

No. 829,685.

PATENTED AUG. 28, 1906.

R. E. ATKINSON.  
CONTROL VALVE FOR RADIATORS AND THE LIKE.

APPLICATION FILED NOV. 22, 1904.

2 SHEETS—SHEET 1.

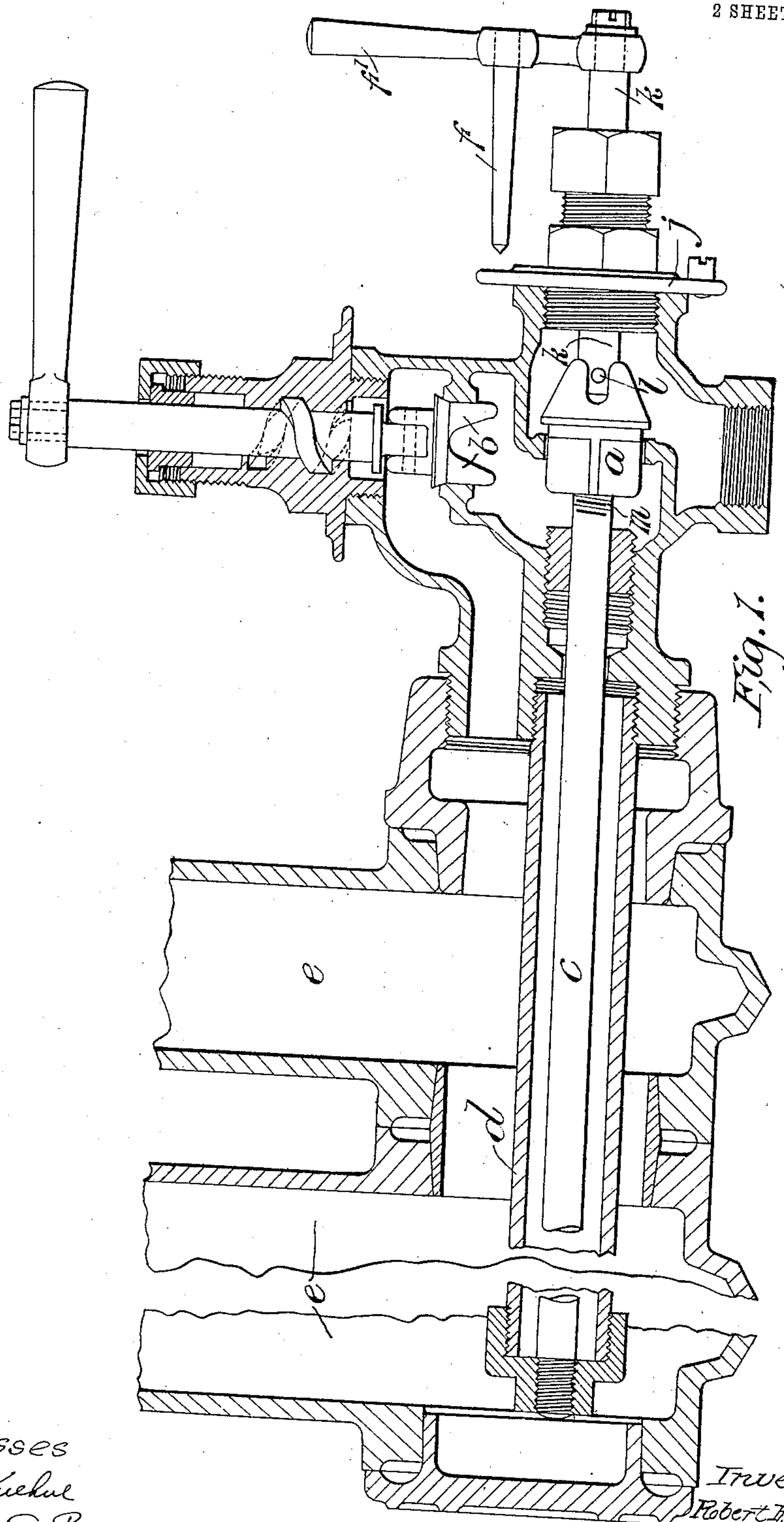


Fig. 1.

