

S. P. CROSWELL.

DOOR STOP.

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934,392.

Patented Sept. 14, 1909.

Fig. 1

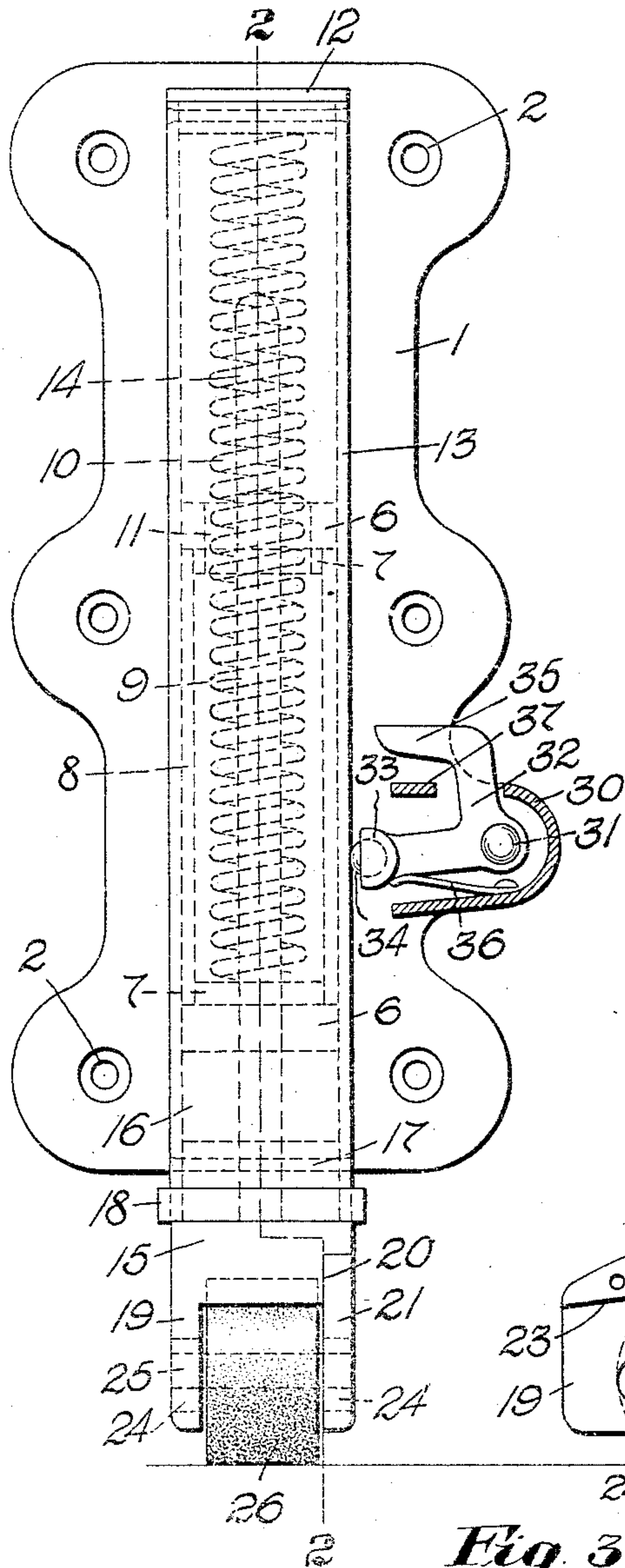


Fig. 2

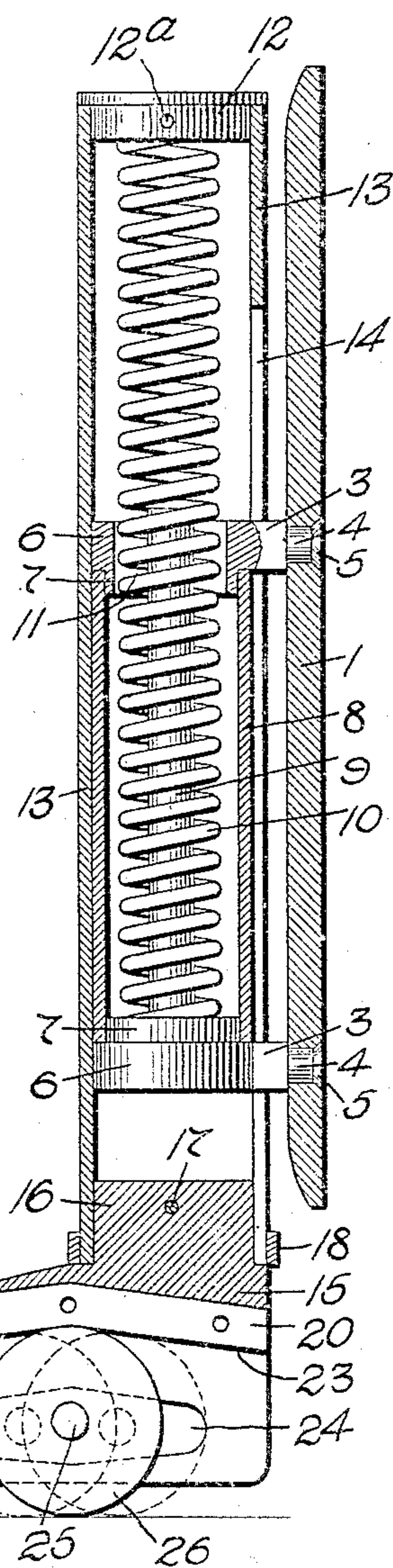
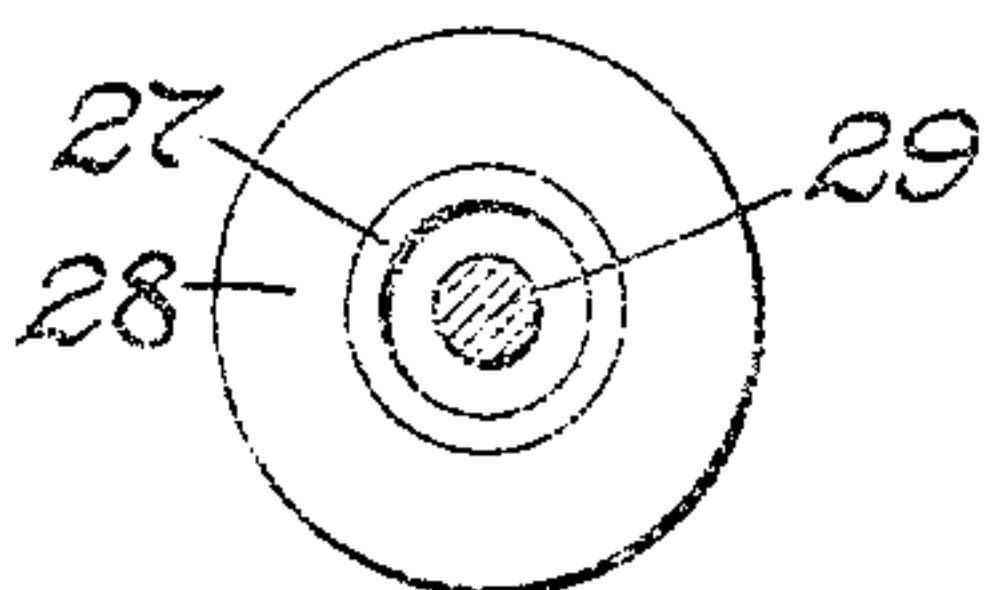


Fig. 3



Witnesses:

Horace A. Crossman
Robert H. Hamner.

Inventor:

Samuel P. Croswell.
by Emory Smith
Attys.

UNITED STATES PATENT OFFICE.

SAMUEL P. CROSWELL, OF MEDFORD, MASSACHUSETTS.

DOOR-STOP.

934,392.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed January 18, 1909. Serial No. 472,801.

To all whom it may concern:

Be it known that I, SAMUEL P. CROSWELL, a citizen of the United States, and a resident of Medford, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Door-Stops, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

My invention relates to door stops and aims to provide a stop wherein the holding or gripping effect is increased with any increase in the force tending to move the door, being in this respect distinguished from that type of stop wherein the holding effect is constant and usually produced by a spring.

In the drawings illustrating one form of my invention selected for disclosure herein,— Figure 1 is a face view of the stop, partly broken away; Fig. 2 is a vertical section on the line 2—2 of Fig. 1; and Fig. 3 is a view of a modified form of the roller wedge member.

Referring to Fig. 1, the stop comprises a back plate 1 of any preferred form or outline, provided with any suitable means, herein the screwholes 2 for screws, to secure the same to a door. At suitable points intermediate the two ends thereof said plate is provided with a plurality of posts or studs 3, herein two in number, one end 4 of each of said studs being secured to the said plate, herein by passing said ends through said plate and heading them over, as shown at 5. The opposite ends of said posts are provided with heads 6, having ring-like seats 7, adapted to receive and hold between them a spring-receiving tubular guide 8. One of the two heads 6, herein the lower one, has secured to it an upright support 9, for a spring 10 coiled thereabout, said spring at its lower end being seated upon the lower head 6. The upper end of said spring supports the head 12 of an outer tubular member 13, herein secured thereto by a pin 12^a, adapted to slide vertically on the guide member 8, said outer member 13 being slotted at 14 to receive the posts 3. The spring 10 normally acts to keep the outer member 13 in its elevated position.

Secured to the lower end of the outer member 13 is a foot member 15, shown herein as provided with a neck 16 fitting tightly in the end of said member 13, and secured therein by any suitable means, as the pin 17.

