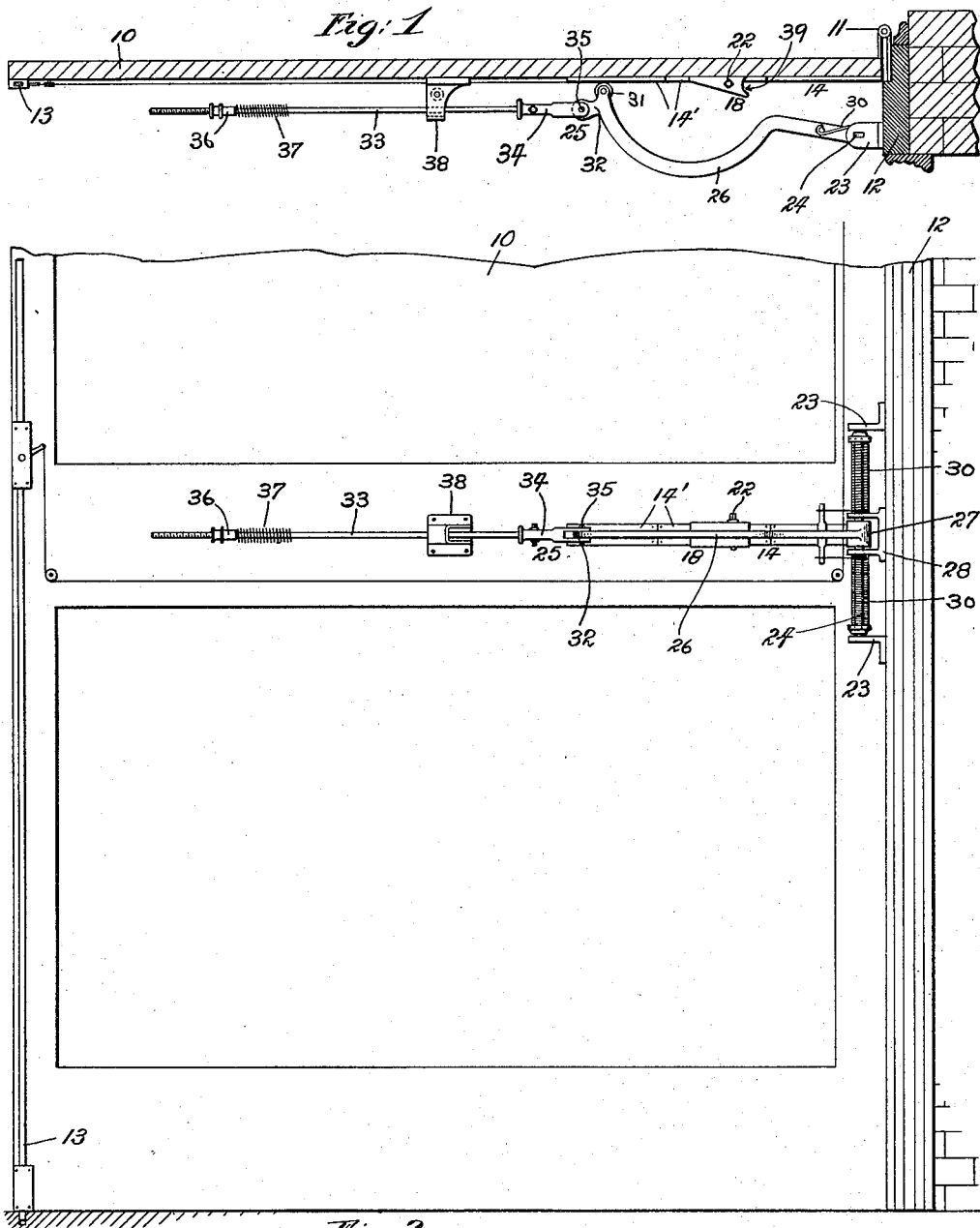


1,204,651.

