H. G. VOIGHT.

COMBINED DOOR CLOSER AND CHECK.

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1,140,637.

Patented May 25, 1915.

Fig. 1.

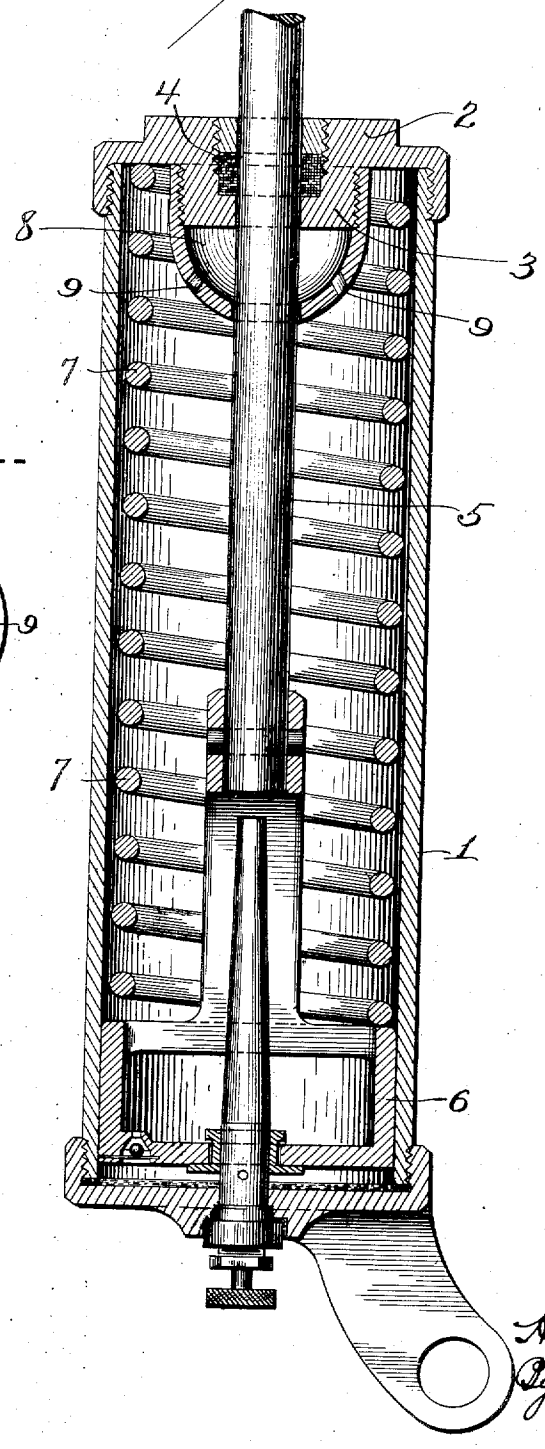
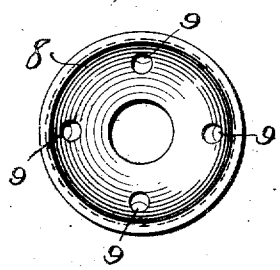


Fig. 2.



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COMBINED DOOR CLOSER AND CHECK.

1,140,637. Specification of Letters Patent. Patented May 25, 1915.

Application filed April 7, 1914. Serial No. 830,191.

To all whom it may concern:

Be it known that I, HENRY G. VOIGHT, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Combined Door Closers and Checks; 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 combined door closer and check.

The ordinary door closer and check comprises a cylinder, a piston in the cylinder, a spring for actuating the piston in a direction to close the door and a liquid acting against the piston for checking the closing movement of the door. When the door is closed the liquid rests in advance of the piston and as the door is opened by hand, the liquid is thrown or forced by the piston against the gland or stuffing box and more or less of it seeps, or is forced through the stuffing box and escapes, due to the pressure of the piston against the same.

The object of this invention is to provide means for protecting the stuffing box from the pressure of the liquid during the opening movement of the piston, and it consists in a deflector projecting from the head of the cylinder and in a position to deflect the liquid from the stuffing box, and prevent it from being compressed against the head of the cylinder adjacent the stuffing box.

In the accompanying drawings, Figure 1 is a view in section of a combined door closing and checking cylinder showing my improvement therein and Fig. 2 is a view of the deflector detached.

1 represents a cylinder, and 2 the head thereof provided with an inwardly projecting boss 3, concentric with the stuffing box 4. The boss is provided with a central opening for the piston rod 5 to which the piston 6 is secured, and the piston is provided with any of the well known means for permitting the liquid to flow freely to the rear thereof during the opening movement of the door, and for checking the piston during the closing movement, and is engaged by a spring 7, which when the door is released, forces the piston rearwardly and operates through the door actuating mechanism to close the door, the checking liquid operating to control or check the closing action of the spring.

When the door is thrown open, at times violently, the piston is pulled rapidly toward the head 2 and throws, and also forces and compresses the liquid against the inner side of the head around the piston rod, which causes more or less of the liquid to seep or be forced around the piston rod and through the stuffing box, and to prevent this, I employ the deflector 8, which may be of any approved shape, but which I prefer to make cylindrical with a rounded lower end as shown. I have shown it provided with internal threads which engage external threads on the boss 3, but I may secure it by friction or by set screws. The piston passes centrally through the deflector, and the latter is provided with one or more holes 9 which permit the liquid to flow into and out of the deflector, but which are not large, or numerous enough to permit of sufficient liquid to pass into the deflector during an opening movement, to create any pressure therein consequently there is no chance for leakage of the liquid through the stuffing box.

I have shown the means disclosed in Patent No. 1,085,070 granted to me January 20th, 1914, for permitting the liquid to pass from one side of the piston to the other, but I do not confine myself to such details.

It is evident that changes may be made in the shape of the deflector and the manner of securing it to the head of the cylinder hence I would have it understood that I do not confine myself to these details but consider myself at liberty to make such changes as may fairly fall within the spirit of my invention.

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

1. In a liquid door check and closer, a cylinder, a piston therein, a spring for moving the piston in a direction to close the door, and a rigid unyielding deflector secured to the head and forming a chamber around the piston rod opening through the head the said chamber having restricted communication with the interior of the cylinder and no communication with the outside of the cylinder.

2. In a liquid door check and closer, a cylinder, a piston therein, a spring for moving the piston in a direction to close the door, and a rigid unyielding deflector secured to the head of the cylinder and having an opening for the piston rod and a restricted open-

ing for the liquid, the said deflector forming a partly closed chamber around the piston rod opening through the head.

3. In a liquid door check and closer, a cylinder the head of which is provided with an inwardly projecting boss concentric with the piston rod opening in said head, a piston within said cylinder, and a cylindrical deflector having a curved end, the said deflector being secured to the boss on the cylinder head and provided with an opening for the piston rod, and with a restricted opening for the liquid, the said deflector forming a partly closed chamber around the piston rod opening through the head.

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

HENRY G. VOIGHT.

Witnesses:
ELLA J. MOORE,
MORTIMER H. CAMP.