

No. 733,437.

PATENTED JULY 14, 1903.

H. M. STURGIS.
HEATER.

APPLICATION FILED JAN. 13, 1902.

NO MODEL.

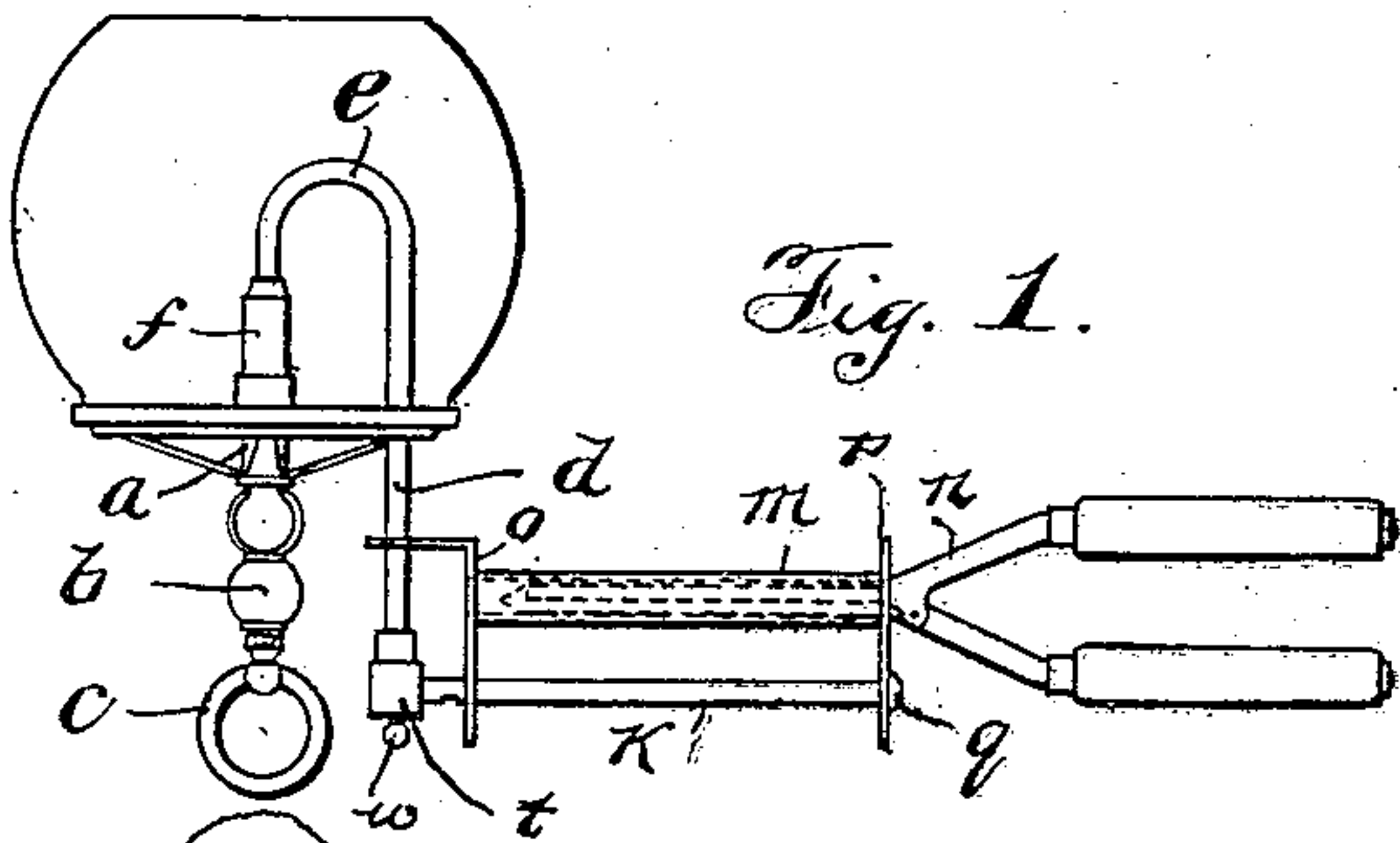


Fig. 1.

