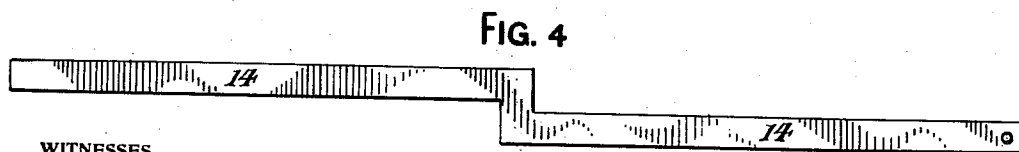
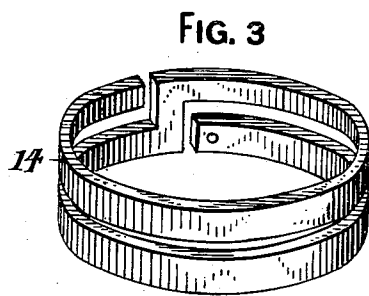
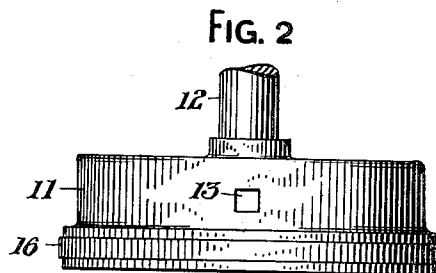
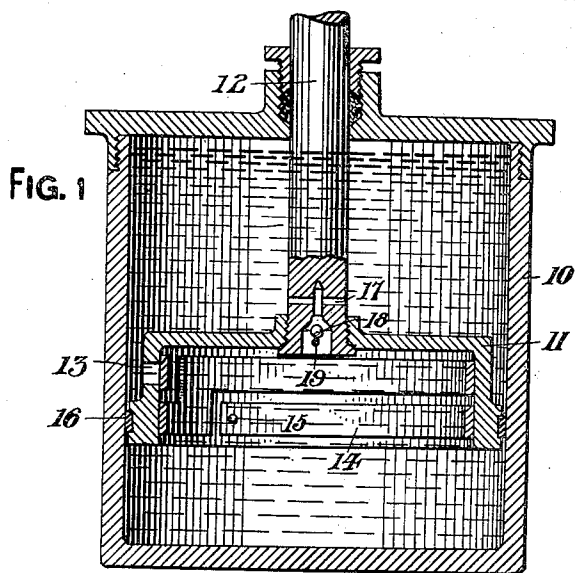


1,058,290.

F. B. COREY.
DASH POT.
APPLICATION FILED NOV. 6, 1911.

Patented Apr. 8, 1913.



WITNESSES

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FRED B. COREY, OF EDGEWOOD PARK, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE UNION SWITCH & SIGNAL COMPANY, A CORPORATION OF PENNSYLVANIA.

DASH-POT

1,058,290.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed November 6, 1911. Serial No. 658,651.

To all whom it may concern:

Be it known that I, FRED B. COREY, a citizen of the United States, residing at Edgewood Park, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Dash-Pots, of which the following is a specification.

My invention relates to dash pots of the type comprising a cylinder and a piston, the cylinder containing a fluid which retards the relative movement of the two.

I will describe one form of dash pot embodying my invention and then point out the novel features thereof in claims.

In the accompanying drawings, Figure 1 is a view showing in vertical section one form of dash pot embodying my invention. Figs. 2 and 3 are views showing more clearly two of the members comprised in the dash pot shown in Fig. 1. Fig. 4 is a view showing in its developed form the member illustrated in Fig. 3.

Similar reference characters refer to similar parts throughout the several views.

One feature of my invention is the provision of means for rendering the operation of the dash pot constant at all temperatures. I accomplish this feature by means of a port through the piston of the dash pot, and a member responsive to variations of temperature and adapted to cover a greater or a lesser portion of the port according as the temperature increases or decreases.

Referring now to Fig. 1 of the drawings, 10 designates a cylinder and 11 a piston movable therein. The piston 11 is shown in elevation in Fig. 2. The cylinder contains a suitable fluid for the purpose of retarding the movement of the piston; in the practice of my invention this fluid is preferably oil, although I do not wish to limit myself to any particular fluid. 16 is a piston ring of a usual type carried by the piston for preventing the escape of the fluid past the sides of the piston. The piston 11 is provided with a port 13 through which the fluid may flow from either side of the piston to the other.

