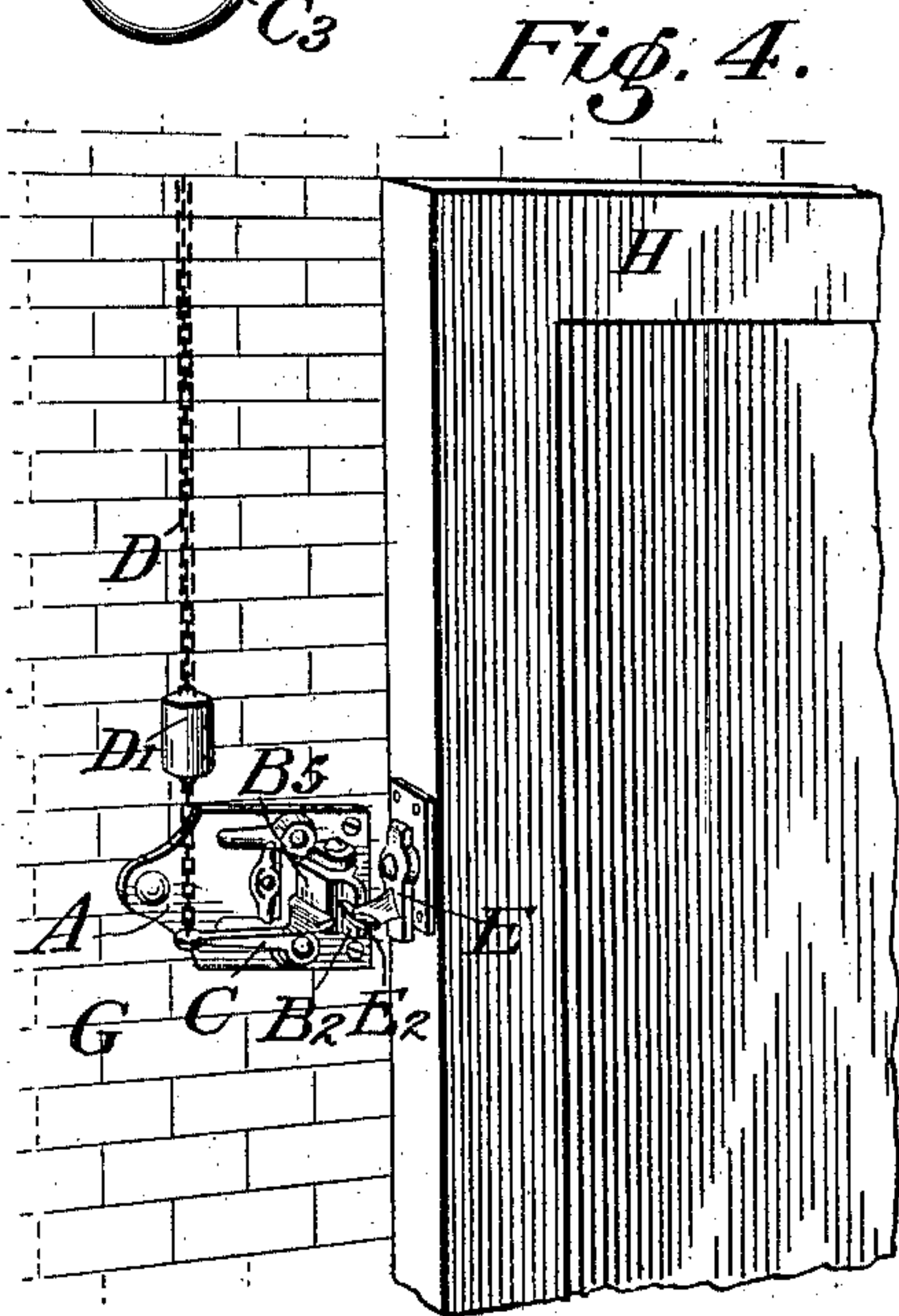