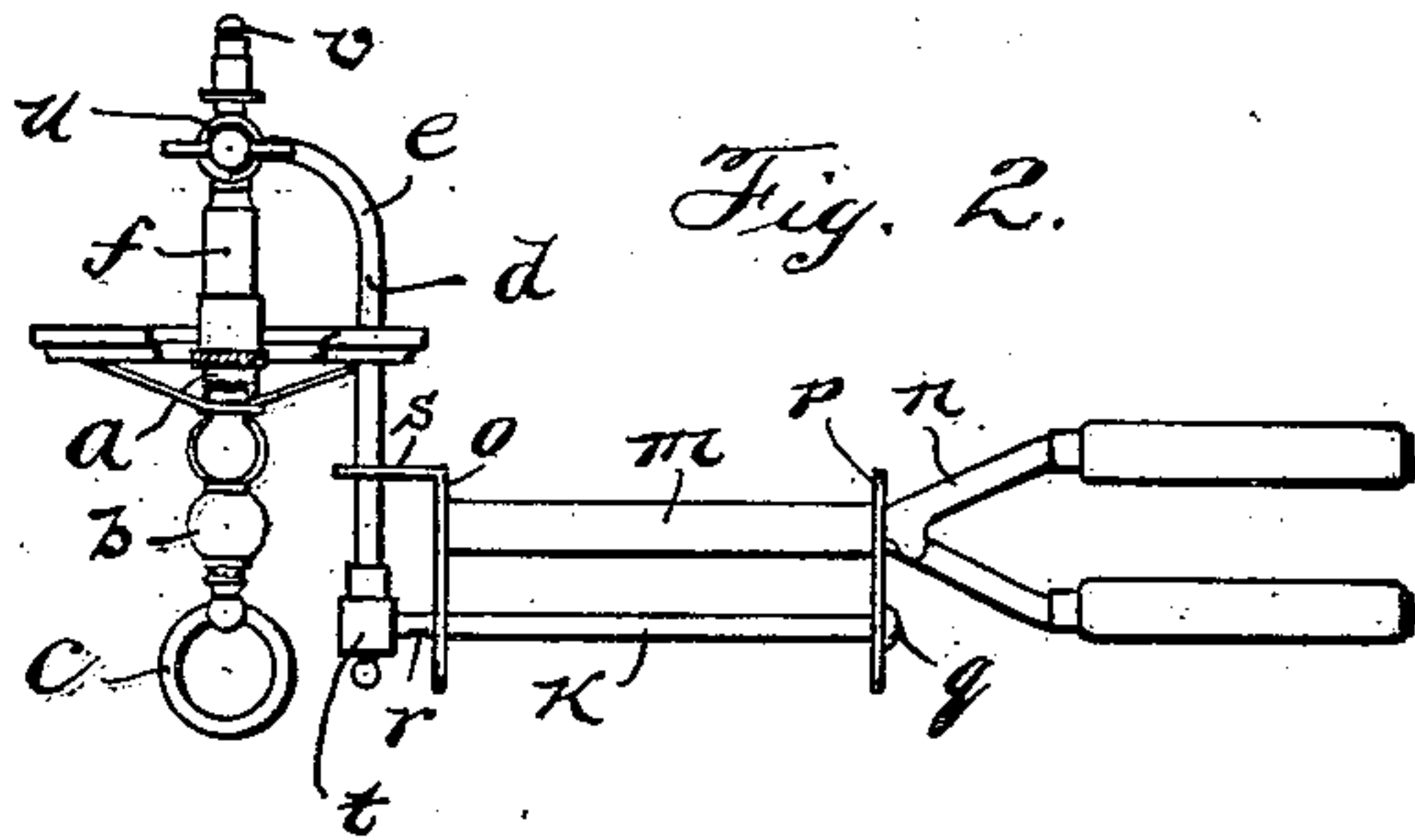


Fig. 2.

