

(No Model.)

T. J. JENNE & C. S. HARMON.

LIFTING JACK.

No. 245,634.

Patented Aug. 16, 1881.

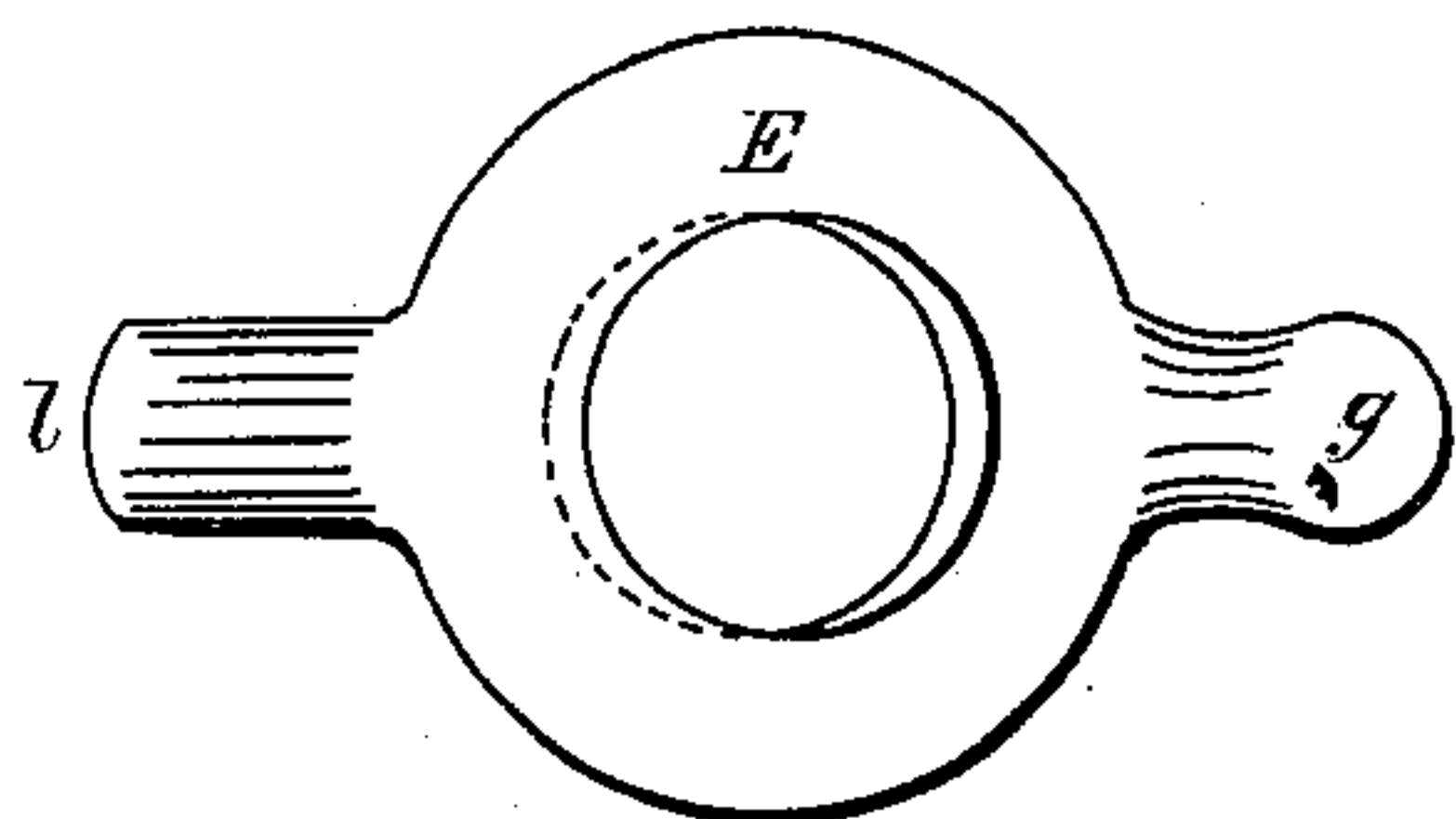


Fig. 6.

