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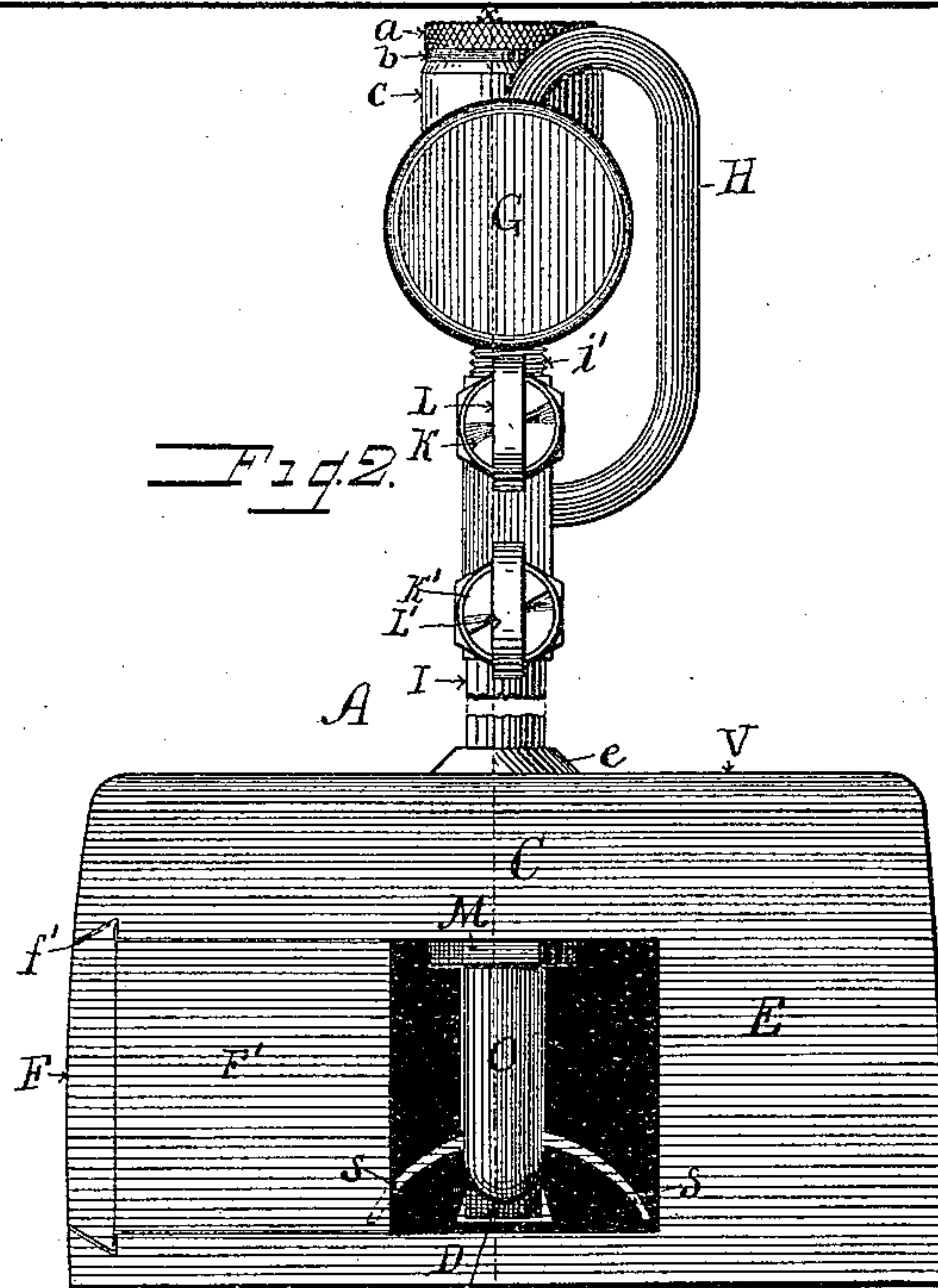
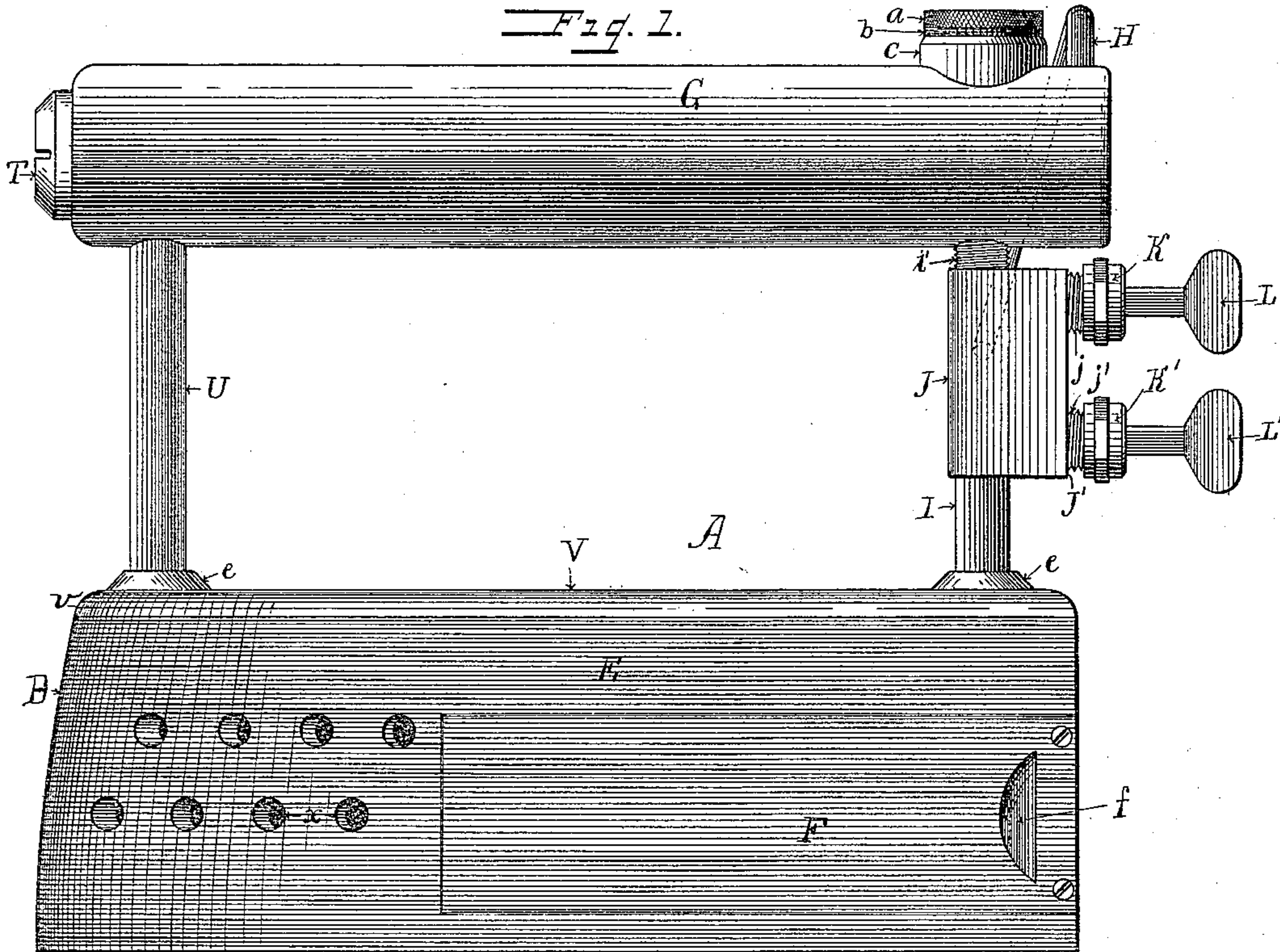
2 Sheets—Sheet 1.

