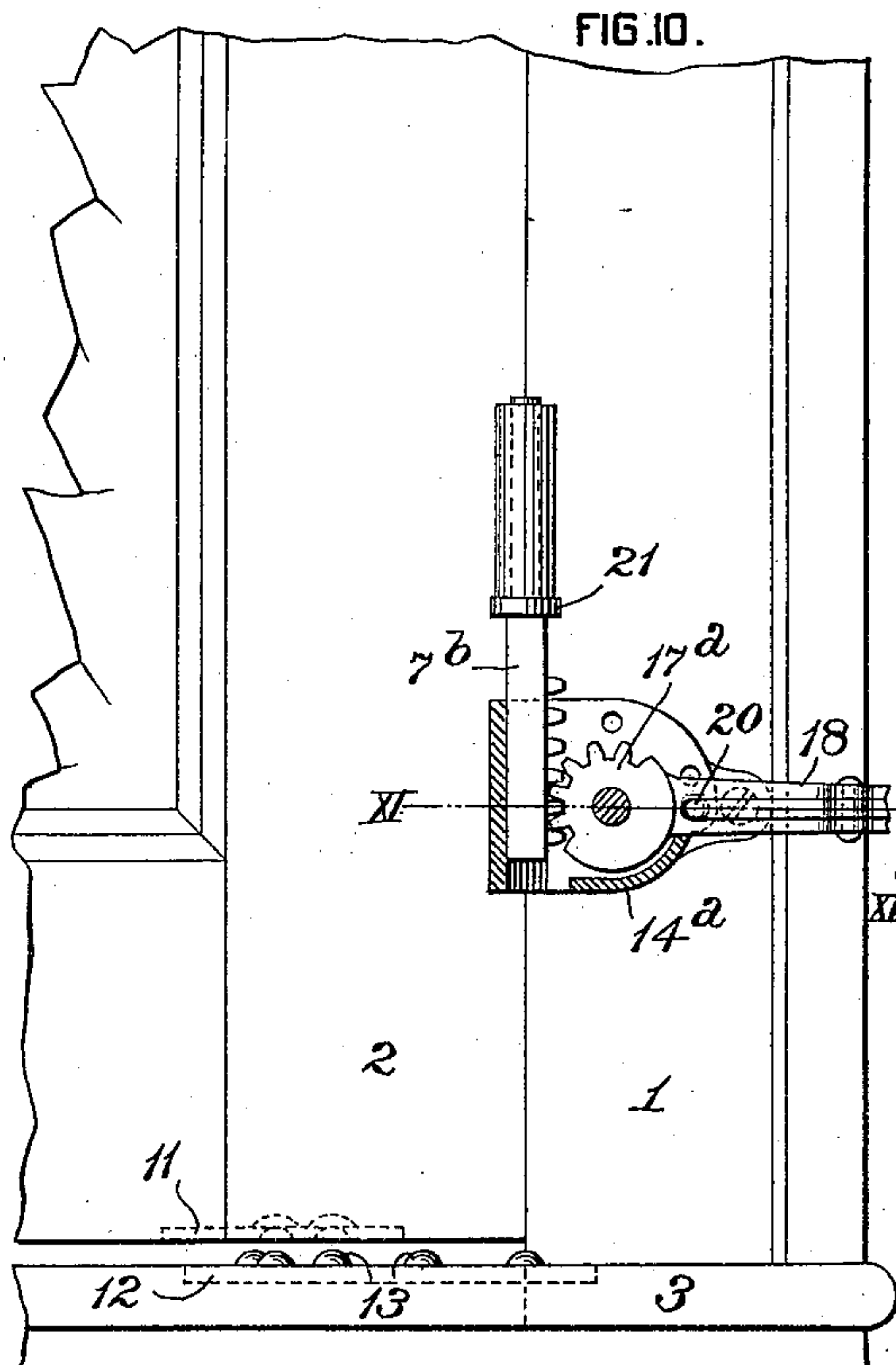
