

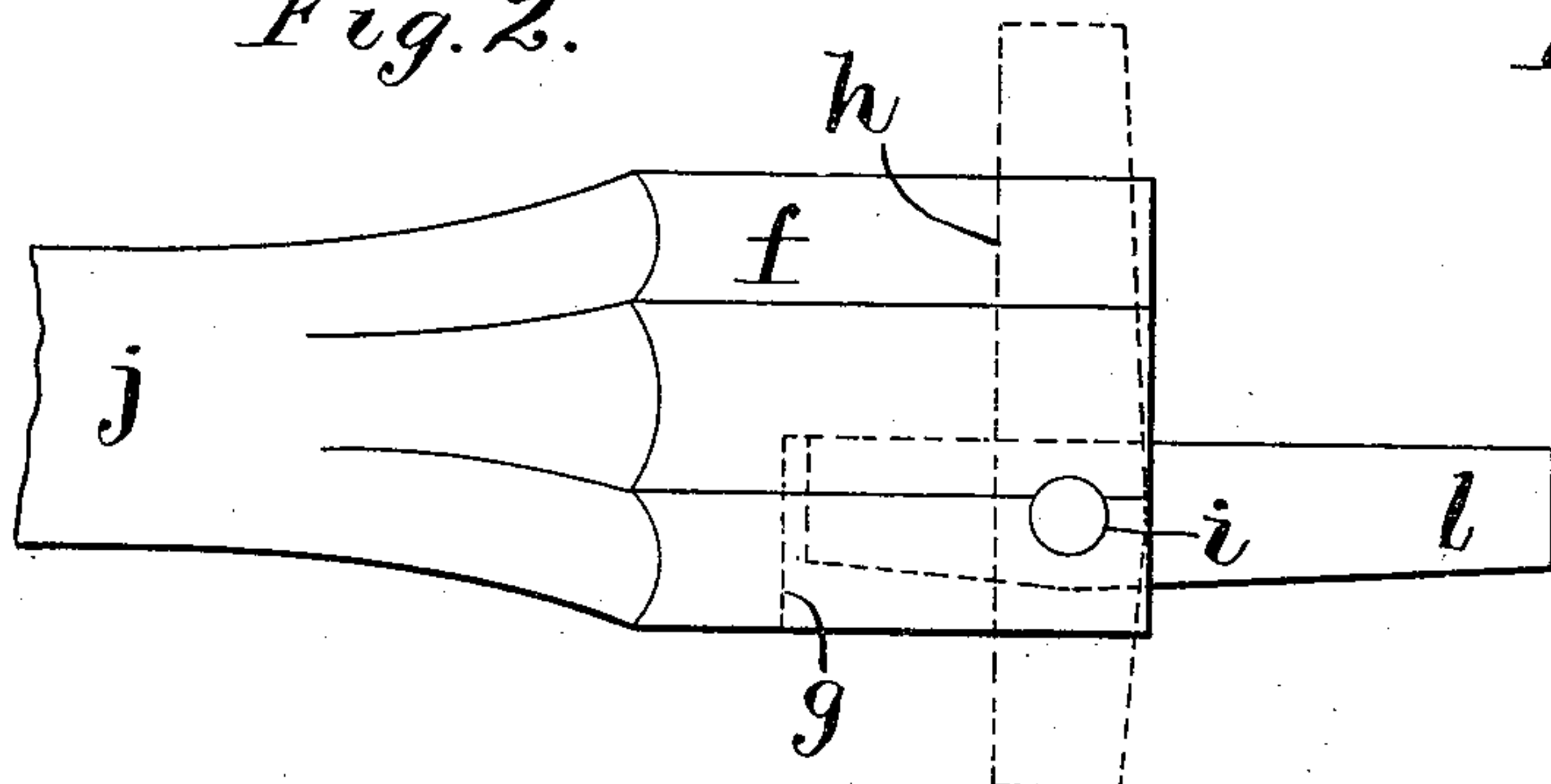
(No Model.)

