

No. 702,342.

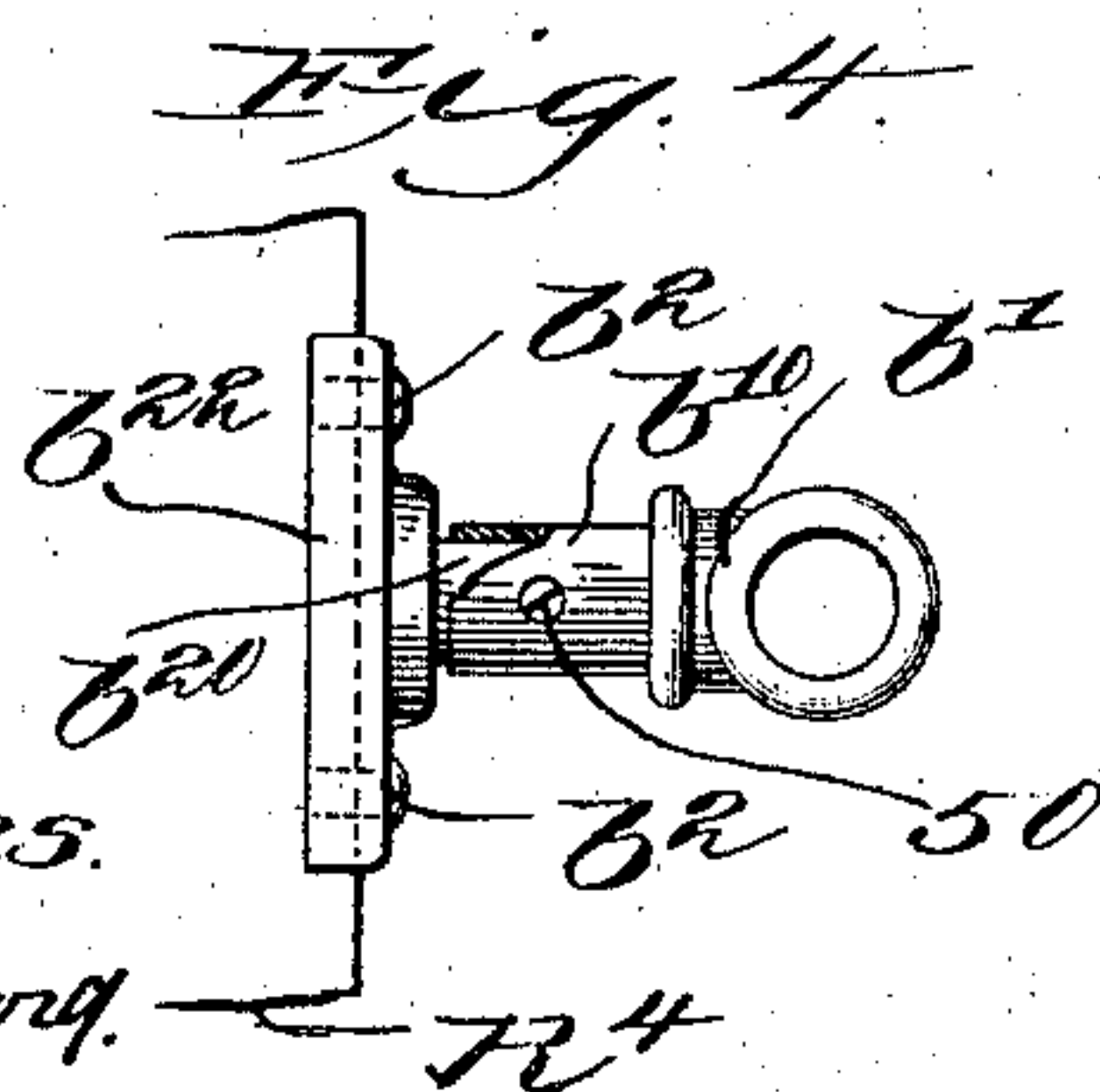
