

975,455.

Patented Nov. 15, 1910.

FIG. 1.

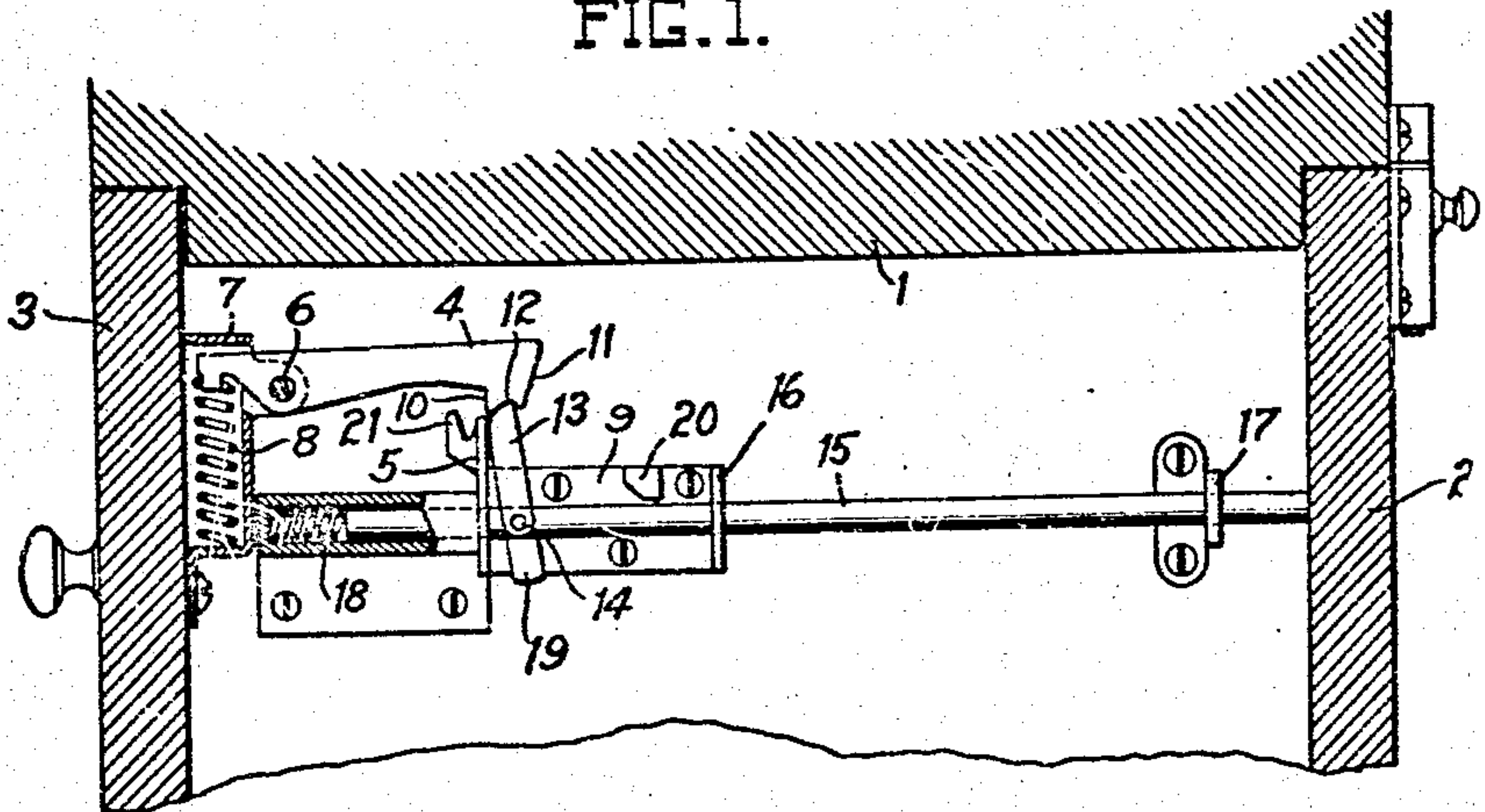


FIG. 2.

