

No. 628,689.

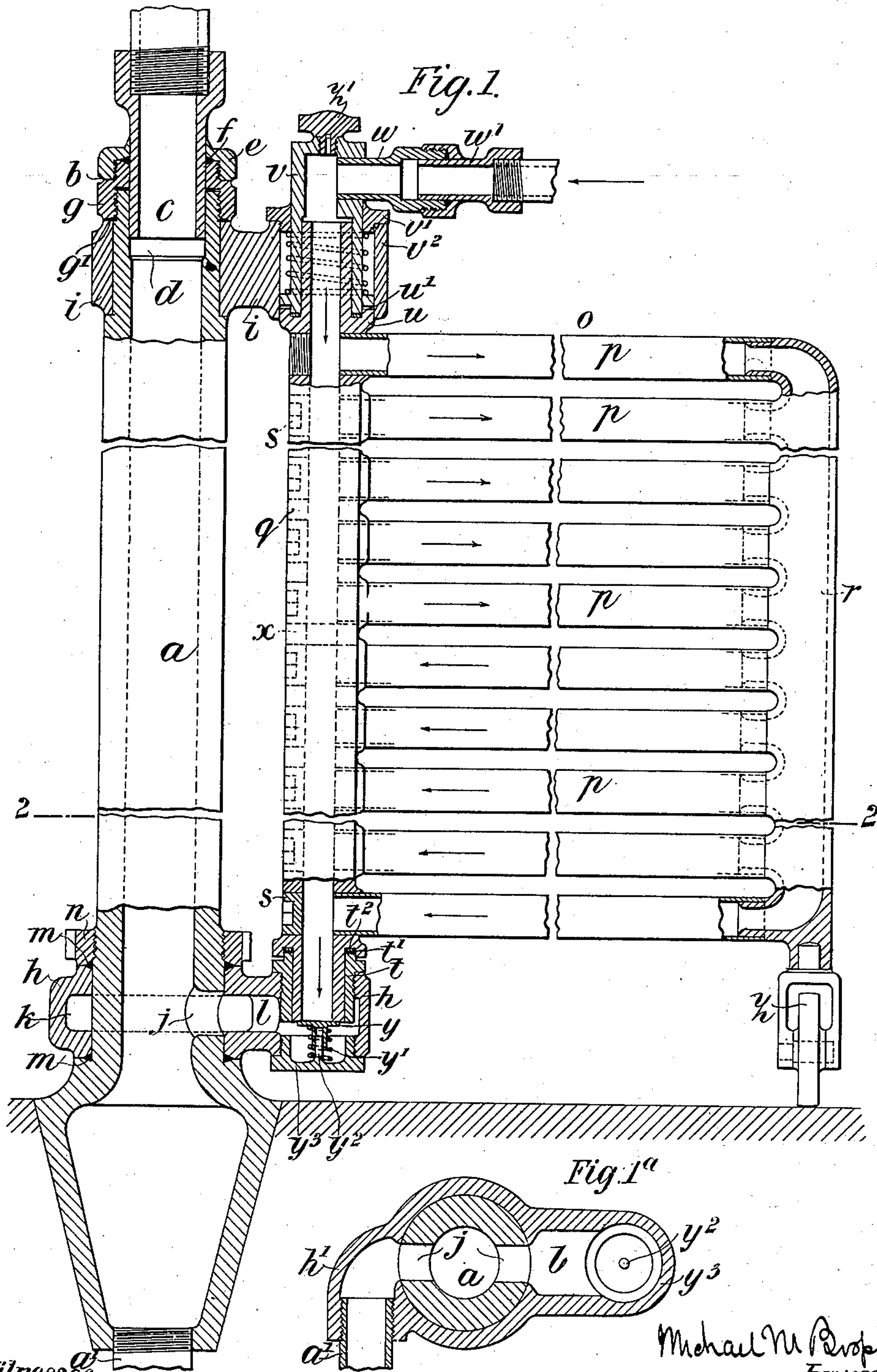
Patented July 11, 1899.

M. M. BROPHY.
HEAT RADIATOR.

(Application filed Sept. 16, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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Fig. 2.

