No. 619,680. Patented Feb. 14, 1899.

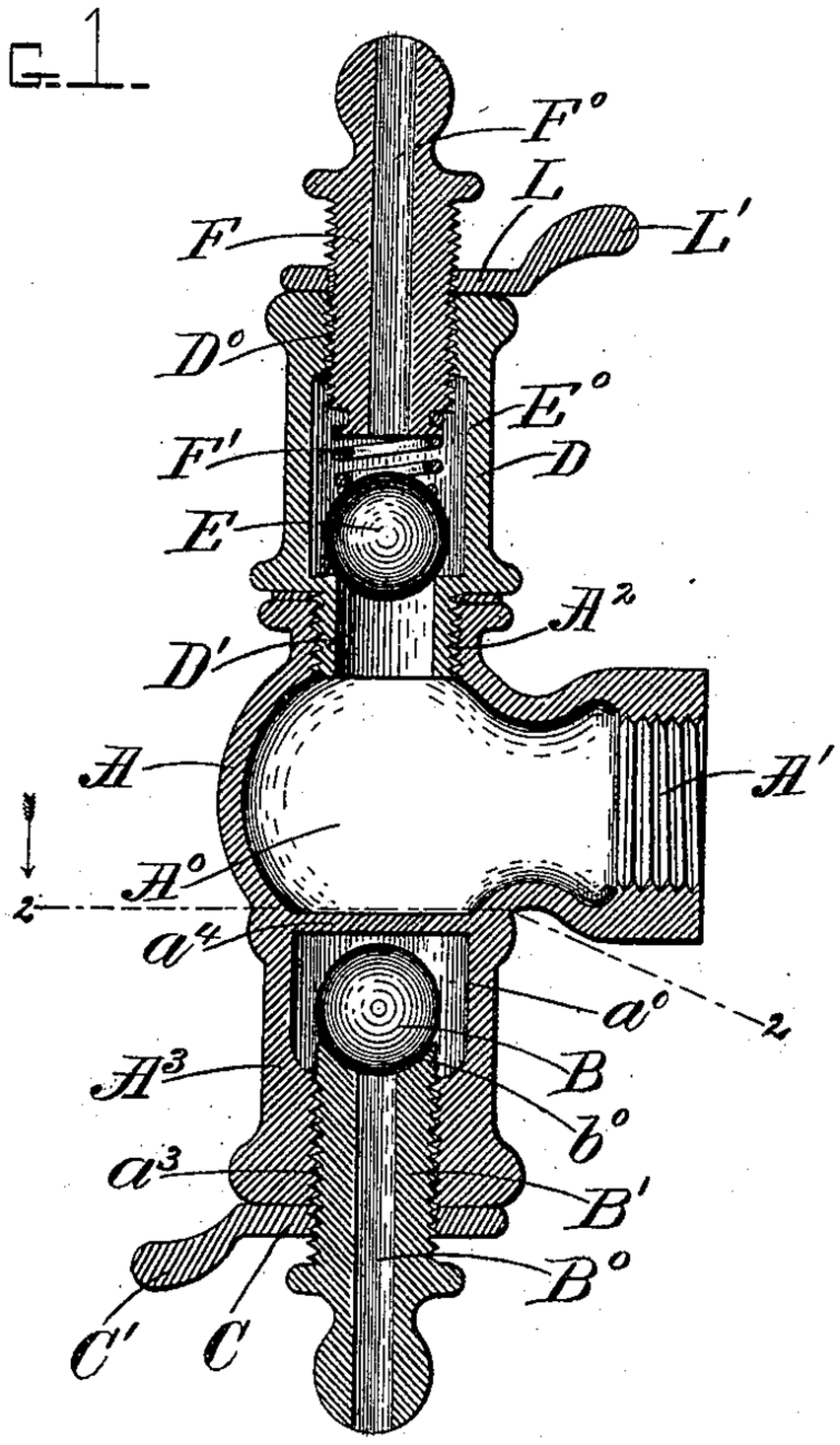
C. DORN.

DASH POT VALVE.

(Application filed July 14, 1898.)

(No Model.)

FIG. 1.



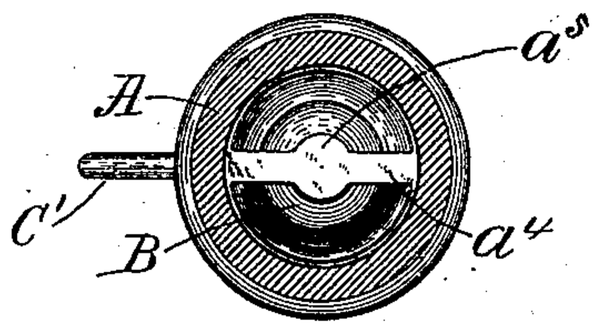


FIG. 2.

Witnesses
John N. Naldy
J. Ley Pickernell Wiley.

Inventor
C. Dorn.
by Wilkinson & Fisher
Attorneys.

UNITED STATES PATENT OFFICE.

CHRISTIAN DORN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM GEORGE T. MARCELLUS, OF SAME PLACE.

DASH-POT VALVE.

SPECIFICATION forming part of Letters Patent No. 619,680, dated February 14, 1899.