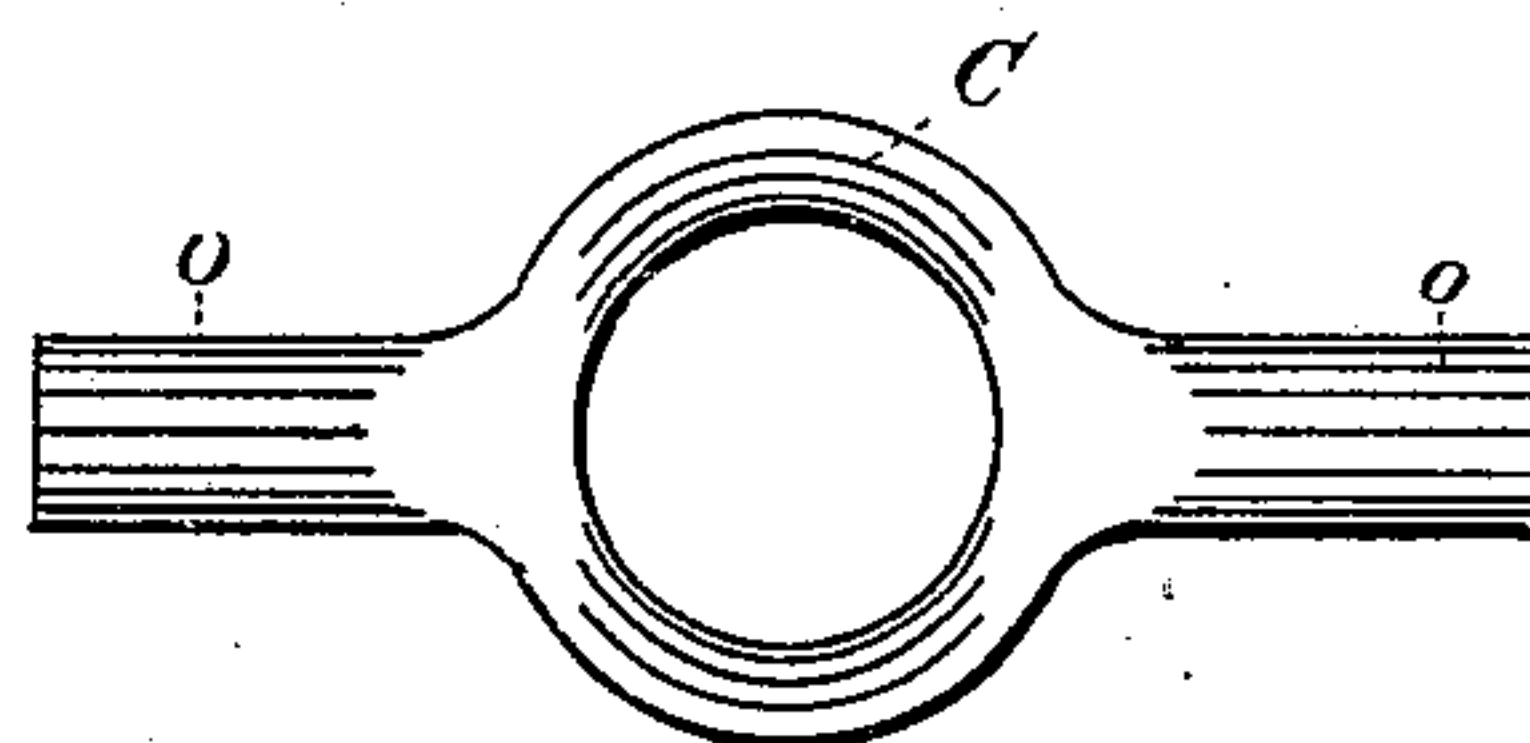


Fig. 7.