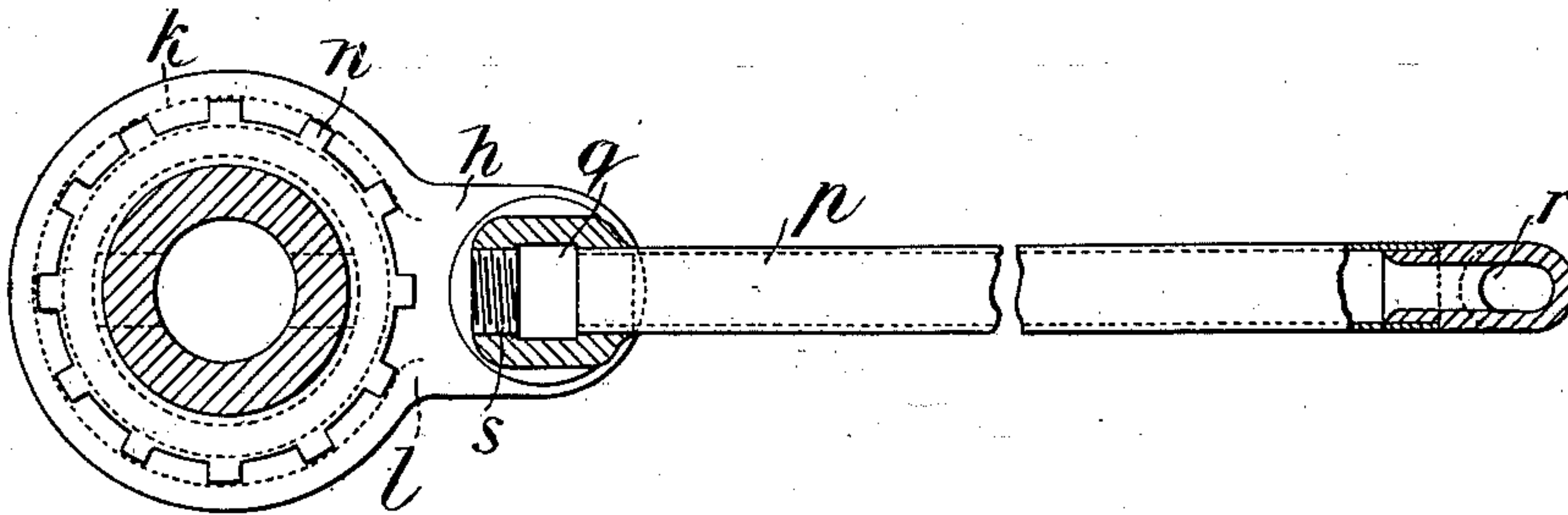
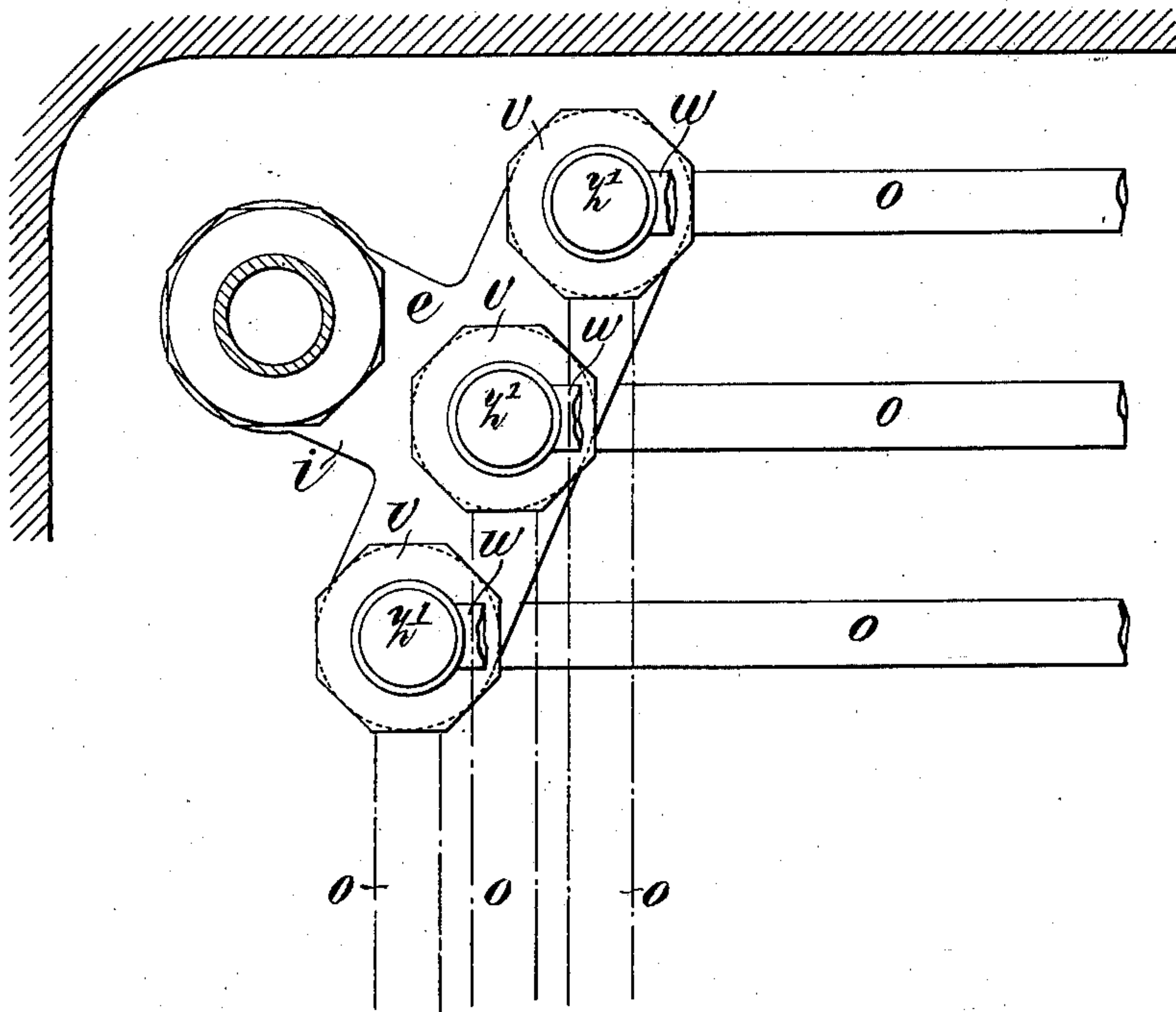


