

(No Model.)

B. REIN.
SAD IRON.

No. 513,728.

Patented Jan. 30, 1894.

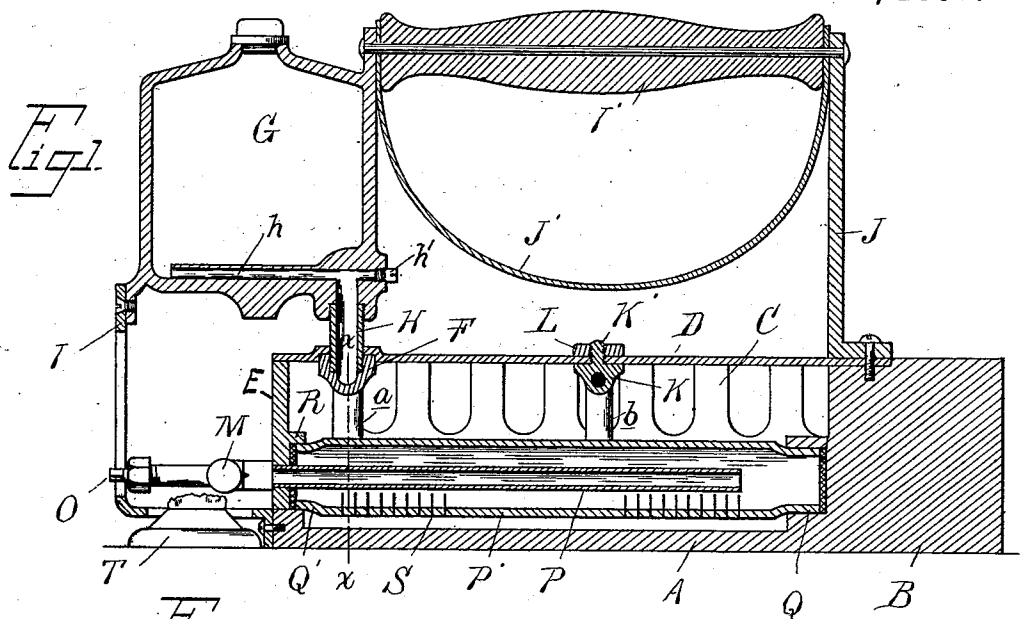


Fig. 1

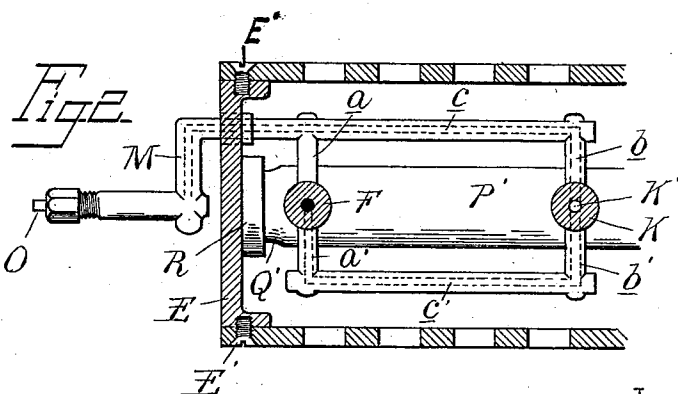
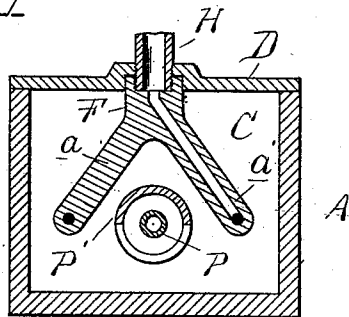


Fig. 2

Witnesses
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UNITED STATES PATENT OFFICE.

BERNARD REIN, OF DETROIT, MICHIGAN, ASSIGNOR TO FRANK WIETHOFF,
OF SAME PLACE.

SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 513,728, dated January 30, 1894.

Application filed July 25, 1893. Serial No. 481,405. (No model.)

To all whom it may concern:

Be it known that I, BERNARD REIN, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have
5 invented certain new and useful Improvements in Sad-Irons, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the peculiar construction, arrangement and combination of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a vertical, central longitudinal section through my improved
15 sad iron. Fig. 2 is a sectional plan view showing the burner, with the top plate of the iron removed. Fig. 3 is a section on line *xx*, Fig. 1.

A is the iron or body, having the solid nose B and the chamber C (which is the combustion chamber) in rear of the nose. The top of the combustion chamber is formed by a plate D, detachably secured in position, and the rear end wall, by a plate E secured by screws E' to
20 the side walls of the iron, as shown in Fig. 2.