G. B. CLAY.
DOOR OPENER AND CHECK.
APPLICATION FILED APR. 7, 1916.

Patented Nov. 14, 1916.
2 SHEETS—SHEET 1.



WITNESSES:

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W. B. Sawyer

INVENTOR.

George B. Clay

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ATTORNEY.

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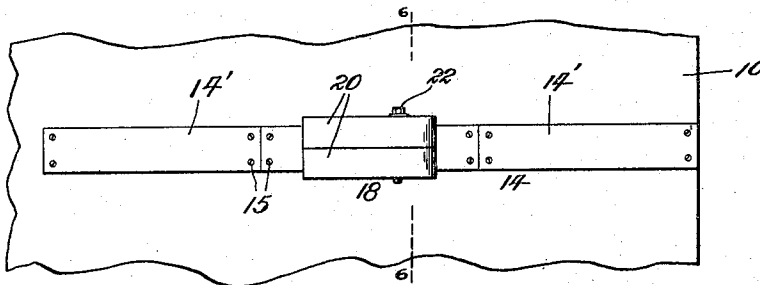


Fig. 4

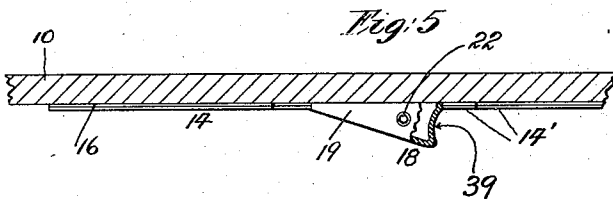


Fig. 5

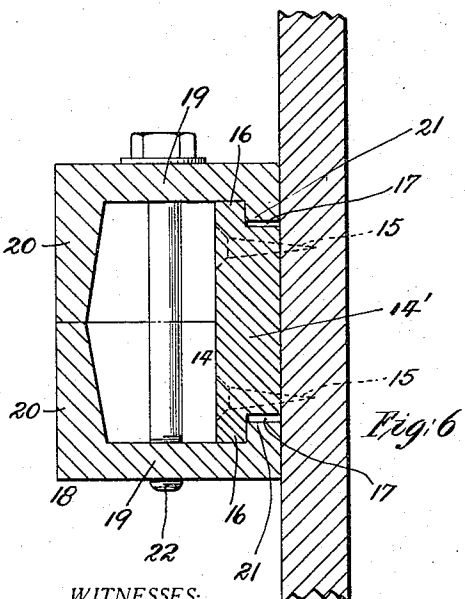


Fig. 6

WITNESSES:

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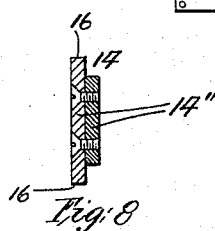