J. J. HOGAN.  
WRENCH.

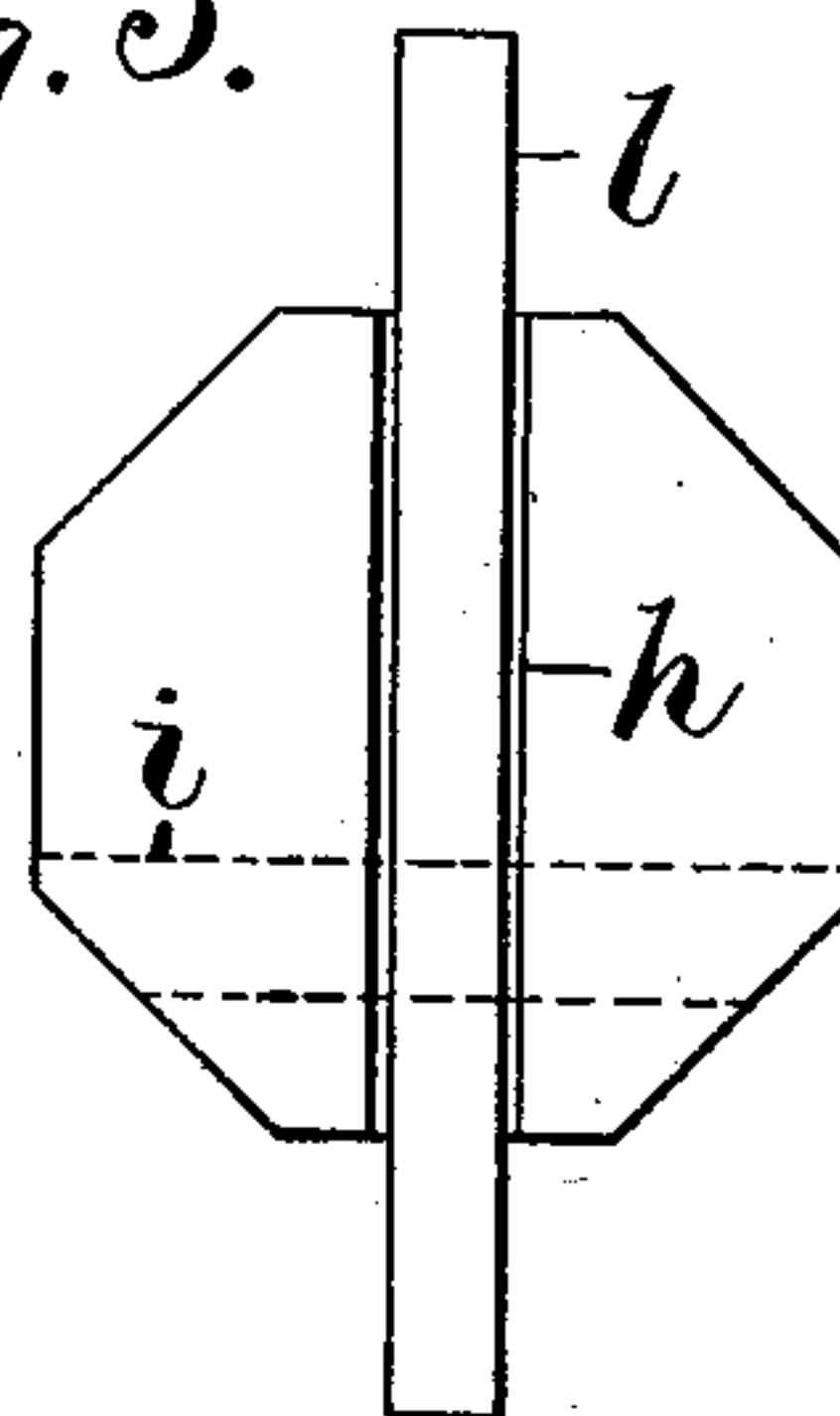
No. 450,154.

Patented Apr. 14, 1891.

