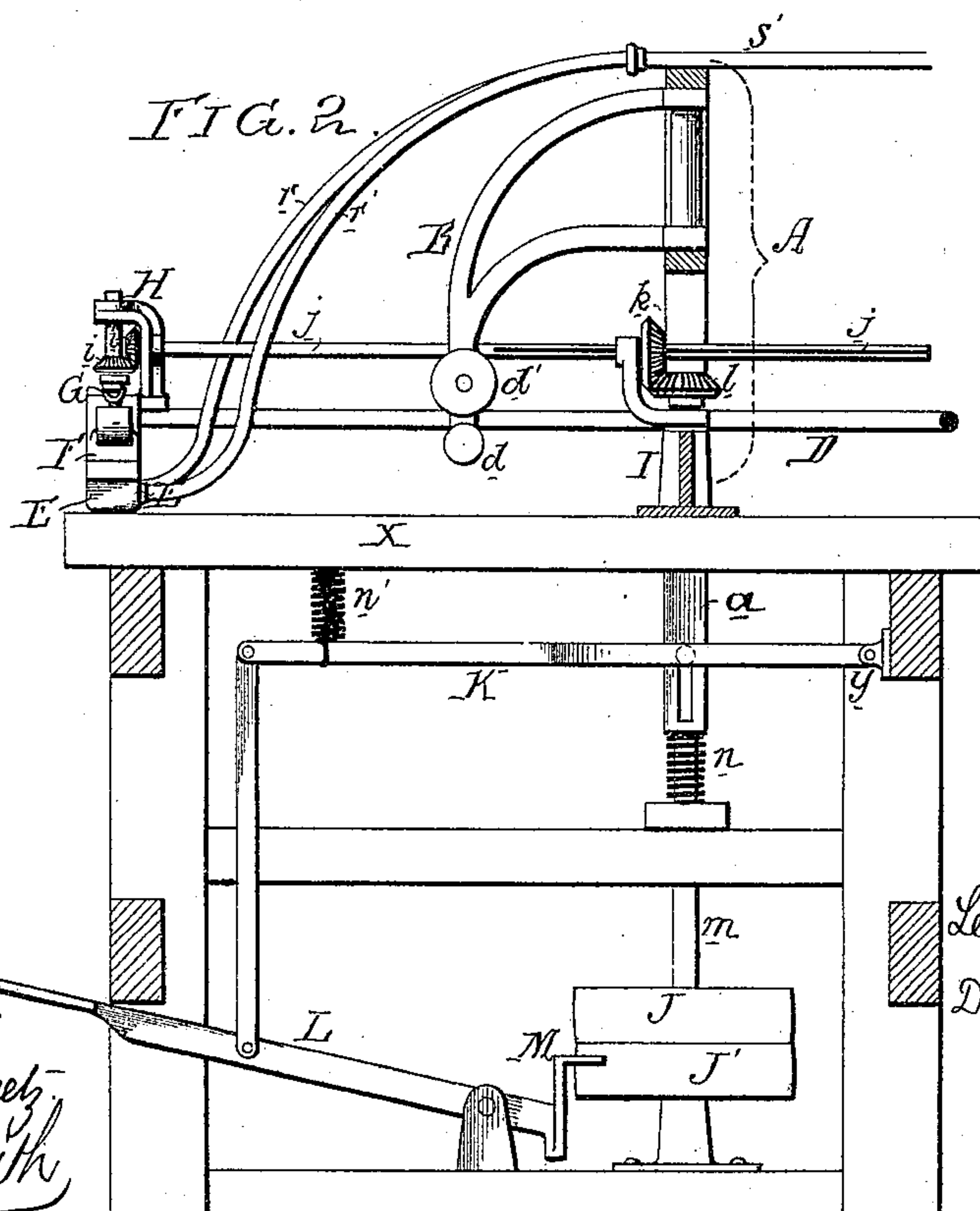
