

No. 776,769.

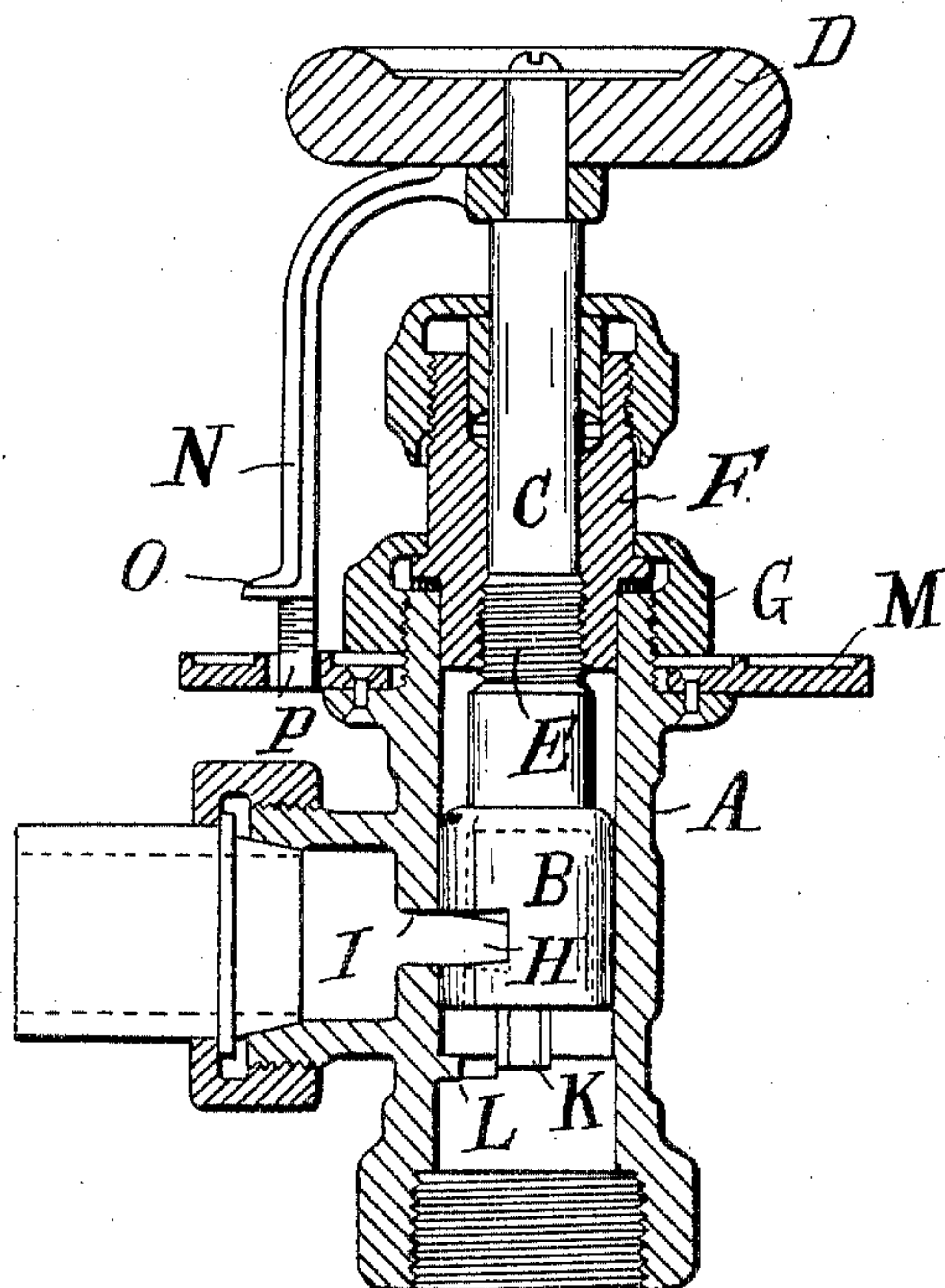
PATENTED DEC. 6, 1904.