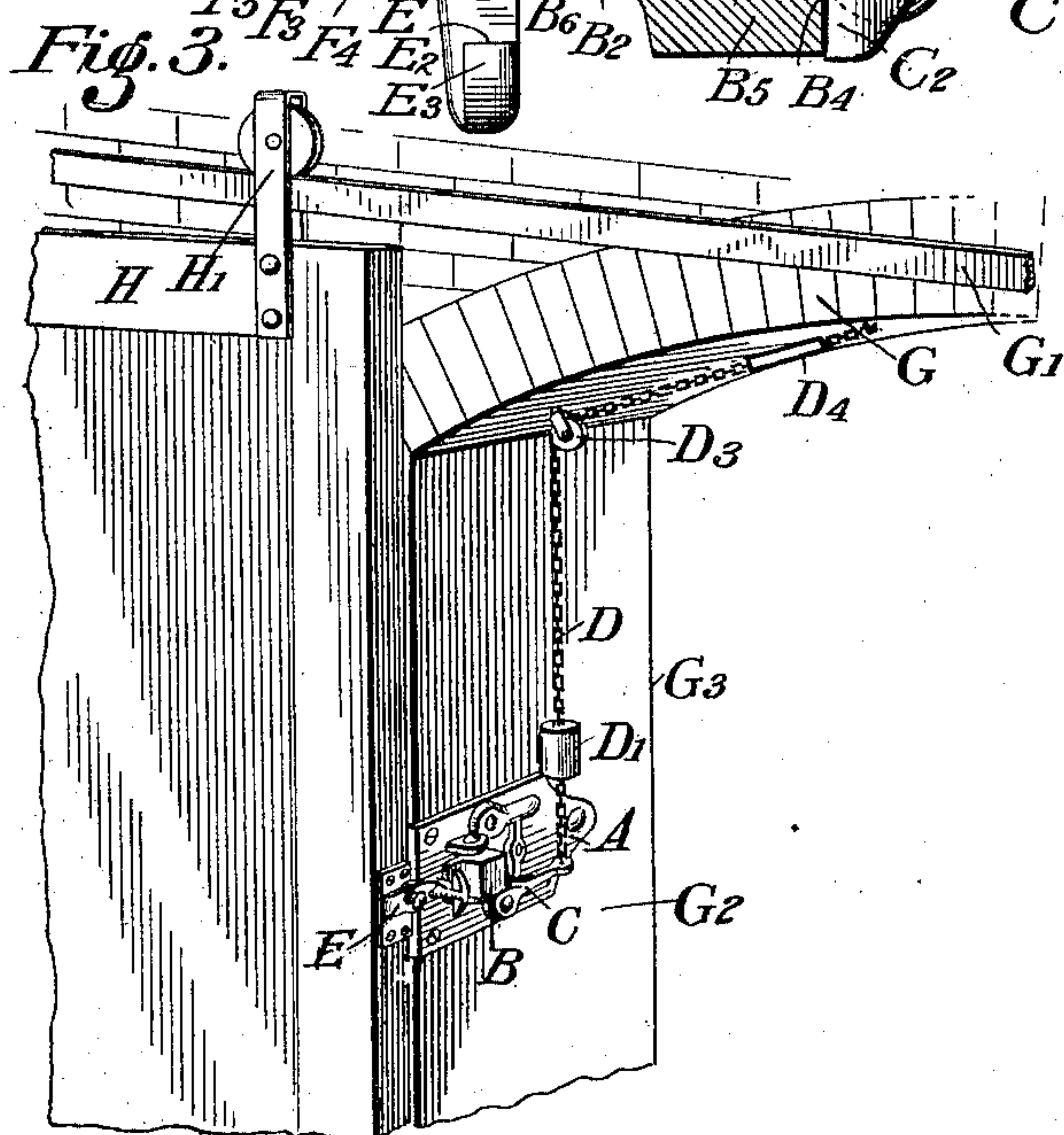
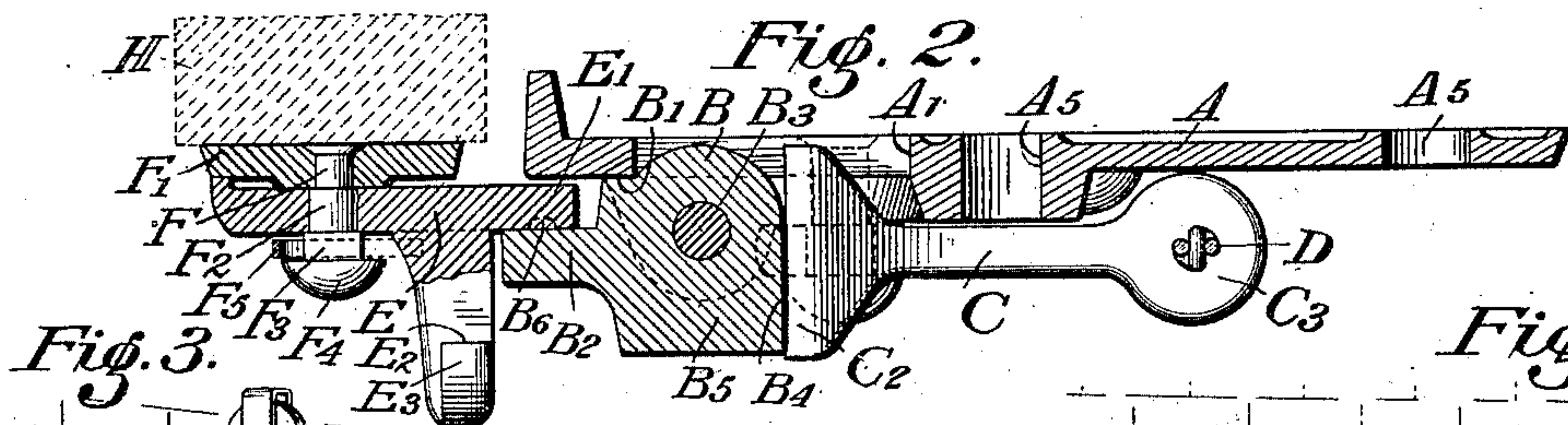