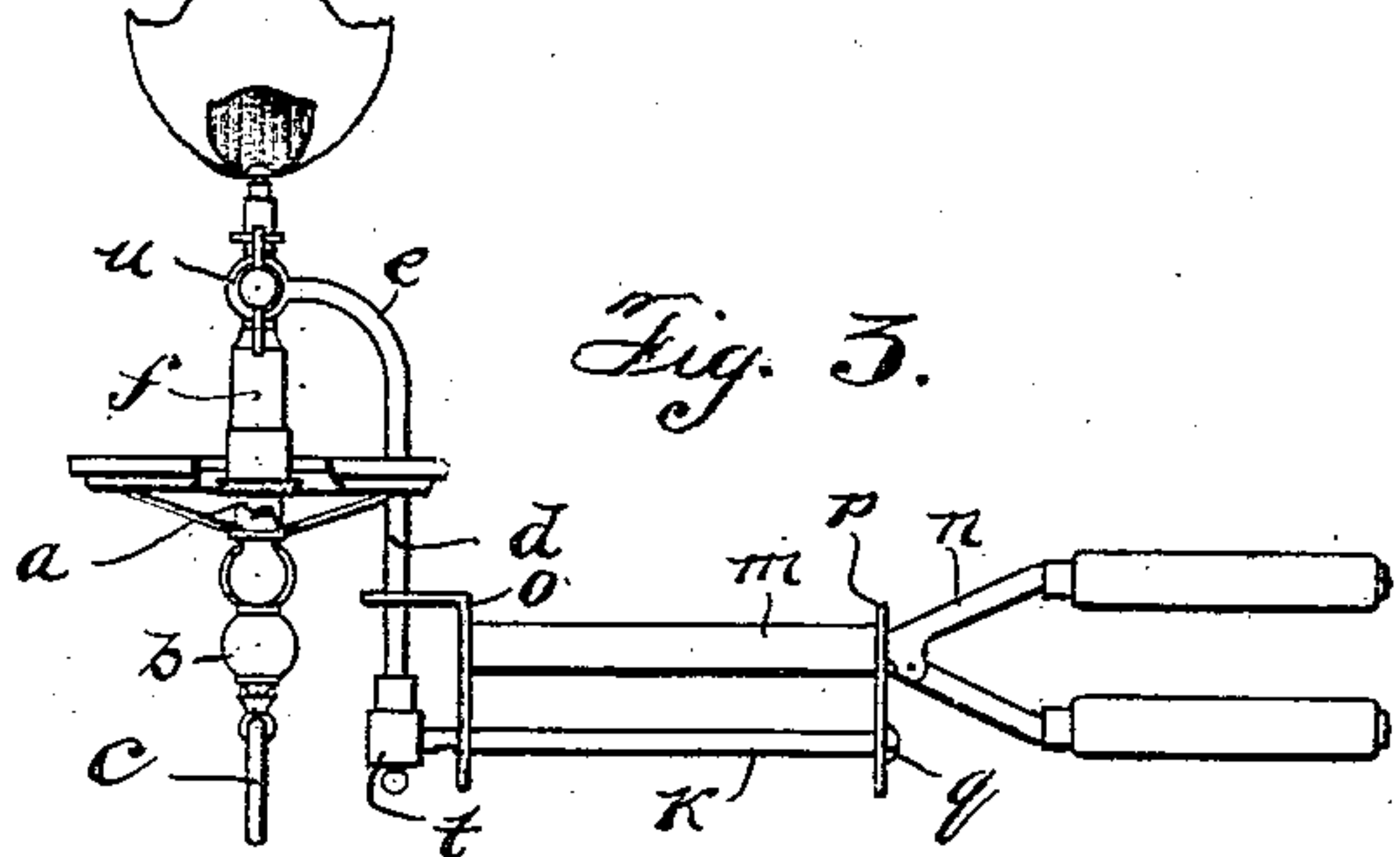


Fig. 3.

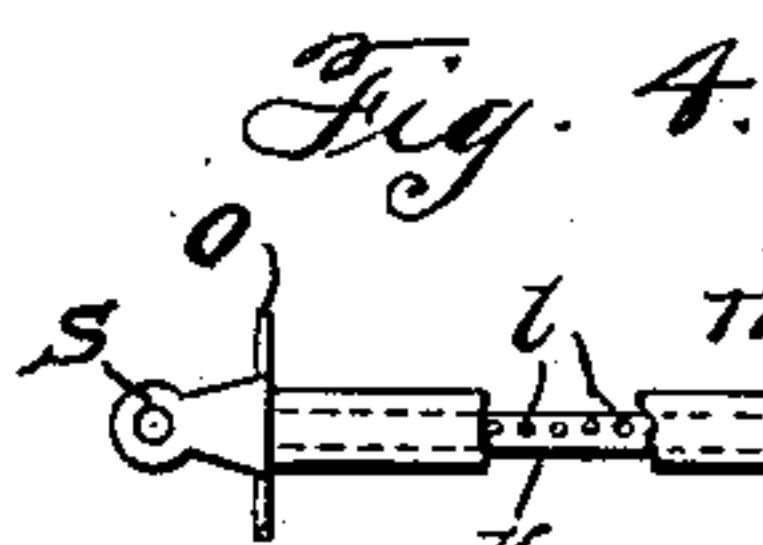


Fig. 4.

Fig. 7.

Fig. 6.