C. WISBECH.  
RADIATOR VALVE.

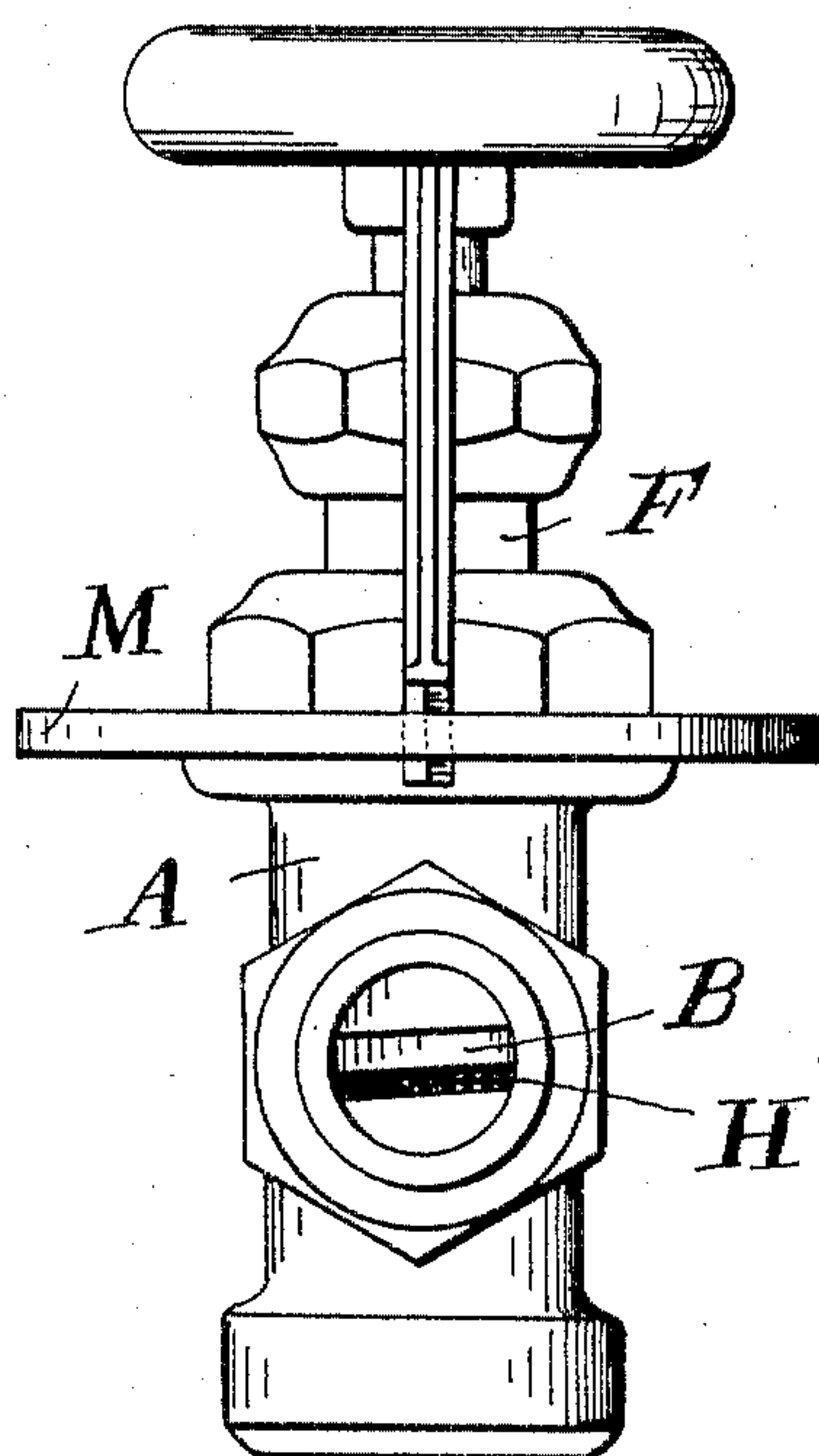
APPLICATION FILED MAR. 9, 1904.

