

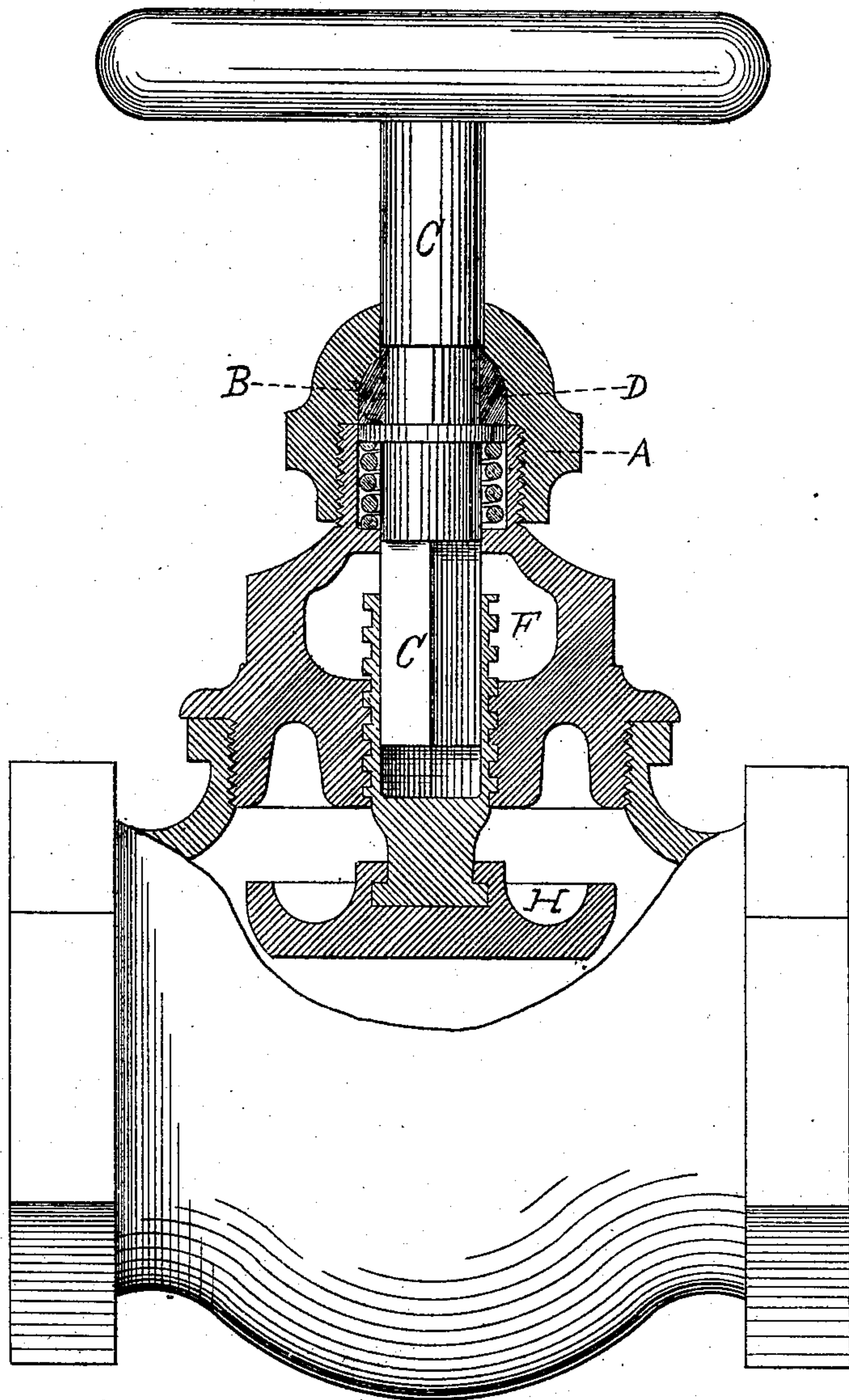
(No Model.)

S. LLOYD & D. E. PIERCE.

VALVE.

No. 275,396.

Patented Apr. 10, 1883.



Witnesses
George J. Harding
Joseph M. Plan

Inventors
Dwight E. Pierce
Seth Lloyd
by their attorneys
Francis T. Chamberlain

UNITED STATES PATENT OFFICE.

SETH LLOYD AND DWIGHT E. PIERCE, OF BETHLEHEM, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 275,396, dated April 10, 1883.

Application filed January 13, 1883. (No model.)

To all whom it may concern:

Be it known that we, SETH LLOYD and DWIGHT E. PIERCE, both of Bethlehem, in the county of Northampton and State of Pennsylvania, and citizens of said State, have jointly invented a new and useful Improvement in Valves, of which the following is as full, true, and accurate a description as we are able to give, reference being had to the accompanying drawing, which forms a part of this specification.

Our invention has reference to that class of valves known as "self-packing," and a special reference to valves of this class having the improvements for which we filed an application for a patent on the 1st day of July, A. D. 1882, which improvements are also shown in the drawing forming a part of this specification. As shown in the drawing and more particularly described in our said former application, we make an enlargement on the stem, which we call the "stem-valve," with that portion of its surface which bears against a portion of the cap which forms its seat in the shape or form of a segment of a sphere. Prior to our herein-described invention we constructed the said stem-valve and cap of the same metal or metals of the same hardness, and when so constructed we found them to work satisfactorily and well at low and most ordinary pressures. When the valves, however, were subjected to a very high pressure, we found that the spheroidal enlargement or stem-valve would, instead of working smoothly in its seat in the cap, cut into and wear the same rapidly away, thereby necessitating too frequent repairs.

Our invention accordingly consists in a device for obviating this difficulty; and it consists in providing the main valve-stem with a soft metallic annulus or ring, which is then turned to the shape of the valve-seat in the cap—that is, has its bearing-surface turned in the form of a sphere of the required size—the cap forming the bearing-surface of the spheroidal valve being formed of a harder composition or metal than the stem-valve, and thus we obtain a soft

metal enlargement or stem-valve working upon a seat of a harder material.

Reference being now had to the drawing, which is a vertical section, and which shows a valve such as is shown by us in a former specification, A is the cap of the valve, in which is the seat of the stem-valve. B shows this seat formed in the cap A, and is the bearing-surface of the stem-valve, both being in the form of a segment of a sphere. C is the main stem on the valve; D, the annulus or ring of soft metal cast with or on the valve-stem C, and having its bearing-surface turned to a spherical shape, while H is the main valve. As above described, the cap A is made of a harder metal or composition than the enlargement or stem-valve D. We have found that by the use of the above-described device we obtain a smooth-working steam-tight joint of great durability at the point B, and that it is very little affected or worn by the highest pressures to which such valves are subjected.

We do not claim broadly in this application the device of making the bearing portions of a stem-valve and its seat of spherical shape, as this is claimed by us in our said former application; but

What we do claim as new, and desire to secure by Letters Patent, is—

1. In a self-packing valve, the combination of the stem C, provided with a soft-metal enlargement, D, with the hard-metal cap A, substantially as and for the purpose set forth.

2. In a self-packing valve, the combination of the stem C, provided with a soft-metal enlargement, D, having a spherical bearing-surface, with the hard-metal cap A, having a similar spherical bearing-surface, substantially as and for the purpose set forth.

In testimony of which invention we have hereunto set our hands.

SETH LLOYD.
DWIGHT E. PIERCE.

Witnesses:

A. A. LINDSAY,
FR. M. RAUCH.