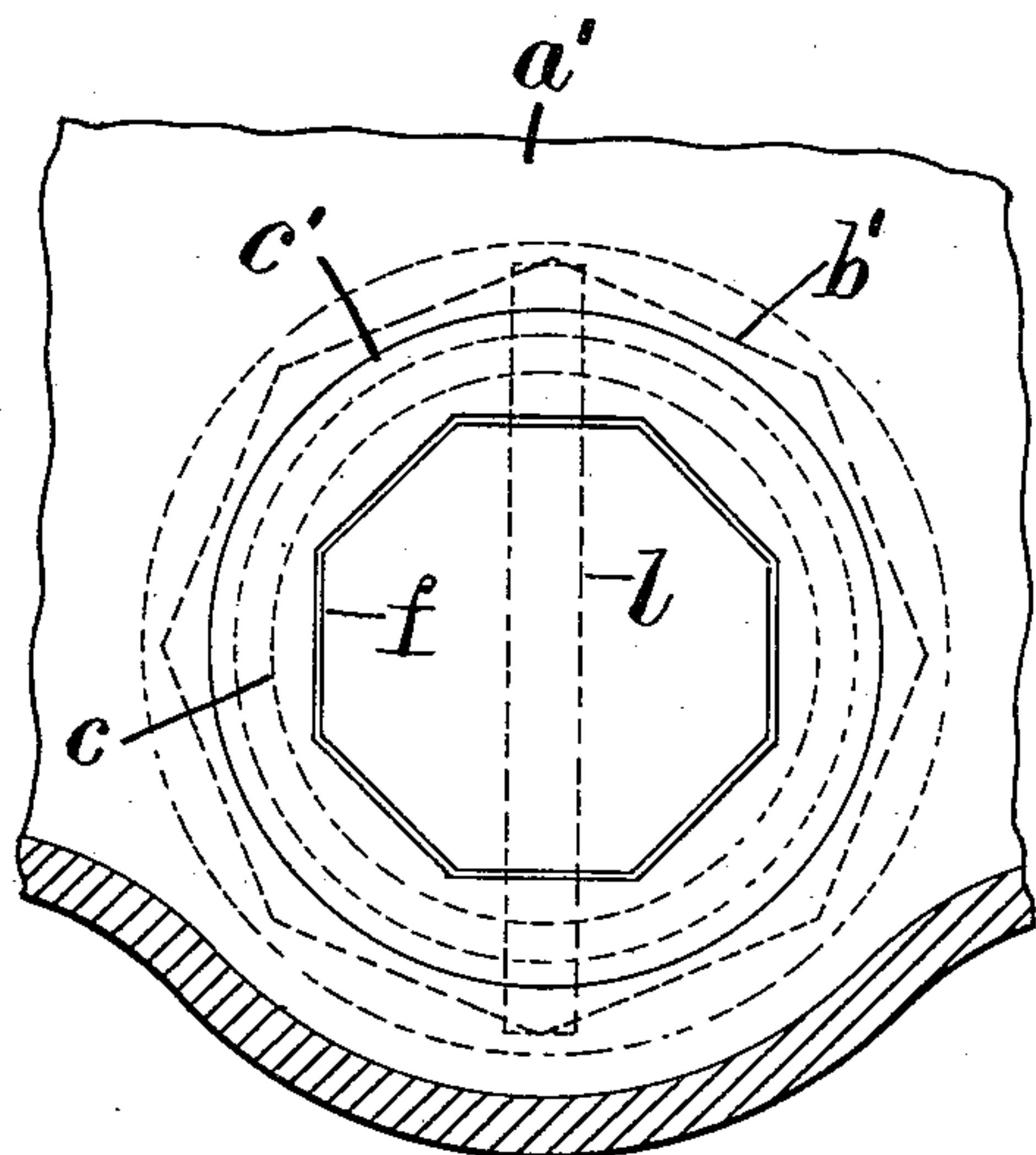