NO MODEL.

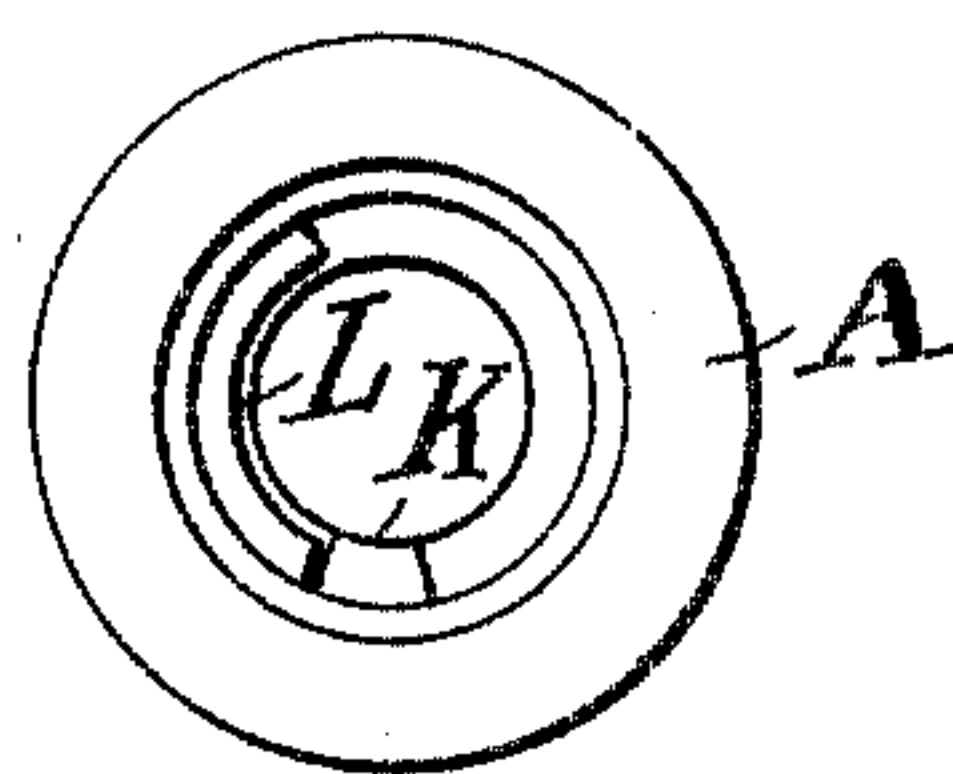
*Fig. 1.*



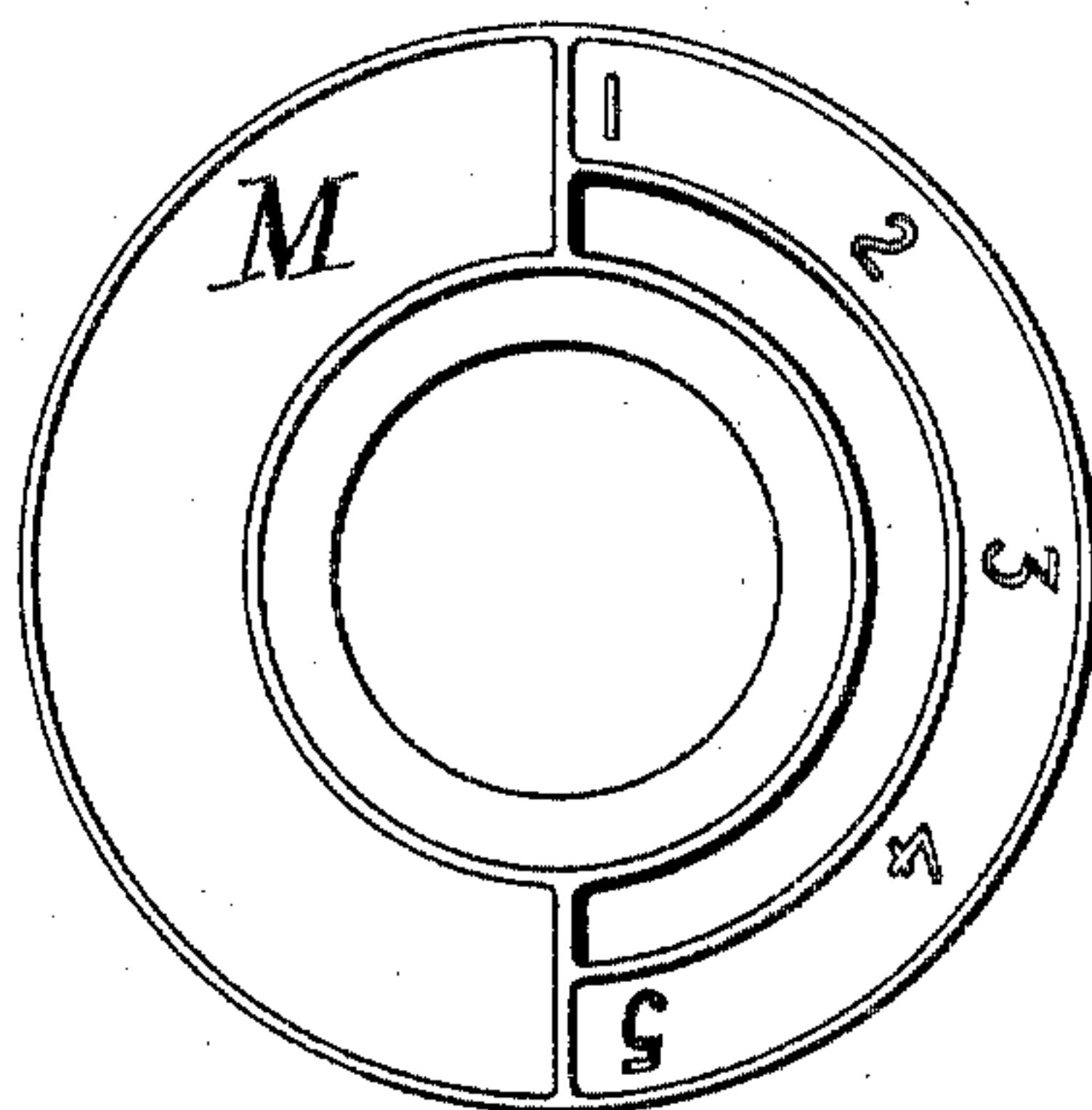
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



Witnesses:  
Robert  
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Attys.



# UNITED STATES PATENT OFFICE.

CHRISTIAN WISBECH, OF CHRISTIANIA, NORWAY.

## RADIATOR-VALVE.

SPECIFICATION forming part of Letters Patent No. 776,769, dated December 6, 1904.

Application filed March 9, 1904. Serial No. 197,287. (No model.)

*To all whom it may concern:*

Be it known that I, CHRISTIAN WISBECH, a subject of the King of Sweden and Norway, residing at Christiania, in the Kingdom of Norway, have invented new and useful Improvements in Radiator-Valves; and I hereby declare that the following is 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to radiator-valves, and more especially to that kind of valves which are provided with means for regulating the area of the valve-opening, so that the latter may be given a suitable size relatively to the heating-surface of the radiator.

Figure 1 is an axial section through a radiator-valve embodying my invention and showing the valve regulated for a large-size radiator. Fig. 2 is a front view showing the valve regulated for a small-size radiator. Figs. 3 and 4 are details.

A is the valve-casing. It has a cylindrical bore in which fits closely the valve-body B. The latter is fixed to or formed on the lower end of the valve-stem C, provided with the hand-wheel D and with screw-threads E. The stem passes through the sleeve F, which is held in position on the valve-casing by means of the nut G and has screw-threads at its lower end and a stuffing-box at its upper end, as shown. The sleeve is hexagonal on the outside, so it may be turned.

