

No. 760,105.

PATENTED MAY 17, 1904.

J. CUNNINGHAM.
FLASK CONNECTION.

APPLICATION FILED FEB. 3, 1904.

NO MODEL.

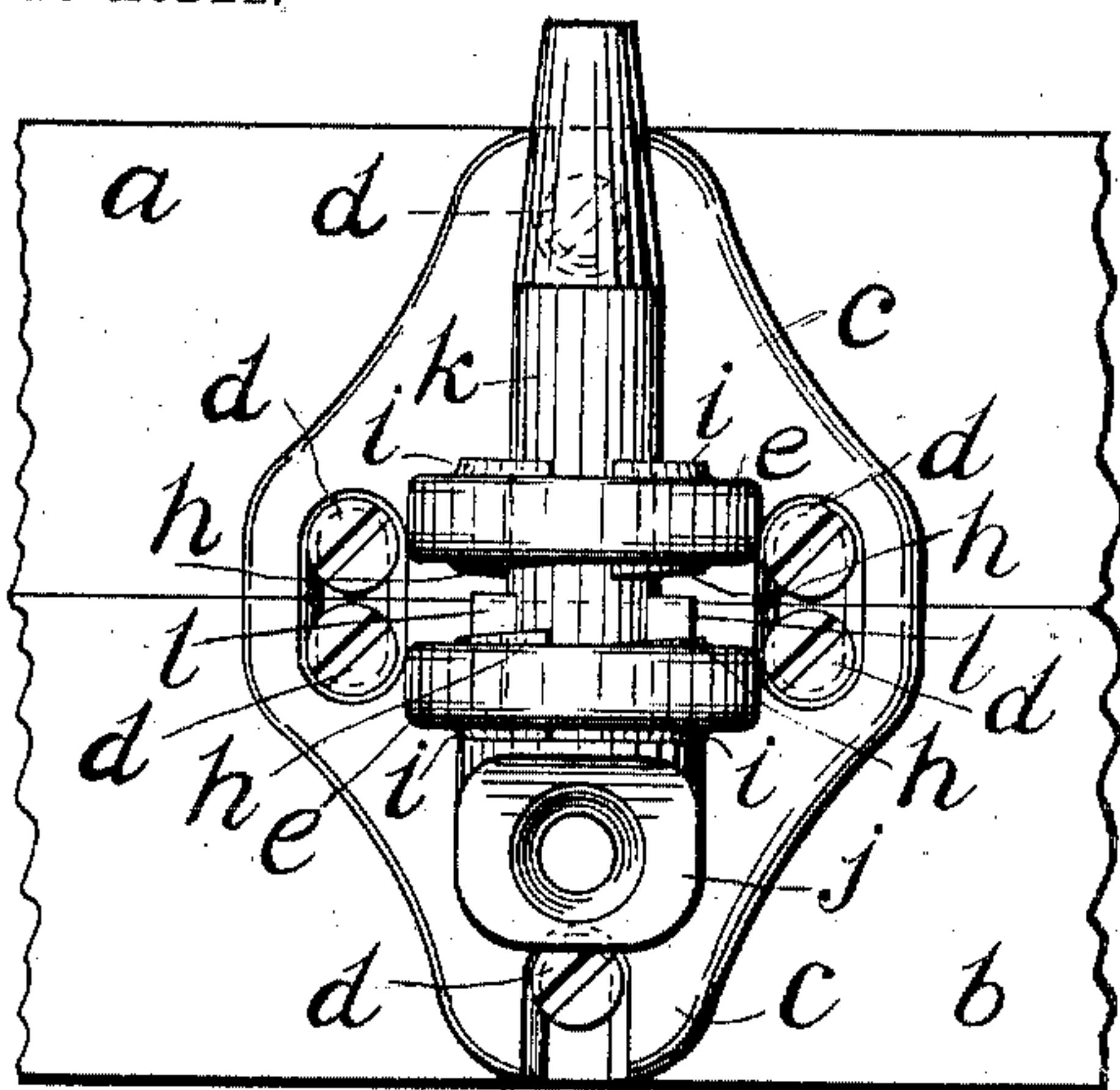


FIG. 1.