G is the tank having a suitable filling aperture. The tank is supported on the nipple H on its forward edge, which enters a screw threaded aperture in the plate D and also a corresponding aperture in the head F of the
25 tubular heating frame. The rear edge of the tank is supported upon the upper edge of the plate or frame I which extends downward to near the bottom of the iron and then forward, and is secured by means of suitable screws to
30 the lower rear edge of the iron body, as shown in Fig. 1.

In the base of the tank G, is a tubular extension *h* of the nipple H. This extension is in the nature of a conducting channel, extending horizontally from the nipple to a point
40 near the outer side wall of the tank. The inner wall of the tank is perforated, forming an aligned continuation of the channel for the purpose of cleaning the channel, and it is stopped by a screw plug *h'*. It will be seen that
45 by the formation of the channel in the manner described and shown, the entire contents of the tank will be conducted into the nipple H, and when the vapor has been formed and the
50 burner lighted, the tubular channel will conduct practically all of the liquid from the tank,

when the iron is set on its rear end, the liquid being drawn up the channel by the suction created by the escaping vapors at the injector or needle valved nozzle.

I' is the handle which is supported at one end at the forward edge of the tank and at the other end upon the standard J.

J' is the hand guard.

The heating frame consists of the heads F 60 and K and the pipe supported therefrom. The head K is provided with a threaded screw K' passing through the plate D and a nut L on the upper side of said plate holds it firmly in position. Depending from these heads which 65 are arranged at the ends of the frame are the inclined arms *a a' b b'* on opposite sides of the heads. These arms are connected by the connecting tubes *c c'*. Through these arms and tubes are passage ways which enable the fluid 70 to pass from the tank throughout the nipple H into the head F and down through the arm *a'* forwardly through the tube *c'*, thence up through the arm *b'* and through the head K downward through the arm *b* rearwardly 75 through the tube *c* which extends beyond and is bent parallel to the rear plate of the combustion chamber and is provided with a screw-threaded socket at its extremity to receive the forward end of the valve nipple M.

O is the valve stem having at its forward end the usual needle valve controlling the supply of vapor to the burner. The needle valve is arranged in front of the supply tube P, which is secured at its rear end in the plate 80 E and extends forwardly through the burner tube P' to near the front end thereof. This burner tube P' has formed at the forward end, the tapering nipple Q which engages a corresponding bearing in the nose B of the iron 90 and at its rear end is provided with a corresponding nipple Q' engaging in a socket R in the forward side of the plate E, suitable packing being employed to form a tight joint. The burner tube P' is provided on its lower edge 95 with suitable apertures S through which the vapor escapes into the combustion chamber.

The parts being thus constructed their operation is as follows: The tank and tubes being supplied with a suitable amount of gasoline, 100 a small lamp T is placed under the valve tube. After a sufficient amount of heat has been

obtained to vaporize the fluid, the valve being open, the vapor will pass into the tube P and at the same time mix with air which also passes into said tube and thence into the burner tube P' and through the apertures S into the combustion chamber where it may be ignited. After being ignited the heat will be sufficient to vaporize the fluid as it passes through the tubes on both sides of the chamber and the lamp may be removed. By placing the vapor tube P within the burner P' and having it extend substantially the entire length of the burner P' the vapor becomes super-heated before entering the burner tube as does the air which mixes therewith, and I obtain the best possible results in combustion. This is materially aided by the high heat imparted to the fluid and vapor in passing through the tubular heating frame on both sides of the burner forward and back.

What I claim as my invention is—

1. In a self heating sad iron, the combination of the body having a solid nose, of a combustion chamber within the body, a detachable rear plate, the nose and plate having sockets therein, of a tubular burner having

tapering end nipples engaging in said sockets and having passages connecting the burner to the combustion chamber, a vapor heating frame in the combustion chamber, an open ended vapor tube in the tubular burner, extending substantially the entire length thereof, having one end opposite the extremity of the vapor heating frame, substantially as described.

2. In a self heating sad iron, the combination of the chambered body, the solid nose, the detachable rear plate, the nose and plate having sockets, of the tubular burner having tapering end nipples engaging in said sockets the vapor tube entering one end of the burner and extending to the opposite end thereof, and the vapor heating frame extending above and on opposite sides of the burner, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

BERNARD REIN.

Witnesses:

JAMES WHITEMORE,
OTTO F. BARTHEL.