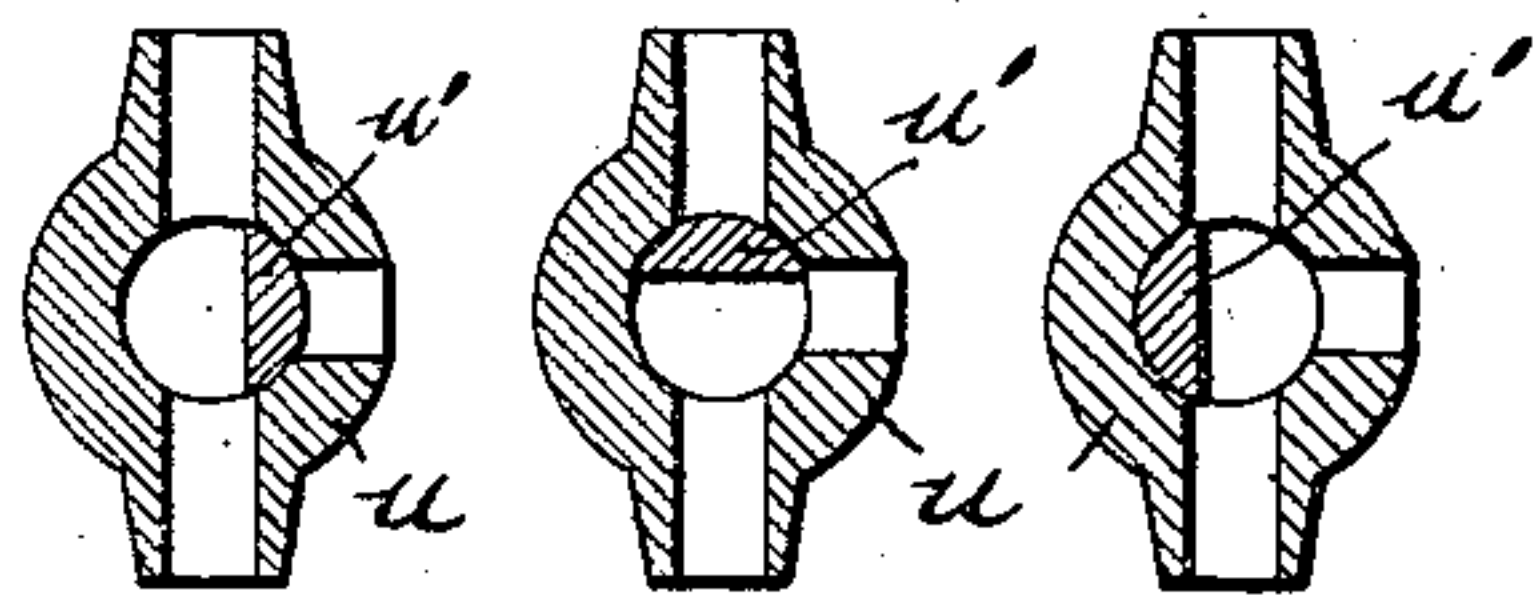
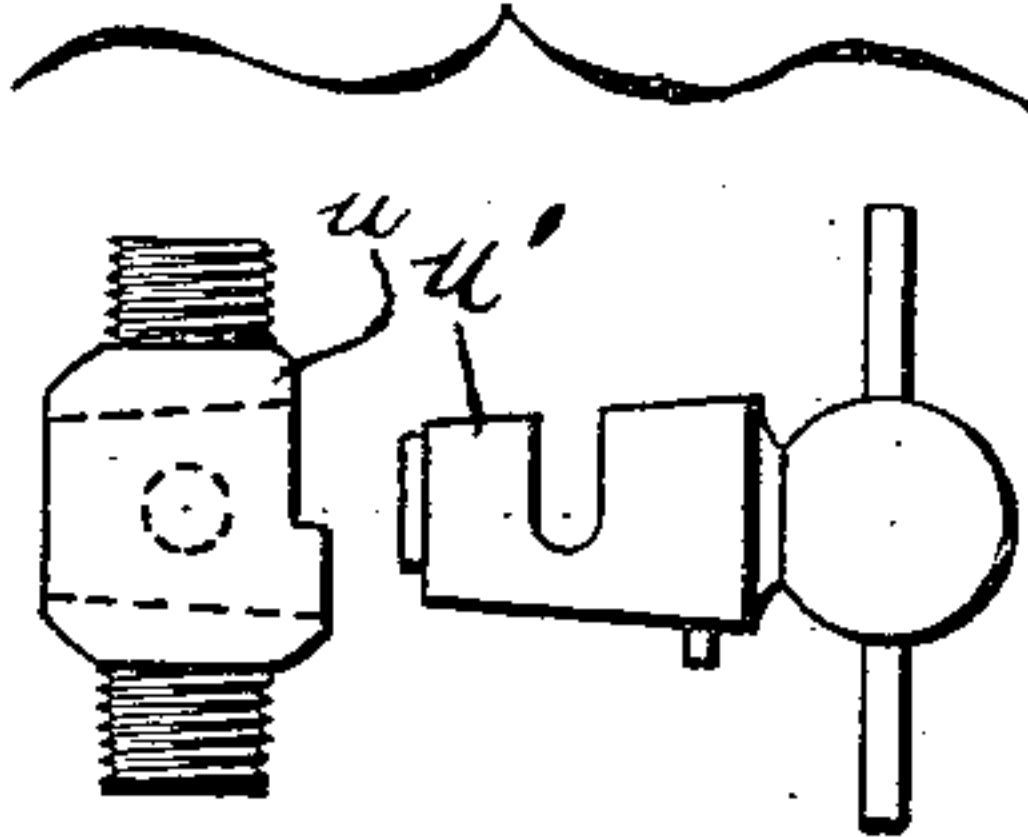