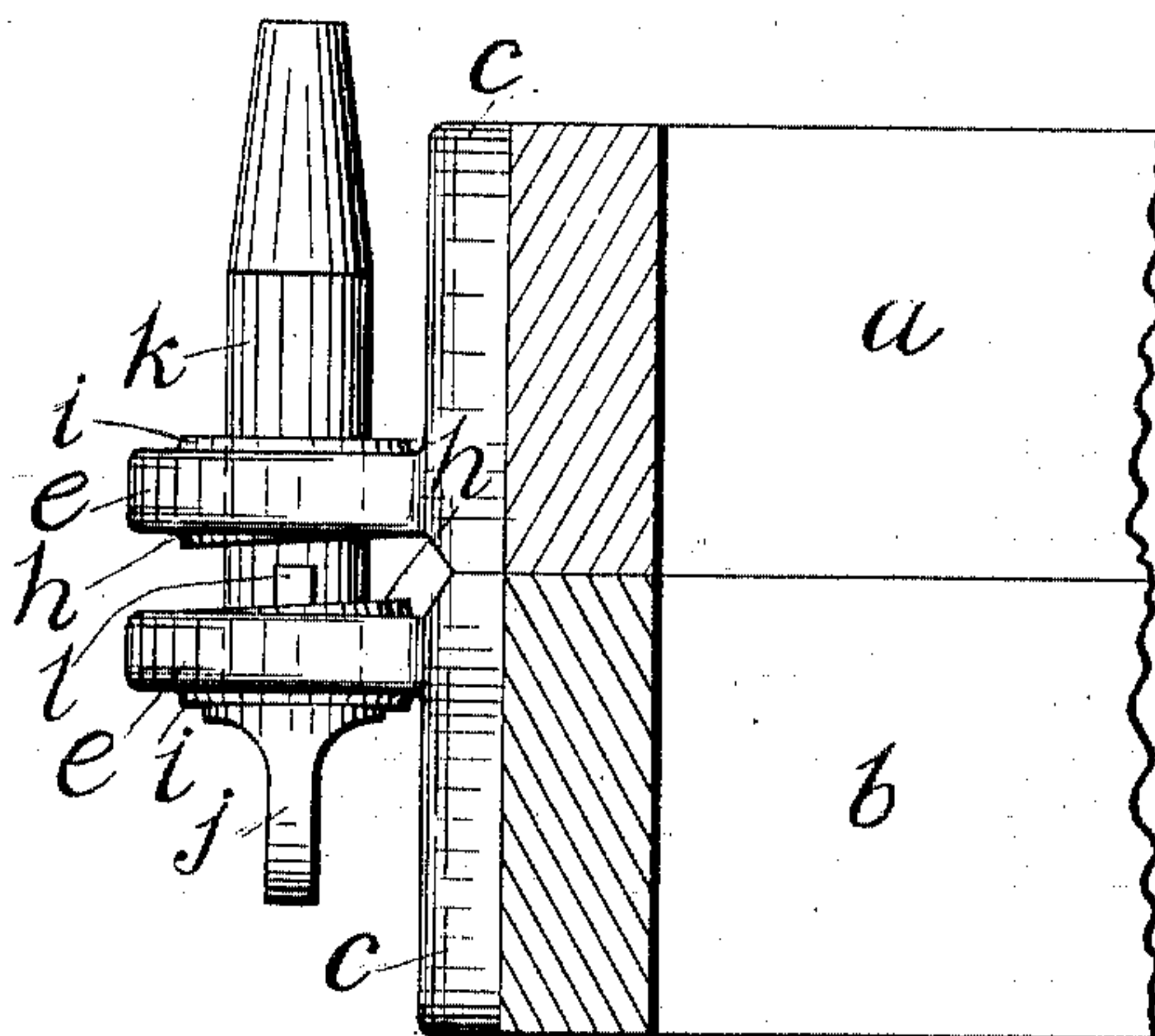


FIG. 2.