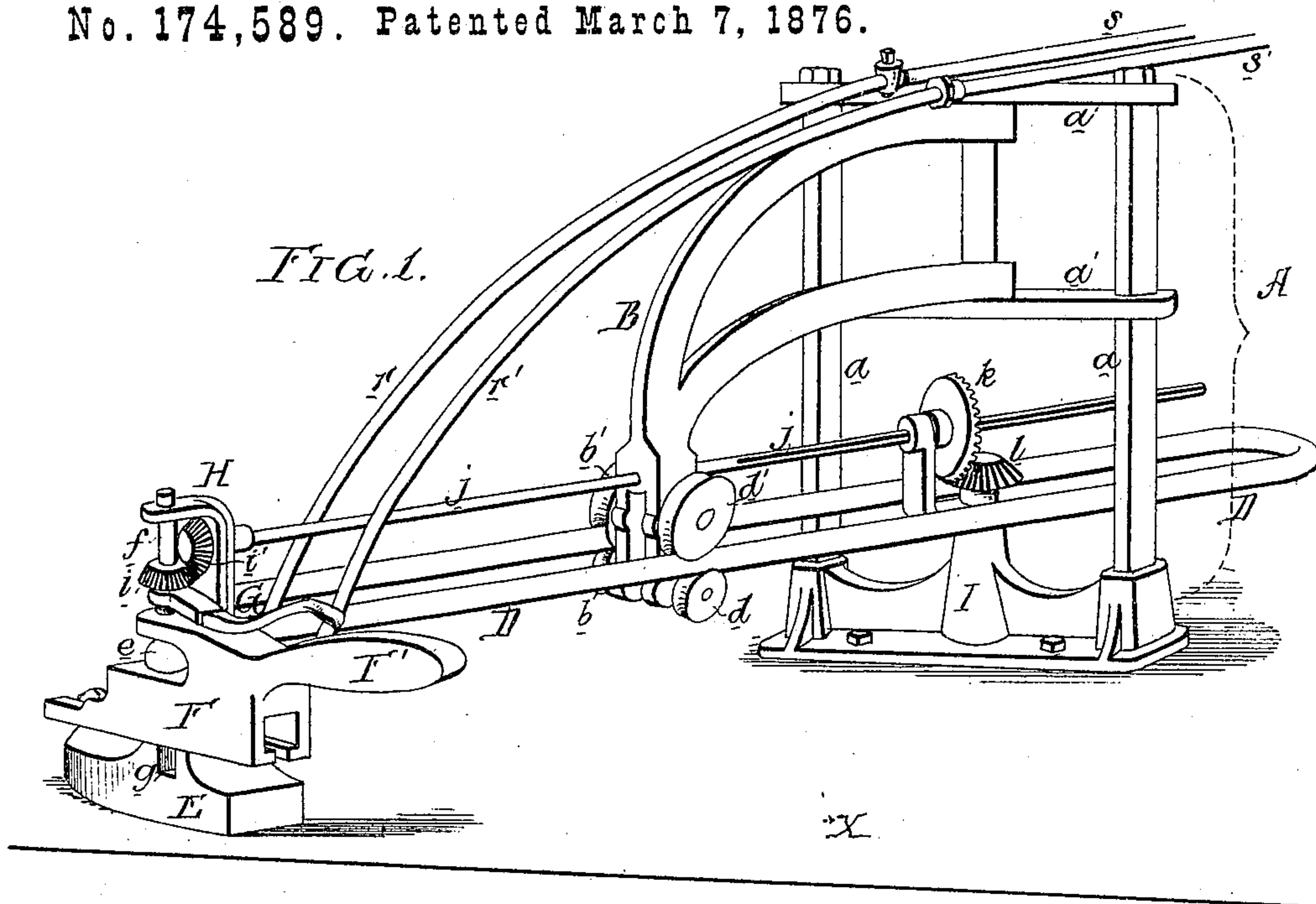


