

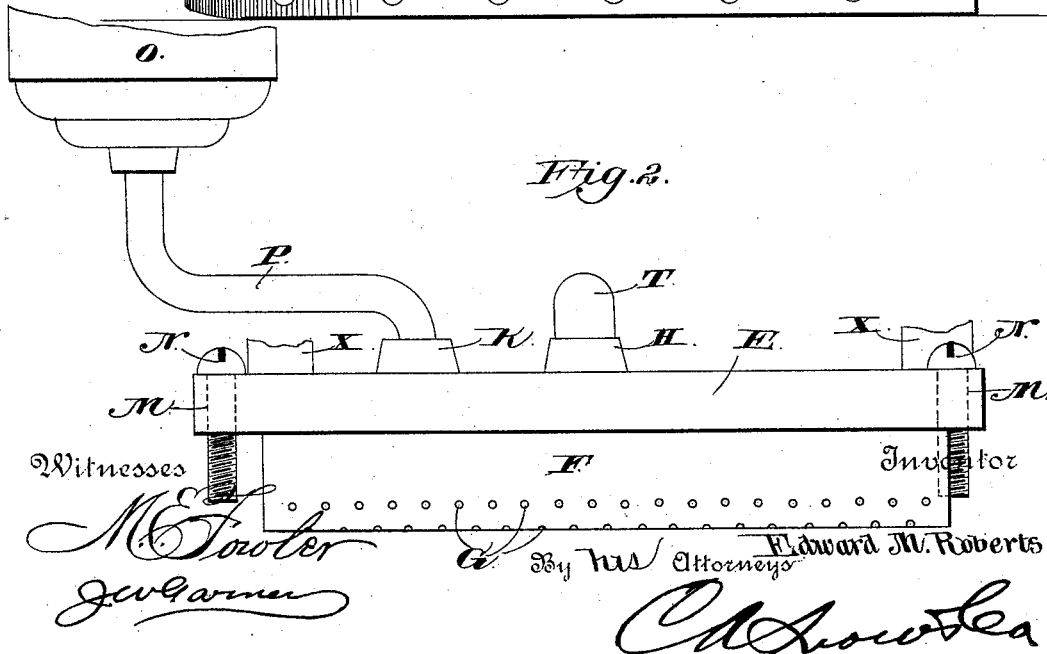
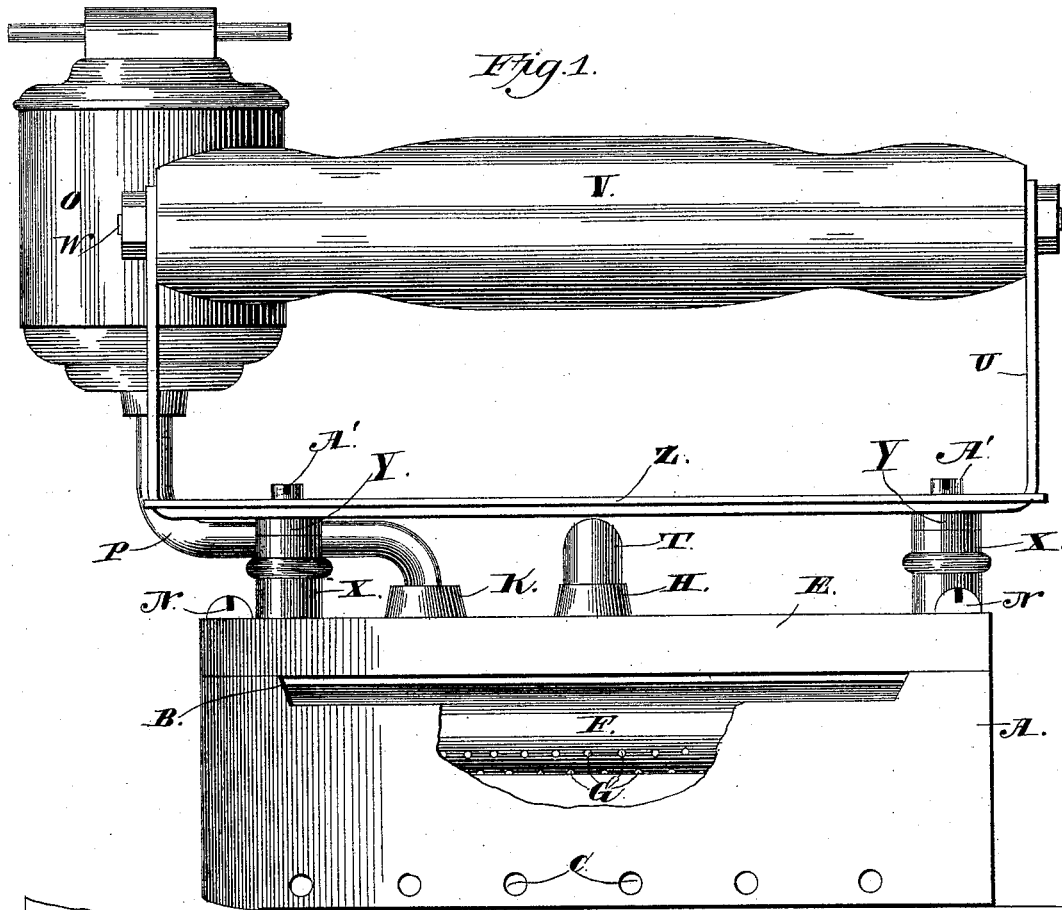
(Model.)