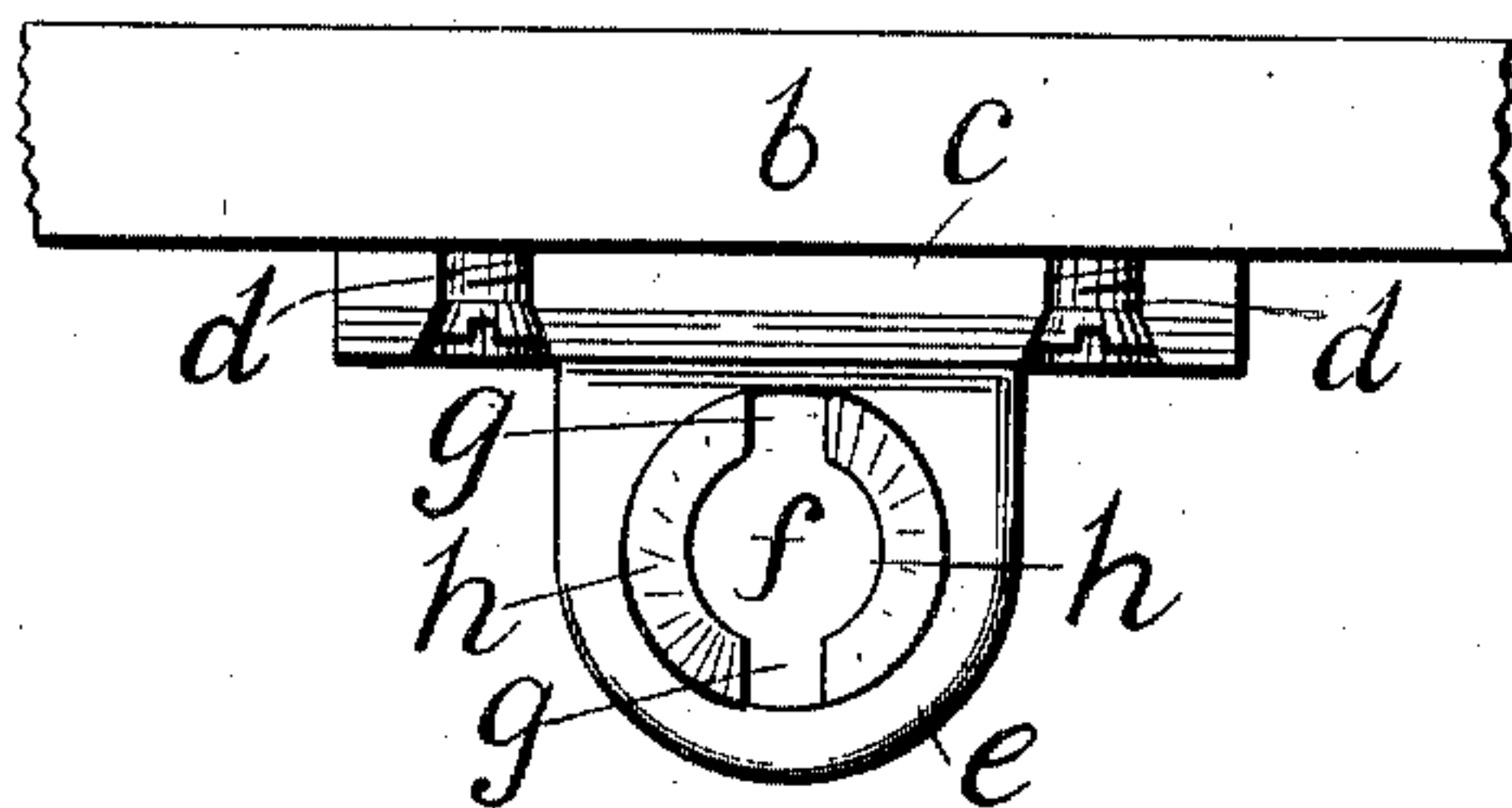


FIG. 3.