L. STERNBERGER & D. M. PFAUTZ.

IRONING APPARATUS.

No. 174,589. Patented March 7, 1876.



Witnesses,
Ellwood T. Peetz,
Harry Smith,

Leopold Sternberger
and
Daniel M. Pfautz
by
their Attorneys
Hewson and Son

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FIG. 3.

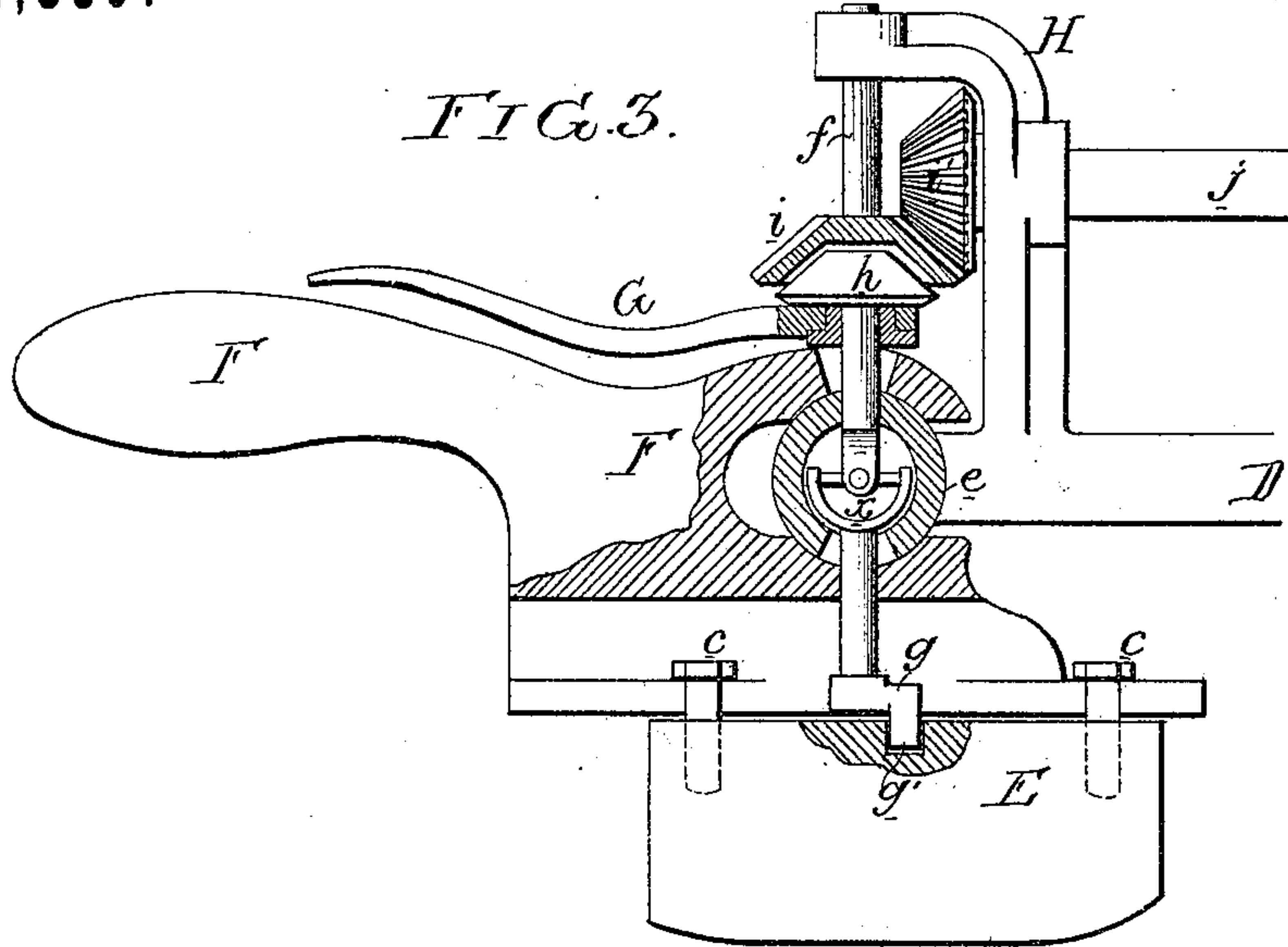


FIG. 4.