W. P. YOUNG & C. D. MIDDLEKAUFF.

VAPOR SAD IRON.

No. 430,164.

Patented June 17, 1890.



Witnesses

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P. J. Fischer.

Inventors

W. P. Young & C. D. Middlekauff.

By Their Attorneys

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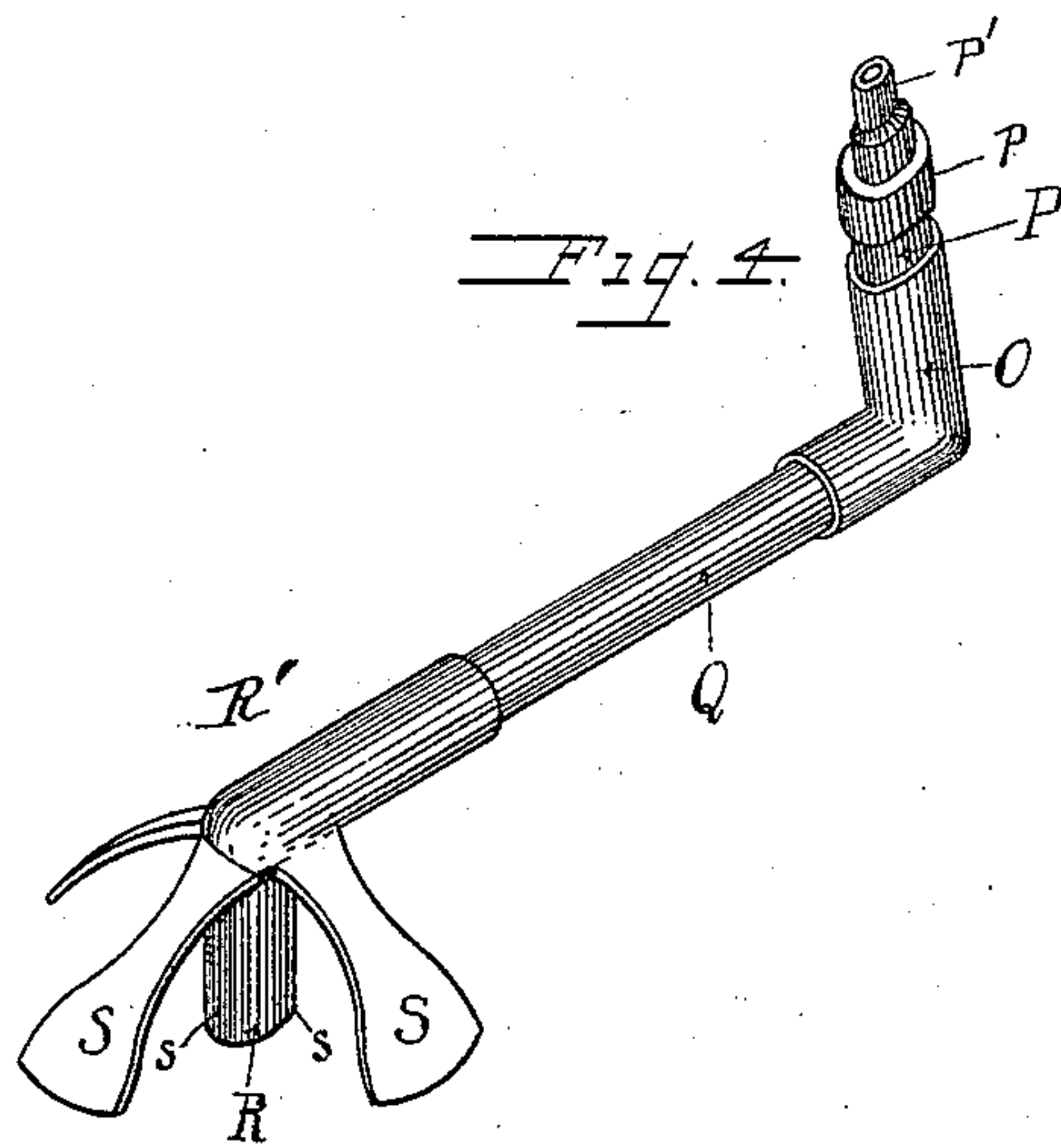
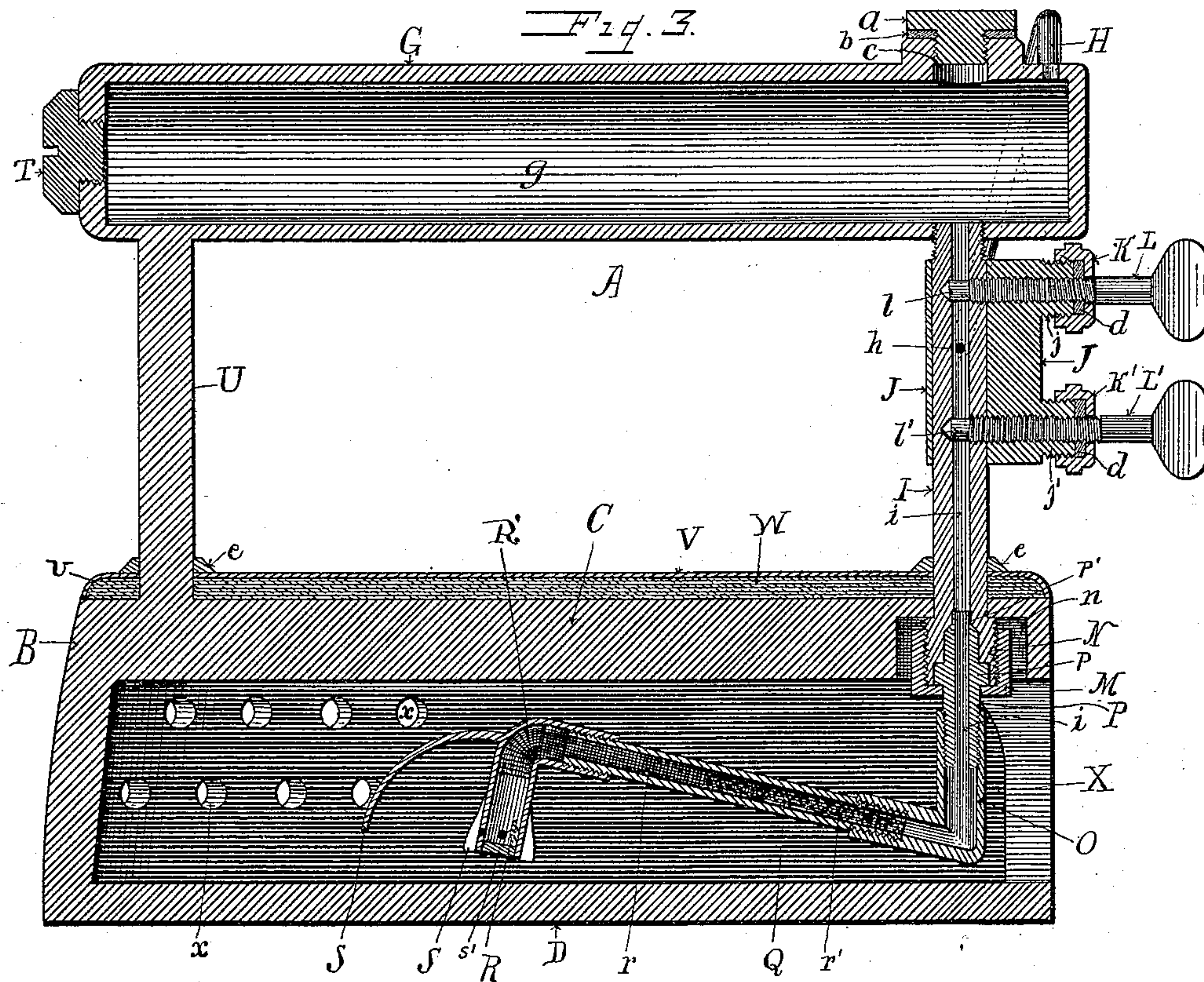
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# UNITED STATES PATENT OFFICE.