Fig. 8

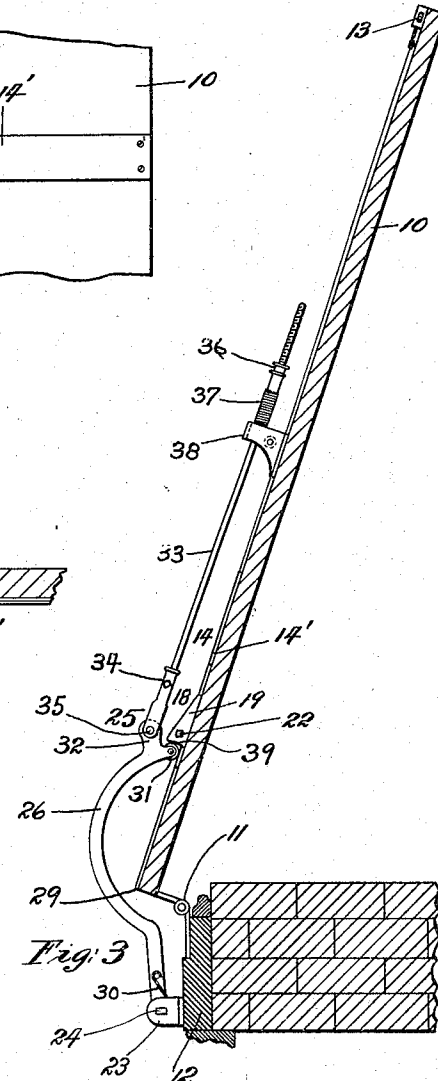


Fig. 3

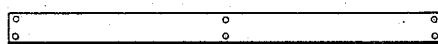


Fig. 7

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UNITED STATES PATENT OFFICE.

GEORGE B. CLAY, OF JENKINTOWN, PENNSYLVANIA.

DOOR OPENER AND CHECK.

1,204,651.

Specification of Letters Patent.

Patented Nov. 14, 1916.

Application filed April 7, 1916. Serial No. 89,716.

To all whom it may concern:

Be it known that I, GEORGE B. CLAY, a citizen of the United States, residing at Jenkintown, county of Montgomery, and State of Pennsylvania, have invented a certain new and useful Improved Door Opener and Check, of which the following is a specification.

This invention relates to a combined door-opener and check and has more particular relation to an improvement upon the device for which Letters Patent were granted to me under date of July 18, 1911, the same being numbered 998,324.

The principal object of the present invention may be said to reside in the providing of a device of the character stated in which is combined efficiency, cheapness of manufacture and maintenance, simplicity of and accessibility to working parts, lightness of structure consistent with maximum strength and the provision for adjustability of parts.

Other and further objects of the present invention reside in the providing of general details of construction and in the arrangement and combination of parts as will hereinafter more fully appear.

With these and other objects in view the invention consists of the improvements hereinafter described and finally claimed.

The nature, characteristic features and scope of the invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof and in which:

Figure 1 is a sectional plan view illustrating the application of the device of the invention between a door and a door-jamb. Fig. 2 is a view in elevation of Fig. 1. Fig. 3 is a sectional plan view illustrating the locked position of the device when a door has been opened. Fig. 4 is a face view of the adjustable stop shown in the foregoing figures. Fig. 5 is a plan view thereof. Fig. 6 is a view in section taken upon the line 6-6 of Fig. 4, but drawn to an enlarged scale, and Figs. 7 and 8 are views of modified details hereinafter referred to.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously

arranged and organized and that my invention is not limited to the precise arrangements and organization of the instrumentalities as herein shown and described.

In the drawings 10 designates a door hinged as at 11 to a door-jamb 12 and in practice adapted to be maintained in closed position by a suitable door-bolt 13 usually releasable by an overhead cord and hand pull arrangement as is well understood in the art. Fixed to the inner face of the door 10 is an elongated horizontally disposed metallic guide-way or track 14 preferably made up of a series of sections 14' secured to place by screws 15. Such sections 14' are flanged top and bottom as at 16 see Fig. 6 so that when a section is properly positioned upon a door, grooves or channels 17 are present between the inner face of the door and the inner faces of the flanges 16, the purpose of which will presently appear. The object of making the guide-way 14 in sections is so that adjustments to accommodate various sizes of hinges may be readily had from a standard type of guide-way. I have in mind the making of the trackway 14 in a single section as shown in Fig. 7 and also have in mind making the track-way 14 in two superimposed strips 14'' considered in cross-section as shown in Fig. 8 instead of an integral flanged piece. Fitted to the guide-way or track 14 so as to be adjustable therealong is a stop 18 preferably embracing a two-part wedge-shaped member made up of integral angular sections 19 and 20 of which each section 19 is horizontally disposed and terminates in a flange 21, said flanges being adapted to track within the aforesaid grooves or channels 17 and of which each section 20 is vertically disposed and the two substantially abut centrally of the stop.