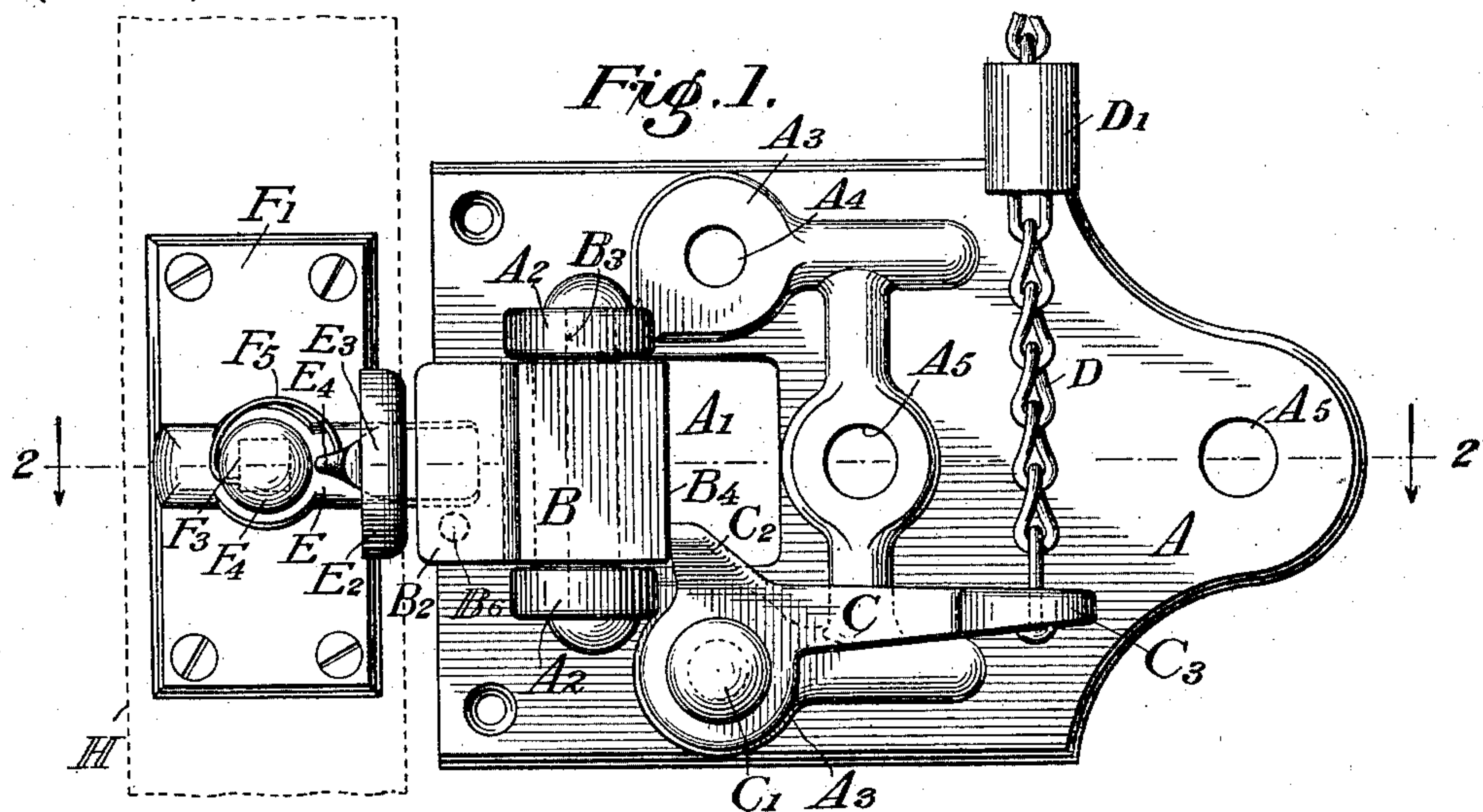