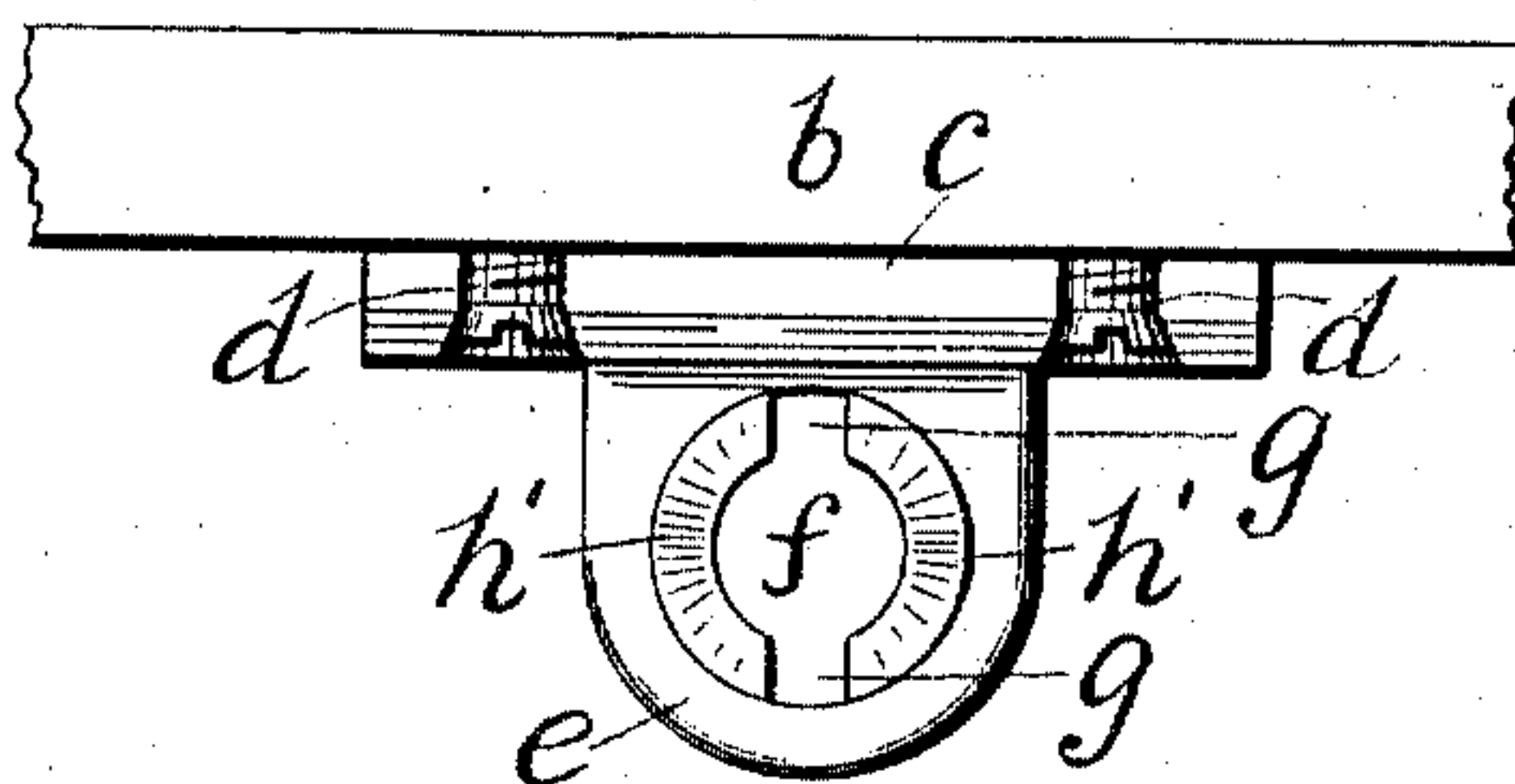


FIG. 4.