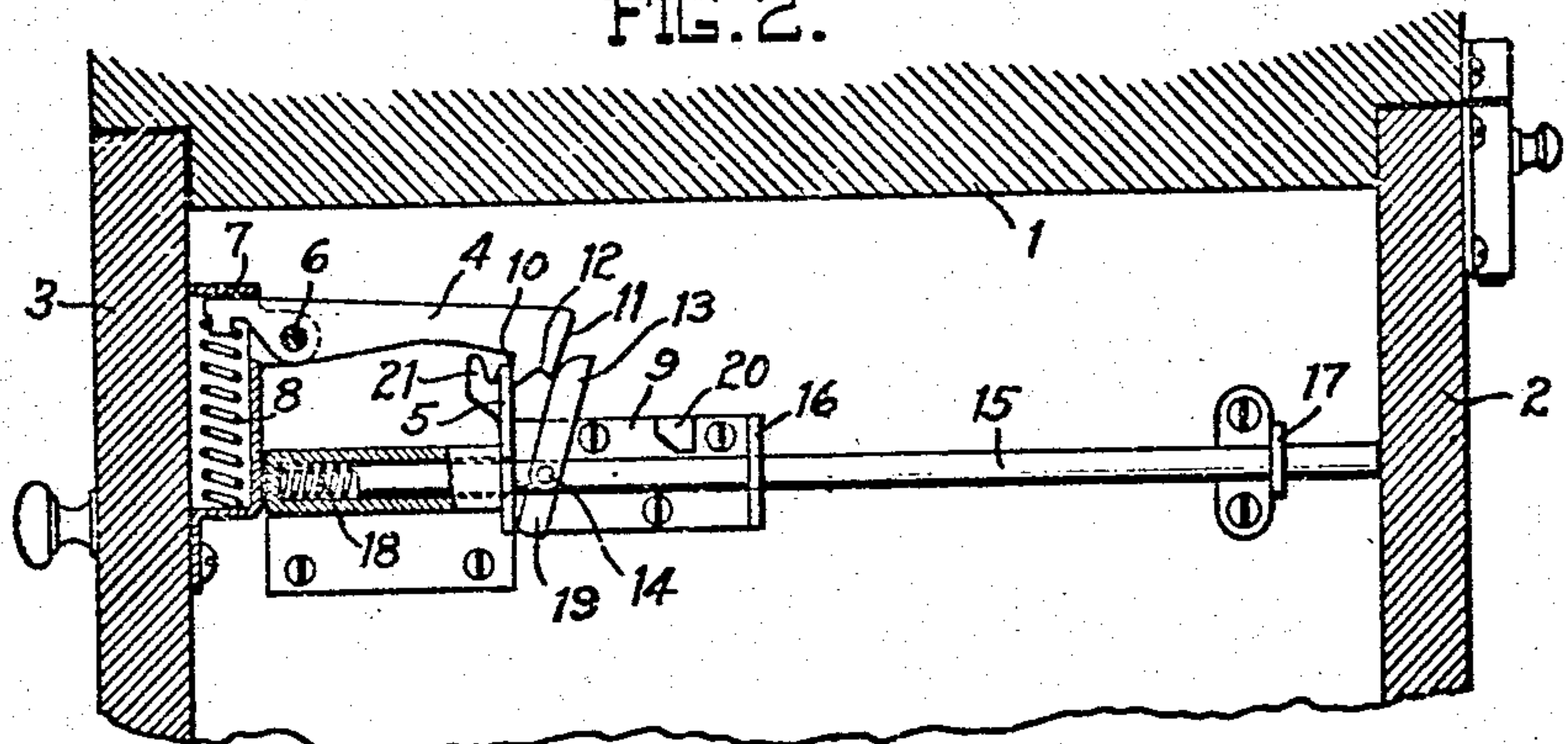
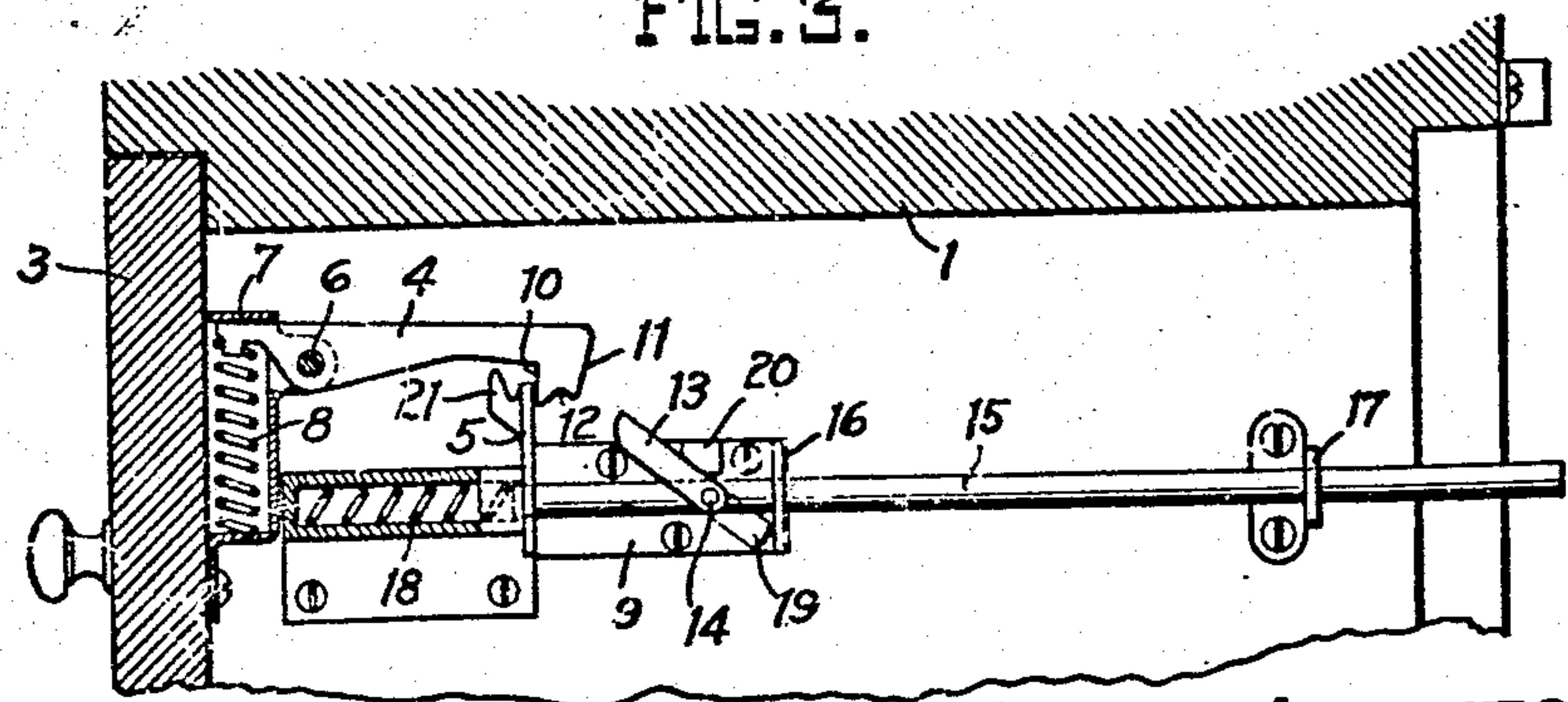


