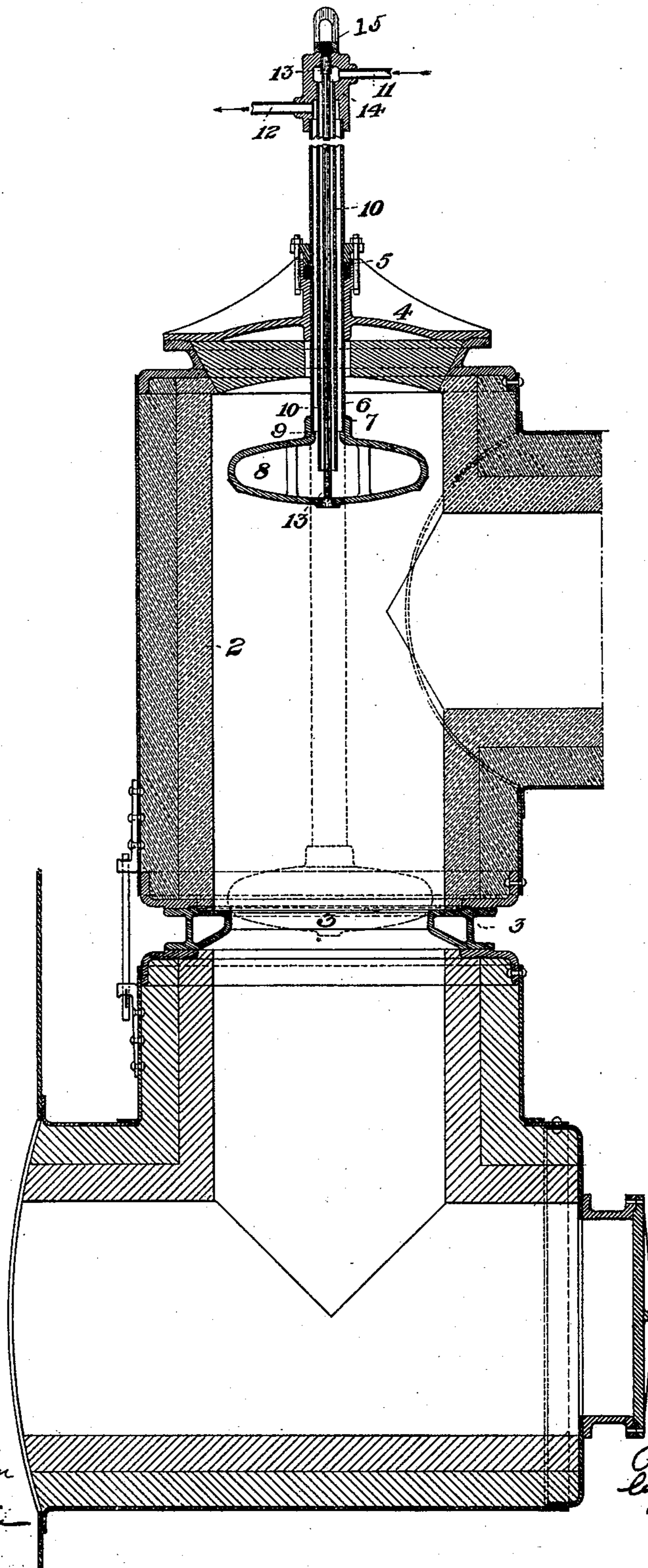


(No Model.)

J. KENNEDY.
VALVE.

No. 477,372.

Patented June 21, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

JULIAN KENNEDY, OF LATROBE, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 477,372, dated June 21, 1892.

Application filed November 17, 1891. Serial No. 412,202. (No model.)

To all whom it may concern:

Be it known that I, JULIAN KENNEDY, of Latrobe, in the county of Westmoreland and State of Pennsylvania, have invented a new and useful Improvement in Valves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which shows in vertical section a valve-chamber having a valve constructed in accordance with my invention.

