

(No Model.)

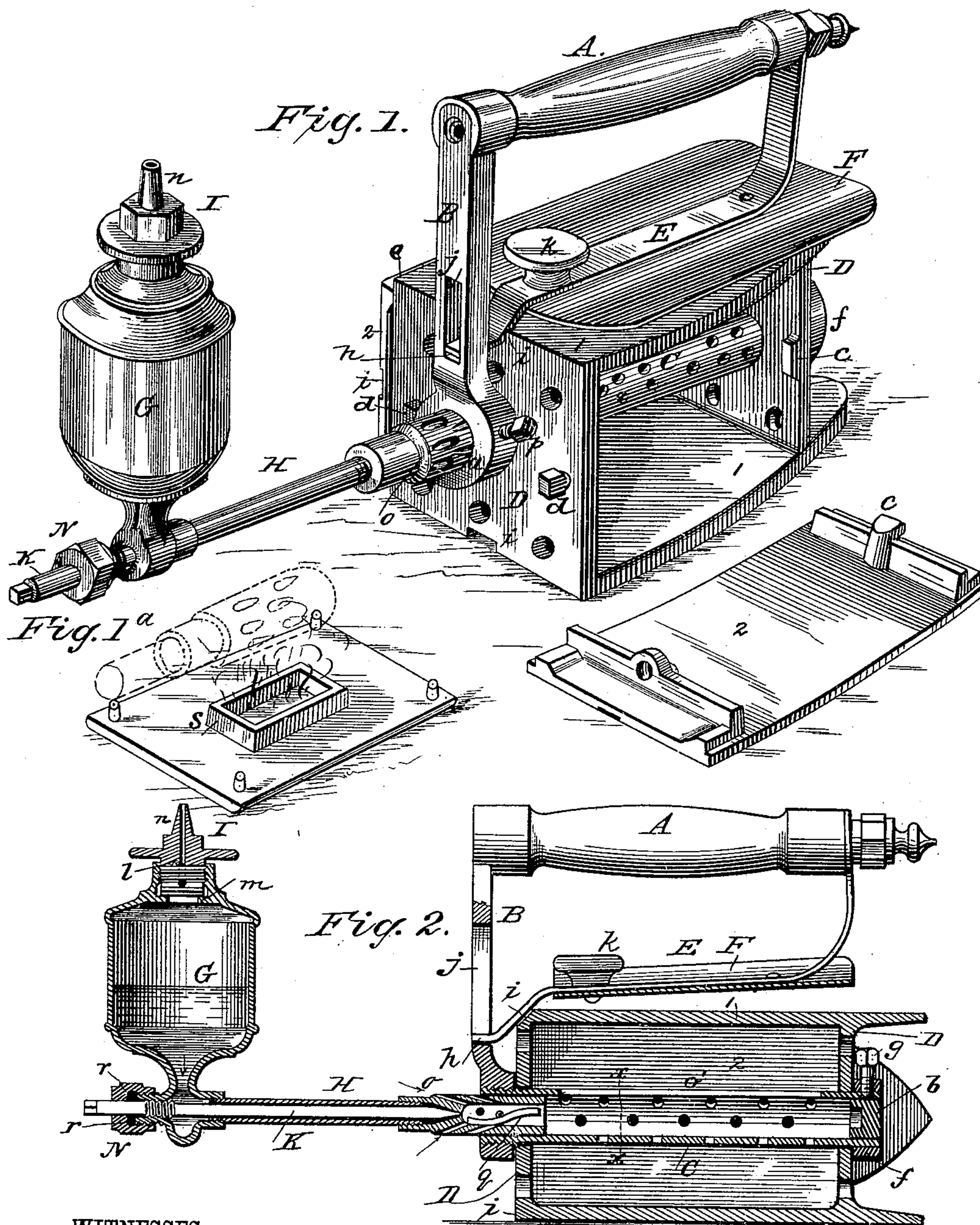
2 Sheets—Sheet 1.

A. F. CHABLE.

SAD IRON.

No. 377,351.

Patented Jan. 31, 1888.



WITNESSES:

*Fred G. Dietrich*  
*Amos W. Hart*

INVENTOR:

*A. F. Chable*  
BY *Wm. L.*  
ATTORNEYS.

(No Model.)