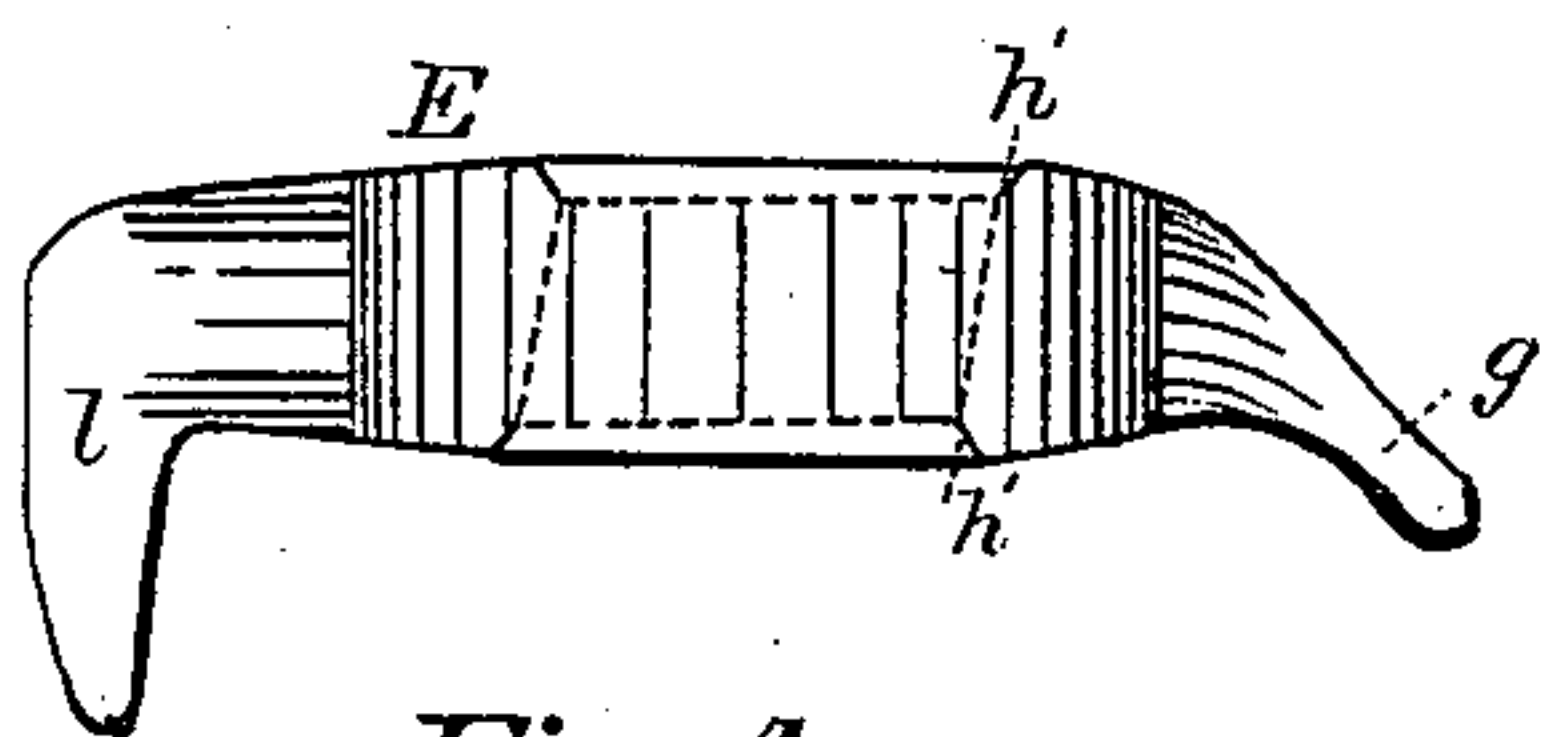


Fig. 4.



Fig. 3.