Fig. 8.

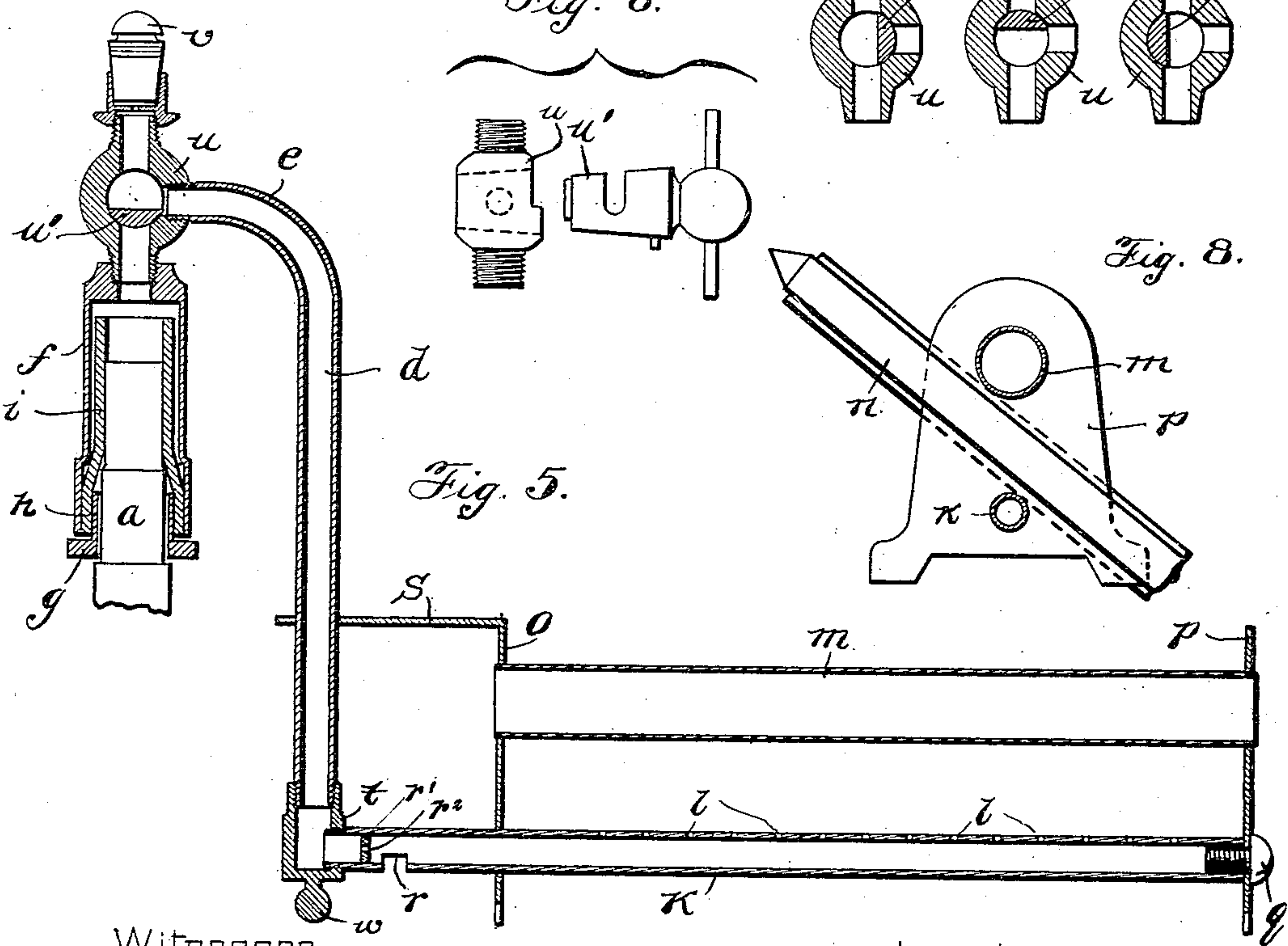


Fig. 5.

