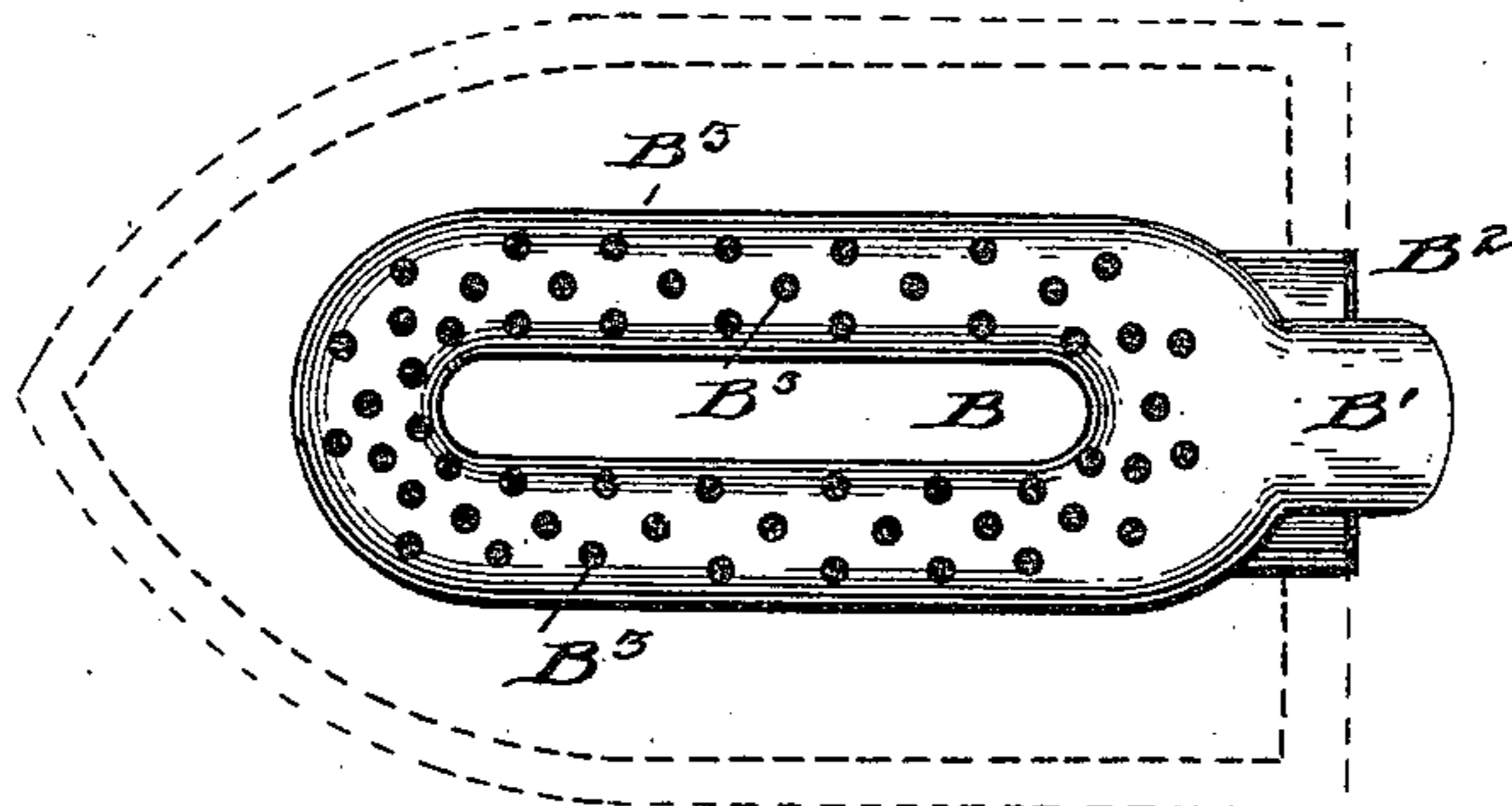


J. MORROW & F. CURTIS, Jr.
SELF HEATING SAD IRON.

Patented May 20, 1890.



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SELF-HEATING SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 428,403, dated May 20, 1890.

Application filed October 10, 1889. Serial No. 326,642. (No model.)

To all whom it may concern:

Be it known that we, JOHN MORROW and FRANK CURTIS, Jr., subjects of the Queen of Great Britain, residing at Ingersoll, Province of Ontario, Canada, have invented certain new and useful Improvements in Self-Heating Sad-Irons, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention has relation to a self-heating smoothing and sad iron, and more particularly to that class which employs a reservoir or other means which furnishes the hydrocarbon liquid from which vapor is generated and ignited in the body of the iron, thereby heating the same; and it has for its object, among others, to provide an improved burner for such devices by means of which the iron may be quickly heated, the parts of the burner being readily assembled or taken apart for cleaning or other purposes, and capable of manufacture at a minimum cost.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation, partly in longitudinal vertical section, (the reservoir being partly broken away to expose the interior construction,) of an iron constructed in accordance with our invention; and Fig. 2 is a detail, hereinafter referred to.