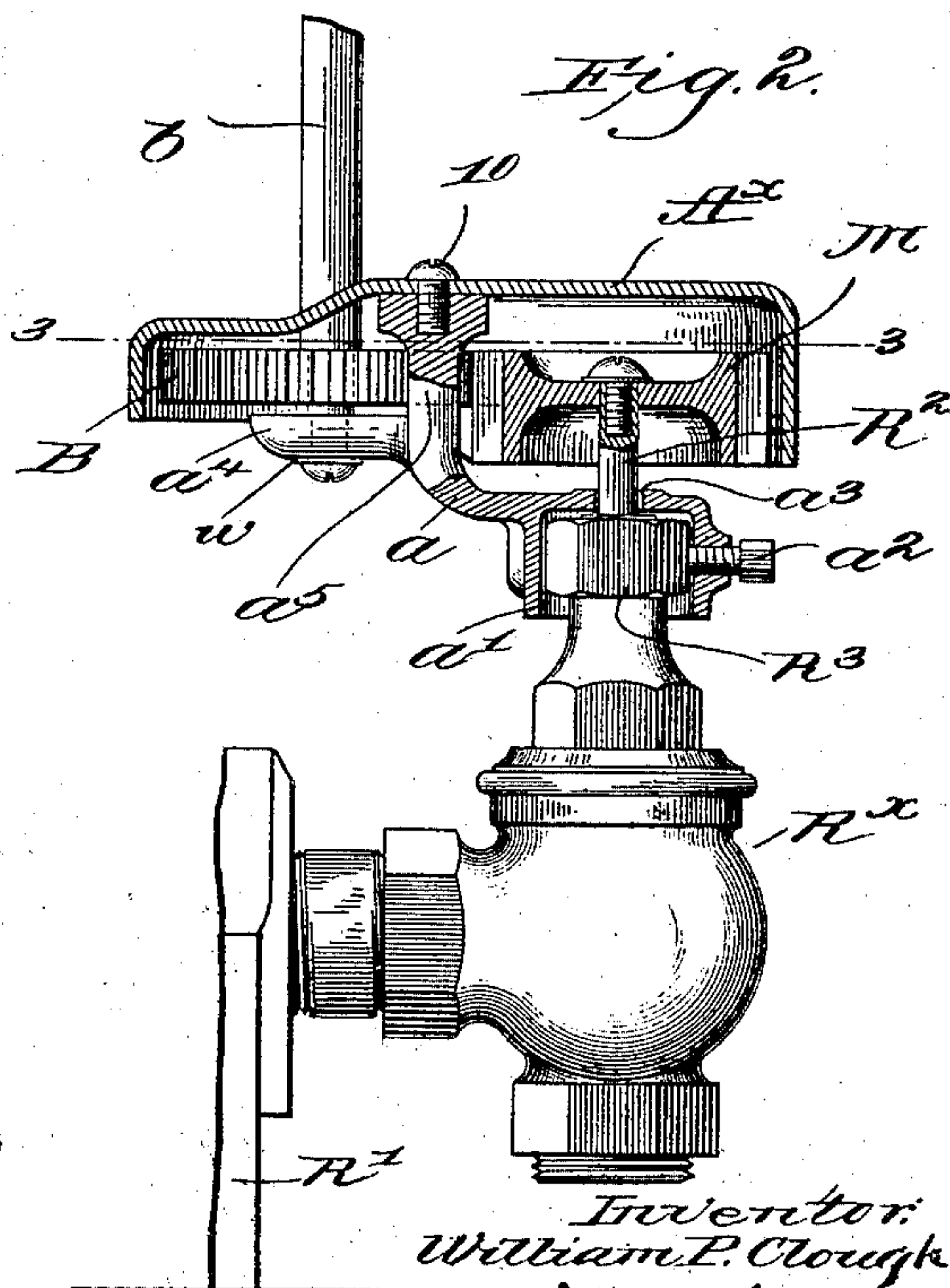