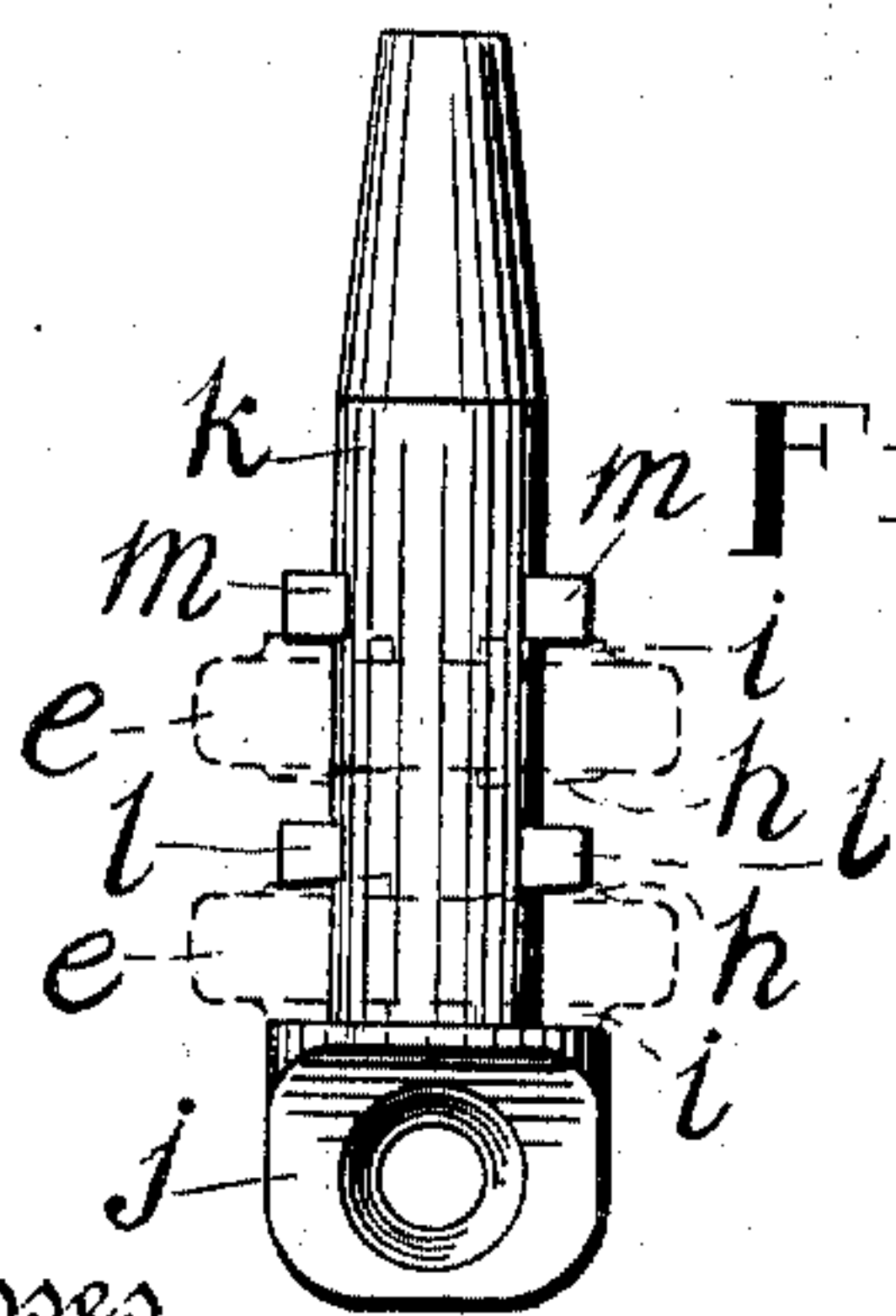


FIG. 5.