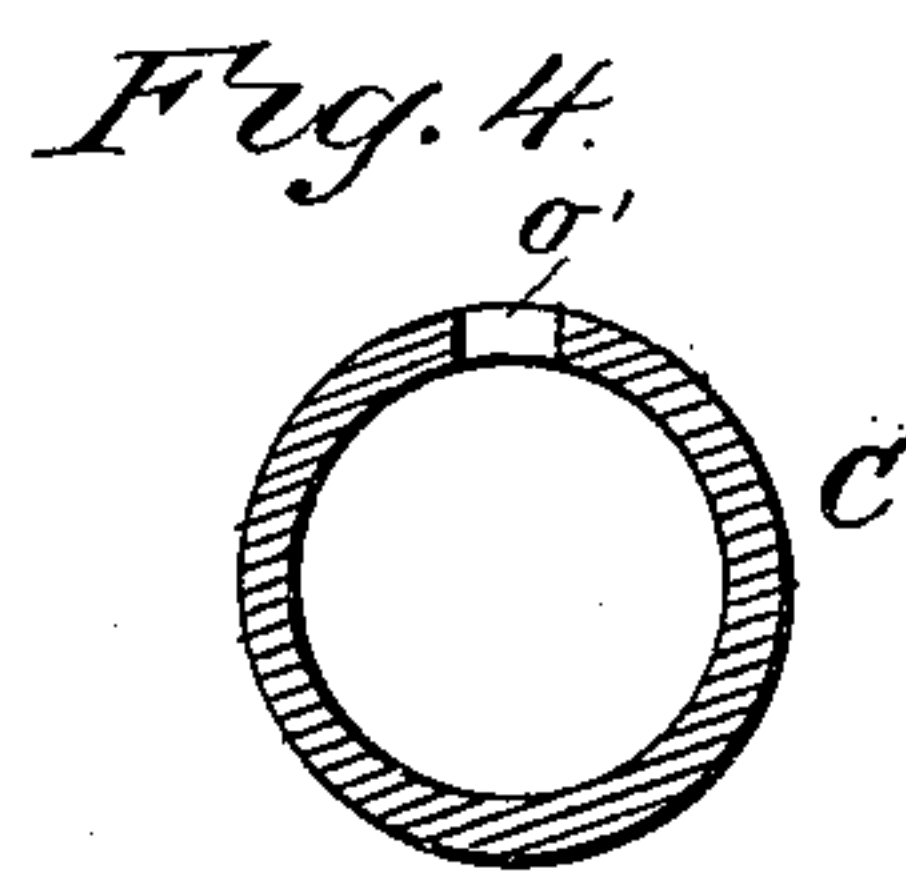
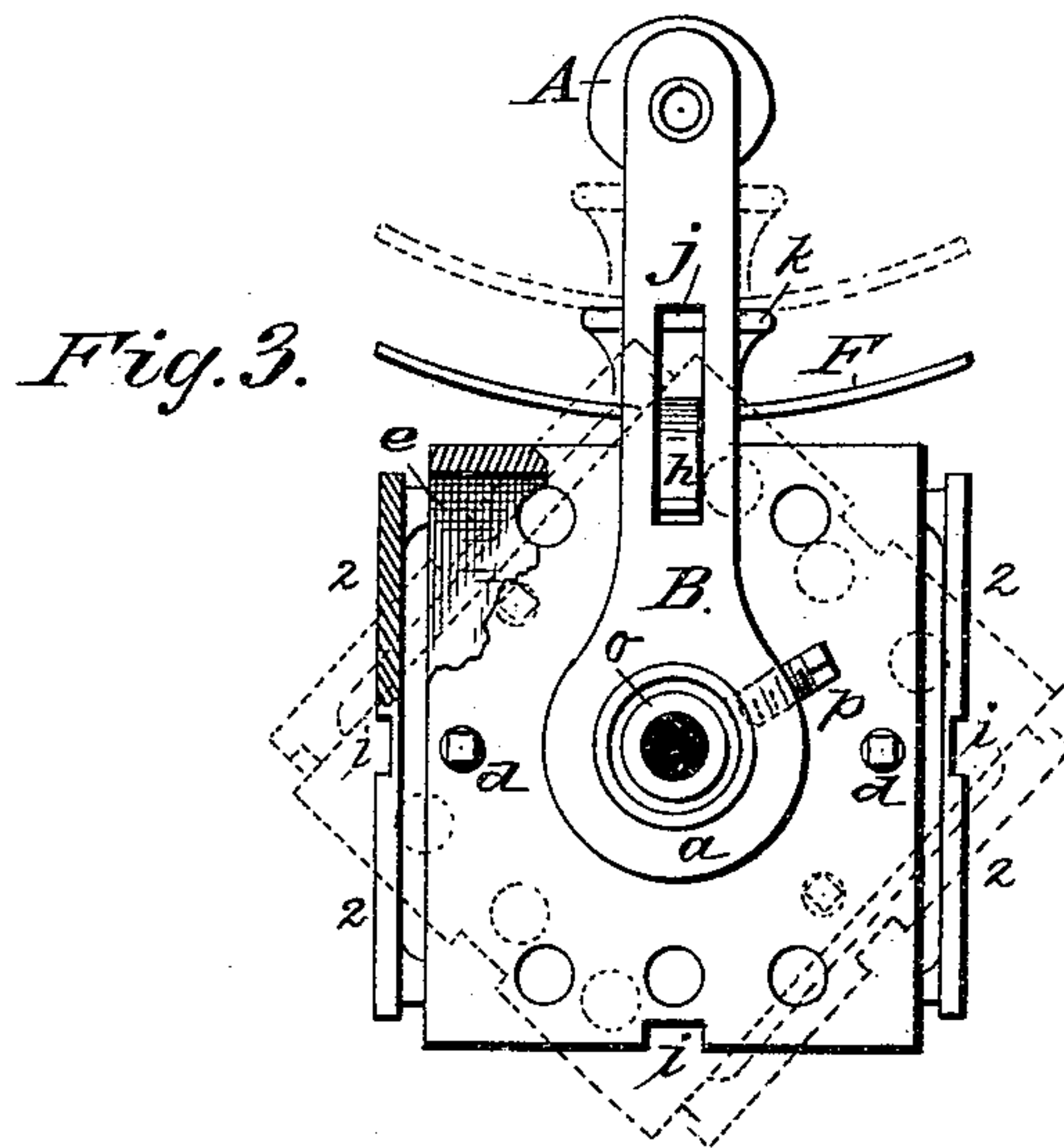
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A. F. CHABLE.