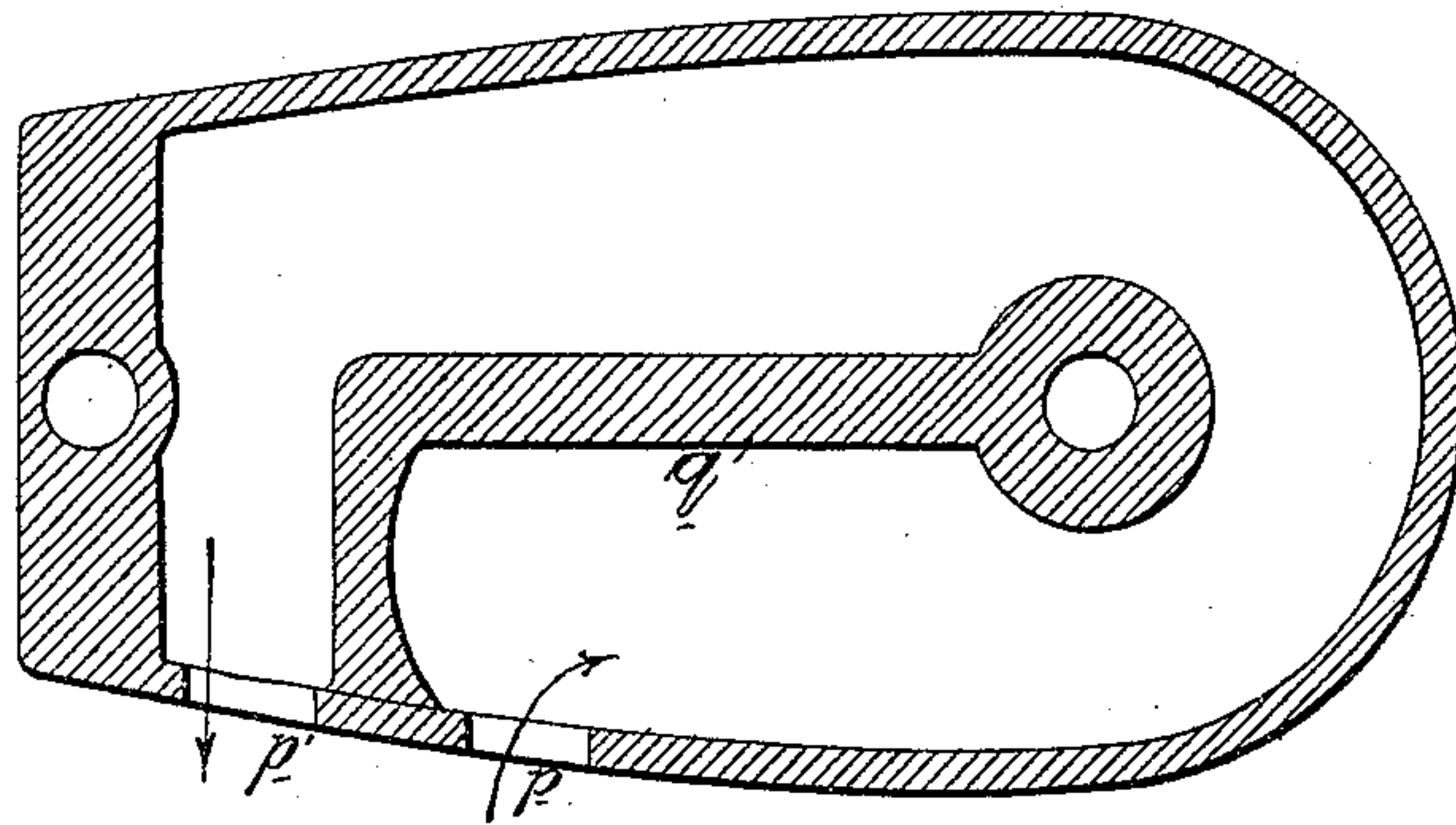


FIG. 5.