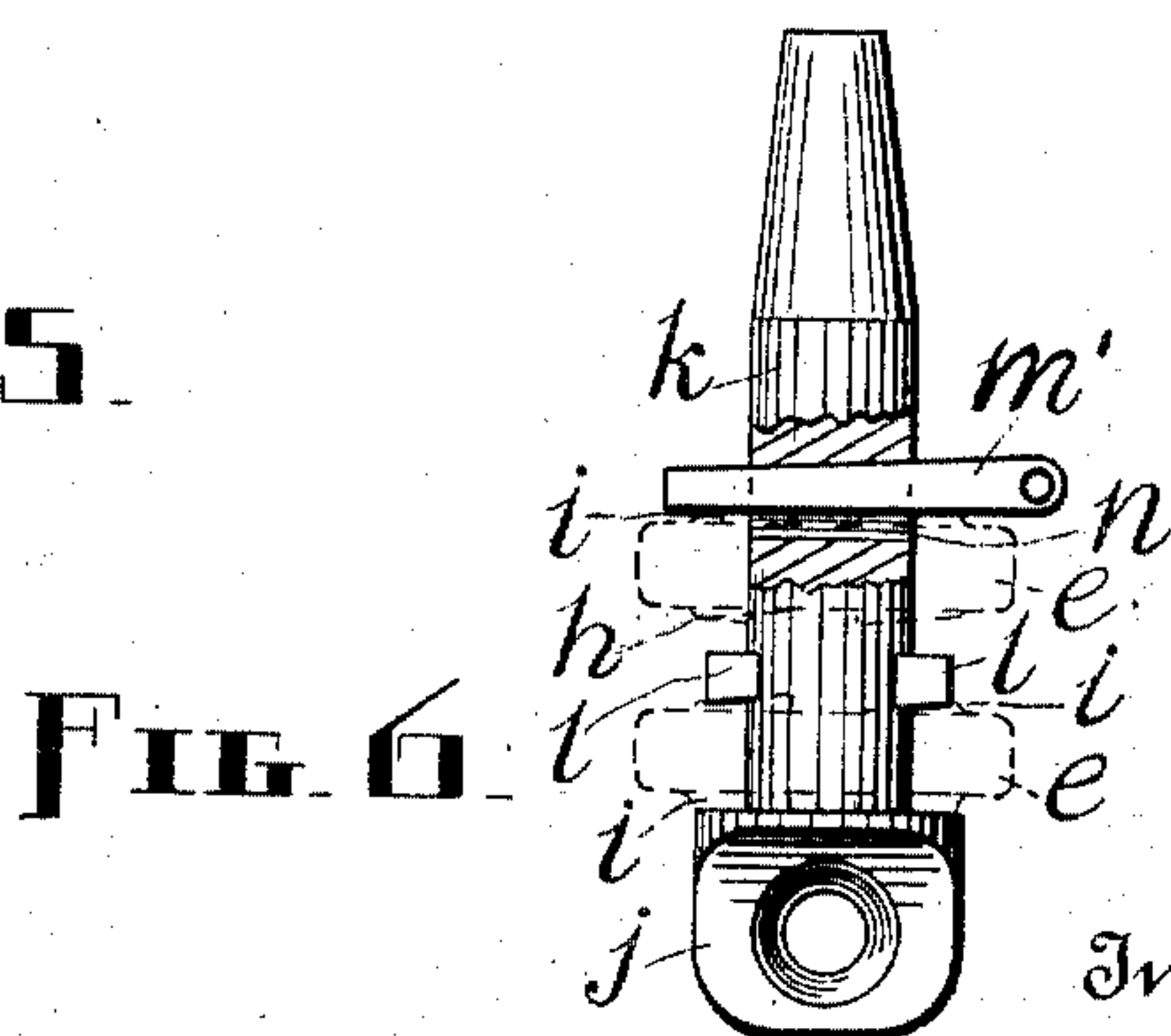


FIG. 6.

Witnesses
L. A. Leutter.
A. L. Stevens.

Inventor
James Cunningham,
By Meeker, Taft & Tilly.
Attorneys

UNITED STATES PATENT OFFICE.

JAMES CUNNINGHAM, OF FLORENCE, MASSACHUSETTS.

FLASK CONNECTION.

SPECIFICATION forming part of Letters Patent No. 760,105, dated May 17, 1904.

Application filed February 3, 1904. Serial No. 191,818. (No model.)

To all whom it may concern:

Be it known that I, JAMES CUNNINGHAM, a citizen of the United States of America, residing at Florence, in the county of Hampshire and Commonwealth of Massachusetts, have invented a new and useful Molding-Flask Connection, of which the following is a specification.