Owing to the variations of the fluidity of oil with variations of temperature, it is apparent that with the apparatus as thus far described the velocity of relative movement of the piston and cylinder (with a given force on the piston rod 12 or on the cylinder)

would vary with the temperature, the velocity being relatively high with a high temperature and relatively low with a low temperature. In order to render this velocity constant for all temperatures, I provide means for varying the area of the port 13 in accordance with the temperature so that the area will be less for a high temperature and greater for a low temperature. As here shown this means comprises a metallic ring 14 located within a suitable chamber in the piston. This ring is shown in perspective in Fig. 3. One end of the ring is rigidly secured to the piston, as for example by means of a screw 15, and the other end is free and terminates over the port 13. In the practice of my invention, the piston is preferably of cast iron, which has a relatively low co-efficient of expansion, and the ring is preferably of brass, which has a relatively high co-efficient of expansion. It will be clear that as the temperature increases, the length of the ring 14 increases more rapidly than the circumference of the piston chamber and the free end covers more of the port 13, thereby reducing the area of the port; and as the temperature decreases the length of the ring decreases more rapidly than the circumference of the piston chamber and the free end covers less of the port, thereby increasing the area of the port. The area of the port and the length of the ring can be so adjusted that for any temperature within reasonable limits the velocity of the relative movement of the piston and cylinder will be substantially constant.

As shown in the accompanying drawing the ring 14 is peculiarly shaped so that it makes two complete turns within a minimum amount of space. The developed form of this ring is shown in Fig. 4. I do not wish however to be limited to this particular shape of ring, or to this particular number of turns.

The dash pot as thus far described is double acting—that is, the retardation is equal for a relative movement of the piston and cylinder in either direction. It is sometimes desirable however that the relative movement in one direction should be comparatively free, and when this is the case the piston may be provided with a suitable check valve arranged to permit the passage of fluid in one direction but not in the other. I have shown one form of check valve in

Fig. 1, in which 17 designates a passage leading from one side of the piston to the other, and 18 is a ball adapted to coact with a suitable valve seat in this passage. The ball is prevented from falling out by means of a pin 19. The arrangement is such that when the piston is moving downwardly with respect to the cylinder the ball is seated, and the flow of fluid through the passage 17 is prevented; but when the movement is in the opposite direction the ball is unseated and fluid flows freely through the passage 17.

Although I have herein shown and described only one form of dash pot embodying my invention, it is understood that various modifications may be made therein within the scope of the appended claims without departing from the spirit and scope of my invention.

Having thus described my invention, what I claim is—

1. In a dash pot, a cylinder, a piston therein, a port through the piston, and a member responsive to variations of temperature, one portion of which is rigidly secured to the piston and another portion of which partially covers the said port.

2. In a dash pot, a cylinder, a piston therein, a port through the piston, and a metallic ring comprising a plurality of turns, one end of which is secured to the piston and the other end of which terminates over the said port.

3. In a dash pot, a cylinder, a piston therein, a port through the piston and a member responsive to variations of temperature one portion of which is secured to the piston and another portion of which partially covers the said port whereby the area of the port will be increased or decreased

according as the temperature decreases or increases.

4. In a dash pot a cylinder, a piston therein, a fluid in the cylinder, a port through the piston for the passage of the fluid, and a member one portion of which is secured to the piston and another portion of which is free and terminates over the port, the piston and the said member having different co-efficients of expansion.

5. In a dash pot, a cylinder, a piston therein, a fluid in the cylinder, a port through the piston for the passage of the fluid, and a ring one end of which is secured to the piston and the other end of which is free and terminates over the port, the piston and the ring having different co-efficients of expansion.

6. In a dash pot, a cylinder, a piston therein, a cup-shaped recess in one face of the piston, a port connecting said recess with the other face, and a ring located in said recess one end of which is secured to the piston and the other end of which is free and terminates over the port, the piston and the ring having different co-efficients of expansion.

7. In a dash pot, a cylinder, a piston therein, a port through the piston, and means responsive to variations of temperature for controlling said port, one portion of which is rigidly secured to the piston and another portion of which partially covers the said port.

In testimony whereof I affix my signature in presence of two witnesses.

FRED B. COREY.

Witnesses:

C. J. SCHREUDER,
A. L. VENCILL.