Fig. 3.



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MICHAEL MARY BROPHY, OF LONDON, ENGLAND.

HEAT-RADIATOR.

SPECIFICATION forming part of Letters Patent No. 628,689, dated July 11, 1899.

Application filed September 16, 1898. Serial No. 691,097. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL MARY BROPHY, a subject of the Queen of Great Britain, residing at London, England, have invented
5 new and useful Improvements in Heat-Radiators, (for which I have applied for a patent in Great Britain, No. 14,297, dated June 28, 1898,) of which the following is a specification.

10 My invention relates to heat-radiators of the kind wherein hinged leaves or coils are employed for facilitating cleaning, the objects of the present invention being to simplify the construction of such apparatus and increase
15 the facility with which access to the various parts can be obtained.

According to my present invention instead of hinging the leaves upon a post or upright which formed no part of the heating system
20 I now hinge them upon a post which forms a part of the return-pipe through which the water or steam flows after having passed through the heating coil or coils. I also provide novel arrangements for forming the
25 joints at the hinges of the several leaves and for preventing steam or water from entering a leaf or leaves from the return-pipe.

To enable my invention to be fully understood, I will describe the same by reference to
30 the accompanying drawings, in which—

Figure 1 is a sectional side elevation of an apparatus provided with a single movable leaf or coil; and Fig. 1^a represents a horizontal
35 section through the lower bracket for supporting the movable leaf or coil, showing said bracket arranged to receive a return-pipe above the floor. Fig. 2 is a section on the
40 line 2 2, Fig. 1. Fig. 3 is a plan view illustrating the arrangement of a radiator having a series of leaves or coils.

a is the hanging post or pillar, which is adapted to be securely fixed to the floor of the building or apartment in which the radiator
45 is to be fixed and which in the case of hospitals or other buildings having concrete, stone, or like floors is advantageously formed at the lower end as shown in Fig. 1, so that it may be embedded in the floor, but which
50 may be otherwise formed and fixed. This pillar is made hollow and adapted to have connected to it either at the lower or upper

end, or at both ends, the return-pipe *a'* for the water or steam.