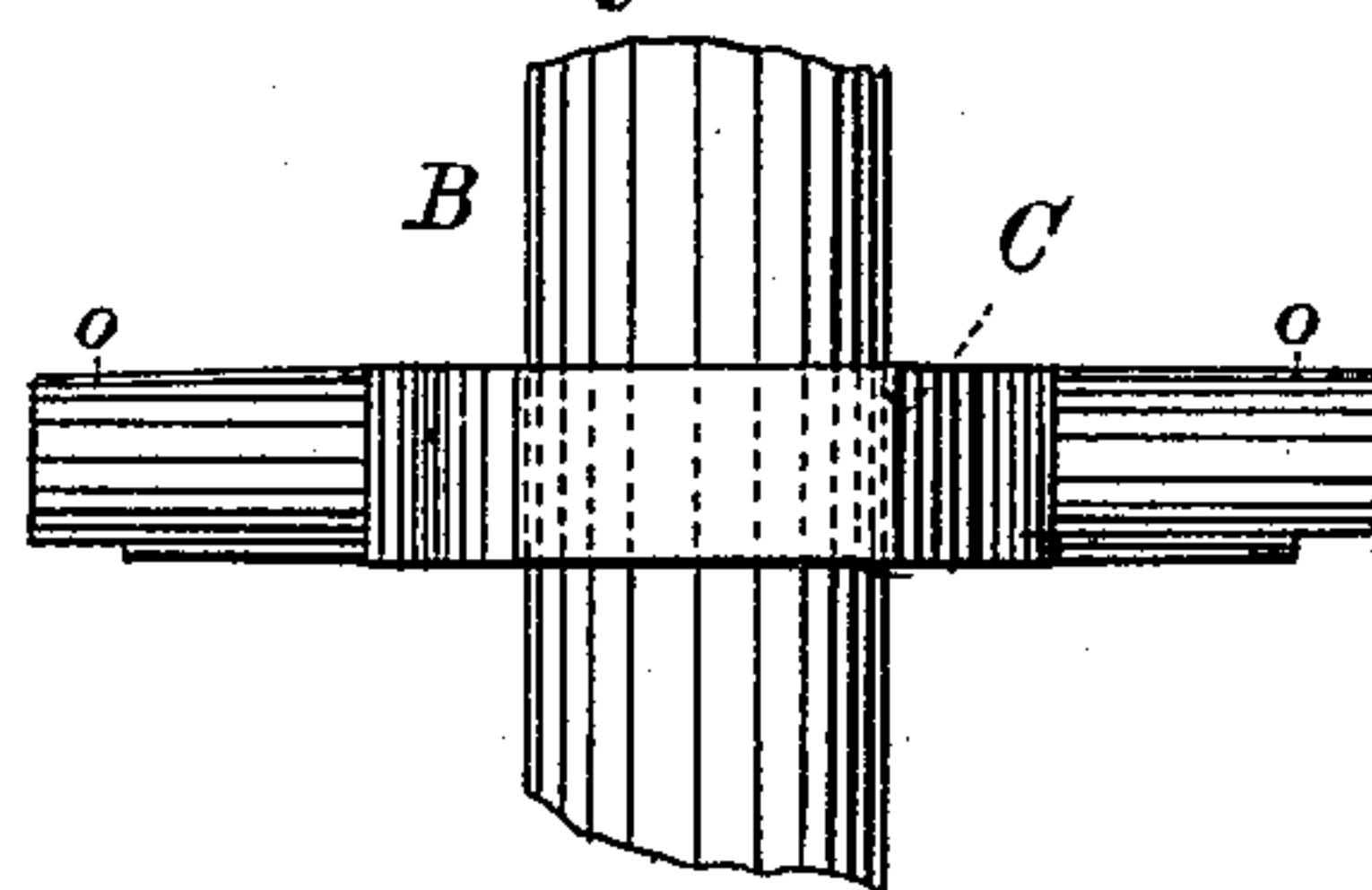


Fig. 5.

