

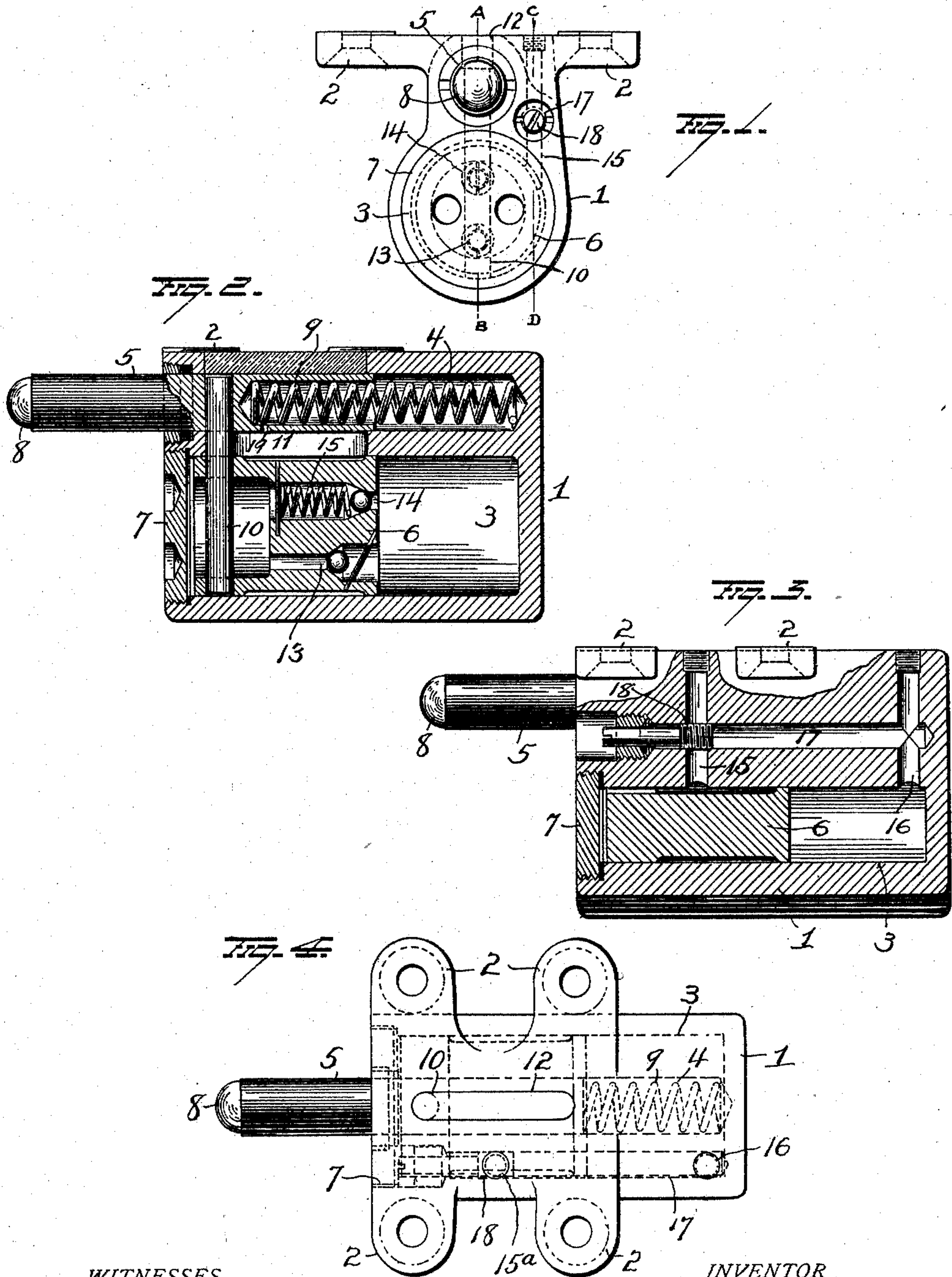
J. C. REGAN.

BUFFER.

APPLICATION FILED JUNE 4, 1910.

967,674.

Patented Aug. 16, 1910.



WITNESSES

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967,674.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Application filed June 4, 1910. Serial No. 565,131.

To all whom it may concern:

Be it known that I, JOSEPH C. REGAN, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Buffers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in buffers designed more particularly for doors, but applicable for use in any position where it is desired to lessen the shock or gradually diminish motion, and it consists in the parts and combinations of parts as will be more fully explained and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in end elevation of my improved device. Fig. 2 is a view in section on the line A—B of Fig. 1. Fig. 3 is a view in section on the line C—D of Fig. 1 and Fig. 4 is a view in elevation.

1 represents a casing, which in the present instance, is provided with brackets 2 for its attachment to a suitable support by screws, but which may be constructed to be concealed in the door jamb with the plunger projecting for engagement with the door. This casing is provided with a piston chamber 3 and a plunger or buffer chamber 4, the latter being separate and distinct from the piston chamber, but communicating therewith to permit the plunger or buffer 5 to be coupled up with the piston 6. Both chambers 3 and 4 are closed at their rear ends, and the forward end of the piston chamber is closed by the screw cap 7.

