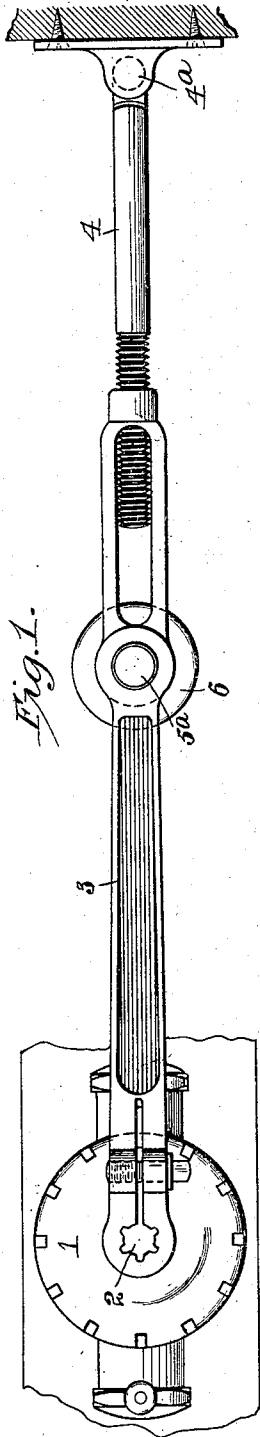
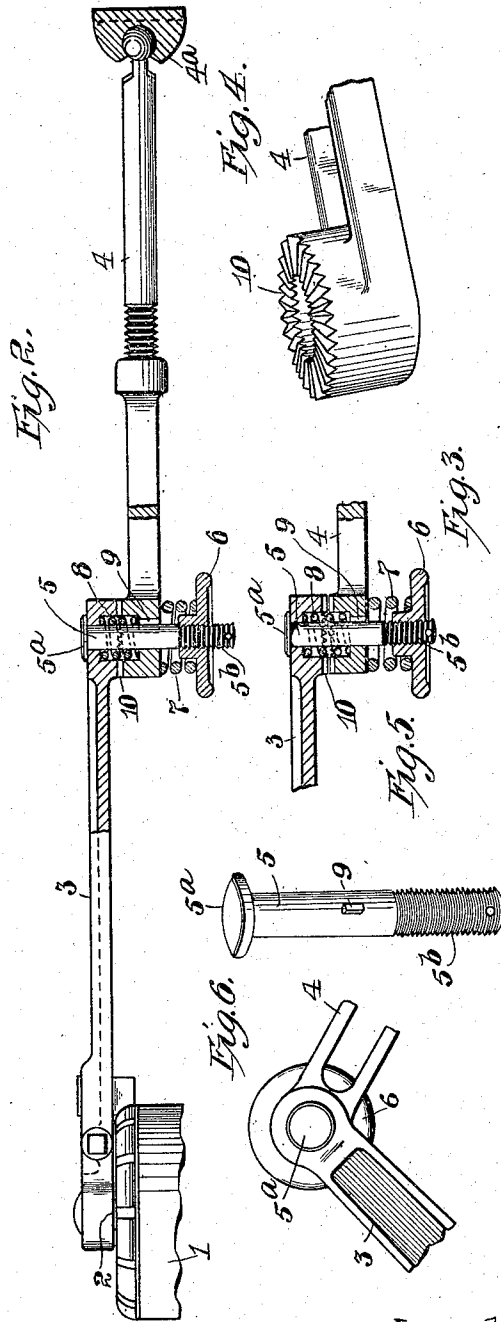


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DOOR CLOSING MECHANISM.
APPLICATION FILED SEPT. 1, 1915.

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DOOR-CLOSING MECHANISM.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES FORTH, a citizen of the United States, residing at Ottawa, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Door-Closing Mechanism, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to door closing mechanism, the object of the invention being to provide for holding the door open in an adjusted open position or positions against the action of the closing means; and
15 the invention consists broadly in means acting on relatively movable parts of a door closing mechanism, and operating to hold said parts against movement relatively to each other; whereby the door may be held
20 in an adjusted open position against the action of the closing mechanism.

The invention consists also in so constructing the holding means that the door will be held yieldingly in open position; whereby
25 if the door be pushed forcibly from its held position, no injury to the holding means will result.

The invention consists further in so constructing the holding means that they may
30 be adjusted or set to render them active or inactive at will; whereby the closing mechanism will be free to operate under normal conditions, or the door may be held open against the action of the closing means.

35 Referring to the drawings:

Figure 1 is a top plan view of a door closing mechanism having my invention embodied therein, the said mechanism being shown in the position it occupies when the
40 door is in full open position.

Fig. 2 is a side elevation of the same partly in section, the holding means being shown in active operative position.

Fig. 3 is a sectional view showing the said
45 holding means adjusted to render the same inactive to permit the normal operation of the closing mechanism.

Figs. 4 and 5 are perspective views of details of the mechanism.

50 Fig. 6 is a top plan view of the inner pivotally connected ends of the links of the door closing mechanism provided with my invention, the said links being shown in the relative position they occupy when the door is
55 partially closed.