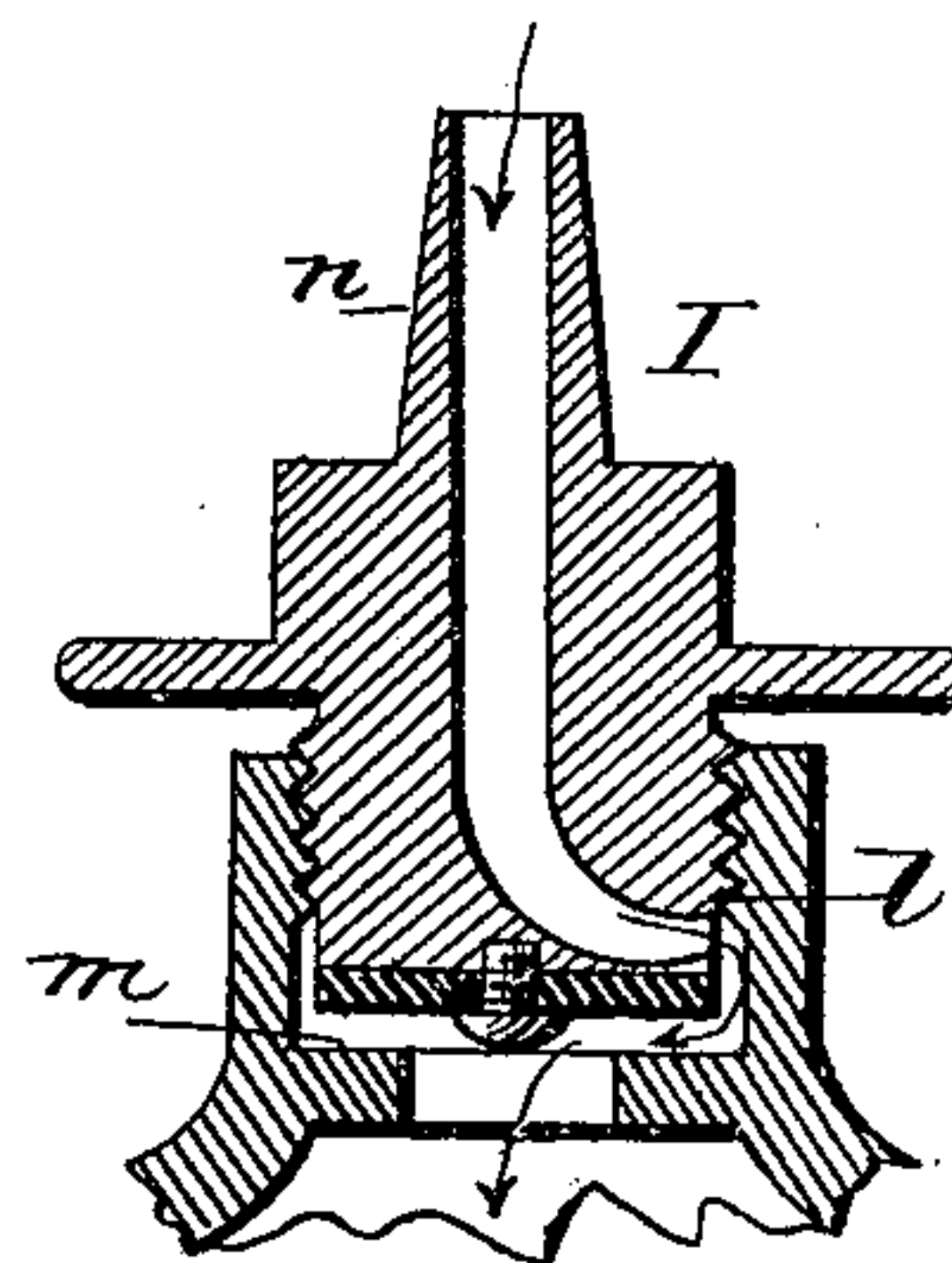
SAD IRON.