WILLIAM P. YOUNG AND CHARLES D. MIDDLEKAUFF, OF SAN FRANCISCO,  
CALIFORNIA.

## VAPOR SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 430,164, dated June 17, 1890.

Application filed September 20, 1889. Serial No. 324,531. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM P. YOUNG and CHARLES D. MIDDLEKAUFF, of the city of San Francisco, San Francisco county, California, have invented certain new and useful Improvements in Vapor Sad-Irons, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to an improved vapor sad-iron; and it consists in a certain novel construction and combination of parts, fully described hereinafter in connection with the drawings and claimed.

In the drawings, Figure 1 is a side view of a sad-iron embodying our invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a vertical longitudinal section taken on line *xx* of Fig. 2, and Fig. 4 is a detail perspective view of the burner and connecting-pipe with the deflecting-flanges secured thereto.

A represents the improved iron, which is provided with a hollow base B of steel or other suitable material, having a bottom D, a top C, and the sides and back E. The rear end of the base is provided with an opening X, and the sides are provided near the front with perforations *x* for ventilation, and F represents a dovetailed slide which fits in a dovetailed slot *f'* in the side of the base and carries a block F', as shown in Fig. 2. This slide F F' is removable to enable the swinging burner, which is hereinafter described, to be swung out when it is to be lighted.

The handle G is hollow, being provided with a bore *g* to contain gasoline, which forms the fuel for the burner, said hollow handle being supported at one end by a solid standard U and at the other end by a tubular standard I. The solid standard is formed integral with the handle and the top of the base, and the tubular standard is screwed into a threaded opening in the bottom of the handle and passes at its lower end through a registering opening in the top of the base. The enlarged shoulder N on the lower end of the tubular standard is received in a recess *n* in the under side of the top of the base and is engaged by a hood-nut M, and a swivel-tube P fits at its upper end in the enlarged lower end of the bore of the tubular standard, and

is provided with a small tubular extension *p'* to fit in the bore of the said standard. The swivel-tube is further provided with an annular collar *p*, which fits in a corresponding recess or enlargement in the lower end of the standard I, and is held in place therein by the hood-nut M.