3 Sheets—Sheet 1.

E. M. ROBERTS.
SELF HEATING SAD IRON.

No. 422,448.

Patented Mar. 4, 1890.



Witnesses

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Inventor

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(Model.)

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Fig. 3.

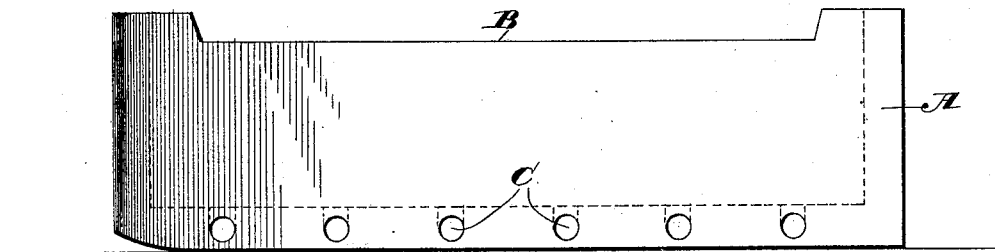
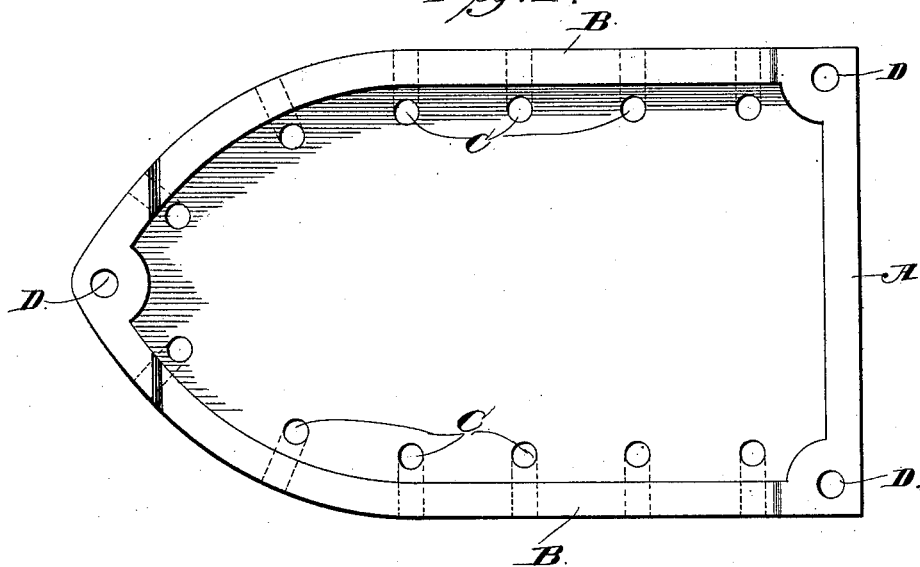


Fig. 4.