Witnesses  
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Inventor  
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By *Richardson*  
ATT'YS

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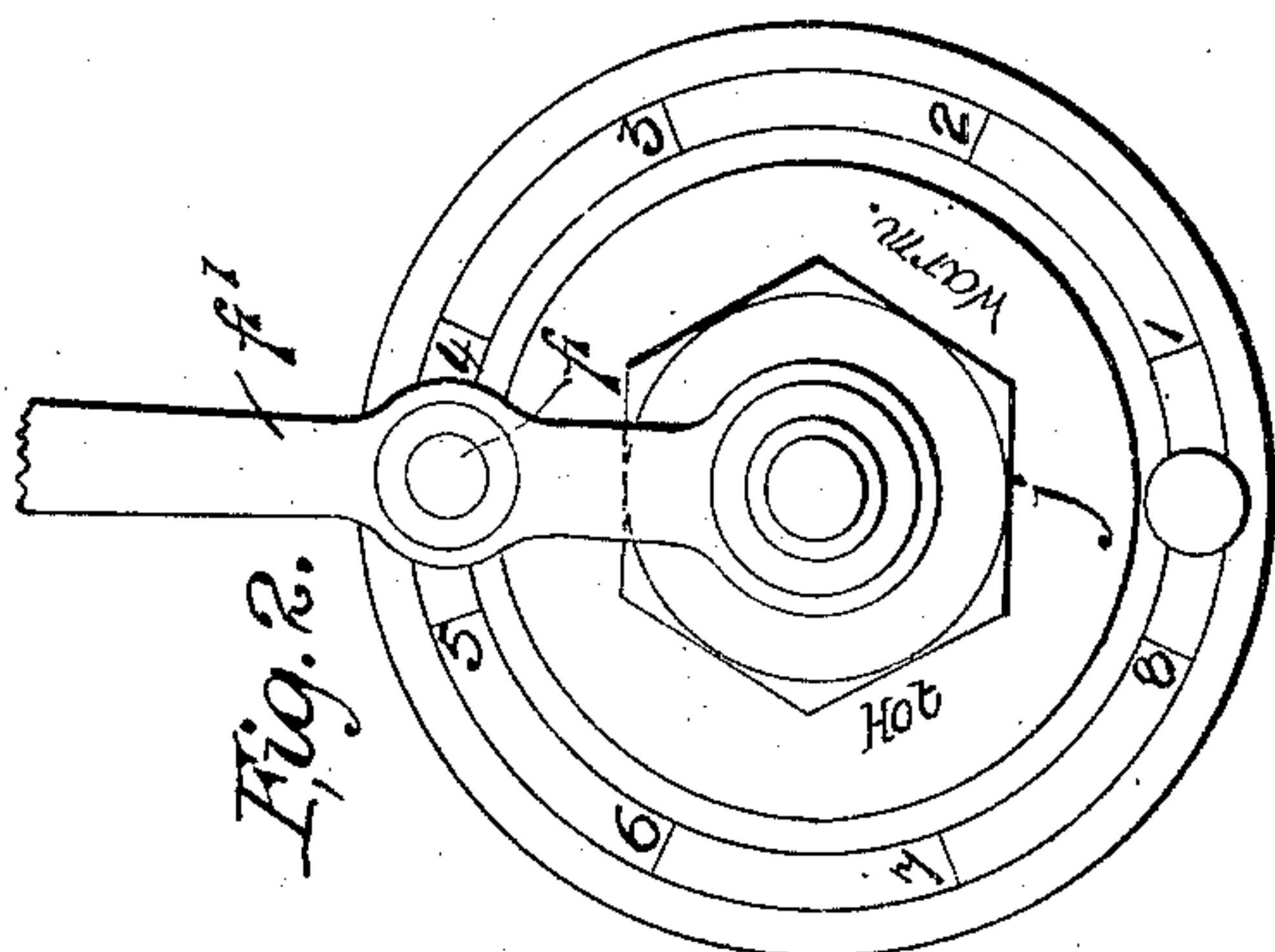
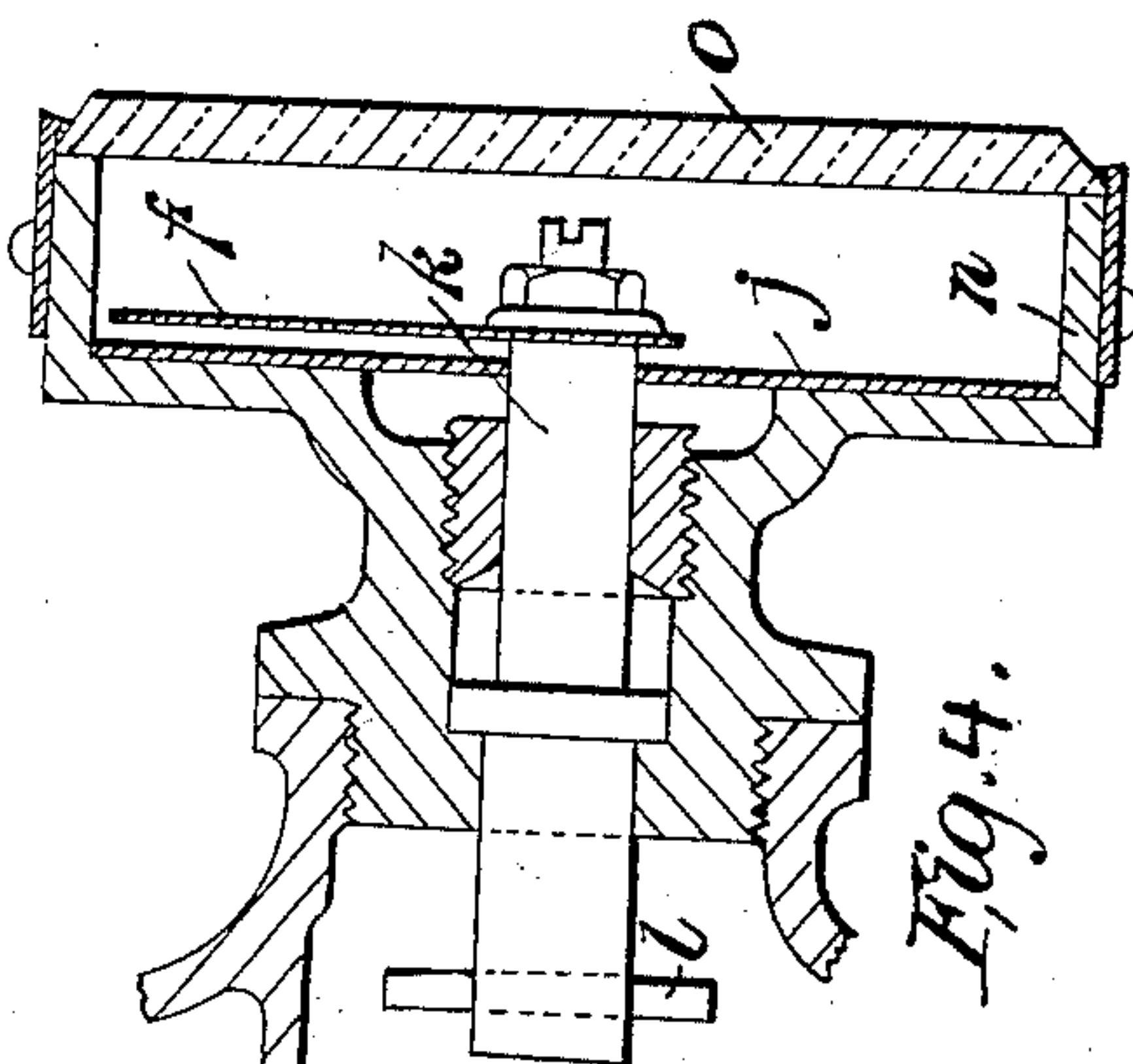
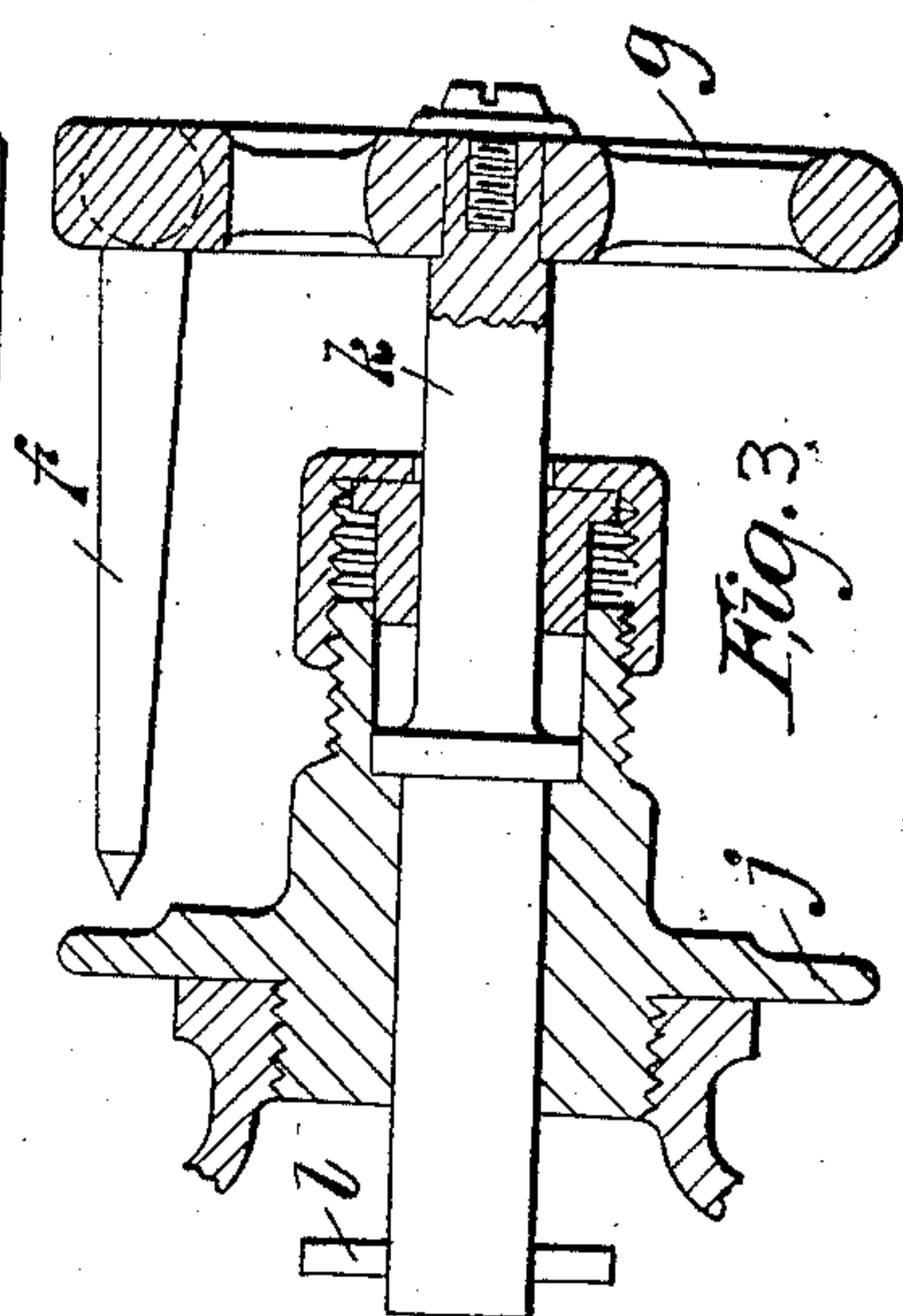