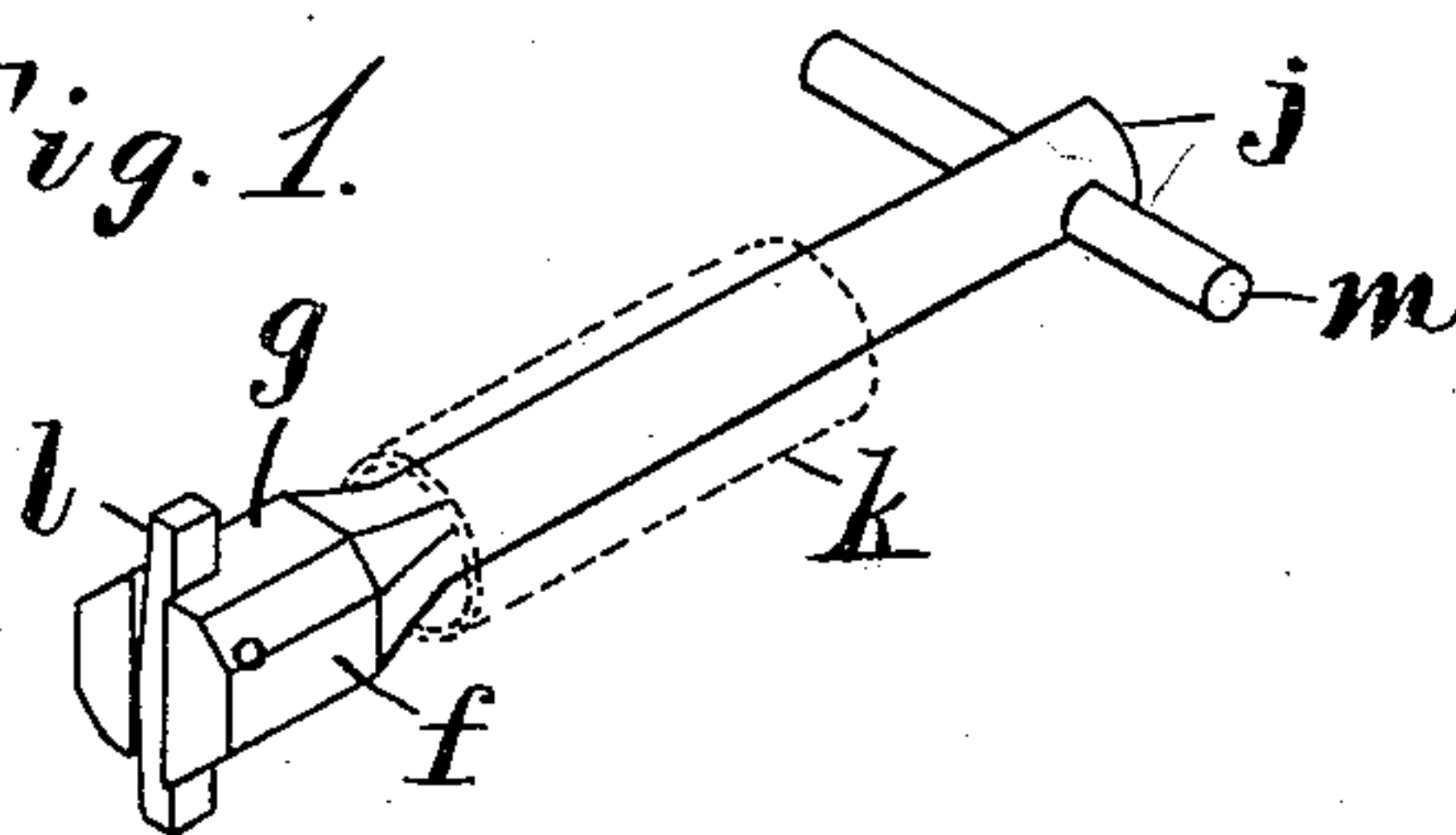
*Fig. 2.*