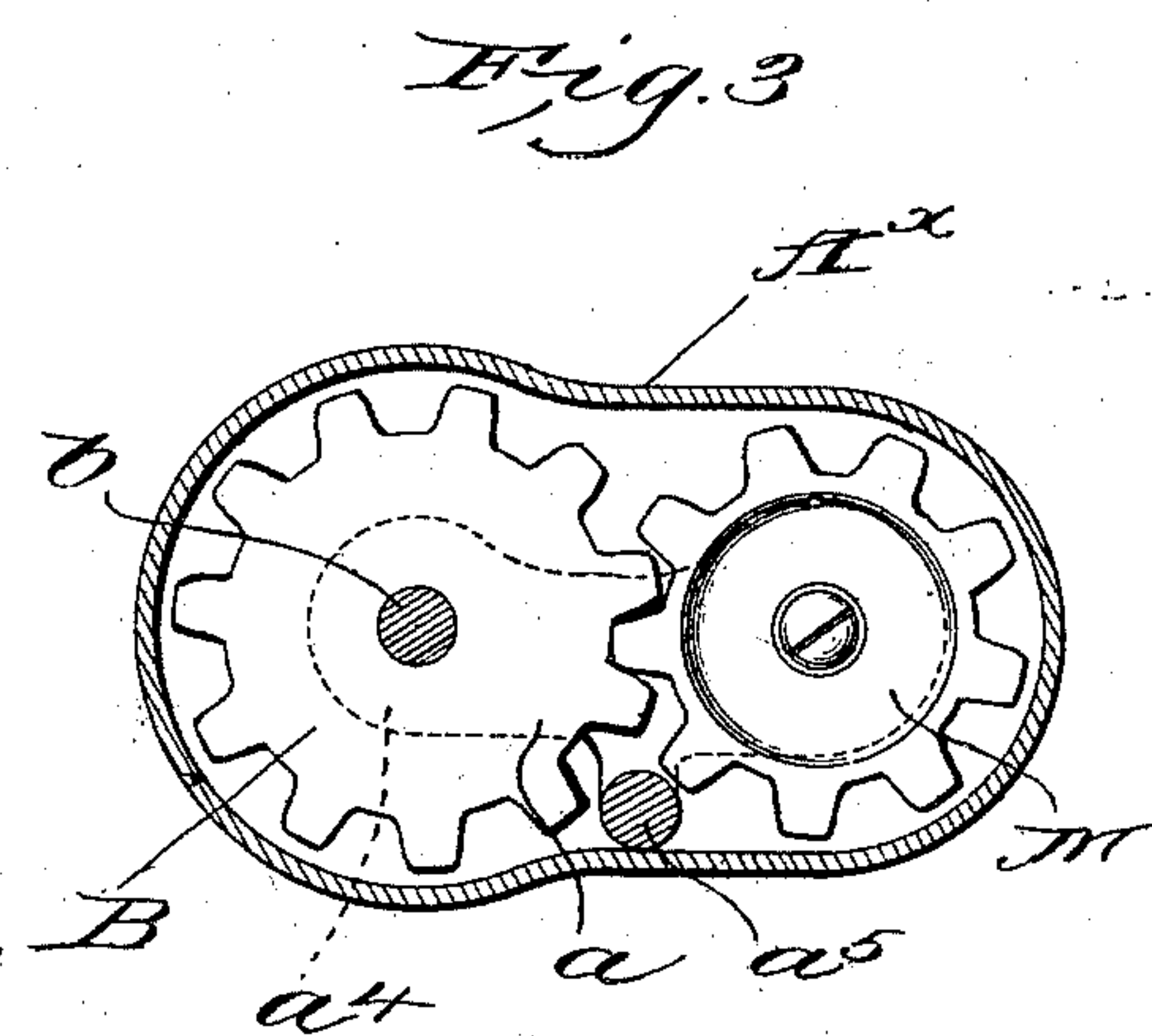