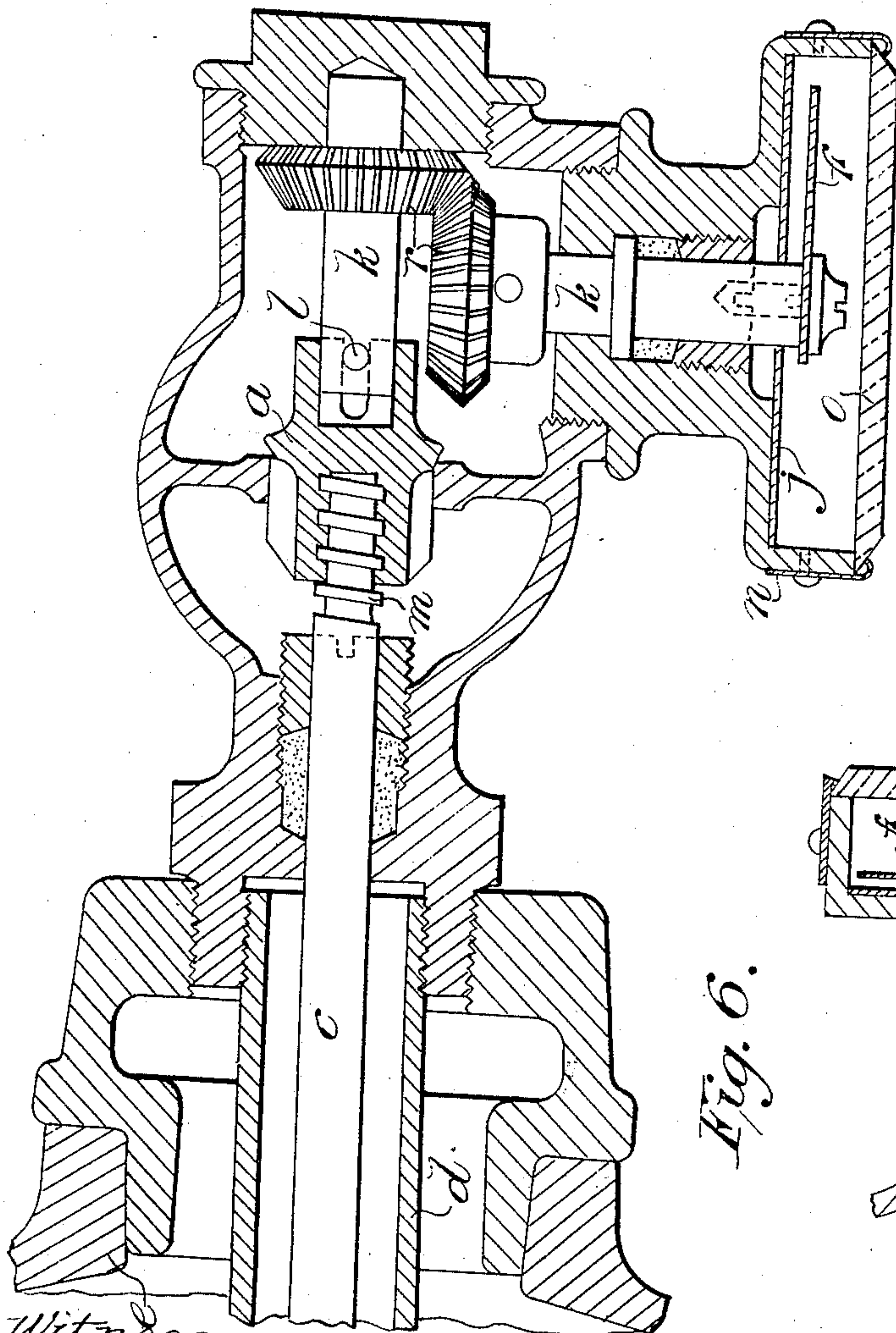
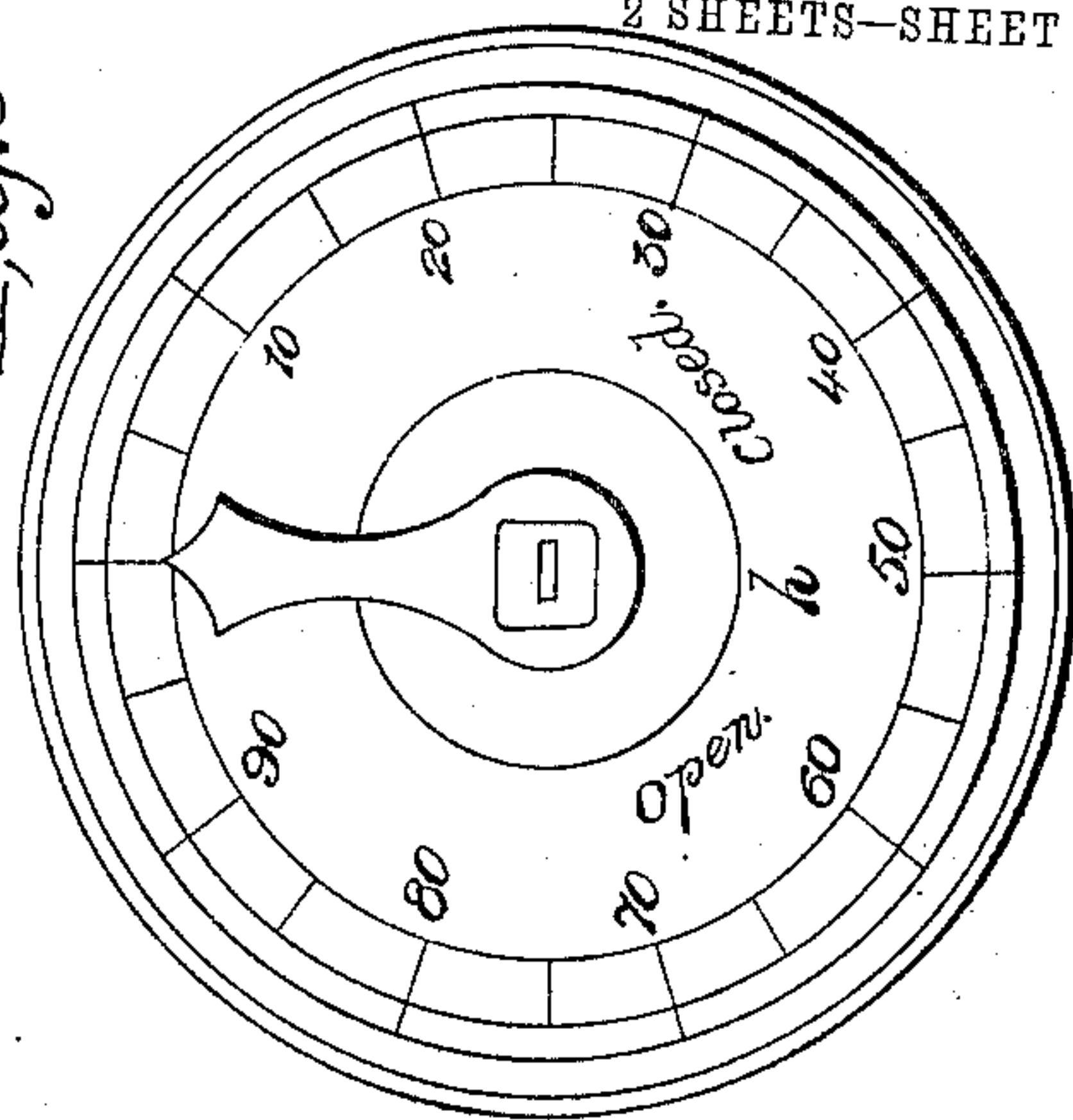


