

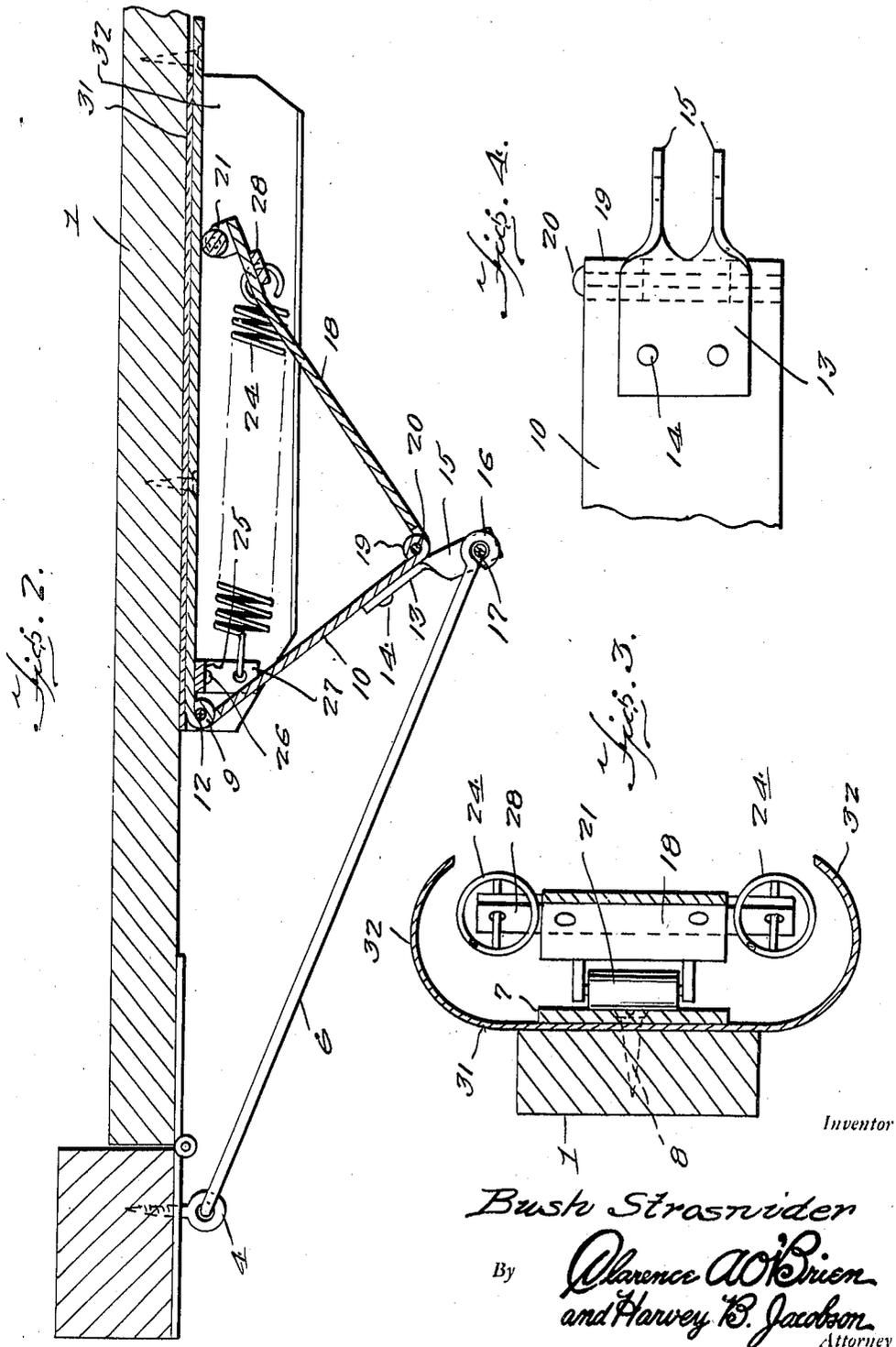


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DOOR OR GATE CLOSER  
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2 Sheets-Sheet 2



# UNITED STATES PATENT OFFICE

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## DOOR OR GATE CLOSER

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### 1 Claim. (Cl. 16—80)

My invention relates to improvements in door or gate closers, the principal object in view being to provide a quick-acting device for closing doors or gates and yieldingly maintaining the same tightly shut, and which operates on the lever principle, involves few parts, will not easily get out of order, and is easy to install and inexpensive to manufacture and service.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvements, will be readily understood when the succeeding description and claim are read with reference to the drawings accompanying and forming part of this specification.