On the lower threaded end of the swivel-tube is screwed one arm of the elbow-sleeve O, and into the other arm of said sleeve is fitted one end of the filter-tube Q, which is inclined upward toward its free end, to which the burner R is connected by means of the elbow-sleeve R'. The burner-tube is closed at its lower end by the plug *s'*, and is perforated above said plug, as seen at *s*, and to the upper end of the burner are affixed the downwardly-curved deflecting-flanges S, which deflect the heat from the burners against the bottom of the base, thereby concentrating the heat. The upper or forward end of the filter-tube and the elbow-sleeve are filled with a wire-gauze filter *r*, and the other end of said tube is filled with the asbestos filter *r'*, whereby the fuel is filtered before reaching the burner.

As will be understood, the swivel-tube enables the burner to be swung out through the opening in the side of the base when it is to be lighted. A finger-slot *f* is formed in the slide F, to enable it to be drawn out.

J represents a sleeve, which is fitted on the tubular standard I and carries the valve-casings *j j'*, having threaded bores, in which fit the threaded stems *l l'* of the valves L L', said valves being adapted to close the bore *i* of the tubular standard. Cap-nuts K K' are screwed on the ends of said valve-casings around the valve-stems and are provided with the filling or packing *d*.

H represents a vapor-duct, which extends from the top of the gasoline-reservoir or handle to a point in the tubular standard between the valves L L', and communicates therewith through the perforation *h*, which is shown in Fig. 3, whereby the vapor which arises from the gasoline is conducted to the tubular standard and thence to the burner.

One end of the handle or reservoir is provided with an opening, in which fits a stopper T, which, when removed, enables the in-



terior of the handle or reservoir to be cleaned and relieved of any sediment which may accumulate, and in a similar opening *c*, near the opposite end of the handle or reservoir, is fitted a stopper *a*, which bears on a packing *b*, this opening being provided to enable the reservoir to be filled.

Over the top of the base is arranged a thin metallic shield *V* of copper or other suitable material, having its edges curved downwardly to form flanges *v*, which bear on the top of the base, and between this shield and the top of the base is introduced an asbestos filling *W*. The shield is provided with collars *e*, which surround the standards *U* *I* and strengthen the same.

The operation of our invention is as follows: The valves *LL'* being opened, the gasoline flows through the tubular standard and the filter-tube to the burner, where it is ignited, said burner having been previously swung outward through the opening in the side of the base, as before described. After the combustion has continued a sufficient length of time the heat is conducted through the standards *U* *I* to the reservoir, and as the latter becomes heated the gasoline is vaporized, the vapor being conducted off through the duct *H* to the tubular standard. The upper valve *L* is now closed, thereby cutting off the flow of gasoline and permitting the vapor alone to pass to the burner. The shield on the top of the base protects the hand of the operator from the direct radiant heat, but does not prevent the heat from being conducted to the reservoir or handle through the standards, and as gasoline is vaporized at a comparatively low temperature said handle or reservoir will be hot enough to vaporize the gasoline without being too hot to be comfortably held by the operator. To extinguish the flame, the lower valve *L'* is closed.

Having thus described our invention, we claim—

1. In a vapor sad-iron, the combination,

with the hollow base and the hollow handle or reservoir, of the hollow standard *I*, having its bore enlarged at its lower end, the swivel-tube fitting in said enlarged bore and provided with a collar *p*, the hood-nut fitting on the lower end of said standard, and the burner connected to said swivel-tube, substantially as specified.

2. A vapor sad-iron having a hollow base, a hollow handle connected at one end to the base by a solid standard, a tubular standard having a burner connected to its lower end and communicating at its upper end with the interior of the handle, said standard being provided with valves, and a vapor-duct communicating with the interior of the handle, and with the tubular standard between said valves, substantially as specified.

3. In a vapor sad-iron, the combination, with the hollow reservoir-handle, of the tubular standard connecting the base and handle, said standard being provided with an upper and a lower valve, and a vapor-duct communicating with the upper portion of the handle, and with the tubular standard between the valves, and a supply-tube swiveled in the lower end of the tubular standard and provided at its free end with a downwardly-projecting burner, substantially as shown and described.

4. In a sad-iron, the combination, with a hollow base having an opening in the side thereof and a suitable slide for closing the same, of a reservoir-handle, a tubular standard connecting the handle and base, and a downwardly-projected burner swiveled in the lower end of the tubular standard and adapted to be swung without when igniting, substantially as shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM P. YOUNG.

CHARLES D. MIDDLEKAUFF.

Witnesses:

HENRY E. WILLS,

J. W. KEYS.