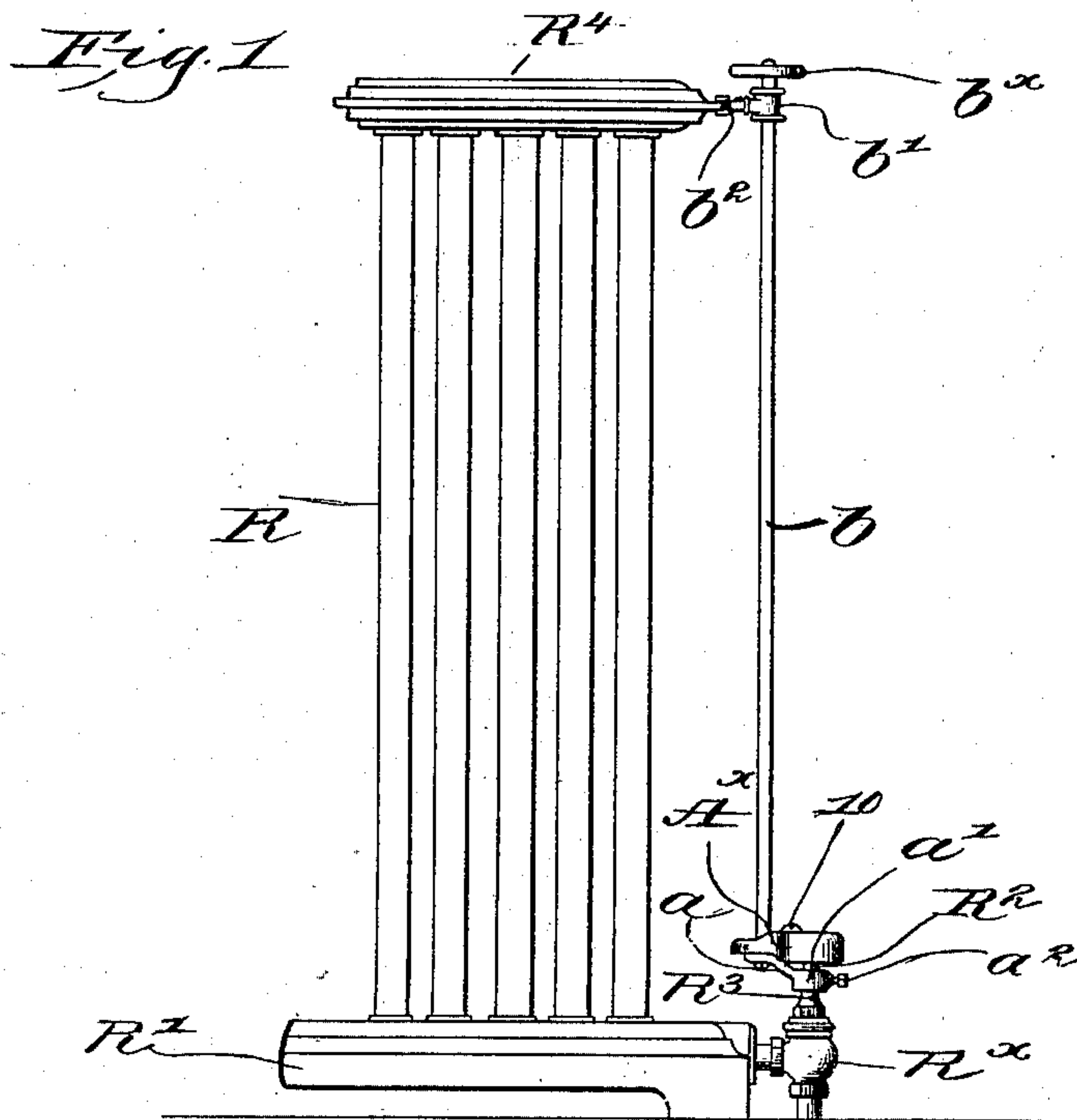
Patented June 10, 1902.