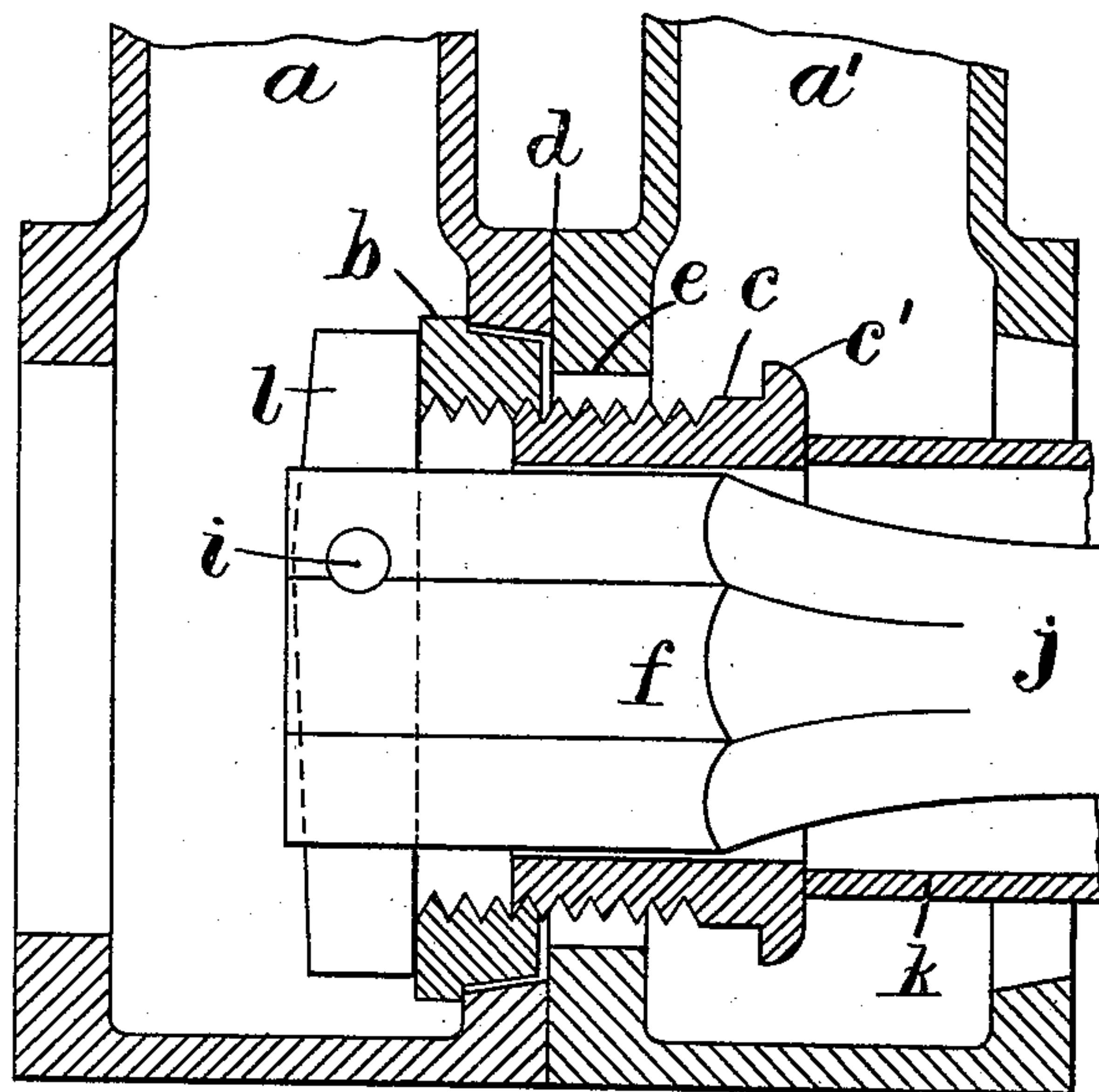
*Fig. 3.*



*Fig. 1.*



*Fig. 5.*



*Fig. 4.*

Attest:  
J. Van Hook  
H. C. Fischer.

Inventor:  
John J. Hogan  
per Crane & Miller, Atty.



# UNITED STATES PATENT OFFICE.

JOHN J. HOGAN, OF BROOKLYN, ASSIGNOR TO THE HOGAN ENGINEERING COMPANY, OF NEW YORK, N. Y.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 450,154, dated April 14, 1891.

Application filed July 31, 1890. Serial No. 360,472. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN J. HOGAN, a citizen of the United States, residing at Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Wrenches for Internal Nipples, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 The object of this invention is to furnish a means for screwing a threaded sleeve into a nut and for simultaneously drawing the nut toward the operator to hold it in a given position.

15 The invention consists in the combination, with a suitable shank, of a head adapted to turn the sleeve, and a cross-bar pivoted in the head and adapted to project upon opposite sides of the same when required.

20 The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is a perspective view of the wrench with dotted lines, showing a tube slipped over its shank. Fig. 2 is a side view of the head of the wrench with the cross-bar shown in dotted lines transverse to the head. Fig. 3 is an end view of the head with the cross-bar in full lines transverse to the head. Fig. 4 is a central section, where hatched, of two radiator-loops with a nut and sleeve for uniting them, and the head of the wrench applied to the nut and sleeve to connect them together, with the end of a pipe applied over the wrench-shank to press the sleeve into the nut; and Fig. 5 is a transverse section through the center of the adjacent loop in Fig. 4 of the wrench without the piece of pipe and an elevation of the sleeve, the nut, and the adjacent portions of the radiator-loop.

40 *a a'* represent two radiator-loops, such as are commonly employed in heating-radiators.

*b* and *c* are the nut and sleeve for coupling the same together, the adjacent faces of the loops at *d* being surfaced to make a joint, as is common. The nut *b* is shown provided with an octagon body *b'*, fitted to an octagon hole in one side of the loop *a*, and the sleeve *c* is shown inserted through a hole *e* in the side of the loop *a'* and provided with a collar *c'* at its inner end.