In said drawings:

Figure 1 is a view in front elevation illustrating my invention in its preferred embodiment applied,

Figure 2 is a view in horizontal section taken on the line 2—2 of Figure 1,

Figure 3 is a view in transverse section taken on the line 3—3 of Figure 1, and

Figure 4 is a fragmentary view in elevation of the rod-operating lever.

Referring now to the drawings by numerals, wherein my improved closer has been shown as applied to a wall 1 and a door 2 hinged to the wall by leaf hinges, as at 3; according to my invention, an eye screw 4 is extended through one leaf of the hinge 3 into the door 2 and to which one hook end 5 of a door-operating rod 6 is pivotally connected for swinging about a vertical axis. Means are provided for imparting end thrust to the rod as follows:

An elongated track bar 7 is secured, as by screws, 8 to the wall 1 to extend lengthwise in horizontal alignment with the hinge 3 on the side of the axis of said hinge opposite to that on which the eye screw 4 is disposed when the door is closed. The end of the track bar 7 nearest the door 2, and constituting the front end thereof, is provided with a vertical central hinge barrel 9. A rod-operating, bar-like lever 10 is pivoted at what constitutes its inner end to the barrel 9 by means of a pair of hinge barrels 11 on said end thereof straddling the barrel 9, with the usual pin 12 extending through said barrels, whereby said rod-operating lever is swingable about a vertical axis toward and from the door 2. The outer end of said lever 10 is provided with a bracket 13 riveted thereto, as at 14, and including a pair of vertically spaced ears 15. The other end of said rod 6 is provided with an eye 16 interposed between said ears 15 and accom-

modating a vertical pivot pin 17 extending through said ears. A lever-operating, flat, pusher bar 18 is hinged at one end thereof by hinge barrels, as at 19 and a vertical pivot pin 20 to extend horizontally from said lever 10 on the side thereof opposite the rod 6. The other end of said pusher bar 18 has mounted thereon a vertically disposed roller 21 interposed between a pair of vertically spaced ears 22 on said bar, said roller being journaled on a pin 23 fixed in said ears so that the roller may run on the track bar 7 lengthwise thereof. A pair of bar-tensioning coil springs 24 extending horizontally along the upper and lower edges of the track bar 7 are operatively connected to the pusher bar 18 as follows: Adjacent the front end of the track bar 7 is a transversely extending bracket bar 25 riveted to said bar 7, as at 26, and provided with a pair of outstanding apertured end ears 27 in which corresponding ends of the springs 24 are hooked. Adjacent the roller 21, or in other words, the inner end of the pusher bar 18, said bar is provided with a cross bar 28 riveted thereto, as at 29, and having end apertures 30 in which the other ends of the springs 24 are hooked.

Interposed between the track bar 7 and the wall 8 is an elongated guard plate 31 clamped to said wall by said bar and the screws 8 and which is provided with upper and lower outstanding curved edges 32 arching over the springs 24.

As best shown in Figure 2, the springs 24 urge the pusher bar 18 toward the rod-operating lever 10 and the roller 21 against the track bar 7 so that said rod-operating lever 10 is yieldingly swung forwardly of the track bar 7 to exert end thrust against the rod 6 in a direction causing the same to close the door 2. During such movement of the pusher bar 18, said bar hinges on the rod-operating lever 10 and said lever 10 on the track bar 7, and the roller 21 rides along said track bar. The front end of the track bar 7 is spaced closer to the eye screw 4 than the length of the rod 6 so that when the door 2 is closed, the rod-operating lever 10 inclines from the rod 6 at an acute angle, whereby when the door is opened, said lever 10 is easily swung rearwardly in opposition to the springs 24. As will be understood, as the door 2 is opened, the rod-operating lever 10 and pusher bar 18 swing relatively toward the track bar 7 into flattened out position decreasing the effect of the springs 24 as the leverage increases against the door 2 because of the swinging of the eye screw 4 around the axis of the hinge 3 to increase

the leverage exerted against the door through said eye screw.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claim.

What I claim is:

A closing device for hinged doors comprising a door-closing rod, means for connecting one end of the rod to the door on one side of the axis of hinging movement thereof, and means to yield-  
15 ingly impart end thrust to said rod in the direc-

tion of said door comprising an elongated track bar adapted to be secured to a wall to extend lengthwise horizontally along the same on the other side of said axis, a rod-operating lever  
5 hinged at one end to one end of said bar for swinging movement horizontally toward and from the door, operating connections between said lever and the other end of said rod, and devices tending to urge said lever toward said door  
10 including a spring tensioned pusher bar riding on said track bar, and pivotally connected at one end to the outer end of said lever with the other end thereof having a roller therein engaging  
15 said track bar.

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