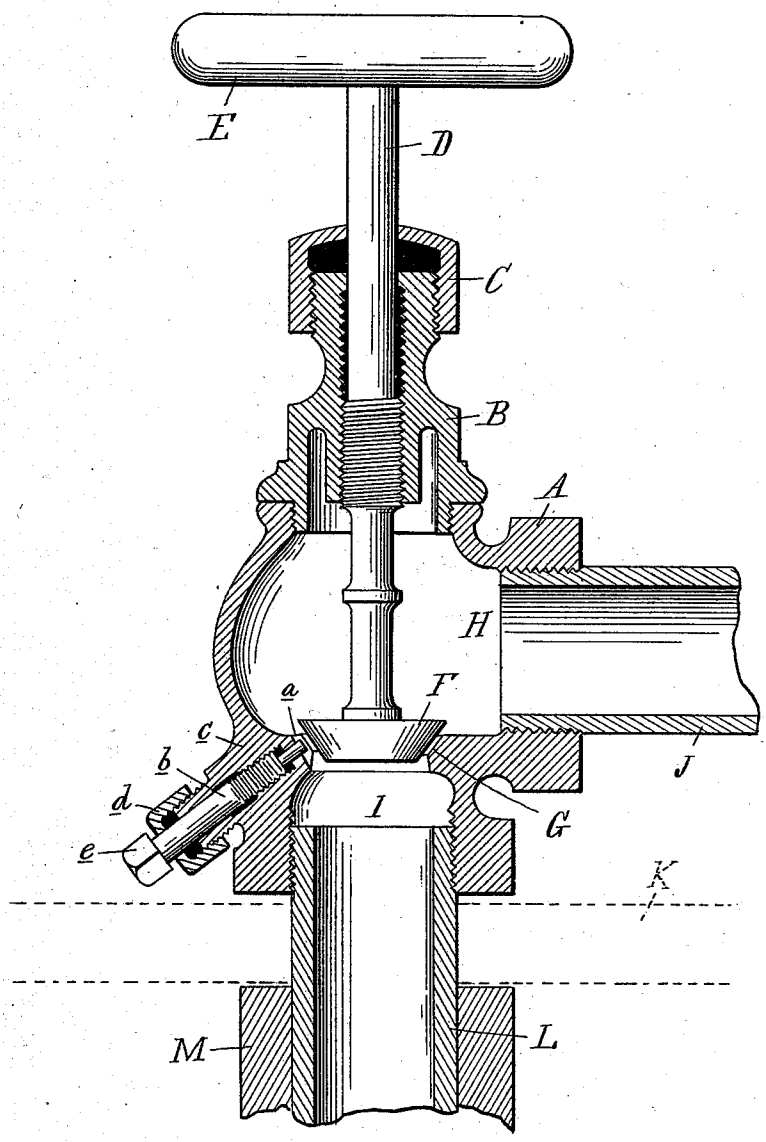
(No Model.)

J. F. McELROY.

DRAIN VALVE.

No. 412,651. Patented Oct. 8, 1889.



Witnesses:
P. M. Halbert
Edwin Brenty

Inventor:
James F. McElroy
By Thos. G. Sprague & Son
Atty.

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UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF LANSING, MICHIGAN.

DRAIN-VALVE.

SPECIFICATION forming part of Letters Patent No. 412,651, dated October 8, 1889.

Application filed May 27, 1889. Serial No. 312,300. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. McELROY, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Valves, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to new and useful improvements in drain-valves; and the invention consists in the peculiar construction of a supplementary exit, whereby a permanent restricted opening is formed in the valve-seat, adjustable as occasion may require.

My improved valve is intended to be used especially in the place of the so-called "trap" in steam-heating or hot-water heating apparatus for railway-cars to allow the escape of the water of condensation.

In the drawing my invention is shown in vertical central section.

My improvement is shown as applied to an ordinary and known type of angle-valve, wherein A is the valve-casing; B is the stuffing-box; C is the cap; D is the spindle; E is the hand-wheel; F is the valve-disk; G is the valve-seat; H, the inlet-opening, and I is the outlet-opening, all of known and usual construction.

J is the pipe leading from the lowest point of the steam-heating system, or from the overflow-pipe of a hot-water-circulating system.

K is the floor of the car.

L is the drip or outlet pipe extending through the floor, and M is the insulating pipe-covering on the outlet-pipe outside of the car.

An aperture or slot *a* is cut through the valve-seat, preferably with its lower end slightly enlarged, and adapted to be closed more or less by a screw-threaded spindle *b*, secured in the screw-threaded aperture in the enlargement *c* in the base of the valve. This spindle is preferably provided with a stuffing-box *d* and with the squared end *e*, to allow of its being readily turned with a wrench or other tool.

In practice, the device being located at the lowest point in the system of steam-heating apparatus or in the overflow-pipe of a steam-heated hot-water-circulating apparatus, the valve-disk F is screwed down upon its seat, closing the passage through the valve, and the end of the spindle *e* is withdrawn from the aperture *a*. As fast as the water of condensation accumulates it will escape through the aperture *a*. If steam escapes as well as the water, by regulating the size of the aperture by means of the spindle *e* the blow-off may be adjusted to carry off the water of condensation more perfectly than by an automatic steam-trap. Should any sediment accumulate in the valve-casing, closing the aperture *a*, a half-turn of the hand-wheel E raises the disk F from its seat, allowing the escape of the sediment. It may then be closed, and it will operate in the usual manner, as previously described. I preferably make the aperture *a* connecting into the outlet-aperture I, so that when the valve-disk is lifted up to allow of the escape of sediment the accumulated water will more readily wash out of the aperture than would be the case if the aperture did not connect with the outlet-opening I. The angle at which the spindle *e* approaches the disk is preferably at right angles to the sides of the disk, so that, if occasion require, the aperture may be quite close—as, for instance, in summer, so that the dust from underneath the car cannot get into the pipes. It is evident that the same arrangement may be placed on the so-called "globe-valve." I show it herein applied to an angle-valve as being the simplest construction.

I do not broadly claim a permanent restricted opening independent of the valve-disk; but

What I claim as my invention is—

1. In a valve of the kind described, a supplementary adjustable aperture or slot formed in the face of the valve-seat independent of the valve-disk, whereby a permanent opening is left for the escape of the contained fluid, substantially as described.

2. In a valve of the kind described, in combination with the inclined valve-seat, the slot-opening formed in the face of the valve-seat, the screw-threaded spindle to adjust the size of said opening, arranged substantially at right angles to the inclined sides of the disk, substantially as described.

3. In a valve of the kind described, the com-

bination, with the inclined valve-seat, the slot-opening formed in the face of the valve-seat, and the screw-threaded spindle adapted to adjust the size of said opening, of the stuffing-box around said spindle and of the wrench-hold, said spindle being substantially at right angles to the inclined face of the disk, substantially as described.

In testimony whereof I affix my signature, in presence of two witnesses, this 15th day of April, 1889.

JAMES F. McELROY.

Witnesses:
JAMES WHITTEMORE,
J. PAUL MAYER.