No. 851,272. PATENTED APR. 23, 1907.

W. G. BELL.

DOOR CONTROLLER.

APPLICATION FILED JULY 9, 1906.

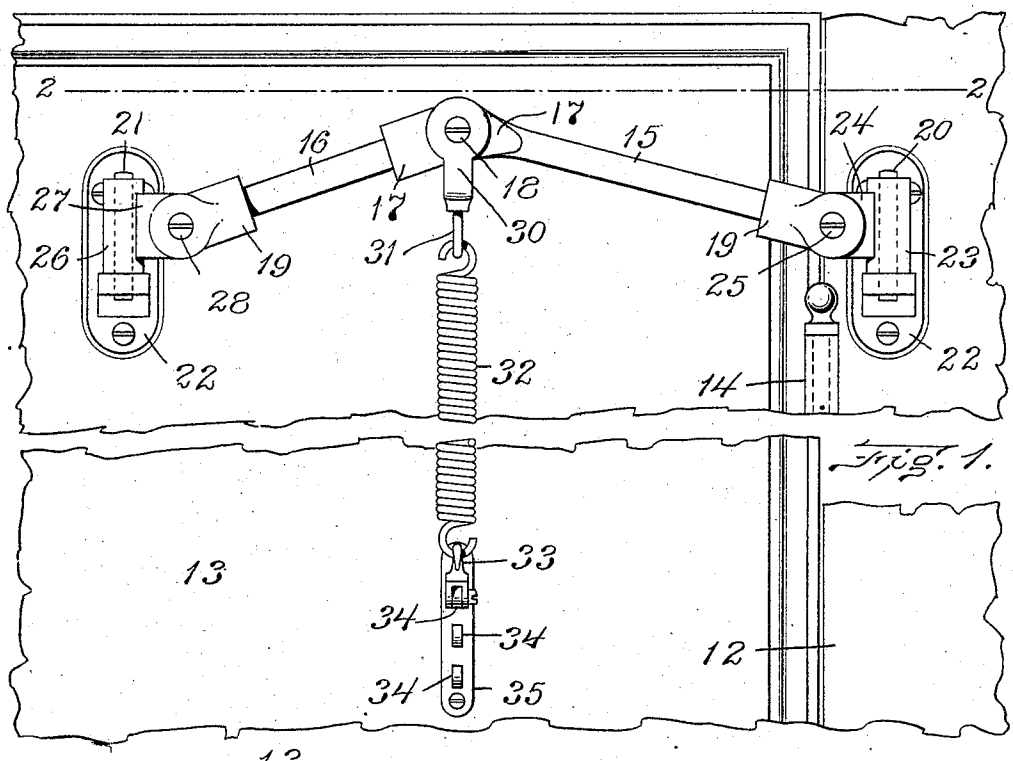


Fig. 1.

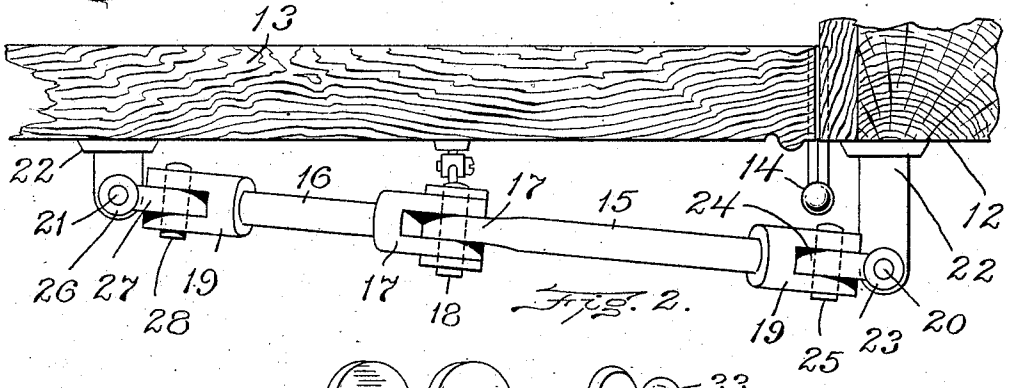


Fig. 2.

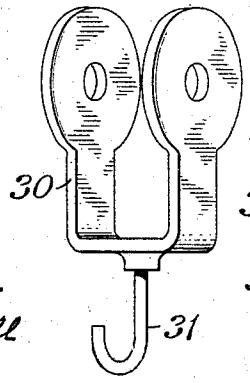


Fig. 3.

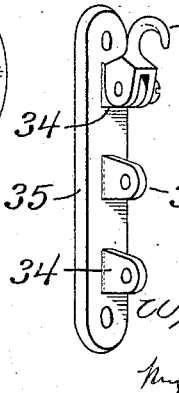


Fig. 4.

Witnesses:
Walter P. Abell
P. H. Pezzetti

Inventor,
William G. Bell,
by Wright Brown Quinby & May
Attys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM G. BELL, OF NEWTON, MASSACHUSETTS.

DOOR-CONTROLLER.

No. 851,272. Specification of Letters Patent. Patented April 23, 1907.

Application filed July 9, 1906. Serial No. 325,253.

To all whom it may concern:

Be it known that I, WILLIAM G. BELL, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Door-Controllers, of which the following is a specification.

This invention relates to spring actuated means for holding hinged doors either in a closed position or in an opened position.