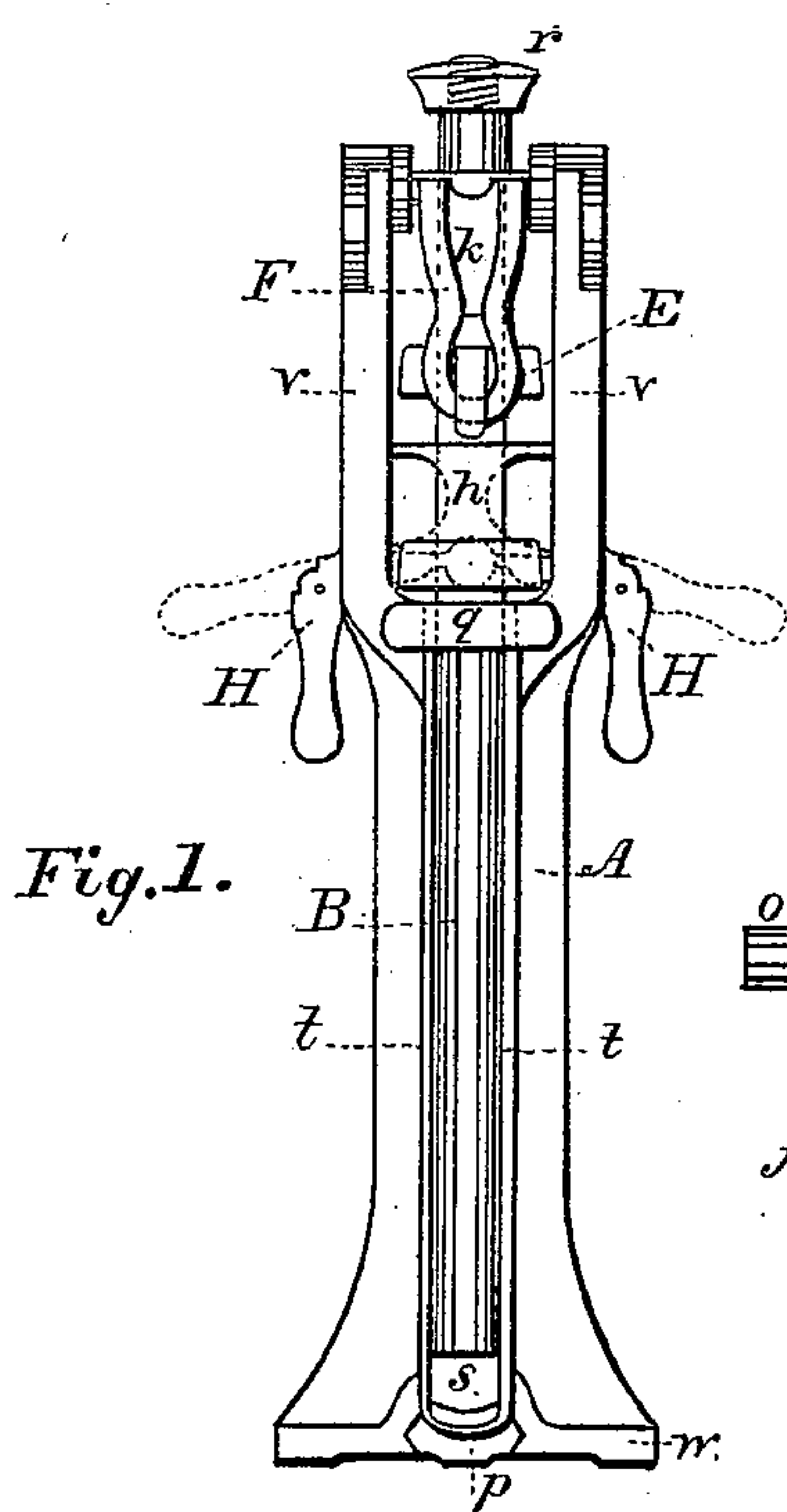


Fig. 1.