W. P. CLOUGH.

VALVE ACTUATING MECHANISM FOR RADIATORS.

(Application filed Oct. 3, 1901.)

(No Model.)



Witnesses.

W. C. Lumsford.

Frederic S. Grumbine

Inventor:
William P. Clough
by Henry Gregory
attys

William P. Cloucke

*by Wesley Oregon
attys*

attys

UNITED STATES PATENT OFFICE.

WILLIAM P. CLOUGH, OF EVERETT, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO GUSTAVUS GOEPFER, OF CAMBRIDGE, MASSACHUSETTS, AND ALONZO COLEMAN, OF BOSTON, MASSACHUSETTS.

VALVE-ACTUATING MECHANISM FOR RADIATORS.

SPECIFICATION forming part of Letters Patent No. 702,342, dated June 10, 1902.

Application filed October 3, 1901. Serial No. 77,374. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. CLOUGH, a citizen of the United States, and a resident of Everett, county of Middlesex, State of Massachusetts, have invented an Improvement in Valve-Actuating Mechanism for Radiators, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of simple, effective, and readily applied and operated valve-actuating mechanism for radiators whereby the controlling valve may be easily operated with small expenditure of force and without stooping or bringing the hand into close proximity to the valve.

Figure 1 is a side elevation of a portion of a radiator of well-known construction with one embodiment of my invention applied thereto. Fig. 2 is an enlarged view, partly in section, of the lower portion of the valve-actuating mechanism shown in Fig. 1 and the radiator-valve. Fig. 3 is a horizontal section on the line 3-3, Fig. 2, looking down; and Fig. 4 is an enlarged detail in plan of the upper bearing for the actuating-shaft, showing the adjusting device.

The radiator R, its base R', valve R^x, supported by the base and having an upright rotatable valve-spindle R², the gland or stuffing-box R³, and the radiator-top R⁴, Fig. 1, may be and are of any usual or well-known construction common in radiating apparatus.

Ordinarily the upright valve-spindle at the base of the radiator and near the floor is provided with a hand-wheel, so that when the valve is operated the operator must stoop over or reach down to the hand-wheel, and in addition to the uncomfortable and constrained position thus assumed the hand of the operator is liable to be burned by coming in contact with the adjacent part of the radiator.

In my present invention I have overcome both objections and have brought the hand-wheel or other suitable operating device up to the top of the radiator, the operation of

the valve being made very easy and readily effected.

In the embodiment of my invention herein illustrated a bracket *a* is provided with a socketed portion *a'* to receive the top of the gland R³, a suitable set-screw *a*² serving to firmly secure the bracket in place, the upper end of the socket having a hole *a*³, Fig. 2, for the valve-spindle R² to pass through. A wide-faced pinion M is secured to the spindle above the socket portion of the bracket, said pinion meshing with a gear B, secured to the lower end of an elongated upright actuating-shaft *b*, the lower end of which is supported in a laterally-extended bearing *a*⁴ on the bracket *a*. The upper end of the shaft is rotatably supported in and maintained in upright position by a second bearing *b'*, suitably secured to the radiator-top R⁴ in any convenient manner, as by screws *b*², the shaft extending above the bearing and having a hand-wheel *b*^x or other suitable handpiece thereon by which to rotate the shaft. Any lifting tendency of the latter is prevented by a washer *w*, secured to the lower end of the shaft beneath the bearing *a*⁴, and manifestly rotation of the shaft will, through the gearing, rotate the valve-spindle R² to open or close the valve, the wide face of the pinion M providing for continuous meshing with the gear B when the spindle moves up and down, carrying the pinion with it.

In order to protect and house the gearing, I have shown a case or housing A^x, preferably made of sheet metal, as mounted on an upright post *a*⁵, secured to or forming a part of the bracket, the housing extending over the top and around the teeth of the gearing, as clearly shown in Fig. 2. The housing is held in place by a screw 10, screwed into the top of the post *a*⁵ and has a hole in its top for the shaft *b* to pass through.

By the device herein shown and described the radiator-valve can be operated without stooping or bending, and the hand piece or wheel *b*^x is in plain sight at a convenient height and not closely adjacent to the hot radiator, so that there is no liability of burning the hand when operating the valve.