The two parts of the stop are clamped together upon the guide-way or track 14 when adjusted to proper position, by means of a bolt 22, so as to normally maintain a fixed position as will be readily apparent by an inspection of Fig. 6, the guide-way 14 clamping the flanges 21 to the door 10 and the bolt 22 clamping the angular section to the guide-way. Fixed to the door-jamb 12, as by brackets 23 is a pivot 24 mounted upon which so as to be operated for partial swinging therearound is one section of a horizontally disposed jointed arm 25 the other section of which is yieldingly mounted upon the door, at least one of said sections being

provided with means operative for engaging the aforesaid stop 18 upon opening of the door 10 to arrest return movement thereof. In practice, the section 26 of arm 25 which moves around the fixed pivot 24 is formed of a tubular socket 27 supported by a bracket 28 upon said pivot and extended from which is a straight portion terminating in a generally curved portion to provide a substantially sickle-like configuration, see Figs. 1 and 3. This is so that as the door is opened the edge 29 thereof will not engage the swinging section 26. Operatively connected between the swinging section 26 and the pivot 24 are coiled springs 30 normally under tension for causing said section to swing in an arc of a circle upon release of the door. The free end of said section 26 is provided with a roller 31 for tracking upon the guide-way 14 including the stop 18. Adjacent the free end of said section there is also located a lug 32 connecting with which is the section 33 of jointed arm 25. This section embraces an elongated bar of circular cross-section fitted into and bolted to a socket 34 which socket is forked and has pivotal relation as at 35 with said lug 32. The free end of the bar is screw-threaded to receive a nut 36 and a spring 37 is positioned on said bar immediately adjacent to said nut to form a cushion between a slotted guide piece 38 fixed to the door 10 and said nut when the door reaches its predetermined extent of outward movement. Obviously by adjusting the nut 36, this movement may be lengthened or shortened as desired. It is to be noted at this point that as the roller upon the free end of the section 26 of arm 25 always tracks upon its guide-way 14 and is thus supported and as the section 33 has pivotal relation with the lug 32 upon said section, the former section may always maintain a position substantially in parallelism with the door 10 considered in plan without danger of said bar becoming bent or distorted. Obviously the nut 36 and stop 18 are adjusted so as to obtain a predetermined cooperation of parts.

Assuming the door 10 to be closed as shown in Figs. 1 and 2, the jointed arm 25 is substantially in parallelism with said door considered in plan with the roller 31 resting upon the outer end of the guide-way 14, spring 37 free from compression and springs 30 under tension. With the release of bolt 13, the door swings upon its hinges thus breaking the arm 25 at its joint and causes roller 31 to track upon its guide-way, ride over stop 18 and again drop to the guide-way in the rear of said stop. The section 33 of arm 25 has meanwhile been drawn backward, thus causing compression of spring 37 against guide-piece 38 to limit the forward swing of the door. The roller 31 is now in abutting position with the rear

of stop 18 and it is to be noted in this respect that the rear of the stop is curved as at 39 so that said roller may be readily accommodated and the section 26 positively locked. In this position, the door 10 is arrested against return movement. This position is clearly illustrated in Fig. 3, in which position it will be observed that the generally curved section of arm 25 is free of the door edge 29 as before described. The curved portion also forms a convenient medium for closing the door 10 as the same forms a grip to readily accommodate the hands of the operator. To close the door, the operator grasps the curved portion of said section and by pulling the same toward him, frees the roller 31 from the rear of said stop 18 whereupon the roller once more tracks upon the guide-way 14 and the door 10 may be readily closed.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

What I claim is:

1. A device of the character stated embracing in combination a door, a stop fixed thereto, a pivot, and a jointed arm, one section of which is operatively mounted to swing around said pivot and the other section of which is slidably mounted upon said door, one of said sections being provided with means for freely riding over said stop to cooperatively engage therewith upon opening of the door a predetermined distance to arrest return movement thereof.