**J. W. TRIPP.**  
**DOOR CLOSING APPARATUS.**

(Application filed Feb. 15, 1902.)

(No Model.)



*Witnesses:*

Witnesses:  
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by  
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# UNITED STATES PATENT OFFICE.

JACOB W. TRIPP, OF NEW YORK, N. Y., ASSIGNOR TO HENRY B. NEWHALL,  
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## DOOR-CLOSING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 704,984, dated July 15, 1902.

Application filed February 15, 1902. Serial No. 94,218. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB W. TRIPP, a citizen of the United States, and a resident of New York city, in the county and State of New York, have invented certain new and useful Improvements in Door-Closing Apparatus, of which the following is a specification, taken in connection with the accompanying drawings.

10 This invention relates to door-closing apparatus particularly adapted for use in connection with automatic apparatus for closing fire-doors and is of the type disclosed in patents to Kingslands, No. 680,415 and 680,458, August 13, 1901.

15 In the drawings, in which the same reference characters refer to similar parts in the various figures, Figure 1 is a front view of the lock as applied to a door-opening. Fig. 2 is a sectional view taken on the line 2 2 of Fig. 1. Fig. 3 shows the lock as applied to the edge of a door-opening to act upon the front of a door. Fig. 4 is a similar view showing the lock applied to the side wall to operate on the rear edge of the door.

25 The plate A is formed of any suitable material—such, for instance, as cast-iron—and has a block-opening A' formed near the front edge of the plate. On either side of this opening are situated the block-supports A<sup>2</sup>. The trunnion-block B, having the form indicated in Fig. 2, rotates in the block-opening, as indicated, and this block is mounted, by means of the pivot B<sup>3</sup>, which may be rigidly secured to the block B and loosely mounted in the supports A<sup>2</sup>, so as to form trunnions, or, if desired, this pivot may be rigidly secured to the supports and the block may rotate about it. The trunnion-block is formed with a flange or rib B', which engages the plate A and serves to hold the block more accurately in position. The lip B<sup>2</sup> is formed on the front edge of the trunnion-block, and on the under surface of this lip there may be formed the slight projection B<sup>6</sup>, as indicated in Figs. 1 and 2.

30 The plate A is provided with two raised lever-bearings A<sup>3</sup>, symmetrically arranged on either side of the block-opening. These bearings are formed with holes A<sup>4</sup>, in which the

lever-pin C' may be readily secured, and this pin serves to mount the locking-lever C upon either one of the lever-bearings. The locking-lever is formed, as indicated, with the wide toe C<sup>2</sup> to engage the trunnion-block throughout a considerable extent of the block, and thus to hold it rigidly in position. The free end of the locking-lever is connected with a chain D, which is provided with a weight D', so arranged that when the chain is released by the thermal releasing mechanism in the ordinary way the weight D' may fall against the free end C<sup>3</sup> of the locking-lever. The impact of this weight serves to disengage the toe of the lever from the trunnion-block in all cases, and so insures the release of the trunnion-block. It will be seen that when the toe of the locking-lever engages the heel B<sup>4</sup> of the trunnion-block the lip B<sup>2</sup> is rigidly held parallel to the plate A, the proper spacing of this lip with respect to the plate being secured by the contact of the rib B' on the trunnion-block with the plate. If, however, it is desired to operate the lock in another manner, the lip may be turned into position perpendicular to the plate, as is indicated in Fig. 4, and the toe of the locking-lever will then engage the side B<sup>5</sup> of the trunnion-block and rigidly hold the lip in this position. It is of course apparent that the trunnion-block in either of these positions is released as soon as the toe of the locking-lever ceases to press against it.