Fig. 5



Witnesses  
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# UNITED STATES PATENT OFFICE.

ROBERT ERNEST ATKINSON, OF LEICESTER, ENGLAND.

## CONTROL-VALVE FOR RADIATORS AND THE LIKE.

No. 829,685.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed November 22, 1904. Serial No. 233,878.

*To all whom it may concern:*

Be it known that I, ROBERT ERNEST ATKINSON, a subject of the King of Great Britain and Ireland, residing at 57 Evington road, Leicester, England, have invented certain new and useful Improvements in Control-Valves for Radiators and the Like, of which the following is a specification.

This invention relates to controlling and stop valves for radiators and like purposes, the object being to provide an automatically-operated valve for controlling the supply of steam to a radiator or other vessel accordingly as the demand for such steam arises, such automatic valve, however, being provided with means by which its amount of opening may be regulated or adjusted at any time in order to allow an attendant or occupant of the room in which the radiator or vessel is situated to more easily control the temperature of the room.

The object is also to so arrange the adjusting devices for the valve as to facilitate the detection of tampering with the valve on the part of the attendant or other unauthorized person.

The invention is applicable to the automatic control of steam, water, or other fluid either to or from a vessel and is not confined in its application to a radiator or any special type of radiator.

The accompanying drawings illustrate forms of the invention.

Figure 1 is a vertical section illustrating the application to a radiator. Fig. 2 is an end elevation of the dial and pointer shown in Fig. 1. Fig. 3 is a vertical section of an alternative form of pointer-manipulating device. Figs. 4 and 5 are respectively vertical section and end elevation of another alternative form of pointer and dial. Fig. 6 is a horizontal section of the device, illustrating a modification of the valve-adjusting mechanism.