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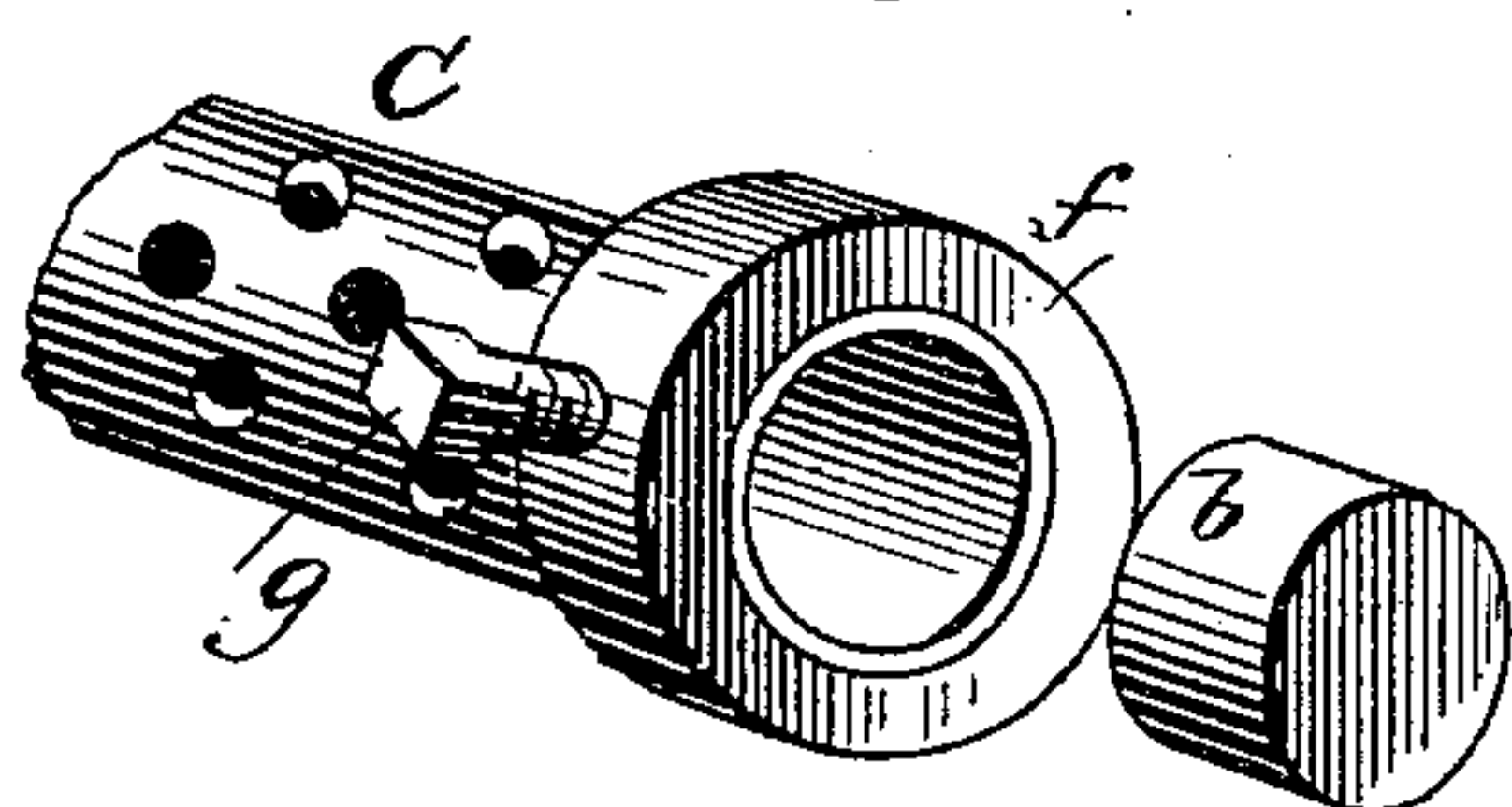