My invention relates to improvements in devices employed more particularly for alining the parts or sections of molding-flasks; and it consists, essentially, of a certain peculiar pin and bracket members therefor, as hereinafter set forth and claimed; and the objects of my improvement are, first, to provide simple, convenient, and inexpensive means for accurately adjusting the cope and drag of a molding-flask relative to each other and retaining them in such adjustment during the process of making the mold; second, to provide means for rendering the parts of the flask readily interchangeable; third, to afford means whereby the pin can be inserted in the bracket-lugs either from above or below, such pin being easily detachable; fourth, to furnish a connection the pin of which may be withdrawn after the sections of one flask have been securely closed for use with other flasks, a set of these pins serving in an indefinite number of connections, and, fifth, to embody this connection in a practicable and efficient form for general use.

Still another object of my invention is to provide means for locking the flask-sections together in addition to the alining means.

I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front view of the improved connection attached to portions of a flask; Fig. 2, a side view of the same; Fig. 3, a plan view of the lower bracket shown in the preceding views; Fig. 4, a plan view of a bracket having modified cam-surfaces; Fig. 5, a front view of a pin provided with locking-lugs in addition to the clamping-lugs, the associated bracket-ears being indicated by dotted lines; and Fig. 6, a similar view illustrating a modified form of locking means, a portion of the pin being broken away.

Similar letters designate similar parts throughout the several views. 50

Since the several connections required for a flask are all alike, only one of them is shown and described.

Referring first to Figs. 1, 2, and 3, portions of the two sections of a flask are shown, *a* representing the cope, and *b* the drag. A bracket, comprising a plate *c* and an ear *e*, is fastened by screws *d* to the cope *a*, and a similar bracket is fastened in like manner to the drag *b*, both brackets being in the same vertical plane—that is, one is directly above the other. Since these brackets are alike, the detailed description of one will suffice for that of the other, only it is to be borne in mind that the upper bracket is in an inverted position, as it were, relative to the lower one. 60

The ear *e* projects forward from the plate *c* a little remote from the edge of the plate, which is adapted to abut the corresponding edge of the other plate. The ear *e* is provided with a hole *f* and slots *g g*, opening into said hole, the hole and slots extending vertically through said ear. On the side of the ear *e* adjacent the aforesaid abutting edge of the plate *c* cam-surfaces *h h* are provided, one of such cam-surfaces starting from one side of the forward slot *g* and ending at the corresponding side of the rear slot *g*, following the curve of the adjacent edge of the hole *f* and increasing in thickness from front to back, and the other starting from the opposite side of said rear slot *g* and ending at the corresponding side of said forward slot, following the curve of the adjacent edge of said hole and increasing in thickness from back to front. On the side of the ear *e* opposite the cam-surfaces *h* flanges *i i* are formed, by preference, to afford bearing-surfaces for contiguous parts of the head *j* of a pin *k*. These flanges bound opposite sides of the hole *f* and slots *g* in a similar manner to the cam-surfaces *h*. 70 75 80 85 90

The pin *k* has the head *j* at one end and oppositely-disposed lugs *l l* intermediate of said head and the other end of the pin. The pin *k* is of a diameter corresponding with that of the hole *f*, and the lugs *l* are adapted to pass

through the slots *g* and when said pin is turned to ride upon the cam-surfaces *h*, the edges of said lugs which contact with said cam-surfaces being beveled to correspond with the latter.

In operation the pin *k* is first inserted through the lower ear *e*, for example, and manipulated so as to enable the lugs *l* to pass through the slots *g*. Then said pin is turned in such a manner that said lugs will ride onto the cam-surfaces *h* until the ear and its members are tightly embraced between the pin-head *j* and the lugs, further movement in this direction being thereby checked. The pin *k* is now held firmly in an upright position in connection with the drag *b*, and when the cope *a* is placed on said drag with the connected ear *e* over said pin said drag and cope are in perfect alinement and no ordinary usage will disarrange them. If the cope *a* is already in place on the drag *b*, the pin *k* is of course thrust through the two ears *e* at the same time and clamped into place, as before. To remove the pin, simply turn it in the opposite direction to that employed for clamping until the lugs *l* aline with the slots *g*, when it can be readily withdrawn from either one or both of the ears *e*. The pin may be inserted from above and clamped to the upper ear *e* just as readily and with precisely the same result as when inserted from below.