When the return-pipe serves also for a coil upon a floor above, I advantageously arrange
55 that the pipe shall be connected with the pillar at the upper end by an expansion-joint. The form of expansion-joint which I advantageously make use of is shown at *b* in Fig. 1. This joint comprises the spigot end *c*,
60 adapted to slide in a socket *d* in the upper end of the pillar *a*, and a packing-gland *e*, which serves to compress a ring *f* of packing in a groove formed partly in the gland itself and partly in a screw-cap *g* (hereinafter de-
65 scribed) on the upper end of the pillar.

h i are two brackets which are bored out to fit correspondingly-turned portions on the pillar *a*, the said brackets having in the portions
70 which project from the pillar sockets for receiving the hinge-terminals of the leaf.

In the turned portion of the pillar upon which the bracket *h* is fitted a hole *j* is formed, and the bracket *h* is formed with a channel
75 *k* and with the inlet-passage *l*. By thus arranging a channel *k* in the said bracket *h* through communication between the passage *l* and the interior of the pillar through the opening or openings *j* always exists, no matter what may be the relative positions of the
80 bracket and the said pillar. In cases where the return-pipe instead of extending through the floor, as shown in Fig. 1, is to be carried above the floor I form the said bracket *h* with a socket *h'*, as shown in Fig. 1^a, to which the
85 return-pipe can be connected. If desired, the channel *k* (shown in Fig. 1) can be dispensed with if the passage *l* and the holes in the pillar are made to correspond.

m m are packing-rings, and *n* is a nut
90 screwed onto the pillar, the said nut serving for retaining the bracket in its proper position upon the pillar and also for compressing the packing-rings to form a tight joint for preventing the escape of water or steam. The
95 upper bracket *i* is held in position by the screw-cap *g* hereinbefore referred to, a packing-ring *g'* being arranged between the said ring and the top of the bracket for preventing leakage.

100 *o* is a hinged leaf provided with a series of heating-pipes *p p*, fixed at their ends to the

castings q r , which for convenience of description I will term "junction-pipes." The junction-pipe q has a series of apertures, into which the pipes p p are fixed by means of a tube-expander inserted through holes in the back of the said junction-pipe, which holes are ultimately closed by plugs s s , and the junction-pipe r is provided with a series of nozzles, upon which the tubes are fitted, as will be clearly understood by reference to Fig. 1. The junction-pipe q at its lower end is fitted into a bush t , inserted into the upper end of the projecting portion of the bracket h , and is provided with a flange or collar t' , having a groove t^2 , which is adapted to fit over the upper end of the bush t and to contain a ring of packing material for preventing leakage between the bush and the said junction-tube. The upper end of the junction-tube is constructed in a similar manner to the lower end and is provided with a collar u , having a groove u' , similar to the flange or collar and groove t' t^2 , the exterior of the flange or collar u fitting in the lower end of the socket in the upper bracket i .

Over the upper end of the junction-pipe q is fitted a cap v , the lower end of which rests upon packing material in the groove u' , while the upper end of the said cap is formed with an aperture, to which the flow-pipe w for the steam or water is fitted, as shown in the drawings. This pipe w is provided with an expansion-joint w' similar to the expansion-joint b hereinbefore described. Around the cap v is a screw-collar v' , which is inserted into the upper end of the socket of the bracket i and presses against a spring v^2 , which at its lower end bears against a shoulder on the cap v and serves to press the lower end of the said cap against the packing in the groove u' to form a tight joint around the upper end of the junction-tube q . This arrangement for hinging the leaf o permits of the latter being turned in any direction in order to afford access to all the parts for cleaning the same.

In practice the packing material in the groove t^2 u' has placed upon it a thin metallic washer for the purpose of preventing the packing being unnecessarily worn when the leaf is moved.

With the apparatus hereinbefore described the steam or hot water enters the coil through the pipe w , whence it flows from the upper part of the junction-pipe q (the said pipe having in it a partition, as indicated at x in Fig. 1) and the pipes p p , connected therewith, into the junction-pipe r and thence through the lower tubes p back to the junction-pipe q , whence it flows through the passage l , channel k , and openings j j to the interior of the pillar a and to the return-pipe.

A suitable valve is provided in connection with the flow-pipe w for shutting off the supply of heating fluid when required. In order that when the fluid is so shut off the steam or hot water from the return-pipe shall not flow back into the coil through the passage l , I ar-

range in connection with the lower end of the junction-pipe q a valve y , which is normally pressed against its seat by a spring y' , the said spring being sufficiently light to allow the valve to open under the action of the fluid entering through the flow-pipe w . The valve y , as shown, is carried upon a stud y^2 on a plug y^3 , which is inserted into the lower end of the socket of the bracket h .

z is a supporting-wheel which when my invention is applied to heavy coils serves to facilitate the movement of the same and to relieve the joints of any unnecessary strain, and z' is a cock for allowing the escape of air from the pipes.