In the accompanying drawings:

1 represents a barrel or cylinder adapted to be connected with a door and provided with a closing spring (not shown), which acts to rotate a shaft or stud 2 mounted in the barrel and connected with the outer end of an arm 3. 4 represents a link whose outer end is adapted to be pivotally connected with the door frame as at 4^a, and whose inner end is pivotally connected with the inner end of the arm 3 by means of a pivot pin 5. The pivot pin extends vertically downward through aligned openings in the inner ends of the arm and link, and is provided on its upper end with a head 5^a bearing against the upper side of the arm 3, and is extended at its lower end some distance below the lower side of the link 4 which extended end is threaded as at 5^b. Screwed on the threaded end of the pin is a hand wheel or nut 6, and encircling the pin between the nut and the link 4 is a coiled spring 7, one end of which bears against the nut, while its other end bears against the under side of the link 4. The ends of the arm and link are recessed in their adjacent sides to receive a coiled spring 8 which surrounds the pivot pin and bears at one end against the bottom of the recess in the arm, and at its opposite end against the bottom of the recess in the link, the said pin being provided with a key 9 which seats in a slot in the link 4 to prevent the pin from turning therein. The inner adjacent sides of the ends of the arm and link, where they surround the pivot pin, are toothed as at 10, which teeth when the ends of the arm and link are forced together as shown in Fig. 2, will interlock with each other and the arm and link will be held against relative pivotal motion, the said parts when their toothed ends are separated, as shown in Fig. 3, being permitted to pivot freely on each other about the axis of the pivot pin as a center.

In the normal operation of the door closing mechanism, the toothed ends of the arm and link are separated from each other and maintained yieldingly apart by the spring 8, the adjusting nut 6 being screwed outwardly on the pivot pin to permit the spring 8 to act. The arm and link are now free to pivot on each other, in the movement of the door under the influence of the closing motor. When now it is desired to bring the holding means into action, to hold the

door in open position against the action of the mechanism, the adjusting nut 6 is screwed up on the pin as shown in Fig. 2, the result being that, through the medium of spring 7, which is stronger than the spring 8, the inner end of link 4 will be forced into yielding engagement with the inner end of the arm and will thereby compress the weaker spring 8 and the teeth on said parts will be caused to interlock with each other. This will hold the arm and link against relative movement and will prevent the closing mechanism from operating to close the door. Consequently the latter may be held in different open positions. Due to the fact that the teeth on the arm and link are held in engagement by a spring, if the door when held open is forcibly pushed either way, the end of link 4 will yield in the direction of the pivotal axis, and the teeth will click by each other, so that injury to the parts will be prevented. Furthermore, and by reason of the yielding clamping pressure applied to hold the teeth in engagement, the door may be moved to different open positions, after once being adjusted, by forcibly pushing thereon.

It will be observed from the above description, that by one adjustment of the nut 6, the holding means will be brought into action and the door may be held in different open positions against the action of the closing mechanism; and by another adjustment of the nut the holding means will be rendered inactive and the closing mechanism permitted to operate normally in closing the door. The adjusting nut being located on the under side of the links as described it is readily accessible from beneath by reaching upwardly.

It will be manifest from the skilled mechanic that my invention in its broader aspect is applicable to other forms of door closing mechanism than that shown, and may be embodied in other and different constructions than that mentioned without departing from the limits of my invention; and it will be understood that the invention is not limited to any particular form or construction of the parts except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim is:

1. In a door closing mechanism, the combination of a closing motor adapted to be connected with the door, an arm actuated by the motor, a link pivotally connected with the outer end of the arm and adapted at its outer end to be connected with the door

frame, the connected ends of the arm and link being movable into and out of engagement with each other in a direction axially of their connecting pivot, means tending to maintain the separation of said ends to permit their free relative movements in the normal operation of the motor, and manually operated means for clamping the ends of the arm and link in yielding engagement with each other to prevent the normal operation of the motor and to hold the door open, the said latter means being operable at will and independently of the movements of the door to hold the door open in any desired position.

2. In a door closing mechanism, the combination of a closing motor, an arm actuated thereby, a link, a pivot pin connecting the arm and link together for relative pivotal movement, the adjacent faces of the arm and link being provided with cooperating beveled teeth adapted when engaged with each other to hold the parts against free relative movement, and said arm and link being separable from each other axially of the pin to permit of their free relative movement, a spring surrounding the pin and bearing against the link, and a nut on the pin bearing against the spring; whereby the spring may be compressed or relieved at will, to hold the parts yieldingly against relative movement or to permit their free relative movement, as desired.

3. In a door closing mechanism, the combination of a closing motor, an arm actuated thereby, a link, a pivot pin connecting the arm and link together for relative pivotal movement, the adjacent faces of the arm and link being provided with cooperating beveled teeth adapted when engaged with each other to hold the parts against free relative movement, and said arm and link being separable from each other axially of the pin to permit of their free relative movement, a spring surrounding the pin and bearing against the link, a nut on the pin bearing against the spring, whereby the spring may be compressed or relieved at will, to hold the parts yieldingly against relative movement or to permit their free relative movement as desired, and a second spring weaker than the first mentioned spring and arranged between the arm and link and acting to separate said parts when the first-mentioned spring is relieved.

In testimony whereof, I have affixed my signature.

CHARLES FORTH.