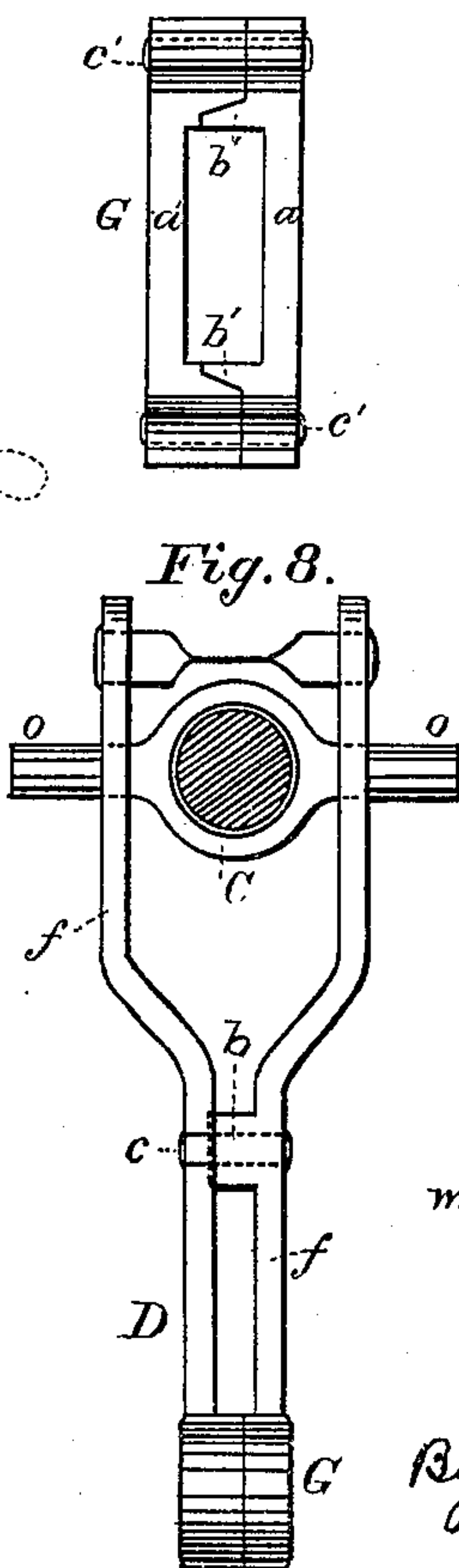


Fig. 8.

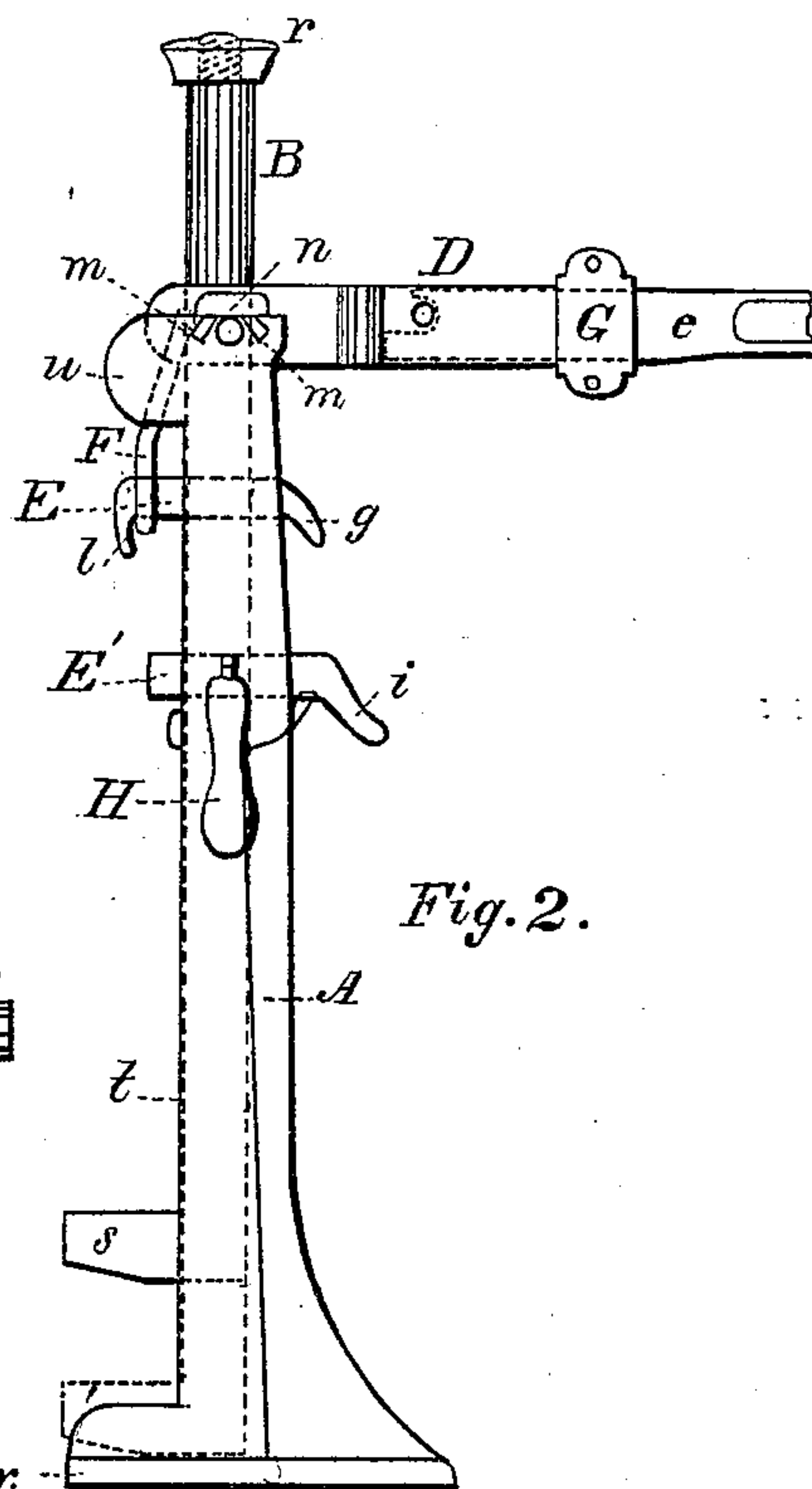


Fig. 2.