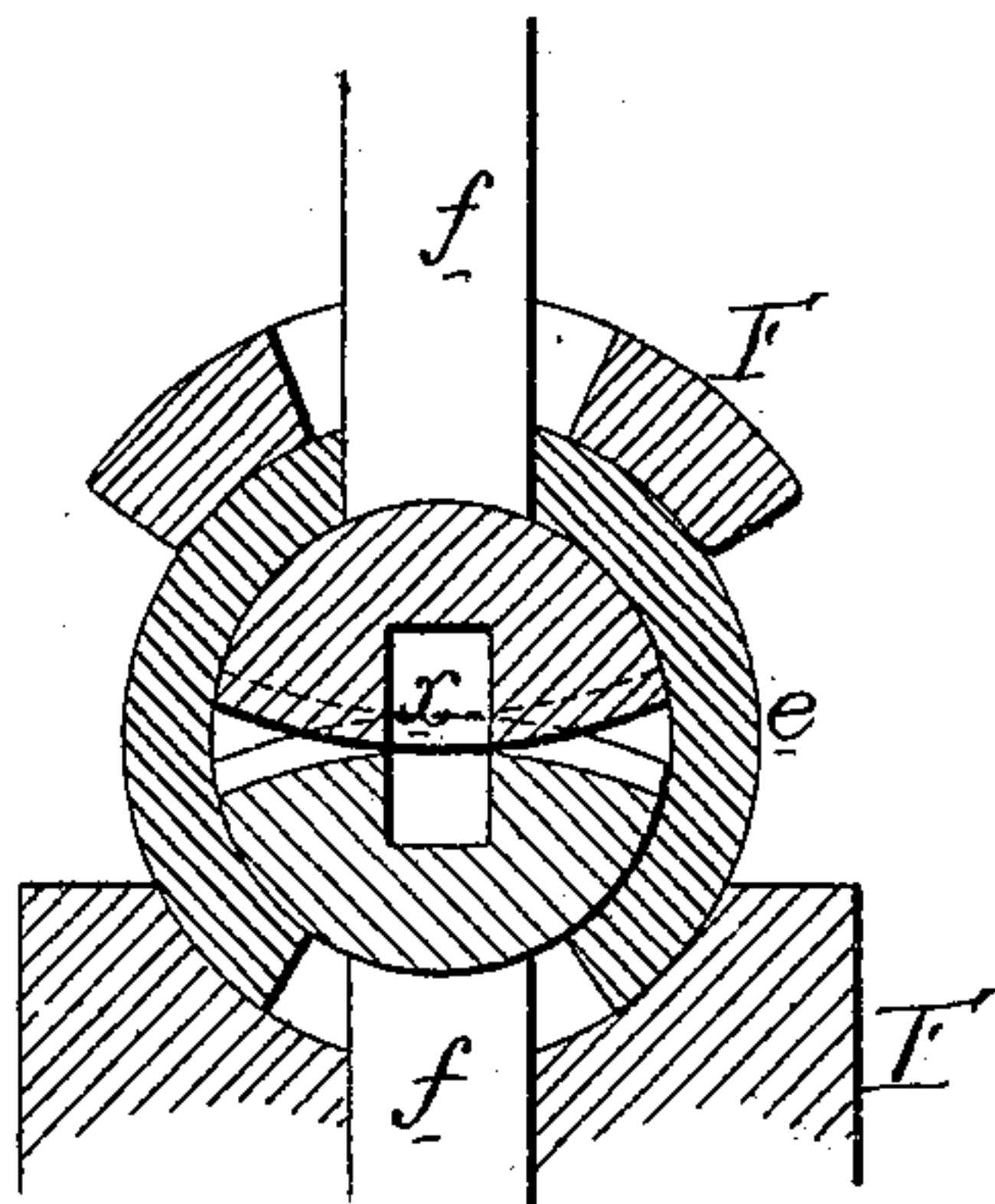
