(No Model.)

S. M. NICKERSON & C. J. HOLMAN.

SAD IRON.

No. 406,943. Patented July 16, 1889.

Fig. 1.

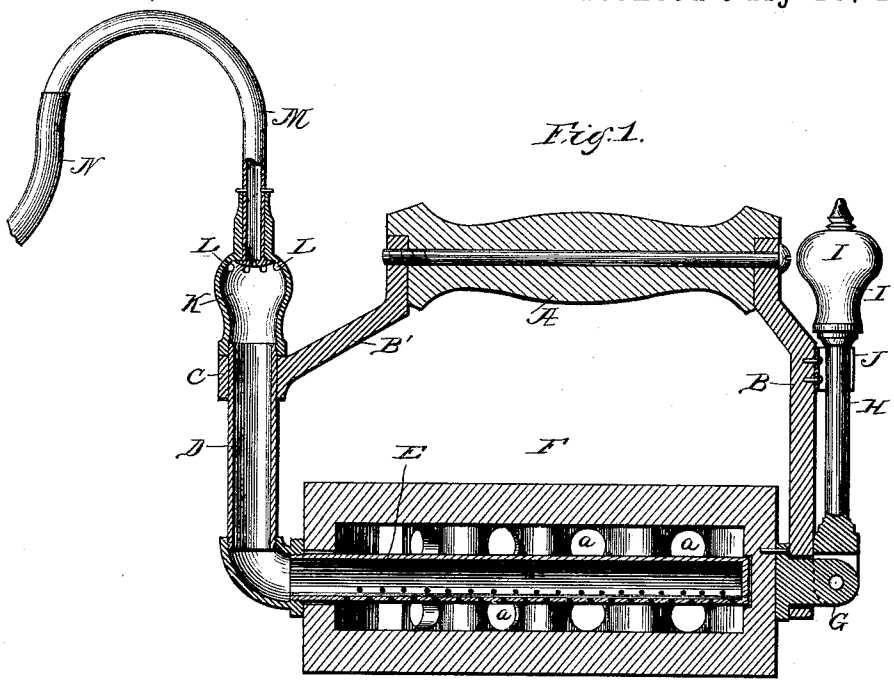


Fig. 2.

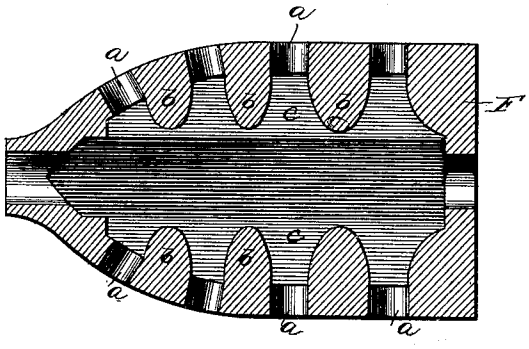
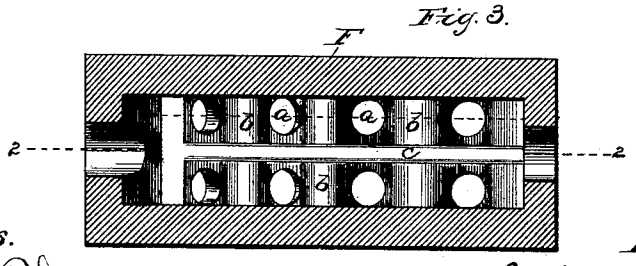


Fig. 3.



Witnesses.

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By Jno. G. Elliott Atty.

UNITED STATES PATENT OFFICE.

SPARROW M. NICKERSON AND CALVIN J. HOLMAN, OF CHICAGO, ILLINOIS; SAID HOLMAN ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM KAPLINGER, OF SAME PLACE.

SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 406,943, dated July 16, 1889.

Application filed April 20, 1888. Serial No. 271,299. (No model.)

To all whom it may concern:

Be it known that we, SPARROW M. NICKERSON and CALVIN J. HOLMAN, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sad-Irons, of which the following is a specification.