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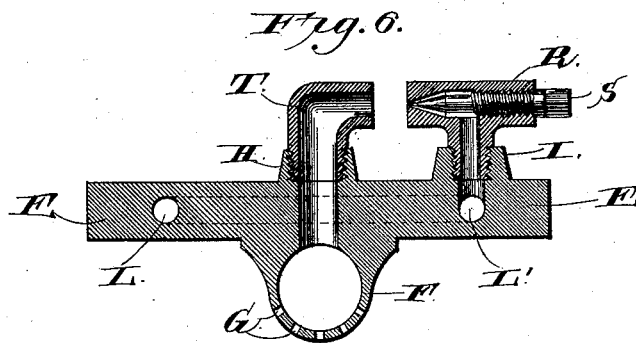
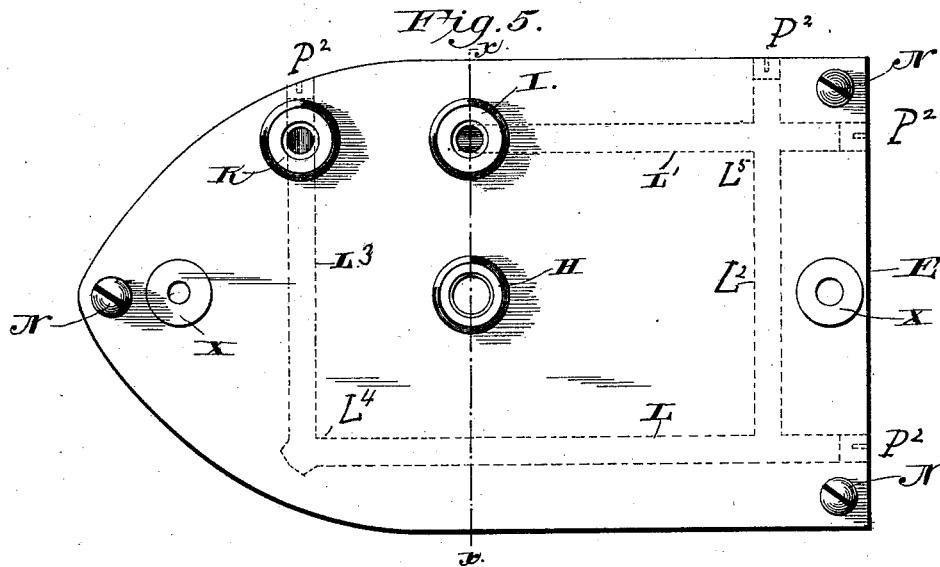
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UNITED STATES PATENT OFFICE.

EDWARD M. ROBERTS, OF MARION, KANSAS.

SELF-HEATING SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 422,448, dated March 4, 1890.

Application filed May 18, 1888. Serial No. 274,304. (Model.)

To all whom it may concern:

Be it known that I, EDWARD M. ROBERTS, a citizen of the United States, residing at Marion, in the county of Marion and State of Kansas, have invented a new and useful Improvement in Self-Heating Sad-Irons, of which the following is a specification.

My invention relates to an improvement in self-heating sad-irons; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a self-heating sad-iron embodying my improvement, a portion of one side of the iron being broken away. Fig. 2 is a similar view of the top plate of the iron provided with the burner and reservoir. Fig. 3 is a similar view of the body of the iron, showing the same detached from the top plate. Fig. 4 is a detached top plan view of the body of the iron. Fig. 5 is a top plan view of the top plate of the iron, the shield, handle, reservoir, needle-valve, and mixing pipe or chamber being removed. Fig. 6 is a vertical transverse sectional view taken on the line *xx* of Fig. 5.

A represents the body of the iron, which is made of iron, steel, or other suitable metal, and of the usual shape, and is hollow and has its upper side open. The upper edges of the iron are provided with longitudinal recesses B, of suitable depth, and near the bottom of the iron are air-inlet openings C, which communicate with the interior of the iron and extend through the sides thereof. In the corners of the iron, on its upper side, are vertical threaded openings D.

E represents a top plate of suitable thickness, which is adapted to fit over and to cover the iron, and is provided on its under side, at its center, with a longitudinal burner-tube F, which is formed or cast integrally with the top plate, and has apertures G on its lower side, which communicate with the bore of the tube. Both ends of the burner-tube are closed. On the center of the top plate is a boss H, which is provided with an opening that communicates with the bore of the burner-tube. At a suitable distance at one side of

said boss is a similar boss I, and at a suitable distance in advance of the boss I is a similar boss K.

L and L' designate openings or channels which are drilled or bored longitudinally in the top plate E from the rear end of the same. Similar channels L² L³ are drilled or bored transversely in the top plate from one side thereof. The inner ends of the channels L L² L³ join each other at L⁴, and the channels L' L² cross each other at L⁵. The inner end of the channel L' communicates with the opening in the boss I, and channel L³ communicates with the opening in the boss K. The outer ends of the several channels or openings are closed by plugs P².

In the corners of the top plate are openings M, which are adapted to register with the openings D, and screws N are inserted in the said openings M and are adapted to engage the openings D, so as to secure the top plate firmly to the iron.

