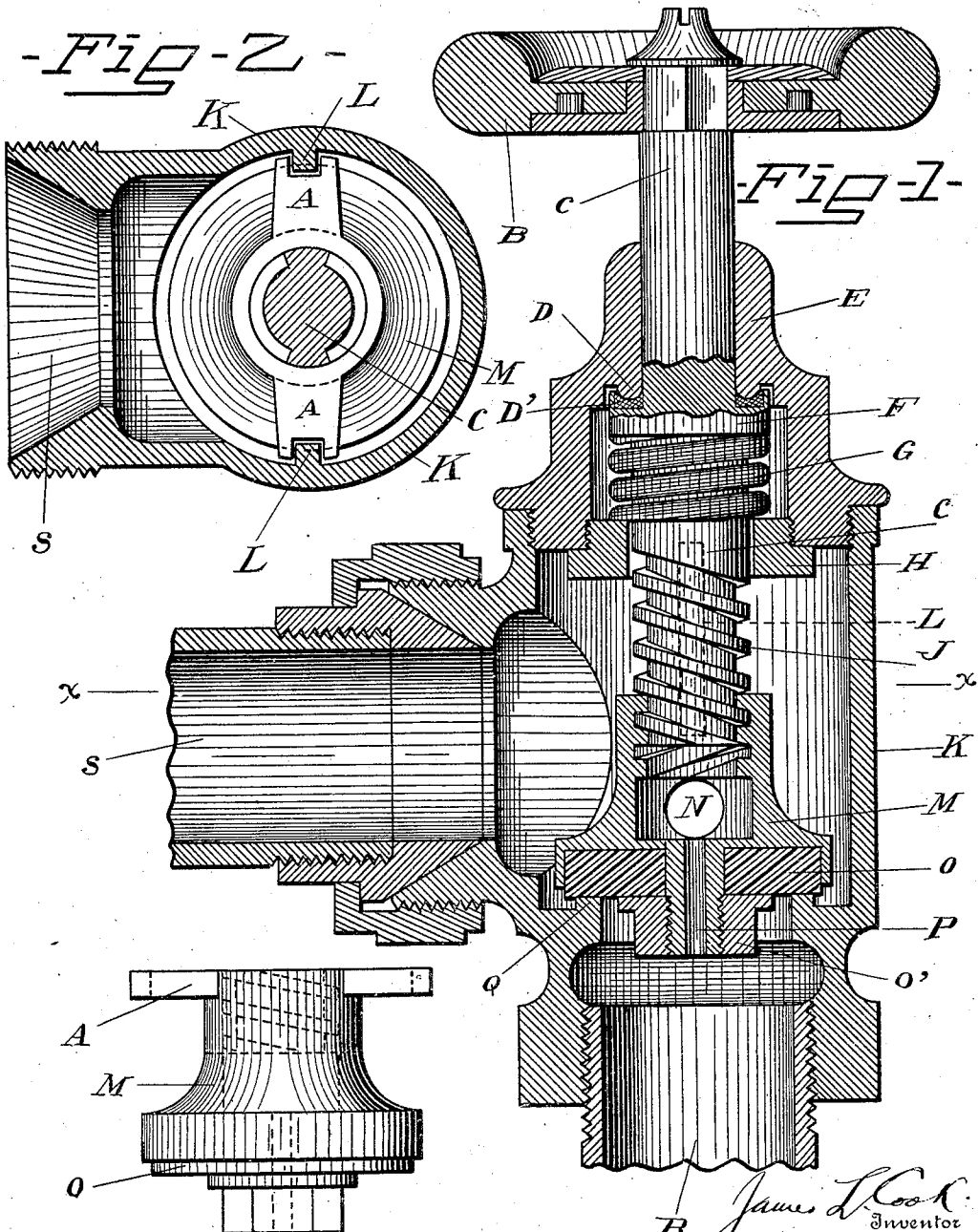


No. 848,811.

PATENTED APR. 2, 1907.

J. L. COOK.
HOT WATER VALVE.
APPLICATION FILED JAN. 2, 1906.



Witnesses

Matthew L. Huber
C. M. Theobald.