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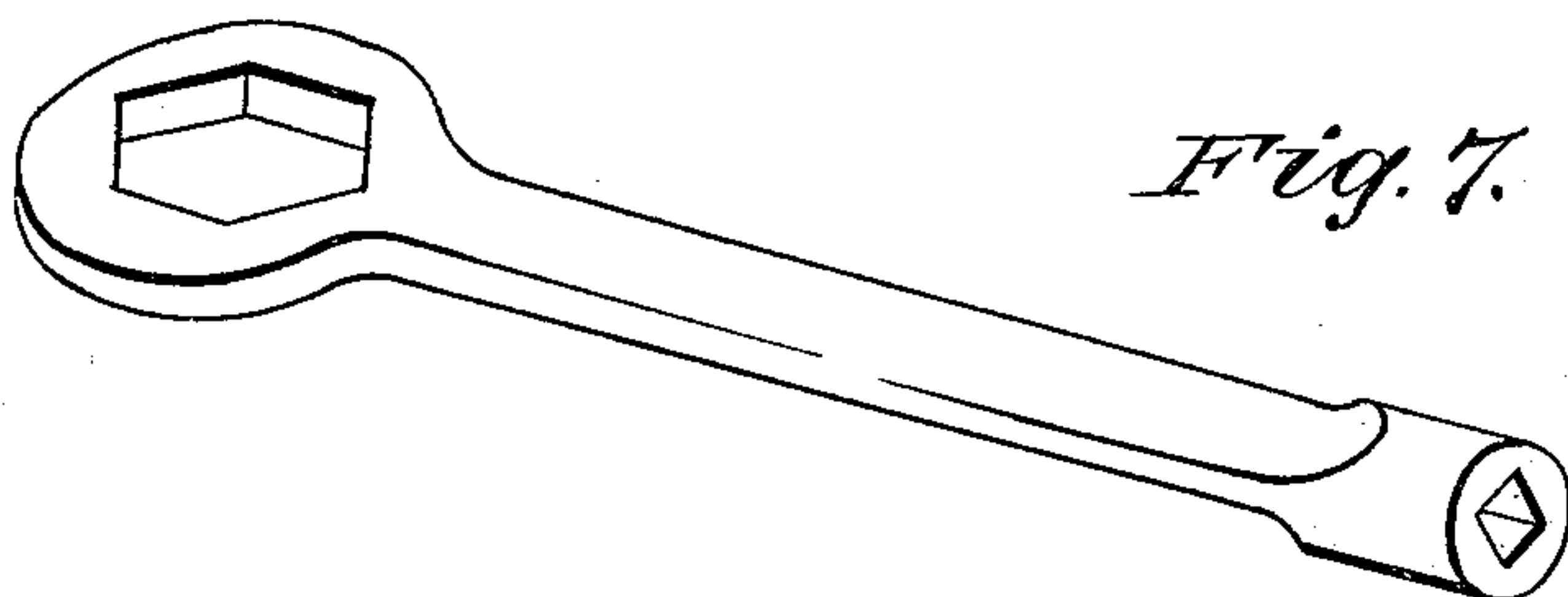
*Fig. 6*