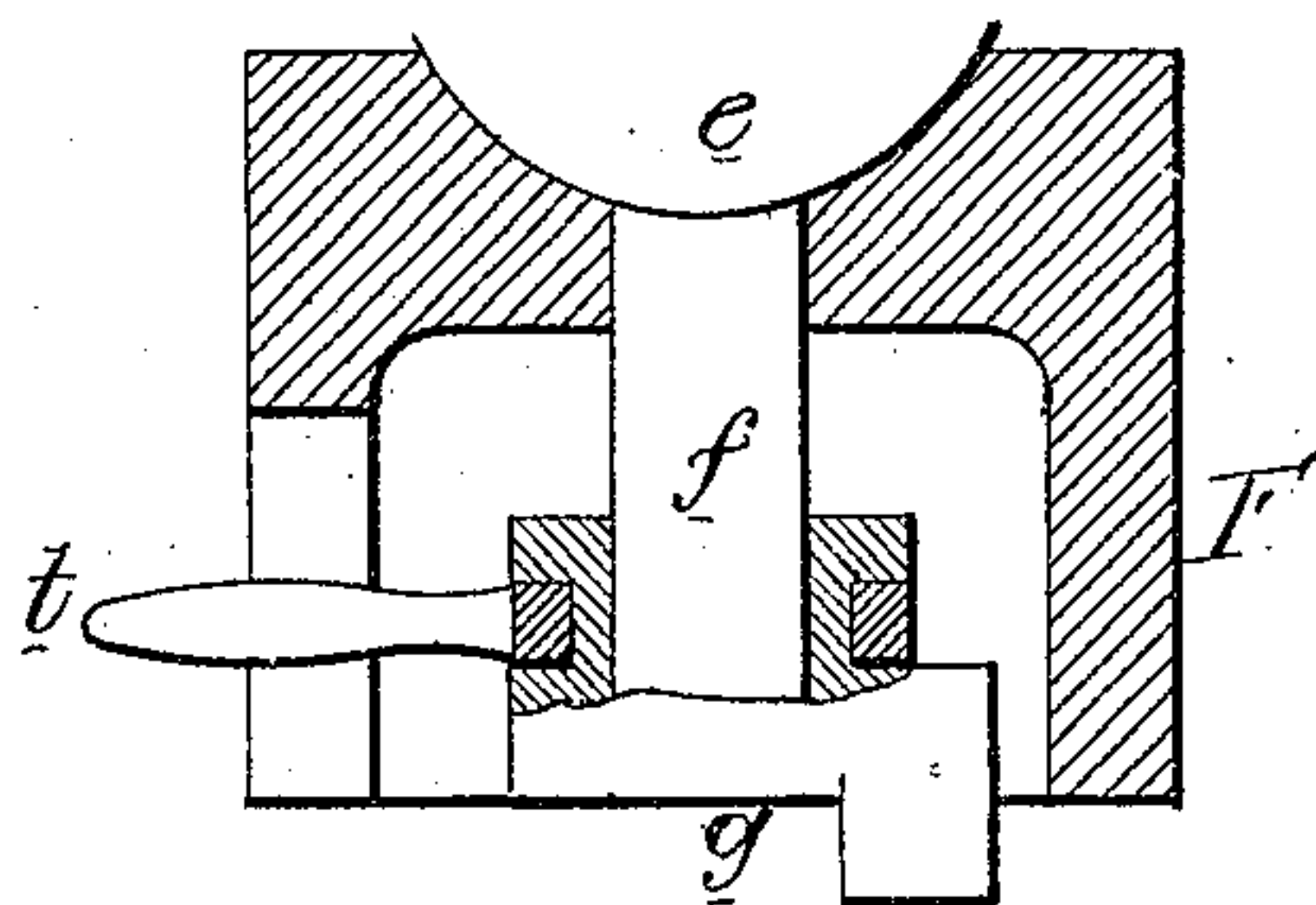