Application filed July 14, 1898. Serial No. 685,940. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN DORN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Dash-Pot Valves for Steam-Engines; 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 improvements in valves for steam-engines, and particularly to valves for regulating the action of dash-pots on steam-engines; and it consists of the novel construction hereinafter described and claimed.

Reference is had to the accompanying drawings, wherein the same parts are indicated by the same letters throughout both views.

Figure 1 represents a central vertical sectional view of my improved form of regulating-valve, and Fig. 2 is a section taken on the line 2 2 of Fig. 1 and looking in the direction of the arrow.

A represents the body of the valve, having the enlarged chamber A^0 and screw-threaded connection A′. At one side—that is to say, at the top of the chamber A^0—the valve-body A is provided with a smaller connection A^2, and at the opposite side—that is to say, at the bottom—an enlarged neck A^3, provided with screw-threaded connection a^3, extends away from the body of the valve in a direction opposite to that of the connection A^2. This enlarged neck A^3 has a hollow chamber a^0 in its base, and at its inner end has a bridge a^4, provided with a central enlargement a^5, which constitutes a stop for the valve B, hereinafter referred to. Within this chamber a^0 is located a ball-valve B, and a screw-plug B′, provided with axial opening B^0, is fitted into the screw-threaded connection a^3 and has its inner end hollowed out, as at b^0, to form a seat for the ball-valve B, the said inner end of the screw-plug extending a short distance into the chamber a^0, as shown in the drawings. A lock-nut C, having an ear or lug C′ thereon adapted to be struck by a hammer for loosening or tightening said lock-nut, is fitted upon said plug adjacent to the outer end of the connection a^3 and serves to lock the said plug against turning when in position. The plug B′ should be so adjusted as to allow a small amount of play to the ball-valve B.

A short hollow tube D, having at one end a male connection D′ and at its opposite end a female connection D^0, has the said male connection D′ engaged in the upper connection A^2 of the valve-body A and contains a ball-valve E, which normally closes the said male connection D′, the latter being slightly reduced. Within the upper female connection D^0 of the said hollow tube D is fitted a screw-plug F, having axial opening F^0, similar to the plug B′, hereinbefore described, and the said screw-plug F extends slightly into the hollow chamber E^0 of the tube D. A coil-spring F′, connected with the inner end of the plug F, bears upon the ball-valve E constantly when in position and tends to hold the said ball-valve upon its seat in the lower end of the hollow chamber E^0. A lock-nut L, having an ear or lug L′ thereon similar to the lock-nut C, hereinbefore described, is fitted upon the screw-plug F and serves to lock the same securely in position.

The operation of the valve is as follows: As the piston of the dash-pot descends the fluid in the dash-pot is forced into the chamber A^0 of the valve-body A. This fluid under pressure will raise the ball-valve E from its seat against the action of the spring F′, allowing the fluid to escape gradually through the upper connection of the valve and out through the central passage F^0 of the screw-plug F, as will be obvious. At the same time this pressure of the fluid will force the valve B closely upon its seat, thereby preventing ingress of any portion of the fluid through the lower connection of the valve. Conversely, as the piston of the dash-pot ascends a partial vacuum is created within the chamber A^0, which, communicating through the passages a^5 in the partition-walls a^4 with the chamber A^0, lifts the valve B from its seat and allows gradual ingress of air or other fluid to the cylinder of the dash-pot to relieve the partial vacuum created as above described. This alternate action of the valves E and B is repeated each time the piston of the dash-pot descends and ascends, thus alter-

nately relieving the pressure and the vacuum created by the action of the dash-pot within the chamber A^0 of the valve-body A.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a valve of the character described, the combination with the body of the valve having a hollow chamber and outlet and inlet connections, each having a hollow valve-chamber and an outer screw-threaded opening; of a screw-plug having an axial escape-passage therein engaging the screw-threaded opening in the outlet connection; a ball-valve in the chamber of said outlet connection; a coil-spring interposed between the inner end of said screw-plug and said ball-valve tending to hold the latter upon its seat; a screw-plug having an axial inlet-opening engaging the screw-threaded opening in the inlet connection, and said screw-plug having also a concave valve-seat at its inner end; a free ball-valve in the chamber of said inlet connection fitting the seat upon said screw-plug; and a stop at the inner end of the inlet-chamber for limiting the movement of the valve, substantially as described.

2. In a valve of the character described, the combination of the body A having hollow chamber A^0, integral inlet connection A^3 having valve-chamber a^0 therein and screw-threaded opening a^3, the screw-plug B′ having axial inlet-passage B^0 therethrough and concave valve-seat b^0 at its inner end, the free ball-valve B in said chamber a^0 fitting the said valve-seat and by gravity closing the inlet-opening; the internally-screw-threaded connection A^2, hollow tubular body D having a reduced male screw-threaded connection D′ engaging the connection A^2 on the valve-body and forming interiorly a valve-seat, said tubular body having a screw-threaded opening D^0; a ball-valve E in said tubular body, a screw-threaded plug F engaging said screw-threaded opening D^0 and having an axial passage therethrough; and a coil-spring interposed between the inner end of said screw-plug F and said ball-valve E, tending to hold said valve closed against pressure from within the valve-body, substantially as described.

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

CHRISTIAN DORN.

Witnesses:
JOSEPH REINSTINE,
JAS. PFEIFER.