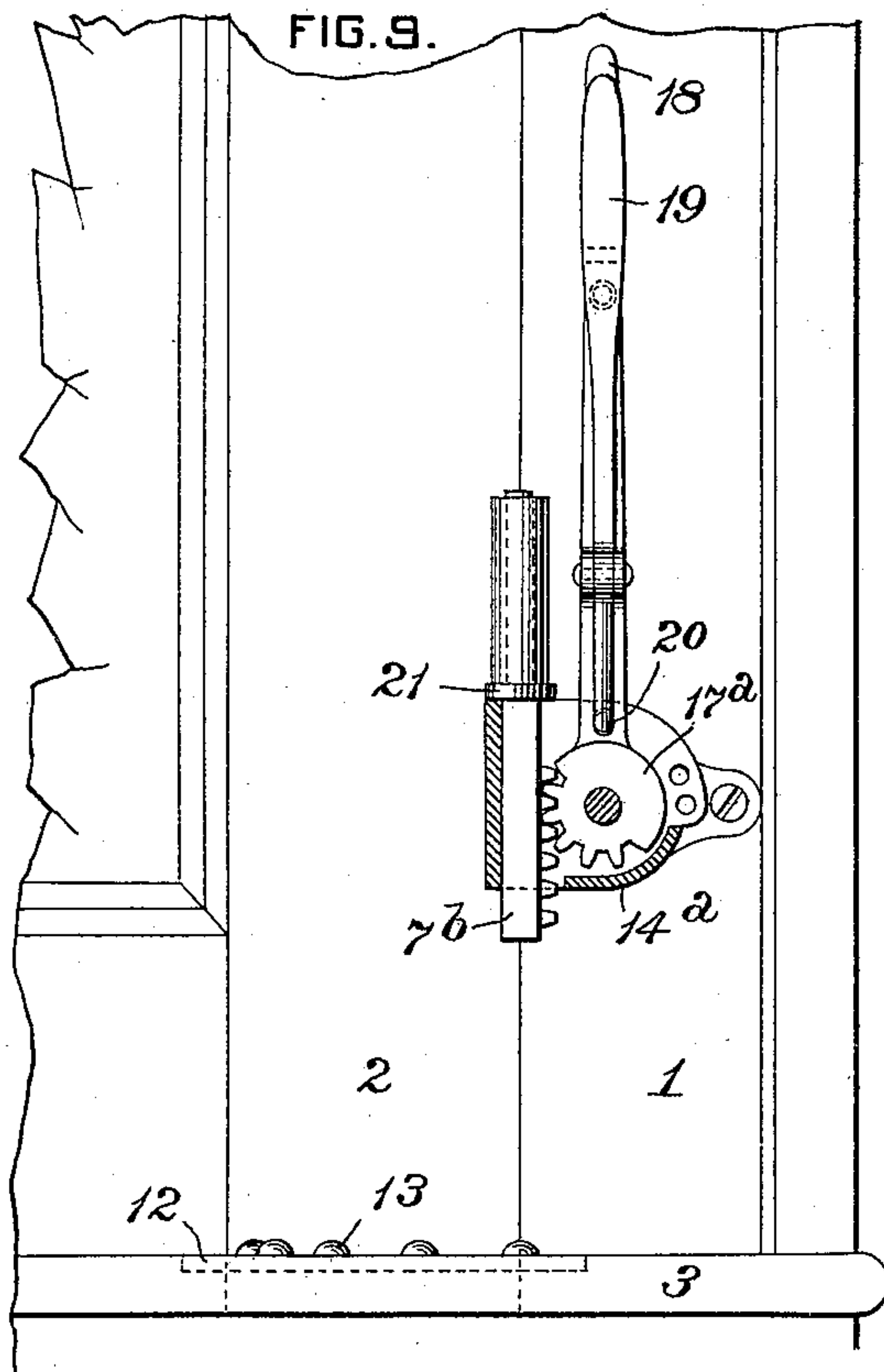