The invention has for its object to provide certain improvements on the door controller shown in Letters Patent of the United States, #802,552, granted to me October 24, 1905, the said controller embodying a toggle joint, means for connecting the outer end of one of the links of the toggle joint with the door casing, and the outer end of the other link with the door, said connecting means having provisions for permitting both a vertical and a horizontal oscillation of one toggle link upon the casing, and of the other link upon the door, whereby each end of the toggle joint is adapted to swing on a vertical axis, and a spring adapted for engagement with the toggle joint and with the door, the said spring exerting a pull upon the meeting ends of the toggle links, and tending to spring the said links into alignment with each other, and thus hold the door either in a closed or opened position.

The present invention has for its object, first to enable the end of the toggle joint which is hinged to the casing to project outwardly farther from the end which is hinged to the door, thus enabling the controller to conform to doors in which the arrangement of the hinges is such as to cause an outward movement of the inner edge of the door when the door is opened, and also enabling the spring to act more effectively in closing the door.

The invention also has for its object to provide an improved means for connecting the spring with the meeting ends of the toggle joint in such manner as to enable the force of the spring to be more advantageously exerted than heretofore.

The invention also has for its object to provide improved means for adjustably connecting the outer end of the spring with the door.

To these ends the invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation showing a door controller embodying my invention applied to a door and its casing, the door being closed. Fig. 2 represents a section on line 2—2 of Fig. 1, and a top plan or edge view of the controller. Fig. 3 represents a perspective view of the yoke which connects the spring to the meeting ends of the toggle links. Fig. 4 represents a perspective view of the device which adjustably connects the outer end of the spring with the door.

The same letters of reference indicate the same parts in all the figures.

In the drawings, 12 represents a door casing, and 13 represents a door connected to the casing by suitable hinges 14.

15 and 16 represent toggle links which are preferably stout metal rods having at their inner ends suitable terminal ears 17, 17, jointed together by the pin or pintle 18. The outer ends of the links 15, 16, are provided with terminals 19, 19, which constitute members of double joint hinges connecting the link 15 with the door casing and the link 16 with the door.

20, 21 represent pintle members adapted to be rigidly attached respectively to the casing and to the door, each pintle member being affixed rigidly to a bracket 22, said brackets being adapted to be screwed to the casing and door, as shown in Fig. 1.

23 represents an intermediate hinge member adapted to turn horizontally on the casing pintle 20 and having an ear 24 connected by a horizontal pin or pintle 25 with the outer terminal 19 of the link 15.

26 represents an intermediate hinge member adapted to turn horizontally on the door pintle member 21, and having an ear 27 connected by a horizontal pin or pintle 28 with the outer terminal 19 of the link 16.

The construction thus far described is substantially the same as that set forth in the above-mentioned Letters Patent, excepting that the shank or arm portion of the bracket supporting the pintle member 20 projects outwardly farther than the shank or arm portion of the bracket supporting the pintle member 21, so that the pintle member 20, which is attached to the door casing projects outwardly from the casing farther than the shank member 21 projects from the door, as clearly shown in Fig. 2. This increased out-

ward projection of the pintle member 20 permits any outward movement of the inner edge of the door that may be required by the arrangement of the hinges, and also makes the action of the spring hereinafter described more effective than would be the case if both pintles had an equal projection.

30 represents a yoke or loop, the end portions of which are perforated to engage the pin 18 which connects the meeting ends of the links 15 and 16, the yoke being adapted to swing freely upon said pin. The neck or swinging portion of the yoke is provided with a hook 31, adapted to engage one end of the spring 32. The other end of the spring is adjustably connected with the door by means of a hook 33, the shank of which is pivoted to an ear 34 formed on a plate 35 secured to the door. The plate is provided with a plurality of ears 34, to either of which the hook 33 is adapted to be pivoted, provision being thus made for an adjustable connection between the spring and the door. The yoke 30 pivoted to the meeting ends of the toggle links and adapted to swing freely, constitutes a strong, durable and self-adjusting connection between the spring and the toggle joint, the yoke being adapted to swing in conformity to any changes of inclination of the spring caused by movements of the door.

I claim:

1. A door controller comprising a toggle joint, means for connecting the outer end of one of the toggle links with a door casing and the outer end of the other link with a door, said connecting means having provisions for permitting both a vertical and a horizontal oscillation of one toggle link upon the casing and of the other link upon the door, a yoke pivoted to the meeting ends of the toggle links, and a spring adapted for engagement with the yoke and with the door.

2. A door controller comprising a pair of toggle links, two hinges composed of vertical socket members connected by horizontal pivots with the outer ends of said links, and vertical pintle members having supporting brackets adapted for attachment to a door and its casing, the pintle supporting arm or shank of one of said brackets being longer than the arm or shank of the other bracket, whereby the axis of one of the hinges is projected outwardly farther than the axis of the other hinge, and a spring adapted for engagement with the meeting ends of the said toggle links.

3. A door controller comprising a toggle joint, means for connecting the outer end of one of the toggle links with a door casing and the outer end of the other link with a door, said connecting means having provisions for permitting both a vertical and a horizontal oscillation of one toggle link upon the casing and of the other link upon the door, a spring engaged at one end with the toggle joint, a holder adapted for attachment to a door and provided with a plurality of ears, and a spring engaging hook having a shank adapted to be pivotally connected with either of said ears.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLIAM G. BELL.

Witnesses:
C. F. BROWN,
E. BATCHELDER.