The valve-body B is bell-shaped and is provided with an aperture H, corresponding in size and shape to an aperture I in the wall of the valve-casing leading to the pipe connection with the radiator. On the lower edge of the valve-body is provided a lug K, and on the inside of the valve-housing is provided a projection L, whereby the circular movement of the valve-body is limited.

M is a usual index-disk fixed at the upper part of the valve-housing, and N is an index-arm provided with a pointer O, indicating the angular position of the valve. The arm is also provided with an extension P, having

a scale marked on it, as shown, which scale indicates the height of the valve-opening. It will be seen that when the sleeve F is turned, the stem C being held against rotation, it will cause a vertical adjustment of the valve stem and body, whereby the free height of the apertures H I will be varied. The height at any time may be seen from the scale on the extension P.

The apertures H and I are shown to have an inclined form. The line of inclination is parallel with the pitch-line of the screw-threads of the valve-stem. The object of this is to secure a constant width of the valve-opening at any angular position of the valve. It will be seen that if the apertures were horizontal instead of inclined the valve-stem when turned from open valve to closed valve would simultaneously cause a lowering of the valve stem and body to the extent of one-half of the pitch of the screw on the stem. This does not, of course, matter when the valve is set at full opening, as shown in Fig. 1, because the openings will then only be reduced a small percent.; but when the valve is set for a small radiator, so that the width of the valve-opening is, say, for instance, only one-sixteenth of an inch, this fact will cause a great inaccuracy. If the pitch of the screw is one-eighth of an inch, it will be seen that the width of the opening will vary from one position of the valve (full steam) to the other (closed valve) between one-sixteenth of an inch and nothing if the valve is turned one hundred and eighty degrees. When it is placed on half-steam, it will, therefore, in this instance not give, as required, half the area of the full opening, but only one-fourth of the full-steam area. By my arrangement the width of the opening will remain unaltered when turning the valve. Only the length will be changed, and therefore no inaccuracy occurs, which is of the greatest importance when one and the same valve-number is made to be used for radiators of different sizes.

I claim—

1. A radiator-valve comprising an apertured casing, a valve having an aperture adapted to register with the aforesaid aperture and having longitudinal and rotary movement in the casing, means for maintaining a constant



effective width of opening through the two apertures at any angular position of the valve, and means to adjust the effective width of said registering aperture.

5 2. A radiator-valve comprising an apertured casing, a valve having an aperture adapted to register with the aforesaid aperture and having longitudinal and rotary movement in the casing, means for maintaining a constant  
10 effective width of opening through the two apertures at any angular position of the valve, means to adjust the effective width of the aperture and means to indicate the degree of adjustment.

15 3. In a radiator-valve, the combination with a cylindrical valve-casing, a hollow cylindrical valve fitting therein and having a longitudinal and rotary movement, an aperture in the valve-casing, corresponding with an aperture  
20 in the valve, said apertures having a length large relatively to the height and having inclined upper and lower outlines, of an adjustable sleeve, a valve-stem working therein, means to adjust the sleeve relatively to the  
25 valve-stem, means to hold the sleeve in a re-

quired position and means to limit the circular movement of the valve.

4. In a radiator-valve, the combination with a cylindrical valve-casing, a hollow cylindrical valve fitting therein and having a longitudinal and rotary movement, an aperture in the valve-casing, corresponding with an aperture in the valve, said apertures having a length large relatively to the height and having inclined upper and lower outlines, of an adjustable screw-threaded sleeve, a threaded valve-stem working therein, means to adjust the sleeve relatively to the valve-stem, means to hold the sleeve in a required position, means to limit the circular movement of the valve, means to indicate the width of the valve-opening and means to indicate the height of the valve-opening.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHRISTIAN WISBECH.

Witnesses:

JOH. VAALER,  
AUG. OLSEN.