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UNITED STATES PATENT OFFICE.

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HEATER.

SPECIFICATION forming part of Letters Patent No. 733,437, dated July 14, 1903.

Application filed January 13, 1902. Serial No. 89,481. (No model.)

To all whom it may concern:

Be it known that I, HERBERT MARSHALL STURGIS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a certain new and useful Improvement in Heaters, (Case No. 4,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to devices for heating curling-irons, and has for its object the provision of a structure of this class that may be quickly and effectively united with or placed upon a gas-jet and which is also adapted for quick removal from the gas-jet.

In practicing my invention I employ a union adapted for quick engagement with and separation from the gas-jet, which union is preferably screwed or otherwise integrally secured to a duct formed, preferably, in the shape of a gooseneck, which duct projects for a suitable distance parallel to the union and is deflected at right angles thereto a sufficient distance below the union to clear the globe and globe-holder and other parts of the gas-fixture, whereby existing gas-fixtures need not be modified nor globes that may be in place removed in order to effect the placement of the heater. The lower angularly-extending portion of the duct is provided with a series of apertures through which gas passed from the gas-jet through the union and duct may issue. These apertures are arranged to produce flames lying in a plane coincident with the vertical diameter of the said angular extension to strike the bottom of a receiving-tube located above the apertures. This receiving-tube is provided with end plates, which are preferably rigidly secured thereto. The angular extension engages the lower portions of these end plates, loosely passing through a hole provided in one end plate and being secured to the other end plate by means of a machine-screw passing through a corresponding hole and having threaded engagement with the interior of the duct to thereby prevent the escape of gas at the other end of the duct, as well as to engage the same with

the end plate. A bracing means is interposed between one of the end plates and the vertical portion of the duct to prevent the vertical and horizontal branches of the duct from being displaced or sagging. The tube having a gooseneck is preferably separably secured to the burner-tube, so that it may be replaced by a similar tube having an added attachment in the form of a fitting including a single jet for the purpose of creating a lighting-flame and a valve whereby the application of gas to the heating and lighting burners may be controlled, the valve being preferably so constructed that it may entirely shut off the gas to both of these burners, limit the flow of gas to either burner, or permit it to flow to both burners simultaneously. This construction is of especial utility where the device is to be used in a room that has but one gas-jet, so that the application of my improved heater to this single gas-jet will not prevent illumination in the room.

I have thus specifically outlined the preferred embodiment of the invention; but I do not wish to be limited to this species of the invention in all the claims.

I will explain my invention more fully by reference to the accompanying drawings, illustrating the preferred embodiment thereof, in which—

Figure 1 is a side elevation of my improved apparatus, including a gooseneck, without the lighting-burner attachment, the apparatus being shown in place upon an ordinary gas-jet inclosed by a globe. Fig. 2 is a view of the apparatus of my invention having a gooseneck with a lighting attachment added thereto substituted in place of the form of gooseneck shown in Fig. 1, the apparatus being applied to a burner without a globe. Fig. 3 is a view similar to Fig. 2, illustrating the lighting-flame that may be secured by means of the fitting supplied to a gooseneck. Fig. 4 is a plan view of the heater. Fig. 5 is a sectional elevation of the apparatus of my invention when modified as illustrated in Figs. 2 and 3. Fig. 6 is a side elevation of the fitting added to the gooseneck, parts thereof being separated to show their con-

struction. Fig. 7 is a view of the fitting illustrated in detail in Figs. 5 and 6, showing different adjustments of the valve. Fig. 8 illustrates the utility of the preferred embodiment of the heating apparatus in holding a curling-iron in place without subjecting the same to the heating-burner.

Like parts are indicated by similar characters of reference throughout the different figures.

In the drawings I have illustrated one of the many well-known types of gas-jets to which and from which my device can be readily attached and detached. In this instance the gas-jet *a* is provided upon the end of a gas-pipe *b* in the form of a wall-bracket having a controlling-cock *c* located near the wall. The location of the valve or cock *c* is immaterial, as the device of my invention is adapted for use in connection with all forms of gas-fixtures now upon the market.