2. A device of the character stated embracing in combination a door, a stop adjustably fixed thereto, a pivot, and a jointed arm, one section of which is operatively mounted to swing around said pivot and the other section of which is slidably mounted upon said door, one of said sections being provided with means for freely riding over said stop to cooperatively engage therewith upon opening of the door a predetermined distance to arrest return movement thereof.

3. A device of the character stated embracing in combination a door, a stop fixed thereto, a pivot, and a jointed arm, one section of which is operatively mounted to swing around said pivot and the other section of which is slidably mounted upon said door, a portion of the first mentioned

section being curved and extended laterally an appreciable distance beyond its juncture point with the last mentioned section for co-operatively engaging with said stop upon opening of said door to arrest return movement thereof.

4. A device of the character stated embracing in combination a door, a stop adjustably fixed thereto, a pivot, and a jointed arm, one section of which is operatively mounted to swing around said pivot and the other section of which is slidingly mounted upon said door, a portion of the first mentioned section being curved and extended laterally an appreciable distance beyond its juncture point with the last mentioned section for coöperatively engaging with said stop upon opening of said door to arrest return movement thereof.

5. A device of the character stated embracing in combination a door, a guide-way fixed thereto, a stop adjustably mounted with respect to the guide-way, a pivot and a jointed arm, one section of which is operatively mounted to swing around said pivot and the other section of which is slidingly mounted upon said door one of said sections being provided with a roller for tracking upon said guide-way and for coöperatively engaging with said stop upon opening of the door to arrest return movement thereof.

6. A device of the character stated embracing in combination a door, a guide-way fixed thereto, a stop adjustably mounted with respect to the guide-way, a pivot, a jointed arm, one section of which is operatively mounted to swing around said pivot and the other section of which is slidingly mounted upon said door, a portion of the first mentioned section being curved and extended laterally an appreciable distance beyond its juncture point with the last mentioned section and a roller mounted upon said extension for tracking upon said guide-way and for coöperatively engaging with said stop upon opening of said door to arrest return movement thereof.

7. A device of the character stated embracing in combination a door, an elongated flat guide-way fixed thereto, a two-part wedge-shaped stop adjustably mounted with respect to the guide-way, a pivot, a jointed arm, one section of which is curved and is operative to swing around said pivot and the other section of which is slidingly

mounted upon the door, a lug carried by the curved section with which the slidingly mounted section has pivotal relation and a roller carried by the free end of the curved section for tracking upon said guide-way and for coöperatively engaging with said stop upon opening of the door to arrest return movement thereof.

8. A device of the character stated embracing in combination a door, means fixed thereto to form a grooved guide-way, a two-part wedge shaped stop adjustable through the grooves of said guide-way, means for clamping said stop thereto, a pivot, and a jointed arm, one section of which is operative to swing around said pivot and the other section of which is slidingly mounted upon the door, one of said sections being provided with means for coöperatively engaging with said stop upon opening of the door to arrest return movement thereof.

9. A device of the character stated embracing in combination a door, a stop fixed thereto, a pivot, and a jointed arm, one section of which is operatively mounted to swing around said pivot and the other section of which is slidingly mounted upon the door, a portion of one of said sections being extended laterally an appreciable distance beyond its juncture point with the other section for coöperatively engaging with said stop upon opening of the door to arrest return movement thereof.

10. A device of the character stated embracing in combination a door, a substantially wedge-shaped stop fixed thereto, a pivot, a jointed arm one section of which is mounted to swing around said pivot and the other section of which is slidingly mounted upon the door, one of said sections being provided with means for freely riding over said stop to coöperatively engage with the rear thereof upon opening of the door a predetermined distance and means for maintaining said section in such interlocked position to arrest return movement of the door.

In witness whereof, I have hereunto signed my name in the presence of two witnesses.

GEORGE B. CLAY.

Witnesses:

WILLIAM J. JACKSON,
HELEN M. BYRNE.