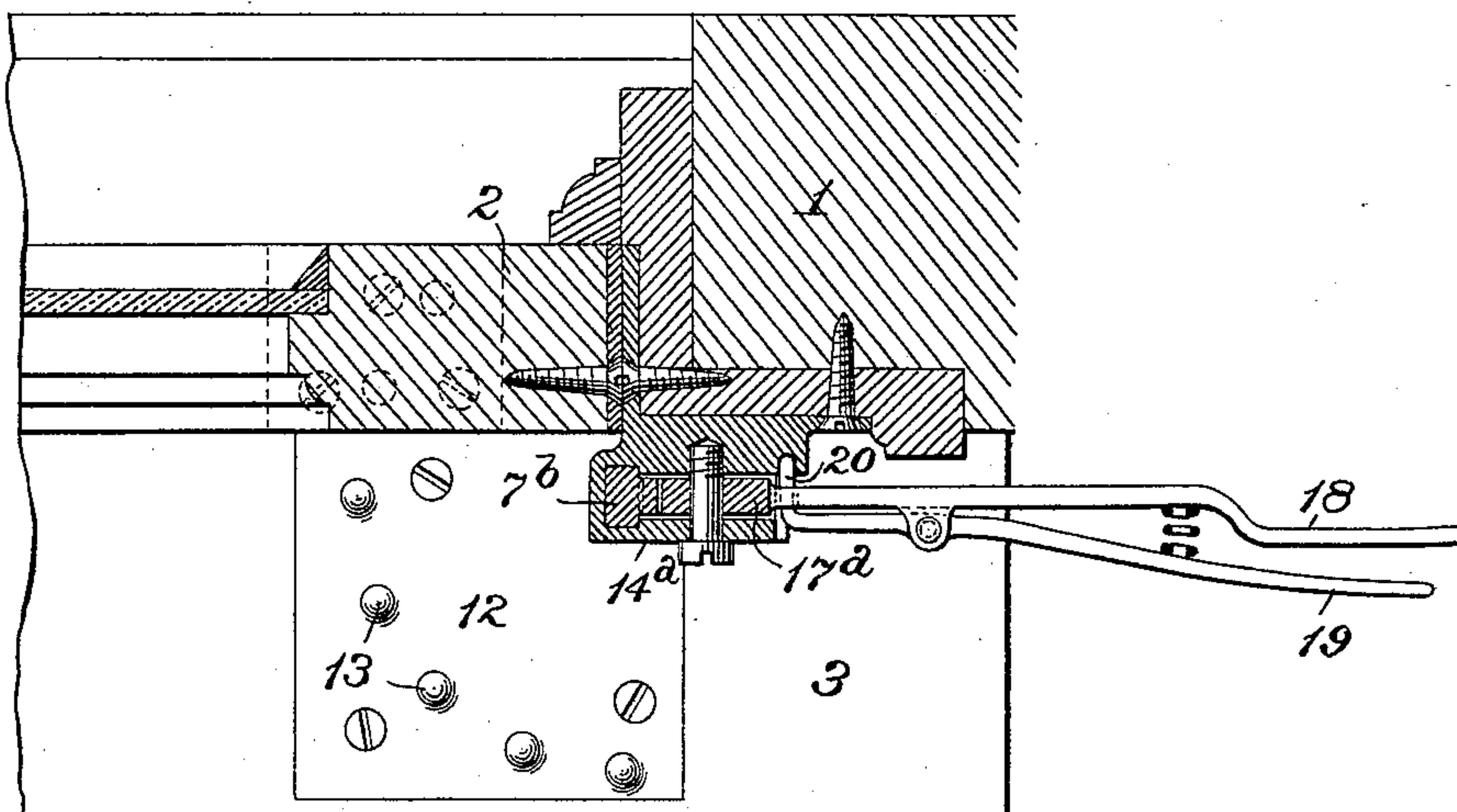