In carrying out the invention according to one modification, as in the application to a steam-radiator, I provide in one valve-casing two independent valves, one of which, *a*, is automatically opened or closed by a thermostatic device, so as to control the supply of steam to the other, *b*, which is operated by hand and forms the usual stop-valve for definitely opening or closing the radiator to steam.

The automatic valve *a* is screwed upon the

end of an iron or like rod *c*, the opposite end of the rod being screwed to the closed end of a surrounding copper or like expansion-tube *d*, the open end of which is screwed to the valve-casing. This expansion-tube *d* may be arranged in any suitable manner in conjunction with the radiator *e*, so as to agree approximately in temperature therewith. It will thus be obvious that as the copper tube *d* becomes hot or cold it will expand or contract, and thus by means of the iron rod *c* move the valve *a* to or from its seat, and thus control the supply of steam to the radiator.

In order to enable the opening of the valve *a* to be regulated at any time by means readily accessible to any one in the apartment containing the radiator, the valve *a* is screwed on the end of the iron rod *c* and adapted to be rotated thereon by means of an exterior handle, pointer, or wheel. A handle *f* is shown in Figs. 1 and 2 with a pointer *f* attached to it. A wheel *g* is shown in Fig. 3 with the pointer *f*, while a pointer *f* alone is shown in Figs. 4 and 5. A pointer *f* in any case is arranged to move over an index or dial *j*, divided into degrees, and, if desired, marked with such indications as "warm," "hot," or the like, corresponding to the limit of opening allowed or set for the valve *a*. The pointer *f* or device carrying the same is preferably carried on a spindle *k*, passing through a stuffing-box and having on its inner end a cross-pin *l*, engaging in slots or between pins on the valve *a*, so as to enable the latter to be rotated in either direction and cause it to move longitudinally on the iron rod *c*, due to the screw-thread *m* thereon, which is preferably left-handed to enable the pointer to be moved clockwise to increase the supply of steam.

The pointer *f* and dial *j* are shown in Figs. 4 and 5 inclosed in a casing *n*, provided with a removable glass top or lid *o*, which may have a bayonet-joint connection or be secured by screws.

In order to prevent tampering with the valve *a* after it has been initially set by the engineer, the latter at such setting may note the number or degree on the dial *j* to which the pointer *f* indicates when the valve *a* is closed or screwed down on its seat or in any other fixed or definite position. This number may be kept in an index, and at a subsequent inspection will reveal at once whether the valve has been tampered with.



The improved automatic controlling-valve is combined with a definite stop-valve. Said stop-valve is situated in the same casing, as illustrated by *b*, Fig. 1, and is preferably of the screw-down type having a very quick pitch, as its object is to entirely close or open the passage to steam and not to partly regulate the same.

When the invention is applied to a radiator which is situated within a recess in a wall or within a cabinet in order that the dial may be brought to the front, the spindle *k*, on which the pointer *f* is carried, may be divided, as shown in Fig. 6, the divided portions being arranged at right angles and connected by bevel-gearing *r* or by universal joints or in any other suitable manner.

It is to be understood that the invention is not confined to the form of thermostat or other details of construction hereinbefore referred to, by way of example, but that the same may all be modified to suit the size or type of radiator or other apparatus to which the automatic controlling-valve or combined automatic controlling and hand-stop valve is to be applied or the position thereon in which it is to be placed.

The invention also is applicable to the con-

trol of fluid either to or from the radiator or like apparatus.

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

The combination with a radiator of a combined hand-operated and automatic device for controlling the supply of heating fluid thereto, and adapted to be connected at one point thereon, comprising a single casing adapted to be screwed into an opening near the bottom of the radiator, an inlet and an outlet to said casing the latter communicating with the radiator, a hand-operated quick-pitch screw-down stop-valve and a thermostatic valve in said casing, thermostatic members for the latter projecting into the radiator, a spindle for adjusting the thermostatic valve, a handle and pointer on said spindle outside the casing and a scale for indicating the adjustment of the valve.

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

ROBERT ERNEST ATKINSON.

Witnesses:

ALBERT L. PARKER,  
A. W. MATHYS.