FIG. 6.



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UNITED STATES PATENT OFFICE.

LEOPOLD STERNBERGER AND DANIEL M. PFAUTZ, OF PHILADELPHIA, PA.;
SAID PFAUTZ ASSIGNOR TO SAID STERNBERGER.

IMPROVEMENT IN IRONING APPARATUS.

Specification forming part of Letters Patent No. **174,589**, dated March 7, 1876; application filed
October 22, 1875.

To all whom it may concern:

Be it known that we, LEOPOLD STERNBERGER and DANIEL M. PFAUTZ, of Philadelphia, Pennsylvania, have invented a Machine for Ironing and Polishing Textile Fabrics, of which the following is a specification:

The object of our invention is to construct a machine for rapidly and thoroughly ironing and polishing textile fabrics, and this object we attain in the manner which we will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of our improved ironing and polishing machine; Fig. 2, a side elevation of the same, partly in section; Fig. 3, an enlarged vertical section of the polishing-iron and its operating devices; Fig. 4, a sectional plan view of the body of the iron; and Figs. 5 and 6, views of modifications.

Although we have illustrated and are about to describe our improved machine in connection with a steam-heated iron, it should be understood in the outset that different forms of irons, heated either by steam or gas, or detachable irons heated by means of a stove or furnace, may be employed.

The main operating parts of the machine are arranged above a suitable table, X, on which the fabric to be ironed is laid, and are carried by a frame, A, consisting of two vertical bars, *a a*, connected together at and near the top by cross-bars *a' a'*, to which is pivoted one end of a curved swinging-frame, B, provided at its opposite end with grooved rollers *b' b'* and *d' d'*, between which are guided the opposite side bars of a longitudinally-adjustable frame, D, carrying at its outer end the smoothing and polishing iron E and the device for reciprocating the same. The iron E has two pins, *e*, adapted to a longitudinal slot in the lower portion of the frame F, which is slotted near the upper edge, and in this slot are formed sockets adapted to a sphere, *e*, inclosing a universal joint, *x*, which connects together the upper and lower halves of an upright shaft, *f*, so that the said frame F and iron E can be held in any position which the character of the work may require, a handle,

F', being arranged at one end of the frame F in order to facilitate this operation.

The iron is reciprocated by means of a crank, *g*, attached to the end of the lower half of the shaft *f*, a pin on the end of this crank working in a transverse slot, *g'*, in the upper face of the iron. The upper end of the shaft *f* has its bearing in a bracket, H, secured to the outer end of the frame D, and carries a bevel-wheel, *i*, loose on the shaft, but capable of being connected therewith by means of a friction-clutch, *h*, keyed to the shaft, and adapted to a conical recess in the under side of the bevel-wheel *i*, into which it can be forced by depressing the outer end of a lever, G. It is preferable that either the disk *h* or the recess in the wheel *i* should be faced with leather or other suitable material, in order to insure a proper frictional contact between the two. The bevel-wheel *i* gears into a similar wheel, *i'*, secured to the end of a horizontal shaft, *j*, which also has its bearing in the bracket H, and after passing through an opening in the lower end of the swinging-arm B is adapted to a bearing at the upper end of a bracket projecting from a bed-plate, I, firmly secured to the table. The shaft *j* carries a bevel-wheel, *k*, which is so secured to the same that while it cannot turn independently of the shaft, the latter has a free longitudinal movement. The wheel *k* is adapted to a horizontal bevel-wheel, *l*, secured to the upper end of a vertical shaft, *m*, which has a bearing near the upper end in a central projection of the bed-plate I, and is provided near its lower end with fast and loose pulleys J and J', to which power is applied from any adjacent shaft. The bed-plate I has at each end an opening for the passage of one of the vertical bars *a* of the frame A, these bars being attached below the table to a forked lever, K, hung to brackets *y*, and connected at its outer end to a treadle-lever, L, so that by pressing upon the latter the frame A will be depressed and the iron E caused to bear upon the surface of the table with any required degree of pressure. Springs *n*, beneath the lower ends of the bars *a*, and a spring, *n'*, attached to the lever *k*, tend to raise the frame A as

soon as pressure upon the treadle L is removed. The treadle-lever L carries at its inner end a belt-shifter, M, which is so arranged that when the treadle is depressed, in order to bring the iron E in contact with the surface of the table, the belt will be moved from the loose pulley J' to the fast pulley J, and the machine will be put in operation, while the elevation of the treadle, to an extent sufficient to lift the iron free from the surface of the table, will cause a reversal of this movement and a consequent stoppage of the machine.