The outer member 13 may also be provided with a reinforcing band 18 at its lower end, if desired. The foot 15, see Fig. 1, has at one side thereof, a depending flange 19, and is recessed at its opposite side as at 20, to receive a corresponding plate 21 secured therein by screws. The under face 23 of said foot 15 between said flange 19 and plate 21 is inclined more or less, herein from each end thereof upward toward the center, and said flange 19 and plate 21 are each provided with a slot 24, the upper wall of each slot being shown herein as substantially parallel with said inclined wall 23. Said slot 24 is depressed from each end toward the center to enable the roller 26, to be referred to, the more easily to return to its central position (see full lines Fig. 2) when released from contact with the floor or floor covering. Loosely journaled in these slots are the journals 25 of a roller or wedge member 26 of rubber or any suitable material. The roller 26 herein is shown as solid, but this form is not essential since it may, if preferred, be of a modified form, for example as shown in Fig. 3, wherein it comprises a central ring 27 provided with an outer tire 28 of any suitable material, as rubber. In the latter case the roller is loosely mounted upon its journal shaft 29.

At any suitable point between its ends the plate 1 is provided with a housing 30 (see Fig. 1) in which is mounted as upon a pivot 31 a bellcrank lever 32, one arm of which is preferably provided with a recess 33 to receive a locking roller or ball 34, which rests against the side of said outer tube 13, the opposite arm of said bellcrank lever being shown as bent laterally at 35 for convenient actuation. Said bellcrank or locking lever is so mounted and acted upon from beneath by a spring 36 that when in the position shown in Fig. 1 said tube 13 is securely wedged and locked against upward movement. When, however, said locking lever is depressed by the foot, or otherwise, against or toward the stop 37, the said outer member 13 with its foot and roller wedge 26 are free to be moved vertically as desired.

In use, the back plate is secured to one side of the door near the bottom thereof. When the door has been opened as far as desired the outer tube or member 13 is depressed by the foot or hand against the action of the spring 10, the locking device 32 permitting such depression until the wedge roller 36 touches

the floor. Pressure upon said member 13 is then released and said member will remain securely locked against upward movement by the locking device 32 as described. The mere contact of the roller 26 with the floor or floor covering may suffice to retain the door in position, but should any attempt be made to move the door, or should the door tend to move, the roller wedge 26 will be moved slightly in one direction or the other and will be wedged between the floor and one of the inclined walls 23 (see dotted line position, Fig. 2), securely holding the door against further movement, and the greater the effort tending to move the door the more securely will the wedge 26 hold it against such movement. If now the locking lever 32 be depressed to release the member 13 the latter will be at once forced upward by the spring 10, preferably raising the roller wedge from contact with the floor and permitting said roller to gravitate down the inclined lower walls of the slots 24 to return to its normal mid-position, preparatory to a second or repeated operation as before.

The device described is simple, comparatively inexpensive, requires no nice fitting or adjusting of parts, and, when in use, affords a certainty of operation not possessed by any device for the purpose heretofore produced so far as I am aware. It will be noted further that the wedging action is not necessarily dependent upon actual rotation of the roller 26, thus rendering the action more certain than would be the case if said rotation were actually required.

Having thus described one embodiment of my invention, what I claim is:

1. A door stop comprising a support carrying a wedging surface and a wedging roll arranged to cooperate with and between said surface and the floor to retain the door in desired position, means to render said surface and roll ineffective for either direction of movement of the door and means simultaneously and automatically to position said surface and roll relatively for a new retention of the door.

2. A door stop comprising a support carrying a wedging surface and a wedging roll arranged to cooperate with and between said surface and the floor to retain the door in desired position, and means to move said wedging surface into and out of operative position.

3. A door stop comprising a support carrying a wedging surface and a wedging roll arranged to cooperate with and between said surface and the floor to retain the door in desired position, and means to move said wedging surface and roll into and out of operative position.

4. A door stop comprising a support, an adjustable member secured thereto, locking means for said member, and a wedging member loosely mounted in said adjustable member and capable of a bodily traveling wedging movement relative to said adjustable member.

5. A door stop comprising a support, a vertically adjustable member thereon provided with a wedging surface, a wedging roller cooperating therewith, and means to cause said roller automatically to assume normal position upon release from wedging position.

6. A door stop comprising a support, a vertically adjustable member thereon provided with oppositely acting wedging surfaces, a wedging roller cooperating therewith, and roller centering means.

7. A door stop comprising a support, a vertically adjustable member thereon provided with a wedging surface, a cooperating wedging roller, a spring to move said adjustable member in one direction, and a friction lock to retain it against such movement.

8. A door stop comprising a support, an adjustable member thereon provided with a foot having a roller wedging support loosely journaled therein, and means to lock said adjustable member in adjusted position whereby movement of the door will cause said wedging support to lock the door against further movement.

9. A door stop comprising a support, an adjustable member thereon provided with a foot having an inclined wall thereon, a revoluble wedging member journaled in said foot and adapted to travel with respect thereto, means to lock said wedging member in operative position, and means to release the same.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

SAMUEL P. CROSWELL.

Witnesses:

EVERETT S. EMERY,
ROBERT H. KAMMLER.