I employ a duct *d*, made of thin metal. This duct is provided with a curved portion *e*, that is preferably rigidly united with a union *f* by being screwed thereto. This union is adapted for unthreaded engagement with the gas-tip. This union is provided with a cap *g*, having a cylindrical extension *h*, around which is placed a section of rubber tube *i*, which is clamped between the extension and the outer wall of the union, whereby the rubber tube may be readily placed in engagement with the selected gas-tip and readily removed from engagement with the gas-tip, while at the same time a gas-tight fit is provided for conveying the gas from the pipe *b* through the duct *d*. This duct has a horizontal extension *k*, which is joined with the portion *e* by the vertical or upright stretch of the duct. The horizontal extension *k* is provided with a series of apertures *l*, constituting jet-openings. I prefer to employ these distinct jet-openings rather than an elongated slot; but I do not wish to be limited to the jet-openings, which, in fact, I herein consider as the equivalent of a continuous slot, and the claims are drawn with this equivalency in view; nor do I wish to be limited to the placement of the jet-openings in a single straight line.

The receiving-tube *m*, within which the tongs of the curling-iron *n* may be inserted, is rigidly secured at its ends to the end plates *o* and *p*, this tube constituting the preferred form of curling-iron support. The end plate *o* is provided with an aperture through which the duct portion *k* freely slips, while the end plate *p* is provided with an aperture through which a fastening-screw *q* may pass into engagement with threads provided within the bore of the duct portion *k*, the screw *q* being preferably in the form of a machine-screw whose head is of a considerably-larger diameter than the diameter of the duct, whereby the end plate *p* is held between the head and the end of the duct to not only secure the heating-tube *m* in proper relation to the duct portion *k*,

but also to seal the end of the said duct portion to prevent the escape of gas. To secure effective combustion of the gas passing through the duct, I provide an aperture *r*, affording direct communication between the surrounding atmosphere and the bore of the duct. By locating this aperture, which is preferably in the form of a wide slot, in the bottom of the duct the escape of gas therethrough is prevented, while the air is readily drawn within the duct or tube during the combustion of the gas to effect a thorough intermixture of the gas and air to produce a most effective combustion. A plug *r'* may be provided at the rear of the cut or slot *r*, which plug contains a very small opening *r''* for the passage of gas, so that the gas may be forced past the opening *r*. As this cut or slot *r* is likely to weaken the tube, which is preferably of a uniform diameter throughout, I provide a bracing device which properly strengthens the tube to prevent the weight of the curling-iron from bending the tube at the said slot. For this purpose an apertured plate *s*, that is rigidly secured to and preferably stamped out of the same metal with the end plate *o*, is provided. The receiving-recess of this plate engages the vertical length or stretch of the gas-duct *d* to thereby preserve the proper angular relation between the vertical and horizontal lengths of the said duct, so that the presence of the slot *r*, which is preferably located in the horizontal portion *k*, does not detract from the rigidity of the structure.

The heating-tube *m* coacts with the duct portion *k* to hold the curling-iron in position; otherwise the curling-iron, although gripping a plate, would of its own weight tend to rotate to a vertical position. By interposing the curling-iron between the duct *m* and the duct portion *k* the curling-iron is placed at a convenient angle to be readily accessible to the user.

The ducts *d* indicated in Figs. 2, 3, and 5 are adapted for substitution in place of the duct *d* indicated in Fig. 1. For this purpose the vertical portion of the ducts *d* of both forms is preferably separably connected with the horizontal stretches *k*, for which purpose the contiguous ends of the vertical and horizontal portions of each duct are preferably threaded to have threaded engagement with an elbow-fitting *t*, which may permanently be engaged with the portion *k*, it only being necessary to unscrew the vertical portion of the duct when it is to be replaced. The duct illustrated in Figs. 2, 3 and most clearly in Fig. 5 is provided with an elbow-fitting *u*, which at one end is adapted for communication with the union or coupling *f* and at its middle portion for threaded engagement with the curved portion *e*. This elbow preferably constitutes a three-way cock, one passage-way affording communication with the union or coupling *f*, another passage-way with the duct *d*, and a third passage-way with the lighting-burner *v*. There is located in this

fitting a valve *u'*, adapted for four operative positions. In the position illustrated in Fig. 5 neither the heating-burner *k* nor the lighting-burner *v* receives gas. In the left-hand illustration in Fig. 7 only the lighting-burner *v* receives gas. In the middle illustration in Fig. 7 only the heating-burner receives gas. In the right-hand illustration of Fig. 7 both the heating and the lighting burners receive gas. Thus the heating-burner may be used without preventing illumination when there is but one gas-jet in a room.