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UNITED STATES PATENT OFFICE.

THOMAS J. JENNE, OF CHICAGO, AND CHARLES S. HARMON, OF BLUE ISLAND, ILL.; SAID JENNE ASSIGNOR TO SAID HARMON; SAID HARMON ASSIGNOR OF ONE-FIFTH TO GEORGE W. STANFORD, AND ONE-EIGHTH OF HIS REMAINING RIGHT TO EDWIN B. SMITH, BOTH OF CHICAGO, ILLINOIS.

LIFTING-JACK.

SPECIFICATION forming part of Letters Patent No. 245,634, dated August 16, 1881.

Application filed January 17, 1881. (No model.)

To all whom it may concern:

Be it known that we, THOMAS J. JENNE and CHARLES S. HARMON, citizens of the United States, residing at Chicago and Blue Island, respectively, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lifting-Jacks; and we hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, of which—

Figure 1 is a front elevation of our device; Fig. 2, a side elevation of the same, and Figs. 3, 4, 5, 6, 7, and 8 detail views.

Our present invention relates to certain improvements upon a former invention in lifting-jacks, for which Letters Patent of the United States, No. 192,831, were granted to Thomas J. Jenne, July 10, 1877, our object being to both simplify and strengthen the device, better adapting it to railway use and lifting heavy weights.

To this end our invention consists, first, in the particular construction of the standard which we now employ; secondly, in the construction of the journal-caps, which we use in combination with the standard and certain attendant parts to resist the strain exerted by the lever; thirdly, in the general combination of parts comprising our device; and, fourthly, in the specific construction of the lever which we employ, all as hereinafter more fully set forth.

In the drawings, A is a standard, having a base-plate, *w*, and having its upper portion bifurcated, as shown, to produce the two upright arms *v*. These arms are provided with lugs *u* projecting forward from their upper ends to prevent external objects from coming into contact with the working parts. The front face of the standard is provided with two longitudinal flanges, *t*, extending from the base-plate *w* to the arms, and serving as guides for the bar B. This bar is provided with a foot, *s*, at its lower end, and is screw-threaded at its upper end to receive the nut *r*. It is retained within the guides *t* by means of the cross-plate *q*, which is cast with the standard. The bar is inserted through a slot in the base-plate, between the guides *t*, and after insertion the slot

is closed by a sliding plate, *p*, the sides of the slot and edges of the plate being suitably dovetailed together to prevent the removal of the said plate in any other way than by drawing it out.

C is a collar, through which the bar passes at the upper end of the standard, and which is provided with trunnions *o* resting in journals in the tops of the upright arms *v*. These trunnions also form the fulcrum of the lever D. The caps *n* of the journals are fitted to the arms *v* by means of dovetailed projections *m*, which fit into recesses of corresponding form in the upper ends of the arms *v*. The caps are placed in position by forcing the projections laterally into the recesses from the outside, where they are obviously held firmly in position against any upward pressure. This method of securing the caps is preferable to fastening them with bolts, both because it enables the cap to resist a greater upward strain, and because it is more readily applied. We prefer to flatten a part of the lower face of each trunnion *o* where it enters the journals, as shown in Fig. 7, to prevent it from turning under a severe strain.

E and E' are two friction collars or pawls sliding upon the lifting-bar, and F is a clevis connecting the hook *l* of the upper pawl with the short arm of the lever. We prefer to form this clevis of cast-steel, and with a web, *k*, to give it the greatest possible strength. The openings through the centers of the pawls or collars E and E' are somewhat larger than the bar B, which passes through them, and are both oblique, but adapted to incline in contrary directions with respect to each other when the pawls are in position, whereby they serve to gripe the bar alternately, the upper one to raise it by means of the clevis and lever, and the lower one to retain it while the upper one is being lowered for a fresh gripe.