By

J. L. Cook
Inventor
R. J. McCarty,
Attorney

UNITED STATES PATENT OFFICE.

JAMES L. COOK, OF DAYTON, OHIO.

HOT-WATER VALVE.

No. 848,811.

Specification of Letters Patent.

Patented April 2, 1907.

Application filed January 2, 1906. Serial No. 294,047.

To all whom it may concern:

Be it known that I, JAMES L. COOK, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Hot-Water Valves; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in hot-water valves or steam-valves.

The object of the invention is to provide a valve of the above type which dispenses with the necessity of using packing and which is quick acting—in a word, a valve of the above type which is the essence of simplicity and practicability.

Preceding a detail description of the invention reference is made to the accompanying drawings, of which—

Figure 1 is a vertical longitudinal section of my improved hot-water valve. Fig. 2 is a cross-section on the line *xx* of Fig. 1. Fig. 3 is a detached view of the disk and metal basket.

In a detail description of the invention, similar reference characters indicate corresponding parts.

K designates a barrel or cylindrical valve-casing, in the lower end of which the inlet-pipe R is connected, and in the upper end of which an apertured cap E is connected, and to a side of which the outlet-pipe S is connected. From opposite sides of and on the interior of this valve-casing K there are placed ribs L, which form guides for a proper movement of the disk holder or basket. The valve-stem turns in the aperture in the cap E and extends down into the cylinder or casing and has its upper end fitted with the usual hand-wheel B. On the interior of the apertured cap there is an annular offset D, forming a valve-seat.

F is an integral collar of annular form on the valve-stem and lying within a chamber in the cap E. This collar F has an annular groove D' formed in its upper surface to match the bead or offset D, and which, together with said annular offset D, forms a packless valve within the cap. This groove

D' is recessed and filled with a composition of softer metal, making the wearing-surfaces smoother, and thus insuring an absolutely tight joint.

G is an expansion-spring mounted upon the valve-stem between the collar F and the nut H, the latter being a lock-nut screwed into the lower end of the cap E and through which the valve-stem C passes. The lower portion of the valve-stem is provided with double threads J, by means of which a quick opening or closing of the valve is enabled. The lower end of said stem screws into a metal basket M, which is provided with inlet-orifices N and P, which communicate with each other and receive hot water from the inlet R.

When the valve is used for hot-water purposes, the opening P from the inlet R, communicating with orifice N, allows a free circulation of hot water when the valve is closed. In a hot-water valve it will be understood that the valve is never closed entirely, owing to the necessity of maintaining a circulation through the hot-water system. The opening P, connecting the inlet R and orifice N, provides for this circulation.

O is a composition disk held within the lower side of the basket M by a nut O', which is screwed onto an extension from the basket M.

Q is the lower valve-seat, with which the composition disk O cooperates.

The basket M has laterally-extended arms A, which are bifurcated at their outer ends to receive the guide-ribs L on the interior of the valve-casing.

From the above description it will be observed that the valve is entirely free from packing and the seating between the stem and the cap E is of a most practical form. The annular seat formed by the matching surfaces D and D' is close to the center of the valve-stem, so that a perfect contact of each part will always be maintained.

Having described my invention, I claim—

In a hot-water valve, a valve-casing, the apertured cap E with interior annular valve-seat D, said valve-seat lying adjacent to the orifice in said cap, a valve-stem having a collar F thereon, said collar lying within the apertured cap and having a valve-seat D' thereon matching with the seat D in said cap, said valve-seat D' being recessed and filled with a composition of softer metal to insure a smooth wearing-surface and tight joint, said valve-seat D' lying adjacent to the stem, a

nut H supported on the lower end of the ap-
ertured cap, a spring G surrounding the valve-
stem and inclosed between the collar F and
the nut H within the apertured cap, double
5 screw-threads J on the portion of said valve-
stem lying within the valve-casing, a basket
engaging said screw-threads, said basket
having guide-arms projected from opposite
sides thereof and receiving guide-ribs on the
10 opposite sides of the valve-casing, a disk O

mounted within the basket M, and the valve-
seat Q on the lower end of the valve-casing,
substantially as described.

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

JAMES L. COOK.

Witnesses:

R. J. McCARTY,
C. M. THEOBALD.