*Fig. 5.*



*Fig. 7.*



WITNESSES:

*Fred G. Dieterich*  
*Amos W. Hart*

INVENTOR:

*A. F. Chable*  
BY *Murphy & Co.*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

AUGUST FRANCIS CHABLE, OF EVANSVILLE, INDIANA, ASSIGNOR OF ONE-HALF TO JOSEPH C. PRICE, OF SAME PLACE.

## SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 377,351, dated January 31, 1888.

Application filed October 5, 1886. Serial No. 215,403. (No model.)

*To all whom it may concern:*

Be it known that I, AUGUST FRANCIS CHABLE, of Evansville, in the county of Vanderburg and State of Indiana, have invented a new and useful Improvement in Sad-Irons, of which the following is a specification.

My invention is an improvement in the class of sad-irons which rotate or are made reversible, so that different faces or irons may be used with one frame and handle.

The construction and combination of parts are as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of the sad-iron, one side being detached and inverted. Fig. 1<sup>a</sup> is a perspective view, illustrating one step in the operation of preparing the sad-iron for use. Fig. 2 is a central longitudinal section of the sad-iron. Fig. 3 is a rear end view, part being broken away. Fig. 4 is a cross-section of the gas and flame distributing tube, or burner proper, taken on line *xx*, Fig. 2. Fig. 5 is a perspective view of a portion of the flame-distributor. Fig. 6 is a vertical central section of the valve and valve-seat of the gasoline-reservoir. Fig. 7 is a perspective view of the wrench employed for adjusting and detaching certain parts of the sad-iron.

The handle A of the sad-iron is attached to a vertical arm, B, having its lower end formed with an eye, *a*, which receives and is firmly secured to one end of the perforated tube C, that serves as a fire-distributor. The body of the sad-iron rotates on this tubular part C, which is closed at its outer end by a plug, *b*, as shown in Figs. 2 and 5. Said body is composed of the following parts: First, a frame, D, which has two open sides and two flat working-faces or smoothing-surfaces, 1 1; and, second, the detachable faces 2 2, which have different forms and are applied to said open sides as required for use. These detachable faces 2 2 are made curved, flat, or fluted, and pointed or square, so that with this sad-iron various kinds of ironing may be done. The said faces 2 2 are detachably connected with frame D by means of lugs *c* at one end and a set-screw, *d*, at the other, substantially as in my former invention, for which I have received Letters Patent No. 354,685. The faces 2 2 stand off

from the frame D far enough to leave spaces *e*, Fig. 3, for admission of air to support combustion. Air is also admitted for the same purpose through openings in the ends of frame D.

The flame-distributing tube C passes through the longitudinal center of frame D and projects through openings in the vertical end portions of the latter. The said frame is detachably secured thereon by means of a collar, *f*, and clamp-screw *g*, applied to the front end of the fire-distributor.

The construction and arrangement of parts whereby the handle is locked to the frame are as follows: A narrow plate-spring, E, is attached by a nut to the front end of handle A and curves back beneath the latter. Its rear end, *h*, is bent downward and rests in a notch, *i*, in the rear end of a working-face of the sad-iron, and also enters a lengthwise slot, *j*, in the arm B of the handle A. A knob, *k*, is attached to the spring near its rear end, for use in raising the latter out of the notch *i*, when required, in order to allow rotation of the body of the sad-iron upon the fire-distributor C. The operation is illustrated in Fig. 3, where said spring is shown passing over a side angle of the iron. This means of locking and releasing the latter is at once simple, inexpensive, and efficient. Besides the above-described function of the spring E, it serves a convenient point of attachment and support for the fender or shield F, which prevents access of an undue degree of heat to the hand of the operator.

The shield is riveted to the spring and extends over the working-face beneath it. It is carried with the spring over the corners or angles of the iron, when the same is being "reversed."