The numerous advantages of such a connection as hereinbefore described, some of which have already been pointed out, and the ease with which the pin can be inserted and removed from the ears render this invention valuable to the molder and commercially.

In some cases it may be desirable that the construction be such as to enable the pin after its lugs have passed through the slots in the ear to be turned in either direction for the purpose of clamping it to said ear, which is not the case in the construction already described, and for this purpose I provide two-way cam-surfaces *h'* *h'* on the ear, as shown in Fig. 4. The thickest portions of the two-way cam-surfaces *h'* are intermediate of the ends of the slots *g*. Hence the lugs *l* of the pin *k* will ride onto said cam-surfaces when said pin is turned in either direction.

In addition to providing means for alining the two sections of a flask it may be necessary or desirable to lock said sections together, so that the cope cannot be lifted from the drag, and this is done with my connection in either one of the two ways illustrated in Figs. 5 and 6. In Fig. 5 two additional lugs *m* extend from the pin *k* between the lugs *l* and the end of said pin opposite the head *j*; said lugs *m* being in line with said lugs *l* and positioned so as to engage the flanges *i* on the ear *e*, through which the pin last passes when the latter is turned to bring the lugs *l* into engagement with their cam-surfaces. By this

means the ears *e* are locked together, and the cope cannot be lifted from the drag until the pin is turned to remove the lugs *m* from locking engagement with the adjacent flanges *i*.

Instead of using the locking means just described I may transversely slot the pin *k*, as shown at *n* in Fig. 6, at a point where a taper pin or wedge *m'* can be inserted outside of the flanges *i* of the ear *e*, through which said pin last passes, and employ said wedge with the pin. An ordinary pin might be used in place of the wedge *m'*; but the latter serves when driven into the slot *n* to draw the parts together as well as to lock them in place.

It is obvious that if the cope and drag are made of metal instead of wood the ears *e* can be integral with said cope and drag, the plates *c* being omitted. In the construction shown in the first three views only a quarter-turn need be given the pin *k* in order to clamp it in position. Such being the case, the cam-surfaces *h* need not necessarily be as long as shown; but the parts may be so arranged that nearly a half-turn of the pin is required to clamp it, in which event no shortening of said cams would be permissible.

I do not wish to be restricted or limited to the exact constructions herein shown and described, as various changes in shape, size, and arrangement of parts may be made without departing from the nature of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a molding-flask connection, with an ear having pin and lug openings therein and provided with cam-surfaces, of a pin provided with a head and laterally-extending lugs, adapted to pass through said ear and clamp the same between said head and lugs, the latter riding on said cam-surfaces.

2. The combination, in a molding-flask connection, with an ear having pin and lug openings therein and provided with oppositely-disposed cam-surfaces, of a pin provided with a head and laterally-extending lugs, adapted to pass through said ear and clamp the same between said head and lugs, the latter riding on said cam-surfaces.

3. The combination, in a molding-flask connection, with an ear having pin and lug openings therein and provided with oppositely-disposed cam-surfaces, of a pin provided with a head and laterally-extending lugs, adapted to pass through said ear and clamp the same between said head and lugs, the edges of the lugs which are adapted to contact with said cams being beveled or inclined to conform with the latter.

4. The combination, in a molding-flask connection, with ears attached to the sections of a flask and having pin and lug openings therein and cam-surfaces on adjacent faces or sides thereof, of a pin provided with a head and laterally-extending lugs, adapted to pass

through said ears from either direction and engage with its lugs the cam-surfaces on the ear through which the pin first passes.

5 5. The combination, in a molding-flask connection, of an ear attached to one of the flask-sections and having pin and lug openings therein and provided with cam-surfaces, a second perforated ear attached to the other flask-section, a pin provided with a head and laterally-
10 extending lugs, adapted to pass through said

ears and engage said cam-surfaces with its lugs, and means to hold said pin in locking engagement with said second ear.

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

JAMES CUNNINGHAM.

Witnesses:

ALLEN WEBSTER,
F. A. CUTTER.