O represents a reservoir for gasoline or other suitable fluid, and P represents a tube which supports the said reservoir and is attached to the central opening in the boss K, thereby putting the reservoir in communication with the channel L³.

Communicating with and attached to the central opening in the boss I is a valve-case R, which communicates with the channel L' and is provided with the usual needle-valve S.

T represents a mixing-tube, which is attached to the boss H, communicates at its lower end with the bore of the burner-tube, and has its upper end curved and arranged opposite the point of the needle-valve and at a suitable distance from the same, leaving an open space between the mixing-tube and the valve-case.

U represents a yoke or frame, which is U-shaped and has the usual handle V, secured by a bolt-rod W between the upper ends of its arms. On the upper side of the top plate E, at the front and rear ends thereof, are standards X. Washers Y are arranged on the upper sides of the said standards, and the lower sides of the handle frame or yoke is supported on the said washers.

Z represents a deflecting-shield, which is made of asbestos or other suitable non-con-

ducting material. The said shield is arranged on the upperside of the lower portion of the handle yoke or frame, and screw-bolts A' are passed through the said shield, through the handle-frame, through the washers Y and standards X, and engage threaded openings in the top plate, thereby securing the handle and the shield firmly above the top plate, as shown.

In operation initial heat is first applied in any convenient manner to the iron until vapor shall be generated in the channels of the cover. By opening the needle-valve the vapor is permitted to escape into the mixing-tube T, and the latter conveys the said vapor to the bore of the burner-tube, together with a sufficient quantity of air to make the vapor combustible. The commingled air and vapor escape from the burner-tube through the openings G, and on being ignited burn in flames of great heat, and which impinge against the bottom and sides of the iron and serve to heat the same to a very high degree, thereby causing the generation of vapor to be continued in the channels of the cover. Air is admitted to the iron through the openings C in sufficient quantities to promote combustion, and the heated air and products of combustion escape from the interior of the iron through the openings in the sides thereof, which are formed by the recesses B. The shield prevents the heat from burning the hand of the operator.

By my improved method of constructing the top plate of the flat-iron it will be seen that the burner-tube and the vapor-generating channels are integral therewith, and therefore simple and compact. Neither does the burner-tube extend at either end, to interfere with the iron being tilted for the purpose of polishing. The tortuous channel formed by the channels L³, L, L', and L², through which the fluid is conveyed from the reservoir to the valve-case, is of considerable extent, and, being formed, as described, in the body of the top plate, will be exposed to the full action of the heat by which the fluid is converted into vapor.

I disclaim a vapor generator and burner consisting of a body having longitudinal openings therein communicating with each other, the body being provided with apertures leading from another longitudinal opening to form a burner, and being also provided with a gas-

receiver, an open recess, and a gas-escape opening from the receiver.

Having thus described my invention, I claim—

1. The combination of the hollow iron, the top plate detachably secured thereto, the burner-tube arranged under the top plate, the latter being provided with a channel for the purpose set forth, the valve-case communicating with one end of the said channel and having the needle-valve, the pipe T, having one end arranged opposite the needle-valve and communicating at its opposite end with the interior of the burner-tube, the reservoir, and the pipe connecting the same with the channel L, substantially as described.

2. In a self-heating sad-iron, a top plate or cover having a tortuous vapor-generating channel formed integrally therein, substantially as set forth.

3. In a self-heating sad-iron, a top plate or cover having a tortuous vapor-generating channel formed integrally therein, and provided on its upper side with bosses having vertical openings communicating with the ends of said channel, for the attachment, respectively, of a reservoir for burning-fluid and a valve-case, substantially as set forth.

4. In a self-heating sad-iron, the herein-described top plate, having the tortuous vapor-generating channel and a vapor burner-tube formed integrally therewith, in combination with a fluid-reservoir attached to the upper side of said top plate at one end of the vapor-generating channel, substantially as set forth.

5. In a self-heating sad-iron, the herein-described top plate, having openings or channels L L' drilled longitudinally and openings or channels L² L³ drilled transversely therein, the inner ends of the channels L L³ being joined and the channels L' L² intersecting each other, as described, in combination with the plugs P² at the outer ends of said openings and the bosses at the ends of the tortuous channel thus formed, for the attachment, respectively, of a fluid-reservoir and a valve-case, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDWARD M. ROBERTS.

Witnesses:

H. A. MCLEAN,
C. W. KELLER.