I will now describe the attachment for supplying a vaporizable combustible liquid to the burner. It consists of the reservoir G and a liquid-conducting tube, H, and their attachments, as illustrated in the drawings, Figs. 1 and 2. The reservoir is preferably spun from thin brass or other suitable sheet metal. Its upper end has an internally-threaded collar, *l*, and a valve-seat, *m*, as shown in Fig. 6. The valve or plug I screws into this collar and closes on the seat *m*, it being provided with



suitable packing to form a tight joint. The plug I has a tubular portion, *n*, projecting vertically and forming part of a passage opening below the screw-thread, the function of which will be presently explained. The plug has a polygonal portion and a radial milled flange to adapt it for being turned with a wrench or by hand, as required.

The reservoir G is attached to the outer end of the tube H, and the latter is of such length that the hydrocarbon contained in the former will not be vaporized to any considerable extent by the heat radiated from the sad-iron proper. The front and enlarged end or burner, *o*, of the tube H enters the fire-distributor C, and is detachably secured therein by means of a clamp-screw, *p*. It has a series of lateral openings or passages inclining inward toward the front. These admit air freely to support combustion without favoring or facilitating escape of vapor or spray passing to the fire-distributor C.

A rod or valve, K, projects from the rear end of tube H and extends forward therein to a point just in rear of the openings in burner *o*, and its conical end fits in a corresponding recess, which constitutes a valve-seat, Fig. 2. By adjusting this rod K the amount of combustible liquid discharged from the reservoir G may be regulated to a nicety. In passing through the narrow annular orifice around the conical end of the valve-rod K into the foraminous chamber *o* beyond the liquid is converted into spray, and this again into vapor, by the heat of the surrounding parts. It therefore passes to the fire-distributor C, and is emitted therefrom in the form of gas, which burns at all the openings of the burner. The latter has also a lengthwise slit, *o'*. When gas enters the distributor C, it escapes along the whole length of this slit, and being ignited the flame communicates thence to the gas-jets, which are contiguous, and thus to all the others. Within burner *o*, I solder or otherwise secure a rod, *q*, Fig. 2, which assists in converting the liquid hydrocarbon into vapor. That is to say, it aids mechanically in producing this result by obstructing the flow of liquid, and thus breaks it up into smaller streams, or even into spray, besides acting as a supplementary conductor of heat.

The outer end of the tube H is screw-threaded, and a cap nut, N, Figs. 1, 2, is applied to it to hold in place and compress the packing *r*, which is inserted to close the space between the valve-rod K and said tube.

To prepare the sad-iron for use, I proceed as follows: First screw out the plug or valve I, and fill the reservoir G nearly full with some suitable hydrocarbon—say, naphtha at seventy-four degrees. Then replace plug I, and screw it part way down, so that an air-space will be left between it and the seat *m*, Fig. 6. Next apply the mouth to the tube projecting from the tube and blow hard enough to create a strong pressure in the reservoir, and screw the plug down tight while maintaining such pressure. On the bottom of the flat sad-iron holder, Fig. 1<sup>a</sup>, is a shallow receptacle or cup, *s*, formed by a flange, as shown. Invert the piece, as shown, and fill this receptacle partly with naphtha and ignite it. Then hold the perforated burner *o* over the flame until hot enough to vaporize naphtha upon coming in contact with it. Next open the conical valve K slightly, ignite the naphtha, which will then enter the perforated piece *o*, and insert the latter in the fire-distributor C, and secure it by the clamp-screw *p*, as before, being careful to leave the perforations outside, so that air may be inducted freely through them. The vapor or gas will now find exit from the holes and slit of the fire-distributor C and burn strongly, thus quickly heating the adjacent fixed and detachable faces of the sad-iron. In five minutes from beginning the above-described operation the iron will be hot enough for use.

What I claim is—

1. The combination, with the rotatable body of the sad-iron having notches in its rear angles, the slotted handle-arm B, and handle proper, of the curved spring attached to the free end of the latter and extending rearward over the said body into the slot of said handle, and having a knob or finger-piece on its upper side, as shown and described.

2. In a reversible sad-iron, the combination, with the rotatable body, the handle and its arm, and the spring attached to its front end and extending rearward, as specified, of the shield attached to said spring and thus adapted to be raised with it for clearing the corners or side angles of the body, as shown and described.

AUGUST FRANCIS CHABLE.

Witnesses:

J. W. WARTMANN,  
HARRY A. WARTMANN.