By means of the gearing interposed between the actuator *b* and the valve-spindle the movement of the latter is easily and rapidly accomplished with the expenditure of little effort on the part of the operator.

To apply the apparatus to a radiator, the usual hand-wheel is removed from the valve-spindle and the bracket is applied and secured in position, the housing being detached from the post *a*⁵, while the pinion *M* is secured upon the spindle. The upper bearing *b'* is then attached to the radiator-top, and the mechanism is ready for use.

In order to readily adjust the shaft *b* and have it in proper upright position, I have shown in Fig. 4 the bearing *b'* as provided with a tubular boss *b*¹⁰, which slides onto a stud *b*²⁰, projecting from the part *b*²², which is secured to the radiator-top by the screws *b*². By moving the boss in or out or rotatably on the stud, if necessary, the shaft *b* is brought into correct upright position, and by tightening a suitable set-screw 50 in the boss engaging the stud the bearing can be held in adjusted position.

The construction and arrangement herein shown and described may be modified or changed in various details by those skilled in the art without departing from the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A radiator provided with a valve having a rotatable spindle, provided with a usual hand-wheel connection for operating the valve, a pinion interchangeable with said hand-wheel, means for securing the pinion detachably to said connection, a bracket detachably mounted on and supported by the valve-casing and provided with a shaft-bearing, a manually-operated actuating-shaft supported to rotate in said shaft-bearing and held from longitudinal movement, said shaft having a gear in mesh with the said pinion on the valve-spindle, and a second bearing for the shaft secured to the upper part of the radiator, rotation of the shaft acting through the gear and pinion to operate the valve.

2. A radiator provided with a valve having a rotatable spindle, provided with a usual hand-wheel connection for operating the valve, a pinion interchangeable with said hand-wheel, means for securing the pinion detachably to said connection, a bracket detachably mounted on and supported by the valve-case, said bracket being provided with a shaft-bearing, a manually-operated actuating-shaft supported at its lower end by and to rotate in said bearing and held from longitudinal move-

ment, a gear carried by said shaft in mesh with the pinion on the valve-spindle, a second bearing for the shaft secured to the upper part of the radiator, rotation of the shaft acting through the gear and pinion to operate the valve, and a housing carried by the bracket and inclosing the gear and pinion.

3. A radiator and its controlling-valve having a rotatable spindle having at its end a usual hand-wheel connection, a wide-faced pinion rigidly but detachably secured at the end of the spindle to said connection, a bracket having a shaft-bearing, means to detachably secure the bracket to the gland of the valve-case, a manually-operated upright actuating-shaft supported at its lower end in said bearing and carrying a gear in mesh with the wide-faced pinion, means to prevent longitudinal movement of the gear with respect to the wide-faced pinion and a second shaft-bearing secured to the top of the radiator to maintain the shaft in upright position.

4. A radiator-valve-actuating mechanism adapted to be detachably secured to the stem of any usual radiator-valve and comprising a bracket having a socketed portion to receive the top of the valve-gland, means for securing the bracket by its socketed portion to said gland to support the same and parts carried thereby, a pinion adapted for detachable engagement with the valve-stem, said bracket having a shaft-bearing, an upright shaft mounted at its lower end in said bearing, a gear fast on said shaft and adapted to mesh with said pinion on the valve-stem.

5. A radiator and its controlling-valve having an upright rotatable spindle at the base of the radiator, a wide-faced pinion fast on the spindle, a bracket having a socket to embrace the spindle-gland and apertured to receive the spindle, a shaft-bearing on the bracket, an upright shaft mounted at its lower end in said bearing and having a gear thereon in mesh with and to rotate the pinion, means to prevent longitudinal movement of said shaft, a second bearing for the shaft, mounted on the upper part of the radiator, a handpiece on the upper end of shaft to rotate it, and a protective housing for the gearing, mounted on the bracket, said housing being open at its bottom to permit the ready attachment of the pinion to the top of the valve-stem.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM P. CLOUGH.

Witnesses:

GEO. W. GREGORY,
HERMAN J. SARTORIS.