The buffer or plunger 5 normally projects beyond the casing as shown in Fig. 2 and is provided at its front end with a leather or other yielding tip 8 adapted to make contact with the door, and is hollowed out or chambered at its rear end for the reception of the spring 9, one end of which bears against the closed end of the buffer chamber 4, and the other end rests within the chambered end of the plunger, thus obviating the employment of a spring receptacle projecting beyond the closed end of the casing 1.

The piston 6 is coupled to the buffer or plunger 5 by the pin 10, so that the two parts necessarily move in unison, the pin

moving in the slot 11 connecting the two chambers. The pin 10 may be rigidly secured to either or both of said parts 5 or 6, but I prefer to have it rigid with the plunger 5, and loosely fitting in a hole in the piston 6, so as to permit of the necessary oscillation for the purpose of proper alignment of the parts. This pin is introduced through a slot 12 in the casing which slot is closed by a suitable packing or plate or both so as to prevent the escape of any liquid. The piston 6 is provided with two ports closed by valves 13 and 14, one of which 13, opens by gravity when the plunger 5 and its connected piston 6 are being forced outwardly by the spring 9, while the other valve 14 which is an auxiliary release or pressure valve is held in place by a spring 15, and operates when there is undue pressure against the front face of the piston 6, as would be the case when a door is slammed or closed quickly, to compress its spring and permit part of the liquid in front of the piston to pass through the piston to the rear of the latter, and thus permit the piston to move more rapidly toward the closed end of the chamber.

The casing 1 is provided with ports 15 and 16, the port 16 communicating with the cylinder or chamber 3 near the closed end of the latter, and the port 15 communicating with said cylinder in rear of the head of the piston. The two ports 15 and 16 are connected by the passage 17 carrying the valve 18, the stem of which is exposed at the end of the casing through which the plunger projects. By adjusting this valve 18 the flow of liquid through the ports and passage can be regulated. There is also a vent 19 connecting the chambers 3 and 4 so that any liquid forced into the spring or plunger chamber, may gravitate back into the piston chamber. The side of the piston adjacent the port 15 is cut away or grooved so as to permit the liquid forced through the passage 17 by the forward movement of the piston, to readily pass to the rear of the latter.

With the chamber 3 filled with a liquid, it will be seen that pressure against the plunger operates to move the piston against the liquid, and as the escape of the liquid from in front of the piston is limited and controlled by the by-pass the closing movement of the door will be checked by the

buffer. If however the door be slammed or forced toward its closed position the extraordinary pressure will cause the auxiliary valve 14 to open and thus permit a larger volume of liquid to escape and thereby lessen the shock which would necessarily result if the escape of the liquid were limited to the by-pass. Instead of using a leather or rubber tip 8 on the exposed end of plunger 5, I may prefer to use a roller.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but,

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. A buffer comprising a casing having a buffer chamber and a liquid chamber parallel to the buffer chamber, a piston in the liquid chamber, a plunger or buffer in the buffer chamber and a spring in said buffer chamber in advance of the buffer, and means connecting the piston and buffer whereby they are caused to move in unison.

2. A buffer comprising a casing having a buffer chamber, a liquid chamber parallel with the buffer chamber, a buffer and spring in the buffer chamber, a piston in the liquid chamber, and connecting means rigidly secured to the buffer and connected with the piston, whereby the said buffer and piston are caused to move in unison.

3. A buffer comprising a casing having two chambers, a buffer and spring in one of said chambers, the inner end of the buffer being chambered for the reception of the

spring, a piston in the other chamber, and suitable means connecting the buffer and piston whereby they are caused to move in unison.

4. A buffer comprising a casing having two chambers, a buffer and spring in one chamber, a piston in the other chamber, and a suitable connection rigidly secured to the buffer and loosely connected with the piston.

5. A buffer comprising a casing having two parallel chambers, a buffer and spring in one chamber, a piston in the other chamber, said buffer being chambered at one end means connecting the buffer and piston whereby they are caused to move in unison and a vent leading from the buffer chamber to prevent the liquid from being entrapped in said chamber.

6. A buffer comprising a casing having two parallel chambers, a buffer and spring in one chamber, a piston in the other chamber, a by-pass around the piston chamber for the passage of liquid, a valve therein, and a suitable means for connecting the buffer and piston.

7. A buffer comprising a casing having two parallel chambers, a buffer and spring in one chamber, a piston in the other chamber, the said piston having a valve adapted to open when the piston is moving rearwardly and an auxiliary spring-pressed valve adapted to open when the piston is exposed to undue forward pressure, and means connecting the buffer and piston.

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

JOSEPH C. REGAN.

Witnesses:

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W. H. BERTINE.