Heretofore in constructing the ordinary vertically-acting valve for hot-blast stoves and regenerative furnaces in which the valve is a hollow casting joined to a vertically-moving stem, which extends through the valve-casing, it has been customary to provide the lower end of the stem with a flange and to bolt it to the valve. This construction is faulty for several reasons. To afford a proper bolting-surface the flange on the stem and the corresponding flange or shoulder on the valve must be of considerably-greater thickness than the shell of the hollow valve, and therefore the water which is caused to circulate through the valve cools it unequally. Such construction also makes it difficult to make the valve-stem of brass, because of the manner in which the brass is weakened by the bolt-holes, and this material is especially desirable, since the only other available material (cast-iron) has a rough surface, which when it wears is apt to cut the packing in the valve-casing and to occasion leakage of hot air or gas at that point. There are other disadvantages of this construction resulting from the liability of the connection between the valve and stem to loosen. All these disadvantages are overcome by my invention, and a strong, simple, and very effective valve is afforded thereby.

In the drawing, 2 represents the usual valve-chamber of a hot-blast valve.

3 is the valve-seat.

4 is the cap of the valve-chamber shell or casing, and 5 is the stuffing-box in said cap, through which the hollow valve-stem 6 passes. This valve-stem is provided with suitable means (not shown in the drawing and unnecessary to be described) by means of which it can be moved vertically, so as to seat and unseat the valve.

Instead of connecting the valve-stem with the hollow valve 8 by bolts, as heretofore, I form on the valve a hollow cylindrical collar 7, forming a seat adapted to receive within it the lower part of the valve-stem and having, preferably, a shoulder 9, against which the end of the stem fits.

10 is the usual pipe, which extends through the stem 6 down into the hollow valve, and is connected at its upper end with a water-supply pipe 11. The water flowing through said pipe enters the hollow valve, and after circulating through the same passes up through the valve-stem and escapes through an outlet-pipe 12 at the upper end.

To connect the valve and valve-stem firmly, I employ a long bolt 13, whose head is fitted against the lower side of the valve and which extends up through the pipe 10 and through a block 14, into which the upper end of the valve-stem and pipe are screwed, and above said block is fitted with a nut 15. When this nut is tightened, it draws on the bolt, pulling the valve against the lower end of the valve-stem, binding these parts together securely, and connecting them in such manner that they are not apt to become loosened.

There need be no special flanges on the connecting parts of the valve and stem, and therefore these parts at their connection are not materially thicker than the remainder of the valve and are equally cooled by the water. Neither the valve-stem nor the valve need be weakened by bolt-holes. The head at the end of the bolt 13 is preferably set in a countersunk recess at the base of the valve, and therefore is not exposed to the cutting action of the hot blast in the valve-chamber, and being in close proximity to the water within the hollow valve is kept cool and prevented from rapid corrosion.

The valve-stem and valve may be made of brass without objection, since the fitting of the stem and valve makes the connection very strong. Other suitable material may be used and the parts of the device may be modified in form and details of construction without variance from my invention, as stated in the following claims.

I claim—

1. In valve mechanism of the character de-

scribed, the combination, with a hollow valve
and a hollow stem fitting within a seat on the
valve, of a connecting-bolt extending through
the stem attached to the valve and provided
5 with means for drawing these parts together,
substantially as and for the purposes de-
scribed.

2. In valve mechanism of the character de-
scribed, the combination, with a hollow valve
10 and hollow stem fitted together and having
a water-supply pipe extending through the

stem, of a bolt connecting the valve and stem,
extending through the stem and provided
with means for drawing these parts together,
substantially as and for the purposes de- 15
scribed.

In testimony whereof I have hereunto set
my hand this 6th day of November, A. D. 1891.

JULIAN KENNEDY.

Witnesses:

R. H. WHITTLESEY,
H. M. CORWIN.