FIG. 3.



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# UNITED STATES PATENT OFFICE.

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## LOCKING MECHANISM.

975,455.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, ARTHUR J. PREVOST, a subject of the King of Great Britain, and a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Locking Mechanisms, of which the following is a specification.

This invention relates to locking mechanism for use in connection with receptacles, such as are provided for the deposit of milk bottles or other articles, the locking mechanism being so arranged as to permit an outer door of such a receptacle to be opened for the insertion of the article and to be locked by the closing of the door after the insertion of the article, so that the door cannot again be opened until the locking mechanism has been released by an appropriate operation from within the receptacle or the building in connection with which it is used.

The object of the invention is to produce a mechanism of the kind above referred to which shall be simple, compact and inexpensive in construction, and convenient and reliable in operation, and to this end the invention consists in the locking mechanism hereinafter described, as the same is defined in the succeeding claims.

In the accompanying drawings, which illustrate the preferred embodiment of the invention: Figure 1 is a vertical elevation of the locking mechanism showing parts thereof in section, and showing in section a portion of the receptacle in which the mechanism is used; and Figs. 2 and 3 are views similar to Fig. 1, showing the parts in different operative positions.

In the illustrated embodiment of my invention the locking mechanism is applied to a cupboard or receptacle formed in the wall of a building, the upper portion of the receptacle, including its top or ceiling 1, being shown, and the receptacle is provided with a door 2 accessible from within the building and a door 3 accessible from without the building. The locking mechanism is arranged to lock the outer door 3, and to be released by the movement of the inner door 2. The mechanism comprises two cooperating members, one of which is in the form of a latch while the other constitutes a keeper for the latch. The latch 4 comprises a lever pivoted at 6 upon a casing 7 fixed

to the inner surface of the outer door 3. The latch has a short arm projecting into the casing 7, where it is engaged by a compression spring 8 which tends constantly to move the outer arm of the latch downwardly and into engagement with the latch keeper. At its inner extremity the latch is provided with a shoulder 10 formed to interlock with the keeper, and with an inclined surface 11 adapted to ride over the keeper. Between the shoulder 10 and the surface 11 the latch is provided with a notch 12 which coöperates with a trip by which the latch is released. The keeper is in the form of a lug 5 mounted on a plate 9 secured to the wall of the receptacle.

The mechanism for releasing the latch comprises a trip 13 which is pivoted at 14 upon a horizontal slide rod 15. The slide rod moves in bearings in the keeper and in a second lug 16 on the plate 9. The rear end of the rod is also guided in a lug 17 fixed to the wall of the receptacle. A compression spring 18, engaging the forward end of the slide rod, tends to cause the slide rod to follow the inner door 2 for a short distance when the door is opened.