To permit the bar to descend from any point it is obvious that both bars or collars must be so tilted as to bring the walls of their openings into a vertical position, when the binding ceases and the bar readily slips through. For the purpose of thus tilting the lower or retaining pawl, E', we provide it with a lip, *i*, designed

to be operated by the foot or hand. The upper one, E, is tilted automatically when the handle is raised to a sufficient height by bringing up against the upper edge of a plate, *h*, connecting the arms *v* at the rear of the bar B. We
5 prefer to have this plate extend downward nearly to the projection *i* upon the lower pawl, as shown in Fig. 1, in order to resist any possible tendency of the said pawl to lift with the
10 bar.

It is sometimes desirable to have the bar B descend gradually instead of suddenly, and for this purpose it is only necessary to loosen the pawls alternately instead of simultaneously.
15 Thus, for illustration, the pawl E' being in position to bind the bar, the pawl E is loosened by tilting it and the handle lowered. The pawl E is then allowed to act, the pawl E' tilted, and the handle raised, thus lowering the load, care
20 being taken, however, not to lower the pawl E far enough to strike against the plate *h* before the pawl E' is left free to act, as this would loosen the two simultaneously and allow the bar to drop. The pawl E' is then again let go,
25 the pawl E loosened, and the operation repeated as before. To facilitate this operation we provide the pawl E with the thumb-piece *g*.

To enable the pawls E and E' to withstand the severe strain to which they are subjected
30 in raising heavy weights without at the same time impairing the gripe by making the length of the oblique opening through which the bar B passes too great, they may be constructed as represented in Fig. 4—that is to say, of the
35 requisite thickness for strength, but with the oblique opening chamfered on its upper and lower edges, as indicated at *h'*.

The lever D is formed in two parts—viz., the inner part or socket, and the outer part or handle
40 *e*—the two being separable from each other. The socket is bifurcated and the separate branches fulcrumed on opposite sides of the bar B, as shown. It is formed of two bars, *f*, firmly connected, about midway between the
45 fulcrum and the end, by means of a bolt, *c*, passing through both bars, and also through a cored lug, *b*, cast upon one of said bars. Thus while the bolt *c* holds the bars together, the lug maintains them at a proper distance apart to per-
50 mit the entrance of the handle *e*. The inner end of the handle is notched, as indicated by the dotted lines in Fig. 2, to engage with the lug *b* when it is inserted. The outer end of the socket is provided with a collar, G, formed
55 in two parts, *a* and *a'*. The male part *a* is pro-

vided with lugs *b'*, which fit into shoulders in the female *a'*, and the two parts are secured together by bolts or rivets *c'*.

The standard is provided with hinged handles H, to admit of its being readily carried
60 and adjusted.

If desired, two clevises, as shown in the former Letters Patent above referred to, may be used instead of one, causing the lever to
65 operate to raise the bar when moved in either direction; but for great weights it is preferable to have the lever operate only by a downward pressure, as much greater physical exertion is necessary to produce an equal effect with an
70 upward pressure.

By making the above device sufficiently large it may be used with advantage as a pile-driver.

What we claim as new, and desire to secure by Letters Patent, is—

1. The standard A, comprising the slotted
75 base *w*, provided with the sliding plate *p*, guides *t*, cross-plate *q*, and arms *v*, provided with the cross-plate *h* and recesses at their tops to form journals for the trunnions *o*, substantially as
80 described.

2. In combination with the arms *v* of the standard A, recessed to form journals for the trunnions *o*, the caps *n*, provided with dove-
85 tailed projections *m*, fitting corresponding recesses in the said arms, substantially as de-

3. The combination of the standard A, provided with the arms *v*, having the cross-plate
90 *h*, collar C, having the trunnions *o*, working in journals at the tops of the arms *v*, lifting-bar B, passing through the collar C, lever D, working upon the trunnions *o* as a fulcrum, friction
95 collars or pawls E and E' upon the bar B, and clevis F, connecting the short arm of the lever D with the pawl E, substantially as described.

4. The combination of the bars *f*, working upon the trunnions *o* as a fulcrum, cored lug *b*
100 upon one of said bars, bolt *c* passing through both bars, and also through said lug, and collar G, comprising the male part *a*, provided with projections *b'* and female part *a'*, having
shoulders to receive the said projections, said parts being held together by bolts or rivets *c'*,
substantially as and for the purpose described.

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In presence of—

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