35 The latch E, which coöperates with the lip of the trunnion-block, is mounted upon the latch-support F', formed of any suitable material and provided, as indicated, with a number of holes by which it may be screwed upon a door H or other device which it is desired to control. The latch-pivot F is rigidly secured to the latch-support. The bearing-shoulder F<sup>2</sup> accommodates the latch and allows it to rotate freely about the support. The square head F<sup>3</sup> holds the latch in proper position and serves to support a spring F<sup>5</sup>, the free end of which engages the upstanding rib E<sup>4</sup> on the latch. The latch-handle E<sup>3</sup> projects at right angles from the tongue E' of the latch and is formed with two lugs E<sup>2</sup> on either side of the same. The handle is

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used to manually operate the latch, and the spring normally tends to draw the latch from the position indicated in Fig. 1 down into a vertical position. Instead of forming the latch in the manner indicated the manually-moving latch may be mounted in any other way, so as to be moved into engagement with the lip of the trunnion-block and withdrawn therefrom.

10 When the lock is operated as indicated in Fig. 3, the plate A is rigidly secured to the edge G<sup>2</sup> of the opening G<sup>3</sup> by suitable bolts or other means passed through the holes A<sup>5</sup> in the plate. The latch-support F' is secured to the front edge of the fire-door H, which is mounted by suitable trolleys H' to slide upon a track (indicated by G') supported by any desired means from the wall G. This track is either inclined, as indicated, or other suitable means are employed so that the fire-door H normally tends to move across the opening G<sup>3</sup> to close the same. The chain D, which passes, as indicated, over a suitable pulley D<sup>3</sup>, is provided at its upper end with the thermal releasing device D<sup>4</sup>, which may be a thermal fuse or any other desired releasing means. This chain is secured so as to firmly hold the locking-lever in the position indicated in Figs. 1 and 2, in which the toe of this lever engages the heel of the trunnion-block B. In this way the lip B<sup>2</sup> of the trunnion-block is held in the position indicated in Fig. 2 adjacent the path of the closing-door H. Then when the door H has been opened the tongue E' of the latch is manually moved out of the path of the door under the lip B<sup>2</sup> of the trunnion-block. The pressure of the door serves to hold this latch in position through the friction of the parts, although, if desired, a slight projection or lug B<sup>6</sup> may be formed on the under side of the lip to maintain the latch in position, the latch being forced up past this projection. When during the ordinary operation of the device it is desired to release the door-closing apparatus, the latch is manually moved about its pivot, so as to release the latch from the lip of the trunnion-block. The door is then free to close. The thermal releasing device releases the chain D, and the weight D', as has been explained, insures the detachment of the toe of the locking-lever C from the heel of the trunnion-block. The pressure of the door then rotates the trunnion-block about the trunnion B<sup>3</sup>, and thereupon the spring F<sup>5</sup> rotates the latch about its pivot downward into a vertical position out of the path of the self-closing door, so that the latch does not project beyond the door. The spring F<sup>5</sup> is not necessary in all cases, since the weight of the latch tends to make it assume this downward position.

When the apparatus is operated as indicated in Fig. 4, the plate A is secured to the side of the wall G, adjacent the rear edge of the door H when the door is opened. The latch is secured to the rear edge of the door,

as indicated, in such a position that the locking-lug E<sup>2</sup> when the door is opened to the desired extent is engaged by the lip of the trunnion-block when this lip is perpendicular to the plate A, as indicated in Fig. 4. The trunnion-block is rigidly held in this position by the locking-lever C, the chain D and thermal releasing devices being arranged in any desired manner as is usual in this art. By manually moving the latch E the locking-lug E<sup>2</sup> is released from the lip of the trunnion-block, and the door may thereupon close in the ordinary way. The release of the chain through the thermal device removes the locking-lever from engagement with the side B<sup>5</sup> of the trunnion-block, and the trunnion-block is then free to rotate under the pressure of the door, so as to release the latch and allow the door to close.