The elbow-fitting *u*, as indicated, preferably has threaded engagement with the curved portion *e* and the union *f*, being thus preferably interposed between the union and the duct. In substituting one form of duct for another the union *f* is unscrewed from the one and screwed to the other.

By means of my invention only one extra part need be provided, as the only interchangeable parts are the vertical portion of the duct *d* with the curved portion *e* (shown in Fig. 1) and the vertical portion of the duct *d* with the fitting or cock *u*, (illustrated in Fig. 5,) the balance of the apparatus being common to both of these interchangeable portions.

It will be readily seen how the form of fitting illustrated in Fig. 3 may be transformed into the style of fitting illustrated in Fig. 2, which may be accomplished by substituting the portion *d* of one structure for the portion *d* of the other.

It is frequently desirable to place the fixture on a table or other support when not in use and have it stand upright. The plates *o* and *p* are continued below the tube portion *k* to afford a suitable standard for the appliance. In order to prevent the weight of the union or coupling *f* and the added illuminating-tip from overbalancing the structure, I provide a knob *w* at the bottom of the elbow *t*, the lower surface of the knob coinciding with the lower edges of the said plates, there being thus three supports placed in alinement to constitute a base for the apparatus.

It will be observed that I have provided a union with a smooth or unthreaded bore, whereby the union may be readily placed in engagement with a gas-tip by a mere vertical motion and removed from this engagement also by a mere vertical motion. Thus the curling-iron heater need not be permanently associated with any given gas-jet, nor need any gas-jet be especially readjusted or modified to suit the heater. Heretofore curling-iron heaters in commercial use have been provided with threaded unions adapted for threaded engagement with specially-provided gas-jet fittings, which necessitated a perfect and complete engagement between the unions and the special fittings, so that the position of the curling-iron heater with reference to the wall could not be readily adjusted. By means of my invention the curling-iron heater may be placed in any position and have its posi-

tion readily readjusted without causing a leakage of the gas.

While I have herein shown and particularly described the preferred embodiment of my invention, it is obvious that changes may be made without departing from the spirit thereof, and I do not, therefore, wish to be limited to the precise construction shown; but,

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

1. In a heater, the combination of a union adapted for separable engagement with a gas-jet, a depending duct separably engaging said union, a horizontal pipe apertured to form a burner and separably connected with said depending duct, a heating-tube or oven, upright end plates for said heating-tube mounted upon said horizontal pipe, and a horizontal projection on one of said end plates apertured to receive said depending duct, substantially as described.

2. In a heater, the combination of a union adapted for separable engagement with a gas-jet, a depending duct separably engaging said union, a horizontal pipe apertured to form a burner and separably connected with said depending duct, a heating-tube or oven for receiving a curling-iron or other object to be heated, upright end plates for said heating-tube mounted upon said horizontal pipe, the distance between said horizontal pipe and said heating-tube being sufficient to afford a convenient resting-place for the object without subjecting it to the heat of the burner, and a horizontal projection on one of said end plates apertured to receive said depending duct, substantially as described.

3. In a heater, the combination of a union adapted for separable engagement with a gas-jet, a depending duct, a horizontal pipe apertured to form a burner and separably connected with said depending duct, a heating-tube or oven, upright end plates for said tube, mounted upon said horizontal pipe, a horizontal projection on one of said end plates, apertured to receive said depending duct, a valve interposed between said union and said depending duct, and an illuminating-burner on said valve, said valve being adapted to control the supply of gas to said illuminating-burner and to said heating-burner, substantially as described.

4. In a heater, the combination of a union adapted for separable engagement with a gas-jet, a depending duct, a horizontal pipe apertured to form a burner and separably connected with said depending duct, a heating-tube or oven, upright end plates for said tube mounted upon said horizontal pipe, a horizontal projection on one of said end plates, apertured to receive said depending duct, a valve interposed between said union and said depending duct, and an illuminat-

ing-burner on said valve, said valve being adapted to control the supply of gas to said illuminating-burner and to said heating-burner, the valve-fitting containing three
5 ways whereby the valve may be adjusted to prevent the flow of gas to the heater-burner or illuminating-burner simultaneously, to permit the flow of gas to these burners simulta-

neously, and to limit the flow of gas to either of the burners, substantially as described. 10

In witness whereof I hereunto subscribe my name this 3d day of January, A. D. 1902.

HERBERT MARSHALL STURGIS.

Witnesses:

SAMUEL C. MCPHERRIN,
JOHN B. COLTON.