FIG. 11.



WITNESSES:

Chas. F. Miller.
Wm. H. Crekine

INVENTOR,

James H. Giesey
by Darnin S. Wolcott
Att'y.

No. 607,432.

Patented July 19, 1898.

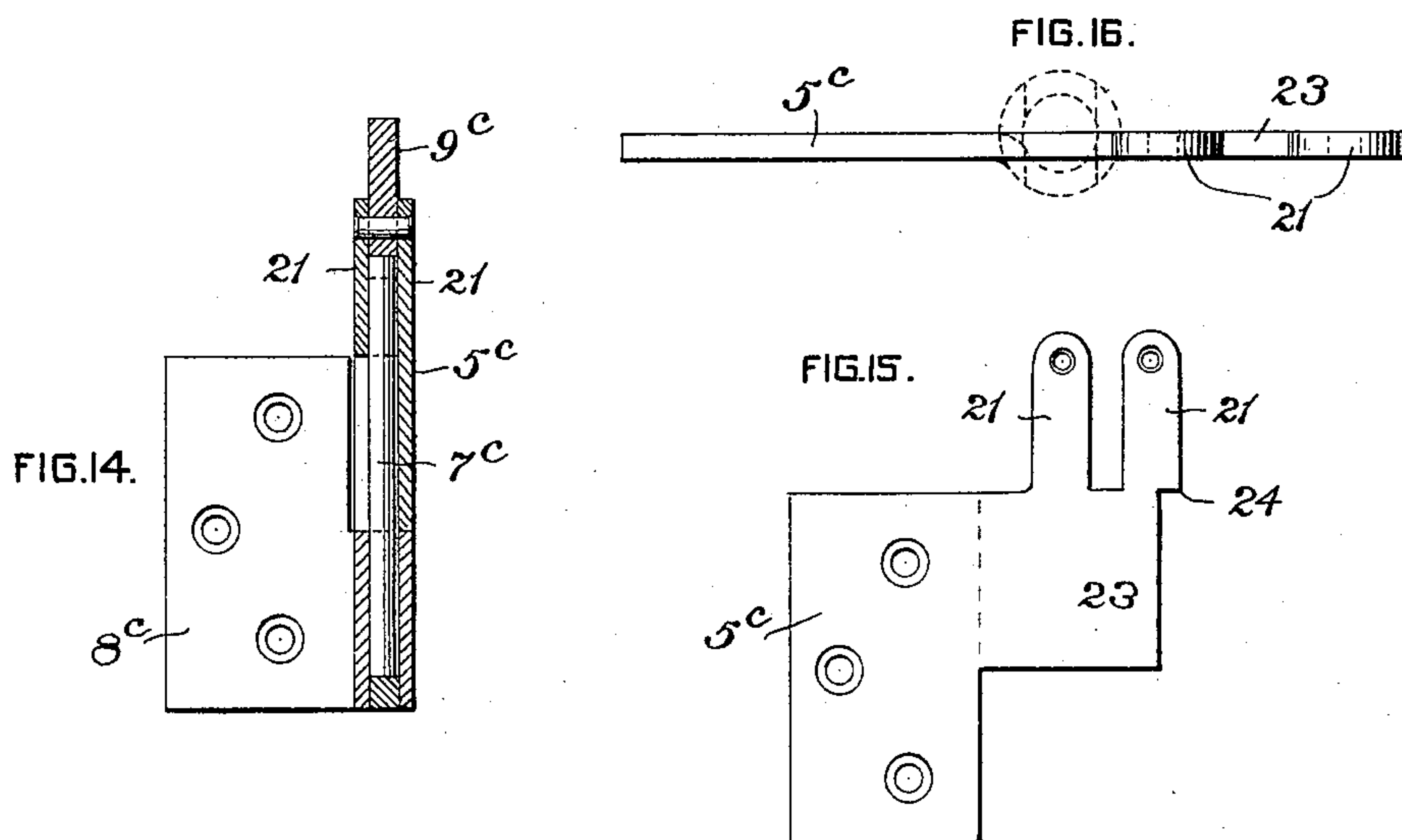
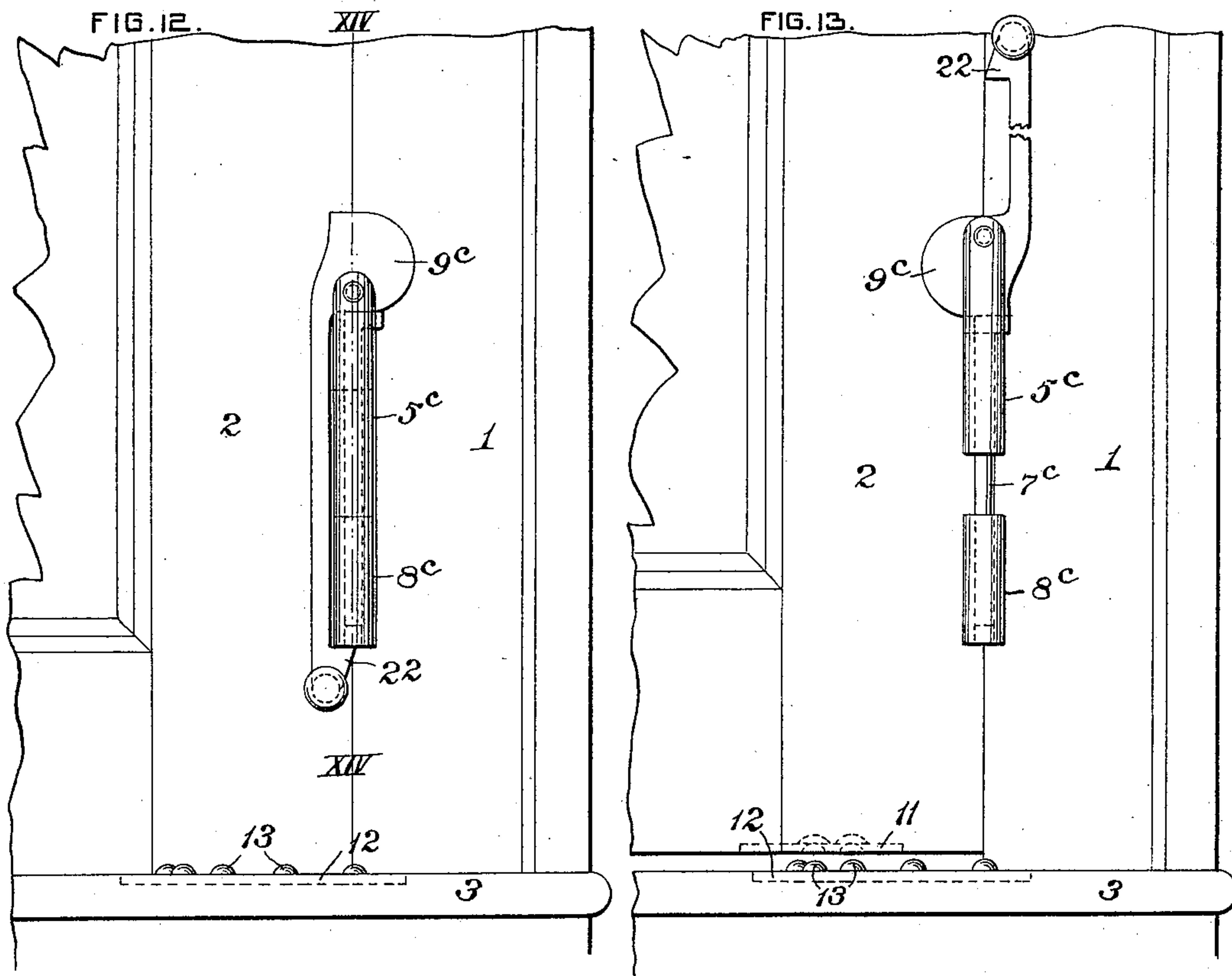
J. H. GIESEY.