It is of course apparent that many modifications may be made in this apparatus by those familiar with the art without departing from the spirit of this invention. Parts of the apparatus may be omitted, and portions of the device may be used in connection with other devices in this art. I do not, therefore, wish to be limited to the disclosure which I have made in this case; but

What I claim as new, and what I wish to secure by Letters Patent, is set forth in the appended claims.

1. In door-closing apparatus, a plate formed with a block-opening, trunnion-supports on either side of said opening, a trunnion-block pivoted to said supports to rotate in said opening, said trunnion-block being formed with a lip on its front edge, with a heel on its rear edge and with a side face substantially perpendicular to said heel, lever-bearings formed in said plate on either side of said opening, a symmetrical locking-lever formed with a toe to engage said trunnion-block to be pivotally mounted on either of said lever-bearings, a thermal releasing device including a weight connected with the free end of said locking-lever, said weight serving to disengage said locking-lever from said trunnion-block by impact, a latch pivoted to a latch-support, a spring tending to rotate said latch about its pivot, said latch having a tongue to engage the lip of said trunnion-block and a handle to manually operate said latch, said handle having locking-lugs to engage the lip of said trunnion-block.

2. In a door-closing apparatus, a plate provided with a block-opening, a trunnion-block pivotally mounted to rotate in said opening, said trunnion-block being formed with a lip on the front edge of the same, said lip having a projection upon its under surface, said trunnion-block having a rib to engage said plate to maintain said lip in proper position, a locking-lever pivoted to said plate and provided with a toe to engage said trunnion-block, when the heel of said trunnion-block is engaged by said locking-lever, said trun-



nion-block having a side at an angle to the heel of the same to be engaged by the toe of said locking-lever to maintain the lip of said trunnion-block at an angle to said plate, a manually-movable latch to be secured to a door, said latch having a tongue and a handle at right angles to said tongue, said handle having locking-lugs on its under surface.

3. In door-closing apparatus, a plate provided with a block-opening, a trunnion-block pivoted to rotate in said opening, said trunnion-block having a lip to be engaged by a latch, a locking-lever mounted on said plate to engage said trunnion-block and to rigidly hold the lip of said trunnion-block parallel to said plate or at an angle thereto and a manually-movable latch having projections to be engaged by said lip.

4. In door-closing apparatus, a plate provided with a block-opening, a trunnion-block movably mounted in said opening, said trunnion-block having a lip to be engaged by a latch, releasable means to hold the lip of said trunnion-block parallel to said plate or at an angle thereto and a manually-movable latch having projections to be engaged by said lip.

5. In door-closing apparatus, a plate, a trunnion-block mounted in said plate and having a lip to project adjacent to the path of travel of a door, a locking-lever mounted on said plate to engage said trunnion-block and hold said lip in position, a manually-movable latch to be secured to the edge of said door, said latch having a tongue to project beyond the line of travel of said door and into engagement with said lip, and a spring to move said tongue into the line of travel of said door.

6. In door-closing apparatus, a trunnion-block provided with a lip, means to mount

said trunnion-block adjacent to the path of travel of a door, releasable means to hold said lip in position, a manually-movable latch to be mounted upon the edge of said door, said latch projecting beyond the line of travel of said door into engagement with said lip and means to move said latch into said line of travel.

7. In door-closing apparatus, releasable means mounted adjacent to the path of a self-closing door to hold said door in open position, a manually-movable latch secured to said door to project beyond the line of travel of said door into engagement with said means, said latch automatically moving when released into said line of travel.

8. In door-closing apparatus, a lip releasably held adjacent to the path of a self-closing door, manually-movable means mounted upon said door to project out of the line of travel of said door into engagement with said lip, said means automatically moving into the line of travel of said door when released from said lip.

9. In door-closing apparatus, a lip to be releasably held adjacent to the line of travel of a self-closing door and manually-movable means to be secured to a self-closing door to project out of the line of travel of said door into engagement with said lip.

10. In door-closing apparatus, a plate, a lip movably mounted on said plate, means to hold said lip rigidly parallel to said plate or perpendicular to the same, and a latch having projections thereon to engage said lip in either position.

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Witnesses:

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