Like characters refer to like parts in both the figures of the drawings.

A is the iron proper, which is hollow and provided with a suitable cover or lid A', openings A² being left at the sides to admit air to aid in the combustion of gas formed therein. A³ are perforations formed near the base of the iron for the same purpose.

The handle A⁴ and bail A^{4x} are of any ordinary well-known construction, and the bail is secured to the lid or cover A' by means of the screw (or screws) A⁵. Formed on the interior of the iron and on the base thereof are the risers A⁶, on which the burner B is adapted to rest.

The burner B is provided with a series of perforations along its under surface, as at B³, and with a branch B', which projects beyond the end wall of the iron, as at B'^x, and has

formed on or near its end the upwardly-extending lug B². The burner and lug may be cast integrally with the main portion of the iron, or may be seated in or form a portion of the end wall of the iron, as clearly indicated in Fig. 2.

The lug is adapted by screw-threading or otherwise for the reception of the conduit or tube C, which is screw-threaded to fit the same, and on its interior surface is roughened and preferably and most easily in the form of a coarse spiral thread C^x. Cylindrical corrugations may be employed, but corrugations with a thread-like pitch are preferable.

C' is an interiorly-screw-threaded sleeve, one end of which is adapted to receive the tube C and the opposite end the elbow C², which is screw-threaded into the reservoir D.

The reservoir D is composed of two sections D' D², which are firmly secured together to make them perfectly air and liquid tight, one being flanged over the other at its equatorial line. The reservoir D is provided at its top with a supply-opening having a screw-threaded or other cap D³, and within the same is the strap D⁴, which crosses the same, having an opening at or near its center for the pin E of the indicator e^x, the lower end of the pin being bent, as at E', to prevent its separation from the strap.

The function of the indicator, which is of buoyant material, is to show when the reservoir is filled, so that it will be only necessary to remove the cap, when the result will be apparent.

F is a valve (shown in dotted lines in Fig. 1) which controls the supply of oil from the reservoir into and through the tube C, and may or may not be used, as desired.

G is a jet-orifice tube which controls the supply of gas and liquid which flows into the burner of the iron, and is screw-threaded into the lug B² of the branch B' of the burner B. The jet-orifice tube G is provided with a bore G', which registers with the opening formed in the tube C, an opening G² being formed at its elbow to admit of access for cleaning purposes, being closed by a screw G^{2x}. G³ is a needle-valve, which closes the opening of the jet-orifice tube G and controls the supply of gas flowing therethrough.

The operation of the invention is as follows:

Oil being within the reservoir, a limited quantity is allowed to flow therefrom and into the tube C, a flame having been previously provided within the burner. If desired, by placing a small quantity of oil therein and igniting the same the oil within the tube C is vaporized and feeds the flame at the needle-valve. This projected into the burner produces the heat and continues the vaporization and combustion. The interior roughening or corrugation C^x of the tube C while it does not materially obstruct the flow of oil therein retards it sufficiently to accomplish a more speedy and satisfactory vaporization of the fuel. We place a cap G⁴ on the point of the jet-orifice tube G, so that should the hole which emits the gas become clogged by any means the cap may be readily removed and the hole cleaned while the iron is hot and the reservoir is full. The seat of the needle-valve G³ is in the jet-orifice tube G.

Having described our invention and its operation, what we claim is—

1. In a self-heating sad-iron, a body A, formed upon its interior at the base, with risers A⁶, combined with the burner resting upon said risers and having a branch B' projecting through the end wall of said body, a feed-tube supported in the wall of the body and centrally above the burner, a reservoir connected with the feed-tube, and the connection between the tube and the branch B' of the burner, substantially as described.

2. In a self-heating sad-iron, a hollow burner provided on its under surface with perforations and at one end with an outwardly-projecting branch having a lug, combined with a feed-tube arranged centrally above said burner, a jet-orifice tube connected with said lug

and having a passage arranged at an angle to the feed-tube and parallel with the branch, and having a needle-valve in line with said branch, substantially as described.

3. The combination, with the burner having the branch B' and the lug B², of the feed-tube engaged with said lug, the jet-orifice tube, also connected with said lug and having a valve-controlled passage in line with the branch of the burner, with a detachable perforated cap upon the portion of the jet-tube adjacent to the branch, substantially as described.

4. In a sad-iron, the combination, with the reservoir, of the valve-tube or jet-orifice tube provided with an opening adapted to be closed by a needle-valve, a needle-valve, and a removable cap closing the opening and having a passage therethrough, substantially as and for the purpose specified.

5. In a sad-iron, the combination, with the burner having upturned branch B', a lug B², of the jet-orifice tube connected with the lug, with a passage substantially parallel with the branch, a passage at right angles thereto, and a passage in line with the branch and controlled by a needle-valve and having its discharge into said branch, with a space between the discharge end and the adjacent end of the branch, and a movable cap closing the opening and having a passage therethrough, substantially as shown and described.

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

JOHN MORROW.

FRANK CURTIS, JR.

Witnesses:

JNO. B. JACKSON,

A. A. BARKER.