HINGE.

(Application filed Dec. 29, 1897.)

(No Model.)

4 Sheets—Sheet 4.



WITNESSES:

Chas. F. Miller.
Wm. H. Crekine.

INVENTOR,

James H. Giesey
by Darnin S. Wolcott
Att'y.

UNITED STATES PATENT OFFICE.

JAMES H. GIESEY, OF HIGHLAND CITY, OHIO.

HINGE.

SPECIFICATION forming part of Letters Patent No. 607,432, dated July 19, 1898.

Application filed December 29, 1897. Serial No. 664,183. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. GIESEY, a citizen of the United States, residing at Highland City, in the county of Jefferson and State of Ohio, have invented or discovered certain new and useful Improvements in Hinges, of which

The invention described herein relates to certain improvements in casement-windows which have the sash hinged along one edge to the window casing or frame and are opened by swinging horizontally on such hinges into the room. While these windows are in many cases preferable to the vertically-moving sash and in some cases are the only form of window which could be used with the freedom of opening, they are objectionable, for the reason that the stool which prevents the inflow of water and air under the window-frame cannot be used, as such stool or strip in the present form or construction of such windows entirely prevents the opening of the window.

The object of the present invention is to provide for the lifting of the sash while in its closed position a suitable distance to permit of its being swung above the stool when it is desired to open the former; and in general terms the invention consists in a construction of a butt or hinge and suitable operating devices whereby the parts of such butt or hinge which are connected to the sash may be moved vertically from the parts secured to the casing, so as to permit of the inward swinging of the sash.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of a window frame and sash having my improvements applied thereto. Fig. 2 is a horizontal sectional view, the plane of section being indicated by the line II II, Fig. 1. Figs. 3 and 4 are vertical sections, the plane of section being indicated by the line III III, Fig. 2, and showing the window-sash in its lowered and raised positions. Figs. 5 and 6 are views, partly in section and partly in elevation, of a modified form or construction of the hinge-supporting mechanism, showing the sash in its lowered and raised positions. Fig. 7 is a sectional view, the plane of section being indicated by the line VII VII, Fig. 5; and

Fig. 8 is a horizontal section on the line VIII VIII, Fig. 5. Figs. 9 and 10 are views, similar to Figs. 5 and 6, of a further modification of my improvement. Fig. 11 is a horizontal section, the plane of section being indicated by the line IX IX, Fig. 10. Figs. 12 and 13 are front elevations of another modification of my improved hinge, showing the parts of the hinge in lowered and raised positions. Fig. 14 is a sectional view, the plane of section being indicated by the line XIV XIV, Fig. 12. Fig. 15 is a detail view of the blank for one leaf or member of the hinge shown in Figs. 12, 13, and 14; and Fig. 16 is an edge view of the blank.

In the practice of my invention the window frame or casing 1 is made a little longer or higher than the sash 2 by an amount equal to or slightly greater than the thickness of the stool 3. This sash 2 is connected by hinges in the usual manner to the window frame or casing, the upper hinge 4 being of the usual or any suitable form or construction. The lower hinge has its lower part or member 5, which is connected to the window-casing, provided with a bearing-plate 6, preferably arranged around the pintle 7 and at the upper end of its socket portion. To the other member 8 or to the sash itself is secured a cam 9, preferably mounted in such relation to the bearing-plate 6 that when turned down to the position shown in Fig. 4 it will raise the window-sash so that the lower edge of its rail will be above the upper surface of the stool 3. This cam 8 is constructed and provided with a handle so arranged that when the latter is turned up to parallelism with the sash the lower edge of the rail will be below the stool, as shown in Fig. 3. The cam is also provided with a flattened portion so proportioned as regards its distance from the pivotal point of the cam that when the handle is turned down to or approximately to parallelism with the sash the latter will be raised and locked in its raised position by the flat portion of the cam resting upon the bearing-plate 6, on which the flat portion of the cam will ride and support the sash as it is being swung to open position. In order to lock the window in its lowered position in front of the stool, the cam is provided with a hook 10, adapted when the cam

is turned to a position to lower the sash below the stool to engage the under side of the bearing-plate 6, and thereby lock the sash as against any upward movement until the cam is again shifted. As the sash must be raised before it can be swung to open position this locking of it in its lowered position will effectually prevent any opening of the sash from the outside.

10 In order to provide for the locking of the sash in different position when open, the plate 11, provided with a recess or socket, is secured to the under side of the lower rail of the sash, and a plate 12, provided with a series of projections 13, is secured to the stool in such relation to the path of movement of the plate 11 that when the sash is opened the socket in the plate 11 will pass above these projections and can be caused to engage them by lowering the sash.

15 In Figs. 5 to 8, inclusive, I have shown a form or construction of lifting mechanism adapted to be applied to the window frame or casing. When using this form or construction, the pintle 7 of one of the hinges is secured in that leaf or member 5 of the butt or hinge attached to the sash, so that the said member and sash will move with the pintle, which is so mounted or arranged in the other member of the butt or hinge as to be capable of longitudinal movement and rotation therein. On the window-frame adjacent to the lower hinge or butt I secure a case or shell 14, having movably mounted therein a toothed bar or rod 15, provided with a laterally-projecting arm or lug 16, which is adapted to support the lower end of the pintle 7^a, the latter being extended, as shown, a distance below the hinge or butt approximately equal to the desired vertical movement of the sash. In the shell or casing is also mounted a toothed wheel 17, adapted to engage the toothed bar 15 and provided with an operating-handle 18. It will be readily understood that by the rotation of the toothed disk the bar or rod will be raised and with it the pintle, which, as before described, is secured or connected to the window-sash by one part or member of the butt or hinge. Any suitable form or construction of locking device may be employed for holding the sash in its raised position—such, for example, as that shown, consisting of a latch-rod 19, preferably mounted upon the handle 18 and provided with a tooth or projection 20, adapted to engage holes or sockets in the shell or casing 14.