When two or more leaves or coils are to be arranged to form a radiator, the brackets h and i are each provided with a number of sockets corresponding with the number of coils to be employed. In fixing these brackets they are preferably arranged at such an angle—for instance, as shown in Fig. 3—that each leaf can be turned back to a position, say, at right angles to the wall against which the radiator is placed—that is to say, from the position shown in full lines in the said figure to the position indicated by the dotted lines. The arrangement of the channel k within the lower bracket h readily permits of this adjustment of the bracket without interfering with the water-passages.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a radiator, the combination with a vertically-disposed stationary hollow pillar, of laterally-extending brackets secured thereto, adjacent to the upper and lower ends of said pillar, and a radiator wing or section, pivotally mounted in said brackets and communicating with the interior of the pillar, substantially as described.

2. In a radiator, the combination with a vertical stationary pillar, provided with turned portions adjacent to its upper and lower ends of brackets surrounding said turned portions and capable of being moved to different positions around the pillar, means for clamping said brackets with respect to the pillar, and a radiator-section having a vertical member pivotally secured to said brackets, and communicating with the pillar, through one of said brackets, substantially as described.

3. In a radiator, the combination with a vertical stationary hollow pillar, of brackets secured thereto adjacent to its upper and lower ends, said brackets being provided each with a vertical aperture, one of said brackets having a communication between its said aperture and the interior of the pillar, a radiator-section having a vertical member pivotally engaging said vertical apertures in said brackets substantially as described.

4. In a radiator, the combination with a vertical stationary hollow pillar, provided at

its upper and lower ends with brackets having portions surrounding said pillar, one of said brackets being provided with a passage communicating with the interior of the pillar, threaded clamping-rings engaging said pillar for clamping the brackets with respect thereto and a radiator wing or section pivotally engaging said brackets and communicating with the interior of the pillar through said passage, in one of said brackets, substantially as described.

5. In a radiator, the combination with a vertical stationary hollow pillar provided adjacent to one end with an aperture, communicating with the interior, of brackets having portions surrounding said pillar adjacent to its upper and lower ends, one of said brackets having an annular groove in line with the said aperture in the pillar, and a passage communicating with said groove, and a radiator-section pivotally connected to said brackets and communicating with said passage, substantially as described.

6. In a radiator, the combination with a vertical stationary hollow pillar, provided at its upper end with a bracket having a vertical aperture therein and at its lower end with a bracket having a vertical aperture communicating with the interior of the pillar, a radiator wing or section having a vertical member having its upper end provided with an annular flange pivotally engaging the aperture in the upper bracket, a sleeve engaging said vertical member above said flange, and provided with means for receiving a supply-pipe, a cap engaging said bracket above said flange and surrounding said sleeve, a spring interposed between said cap and said sleeve for holding said sleeve in engagement with said flange, the lower end of said vertical member having a pivotal connection with the lower bracket

and communicating with the interior of the pillar, through the same, substantially as described.

7. In a radiator, the combination with the vertical stationary pillar, provided at its upper end with a bracket having a vertical aperture therein, and adjacent to its lower end with a bracket having an aperture therein communicating with the interior of the pillar, and a bushing in said aperture, a radiator wing or section, having a vertical junction-pipe having its lower end pivotally engaging said bushing and provided with a flange adjacent to the end of said bushing having a packing-recess therein, the upper end of said junction-pipe having a flange pivotally engaging the upper bracket and extending into the aperture therein, said flange having a packing-recess therein, a sleeve engaging the junction-pipe within the bracket, a cap surrounding said sleeve and secured to the bracket, a spring interposed between the said cap and sleeve within the bracket, said sleeve having provision for receiving an inlet-pipe, substantially as described.

8. In a radiator, the combination with a vertical stationary hollow pillar, of a pair of brackets secured thereto adjacent to its upper and lower ends, one of said brackets communicating with the interior of the pillar, a radiator wing or section having hollow vertical portions pivotally engaging said brackets, and a spring-actuated valve engaging one of said hollow portions, adjacent to the bracket communicating with said pillar, substantially as described.

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Witnesses:

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