The mode of heating the iron E, when steam is employed, is shown in Fig. 4, on reference to which it will be observed that the shell of the iron has two openings, *p* and *p'*, which communicate with a passage formed by the angular partition *q*, this passage being of such a shape that steam entering the opening *p* is compelled to pass entirely around the iron before it can escape from the opening *p'*, thus insuring a thorough heating of the iron at all points. The openings *p* and *p'* are connected by means of flexible tubes *r* and *r'* to inlet and exhaust pipes *s* and *s'*, so that a constant circulation of steam is maintained without interfering with the operations of the irons.

Various forms of universal joints may be employed in connection with the sectional shaft *f*. Thus, when heavy work is to be performed, it may be found advisable to employ the halved sphere shown in Fig. 5, the adjoining faces of the two halves being made convex, and being provided with teeth which gear into each other, as shown.

In order to permit the iron E to be removed from the frame F, when necessary, we prefer in some cases to so secure the crank *g* to the lower end of the shaft *f*, either by squaring the shaft, or by means of a suitable key or feather, that the said crank can be lifted until its pin is clear of the transverse slot *g'* of the iron. This movement is effected by raising an arm, *t*, Fig. 6, attached to the crank and projecting through a slot in the side of the frame F, so as to be under the direct control of the operator.

A spring-pin may be combined with the arm *t*, so that the crank may be held in either of its extreme positions.

In some instances the lever K may be dispensed with, and the pressure on the iron regulated, by the hand of the operator, through the medium of the frame F and its handle F'; but we prefer the arrangement shown and described, on account of its ease and the certainty of its operation.

It will be evident, without further description, that with the above-described machine the operation of ironing a piece of fabric can

be performed much more rapidly and effectually than with the usual heated iron operated by hand, for in this machine the polishing of the fabric is effected entirely by the power-driven iron, the operator merely regulating the pressure and guiding the iron over the surface of the fabric, and as the iron is both universally pivoted and secured to the end of a universally-adjustable frame, the latter operation can be performed without difficulty.

We claim as our invention—

1. An ironing-machine in which a universally-adjustable frame is combined with an iron having a reciprocating motion independent of said frame, as set forth.

2. The combination of the longitudinally-adjustable frame D, carrying at its outer end the iron E and its reciprocating devices, with the laterally-swinging frame B, substantially as set forth.

3. The iron E, having pins adapted to a longitudinal slot in the frame F, and a transverse slot, *g'*, adapted to a pin on a crank, *g*, at the lower end of the shaft *f*, as set forth.

4. The combination of the frame F, carrying the iron E with the shaft *f*, made in two parts, connected together by a universal joint, substantially as and for the purpose described.

5. The combination of the shaft *f*, its loose bevel-wheel *i*, and friction-clutch *h*, with the lever G hung to the frame F, as set forth.

6. The combination of the iron E and its transverse slot *g'* with a crank, *g*, rendered vertically adjustable on the shaft *f*, as and for the purpose set forth.

7. The combination of the iron E and its inlet and outlet openings *p* and *p'* with the inlet and exhaust pipes *s* and *s'* and the flexible tubes *r* and *r'*, as set forth.

8. The iron E, provided with inlet and outlet openings *p* and *p'*, and an internal partition *q* between said openings, as set forth.

9. The combination of the frame A and lever K with the treadle-lever L, its belt-shifter M, and the fast and loose pulleys J and J' on the driving-shaft *m*, all being arranged and operating in respect to each other as and for the purpose set forth.

10. The combination of the bevel-wheel *i* on the shaft *f*, and the bevel-wheel *l* on the shaft *m*, with the longitudinally-adjustable frame *j* and its bevel-wheels *i* and *k*.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LEOPOLD STERNBERGER.
DANIEL M. PFAUTZ.

Witnesses:

HARRY HOWSON, Jr.,
HARRY SMITH.