20 As shown in Figs. 9 to 11, inclusive, the pintle 7^b may be formed with teeth or projections, and the toothed wheel 17^a may be mounted in a casing or shell 14^a, formed integral with one part or member of the butt or hinge. When using this form or construction, it is necessary or desirable that the toothed portion of the pintle should not rotate and that the other part or member of the butt or hinge should rotate on the pintle. Hence in order

to secure the upward movement of the sash with the pintle a collar 21 is formed on the pintle to form a seat or bearing for the movable portion of the butt or hinge.

25 In the construction shown in Figs. 12 to 16, inclusive, the leaf or member 8^c is constructed in the usual or any suitable manner; but its pintle-socket should have its lever end closed or should be otherwise constructed to prevent any longitudinal movement of the pintle 7^c when supporting the weight of the sash, as hereinafter described and claimed. The leaf or member 5^c is provided with fingers 21, which are so arranged with relation to the pintle as to support the cam 9^c in line therewith. The cam is mounted on a suitable pin passing through the fingers near their upper ends. The cam is provided with a handle or lever adapted, when the cam has its point of least eccentricity resting on the pintle, to hang down alongside of the hinge or butt sockets, as shown in Fig. 12. The handle or lever is provided with a lug or toe 22, adapted to project under the hinge when in closed position, and thereby lock the sash as against vertical movement.

30 As shown in Figs. 15 and 16, the fingers 21 may be made integral with that part 23 of the leaf or member 5^c forming the pintle-socket. The fingers are so located in the part 23 that when the latter is bent around to form the socket the fingers will be on opposite sides thereof, as shown in dotted lines in Fig. 16. It is preferred to form a shoulder 24 on the part 23, adapted when the part 23 is bent to project over the end of the body of the leaf. It will be readily understood by those skilled in the art that it is immaterial, as regards the construction shown in Figs. 9 to 11, which portion of my improved hinge is attached to the window-casing, as its operativeness is the same whether attached to the window-casing or to the sash. In one case the toothed wheel or cam would remain stationary as regards vertical movement while lifting the shaft and in the other case the toothed wheel or cam would move up with the sash, the pintle remaining stationary.

35 It will be readily understood by those skilled in the art that my improvement can be applied to balcony or other doors, but is more especially designed for use with casement-windows.

I claim herein as my invention—

1. A hinge or butt consisting of two leaves or members movable angularly with relation to each other, and having means for separating the leaves or members in the direction of their axes and means for locking the leaves as against such motion, substantially as set forth.

2. A hinge or butt consisting of two leaves movable angularly with relation to each other in combination with mechanism attached to one of the leaves or members and operative on a bearing carried by the other leaf or

member for separating the leaves or members in the direction of their axes, substantially as set forth.

3. A hinge or butt consisting of two leaves
5 or members movable angularly with relation to each other in combination with a rotating part or device connected to one of the leaves and operative on a bearing carried by the other leaf for separating the leaves or mem-
10 bers in the direction of their axes, substantially as set forth.

4. A hinge or butt consisting of two leaves or members movable angularly with relation to each other, in combination with a rotata-
15 ble cam mounted on one of the leaves and a bearing for the cam carried by the other leaf, substantially as set forth.

5. A hinge or butt consisting of two leaves or members movable angularly with relation

to each other, in combination with a rotata- 20
ble cam mounted on one of the leaves, a bearing for the cam carried by the other leaf, a hook carried by the cam and adapted to en-
gage the leaf or member having the bearing, substantially as set forth. 25

6. A hinge having in combination there-
with fingers formed on the end of the socket
portion of one of the leaves, a cam or eccen-
tric pivotally mounted between said finger,
and a pintle supported in the other leaf and 30
serving as a bearing for the cam or eccentric, substantially as set forth.

In testimony whereof I have hereunto set
my hand.

JAMES H. GIESEY.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GAITHER.