This invention relates to improvements in sad-irons heated internally by means of flame-jets, and has for its objects an iron so constructed as to prevent the escape of the flame from the iron during the use thereof, and also the breaking up and distribution of the flame, so as to promote its heating effect upon the iron, and a more perfect combustion of the gases employed for heating the iron from its interior, and finally to mix the supply of gas to an iron previous to its discharge into the burner of said iron, whereby perfect combustion by the burner is correspondingly promoted. We attain these objects by the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a central vertical section of a sad-iron embodying our invention; Fig. 2, a horizontal section of the iron on line 2 2 of Fig. 3, and Fig. 3 a central vertical section of the iron.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates the usual wooden handle, and B B′ the bail or supports thereof, the support B extending downwardly a suitable distance to form a pivotal bearing for the iron body, while the support B′ is shorter and extends at an oblique angle from the handle, the outer end of which is formed into an eye C, in which is rigidly secured, by screwing or otherwise, one end of a vertical pipe D, to the lower end of which and extending at right angles thereto is secured another pipe E, projecting toward the support B, and perforated, as shown, preferably on the under side thereof, constituting a burner. This perforated pipe is closed at the end thereof and constitutes one bearing of the iron body F, one end of which bears thereon near the vertical pipe D, while the opposite end of said iron has cast thereon or otherwise rigidly secured thereto a trunnion G, which works through an eye in the lower end of the support B and constitutes the other bearing of the body, which is thus loosely journaled within the handle and free to revolve on its bearings.

To the end of the trunnion G, projecting beyond the supports B, is pivotally secured a rod H, provided with a knob I on the end thereof, and constituting the handle, by means of which the iron may be revolved upon its pivot, the said rod being adapted and arranged to be forced between opposing spring jaws or catches J, attached to the handle-support B, so as to lock the iron in either of its adjusted positions.

To the upper end of the pipe D, projecting beyond the eye C, is secured a nozzle constituting an air-chamber K, perforated at L for the admission of air, and with the nozzle is connected, by means of a swivel-joint, a metallic pipe M, either straight or curved, as shown, to the opposite end of which is secured a rubber or other flexible supply-pipe N, through which gas is conducted to the iron, the perforations in the nozzle admitting sufficient atmospheric air for the purposes of combustion, which mixes with the gas before its discharge into and ignition in the iron.

The swivel-connection between the supply-pipe N and the iron enables a free movement of the iron in any direction without danger of twisting or bending the pipe and thereby cutting off the gas-supply, and the iron may be used equally well at any point within the radius of the supply-pipe. Besides, the connection between the flexible supply-pipe and the iron is thereby effected at such a height above the articles being ironed as to greatly facilitate the work of the operator by holding the pipe always out of the way.

The principal feature of our invention, however, is the construction of the interior of the body of the iron, which walls have heretofore been made plain in hollowing out the interior thereof, so as to provide a heating-space for the burner; but practice has demon-

strated that with an iron so constructed the heated air and products of combustion not only pass quickly and directly out of the perforations *a*, formed in the side walls thereof, first toward one end and then toward the other as the iron is moved back and forth, but frequently the jet-flames will issue through said perforations and burn both the hand of the operator and the garment being ironed. In order to avoid this objection and at the same time economize the heat, we have provided the body of the iron between each pair of perforations with vertical ribs *b* and horizontal ribs *c*, projecting inwardly from the side walls of the iron toward the center, leaving only sufficient room for the insertion of the burner and the passage around it of the heated air and products of combustion. These ribs all tend to deflect the flame-jets and obstruct the exit of the heated air and products of combustion, the horizontal ribs effectually preventing the direct rising of the flames through and out of the upper sets of perforations, while the vertical ribs not only materially aid the horizontal ribs in their function by making tortuous passages for the exit of the products of combustion, but prevent direct and insetting drafts from either side, occasioned by the rapid movements of the iron, from acting on the flame-jets and forcing them through the perforations in the iron.

Another important result is the saving of fuel effected by this construction, due to the increased heating capacity of the fuel, owing partly to the detention of the products of combustion within the iron and partly to the increased radiating-surface furnished by the deflecting-ribs, and this saving is important for a twofold reason, first, because of the saving in fuel, and, second, the saving of the time of the operator, because the iron will not have to be so often reversed.

Having described our invention, what we desire to secure by Letters Patent is—

1. A hollow internally-heated sad-iron having vertical ribs *b* projecting from the side walls and formed integral with the face of the iron, and perforations between said ribs, substantially as described.

2. A hollow internally-heated sad-iron provided with vertical ribs *b* and horizontal ribs *c*, projecting from the side walls of the iron, the vertical ribs being integral with the face of the iron, substantially as described.

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Witnesses:
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