The wrench shown herein is especially adapted to hold the nut *b* into the octagonal hole in the loop *a*, while it also operates to rotate the sleeve *c* and screw its thread into the nut, so as to press the collar *c'* against the margin of the hole *e* and clamp the loops firmly together.

The sleeve *c* is formed with an octagonal hole to be rotated by the octagonal head of the wrench; but a polygonal head and hole of any form may be used, or a round head with a suitable projection fitted to a recess in the sleeve, as such construction would perform the same functions. The nut *b* would be inserted within the loop in readiness to couple with the sleeve *c* when it was required to secure two loops together; but it is obvious that when the several loops have been already connected together an additional loop could not be connected to the series without means to hold the nut *b* into the hole in the loop *a* while screwing the sleeve *c* through the loop *a'* into the nut. To fit the wrench to perform both of these functions, I form the head *f* of suitable form to engage with the interior of the sleeve *c* and pivot a cross-bar *l* in a transverse recess *h* in the end of the head, the pivot being inserted nearer to one end of the cross-bar than the other, so that one end may overbalance the other and turn the cross-bar transverse to the head when required.

A lateral recess *g* is formed in the head to receive one end of the cross-bar and to hold the same projected longitudinally from the end of the head. While in this position, which is shown in full lines in Fig. 2, the head is readily inserted through the sleeve *c* into the nut *b* within the radiator-loop *a*. By turning the head of the wrench over, as shown in Figs. 1 and 4, the bar then falls into the transverse position shown in dotted lines in Fig. 2 and in full lines in Figs. 1, 3, and 4. The shank *j* of the wrench is shown in Fig. 1 provided with a cross-handle *m*, by which it would then be pulled toward the nut *b*, firmly pressing the nut into the seat or hole in the loop *a*.

A pipe *k* (shown in dotted lines in Fig. 1) may, before the head is inserted in the sleeve, 100



be slipped over the head upon the shank *j*, and would then be used to push the sleeve *c* toward the nut. By turning the wrench while the sleeve is thus pushed the thread upon the sleeve engages the nut and the sleeve could be wholly screwed to its seat within the loop upon the radiator, the ends of the cross-bar *l* slipping around upon the inner face of the nut *b* while the wrench was rotated to screw up the sleeve.

To withdraw the wrench from the coupling, it would be turned in the position shown in Fig. 2, in which the upper end of the cross-bar would overbalance the lower end and project the cross-bar longitudinally from the head *j*, when it could be drawn out through the sleeve and through the hole *e* in the outer loop. The wrench may be used with any other form of coupling in which a portion requires (like the nut *b*) to be drawn longitudinally, while another portion, like the sleeve *c*, requires rotation to connect the parts of the coupling together.

I am aware that it is not new to pivot a cross-bar upon the end of a tool to lock it as a stationary fixture within a hole; but in such case neither the shank nor the head of the fixture is constructed to engage the interior of the sleeve, as in my invention, so as to rotate the same. In my invention the head is designed to rotate the sleeve while the cross-bar holds the nut up to its seat, and the head is not therefore clamped in a fixed position by the cross-bar at any time. It will also be

noticed that one end of my cross-bar is adapted to overbalance the other, so as to turn the cross-bar transverse to the head when the head is rotated into a given position.

Having thus set forth the nature of my invention, what is claimed herein is—

1. In a coupling-wrench for rotating tubular coupling-sleeves, the combination, with a head shaped to engage the interior of the sleeve and adapted to rotate the same, of a transverse pivot in the end of the head, and a cross-bar mounted upon such pivot and overbalanced at one end, as and for the purpose set forth.

2. In a coupling-wrench, the combination, with the head *f*, provided with the lateral recess *g*, the transverse recess *h*, and pivot *i*, of the cross-bar *l*, pivoted out of balance and adapted to project longitudinally or transversely from the head, substantially as herein set forth.

3. The combination, with the coupling-wrench provided with a head *f* and cross-bar *l* in the head overbalanced, as described, of the pipe *k*, fitted loosely upon the shank of the wrench to press a coupling-sleeve toward the cross-bar, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN J. HOGAN.

Witnesses:

JAMES WHITE,  
THOS. S. CRANE.