In the normal position of the apparatus the latch rests with its notch 12 upon the upper end of the trip, as shown in Fig. 1, and, under such conditions, the outer door is unlocked, since the shoulder 10 on the latch is held clear of the keeper. With the parts in this position, if the outer door be opened the latch is disengaged from the trip and drawn over the keeper. After the door has been so opened, if it be closed again, the inclined surface 11 on the latch rides over the keeper, and then engages the upper end of the trip. The trip is thus pushed back into inoperative position, as shown in Fig. 2, before it can engage the notch 12, and the spring 8 then acts to force the latch down with its shoulder 10 in locking engagement with the keeper, and the outer door is thus locked and cannot again be opened until the trip has been operated to release the latch. The trip at this time is prevented from swinging too far back by means of a downward projection 19 which engages the rear side of the keeper as shown in Fig. 2. When the inner door 2 of the receptacle is opened, the spring 18 forces the slide rod rearwardly, or to the right as shown in Fig. 3, thereby withdrawing the trip from the



latch. As the rod nears the right-hand limit of its movement, the trip engages a lug 20 fixed on the plate 9, and this swings the keeper forward into a position in which its upper end may pass freely beneath the end of the latch. The trip is prevented from swinging too far in this direction by engagement of the downward projection 19 with the lug 16. With the parts in the position of Fig. 3, if the inner door be closed, the slide rod is moved forward by the engagement of its rear end with the door, and the trip is thus carried forward until its upper end engages the rear surface of the keeper. During the continued movement of the slide rod the end of the trip first slides upward along the surface of the keeper and into engagement with the notch 12 in the latch, and then raises the latch into the position illustrated in Fig. 1, and the mechanism is thus reset for a new operation.

It is desirable to provide sufficient resistance to the movements of the outer door to prevent it from being opened and closed by accidental causes as, for example, by the action of the wind. For this purpose a detent 21 is mounted upon the front of the keeper. This detent has an inclined rear surface over which the shoulder 10 of the latch may ride, while the inclined surface 11 of the latch rides over the front surface of the detent. The detent operates, therefore, merely to provide a frictional and resilient resistance to the opening and closing movements of the door.

While the releasing mechanism is actuated, in the illustrated embodiment of the invention, by means of the inner door, it is not necessarily so operated. If the inner door 2 in the drawings were omitted, for example, the slide rod might be actuated by hand when necessary to release the locking mechanism. While, therefore, it is preferable to operate the releasing mechanism automatically by means of an inner door, this feature of the device is not essential to the invention.

The hereinbefore described mechanism is simple and compact, and all of its mechanical parts, except the latch, may be mounted and connected together in a self-contained form, that is to say, without separate attachment to the wall of the receptacle.

My invention is not limited to the embodiment hereinbefore described and illustrated in the accompanying drawings, but may be embodied in various other forms within the nature of the invention as it is defined in the succeeding claims.

I claim:—

1. Locking mechanism having, in combination with a door, a latch and a keeper arranged in cooperating position, one of said

members mounted upon the door, and a trip adapted to be set to engage the latch and hold the latter normally free from the keeper so long as the door remains in closed position, the latch being formed and arranged to engage the trip when the door is opened and again closed, and to throw the trip into inoperative position to permit the latch to interlock with the keeper.

2. Locking mechanism having, in combination with a door, a latch and a keeper arranged in cooperating position, the latch being mounted upon the door, and a trip adapted to be set to engage the latch and hold the latter normally free from the keeper, so long as the door remains in closed position, the latch having an inclined surface formed to ride over the keeper and engage the trip and throw the latter out of operative position, when the door is moved from open to closed position to permit the latch to interlock with the keeper.

3. Locking mechanism having, in combination with a door, a latch movably mounted on the door, a stationary keeper arranged in position to cooperate with the latch, a slide, and a trip pivotally mounted upon the slide and adapted to cooperate with the latch, said latch having a notch adapted to be engaged by the trip when the latter is operated in one direction whereby the latch will be raised from the keeper, and the latch also having a surface arranged to engage the trip and throw the latter into inoperative position when the latch is moved by the closing of the door.

4. Locking mechanism having, in combination with a door, a latch movably mounted on the door, a stationary keeper arranged to cooperate with the latch, the latch having a shoulder formed to engage the rear surface of the keeper and thus to interlock the latch and the keeper, a slide arranged to move below the latch, and a trip pivotally mounted upon the slide in the rear of the keeper and extending upwardly therefrom in position for its extremity to engage and cooperate with the rear surface of the keeper and the extremity of the latch when the slide is moved in the direction of the keeper, whereby to free the latch from the keeper.

5. Locking mechanism having, in combination, a spring-controlled latch, a keeper cooperating with the latch, means for tripping the latch, and a detent arranged to engage the latch in front of the keeper and to frictionally oppose the movement of the latch into and out of engagement with the keeper.

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Witnesses:

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