(No Model.)

W. MITCHELL.

ELECTRIC SMOOTHING IRON.

No. 457,164. Patented Aug. 4, 1891.

Fig. 1.

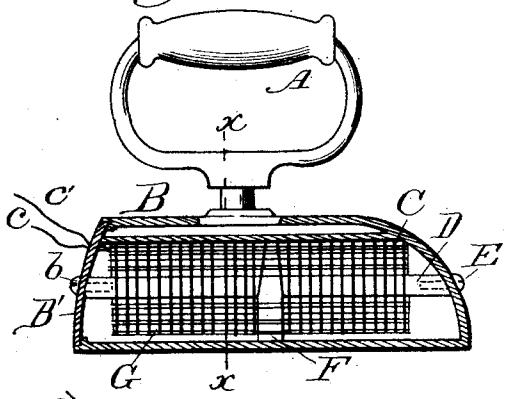


Fig. 6.

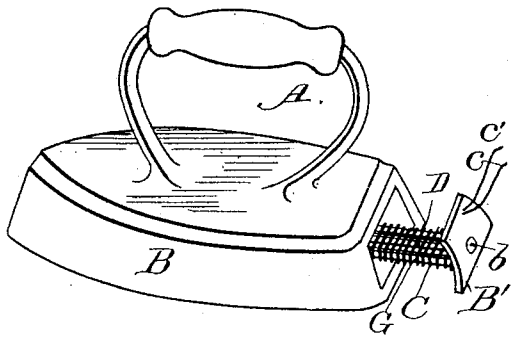


Fig. 2.

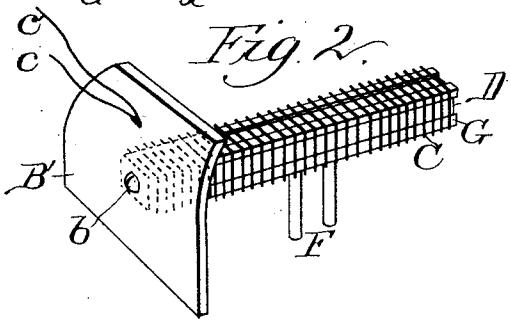


Fig. 5.

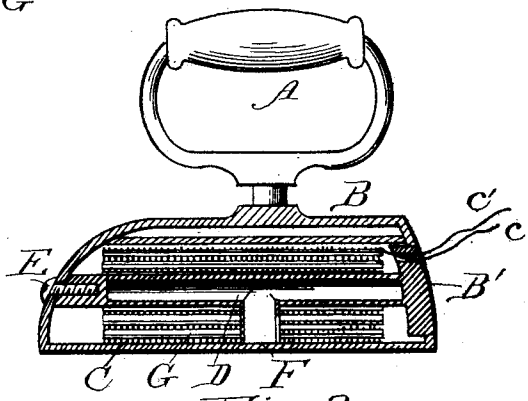


Fig. 4.

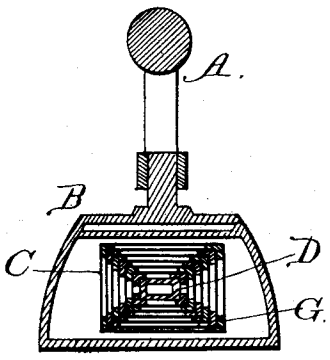
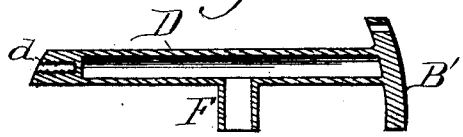


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIS MITCHELL, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO THE BUTTERFIELD-MITCHELL ELECTRIC HEATING COMPANY.

ELECTRIC SMOOTHING-IRON.

SPECIFICATION forming part of Letters Patent No. 457,164, dated August 4, 1891.

Application filed November 21, 1890. Serial No. 372,148. (No model.)

To all whom it may concern:

Be it known that I, WILLIS MITCHELL, a citizen of the United States, residing at Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Electric Smoothing-Irons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to tailors' irons and laundry-irons which are heated by removable coils or spirals of wire forming part of an electric circuit.

The objects of said invention are to increase the efficiency of the heating devices and to improve the means of attachment and detachment, so that these operations may be conveniently effected without impairing security.

In the accompanying drawings, Figure 1 represents a vertical longitudinal section of a tailor's iron provided with my improvements. Fig. 2 represents in detail perspective the bar, slug, or core, the wire wound thereon, and the front plate and supports. Fig. 3 represents a detail side elevation of the bar support and plate. Fig. 4 represents a vertical transverse section on the line *x x* of Fig. 1. Fig. 5 represents a view, similar to Fig. 1, of a modification. Fig. 6 represents a perspective view of a laundry-iron provided with my improvement, the core and wire being partly drawn out.

A designates the handle, and B the hollow body, of the iron.

C designates the heating-wire, which may be covered with insulating material or left naked if wound carefully, and forms part of an electric circuit, the ends *c c'* of said wire extending through the shell of body B, as described. This wire is wound on an iron slug, core, or bar D, which extends from end to end of said body within the latter, and is rigidly attached to the removable rear plate B' of said body, preferably by means of a screw *b*. The forward end of said slug, core, or bar is recessed and internally screw-threaded at *d* to receive another screw E, which enters through a hole in the front end of the iron. Rigid supports F extend down from said bar to the bottom of the body B and hold the wires above the bottom. If preferred, as shown in Fig. 5, the bar or core may be tubular throughout, a single support F, also tubular, being employed. When the screw E is withdrawn, the entire heating apparatus may be slipped out very easily; but this screw is not relied on to sustain the weight. The screw *b* may be dispensed with, the plate B' and bar or slug D being cast integral, as indicated in Fig. 5.

The chief advantage of holding the wire above the bottom of the iron is that in ironing after very damp sponging, which is often necessary, the wire will be less cooled by conduction and the current of electricity required to heat the device will be less. I do not, however, depend wholly on the heat generated by resistance, having found that when the wire is wound at intervals, leaving each coil or spiral in a space about ten or twelve times its own width, an intense heat is generated in the inclosed bar, slug, or core, although this latter is not in circuit. By this way of winding I am enabled to heat the slug or core to a red heat without ever having red-hot wires or overheating them at all. I can put eight irons in series, and thus heat them all without using more than four ampères of current. Moreover, I do not use wires small enough to obtain sufficient heat by resistance alone.

As shown in Fig. 4, besides the first winding on the core or slug, I wind the wire outside of that in the same manner, again and again interposing insulating-strips G between said layers or windings. This of course intensifies the effect. The iron is heated mainly by the radiation and conduction of the slug or bar aforesaid.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A smoothing-iron for tailors' and laundry use having a hollow body and removable plate, in combination with a core removable with said plate and having a support or supports which rest on the bottom of said body, and a wire wound about said core and forming part of an electric circuit, the said wire being held above the said bottom, substantially as set forth.

2. In combination with the hollow body of a smoothing-iron and a wire forming part of an electric circuit which is used for heating the same, a core D, which is screw-tapped at one end and attached at the other to a removable plate forming part of said body, and further provided with a support or supports F, the wire being wound on and supported by said core, and the core-plate, wire, and support being removable together when said screw is withdrawn, substantially as set forth.

3. In an electrically-heated smoothing-iron, the combination of a metallic bar or core inclosed within the hollow body thereof, and a wire forming part of an electric circuit, which is wound on said core, each coil or spiral being in a space or interval about ten or twelve times its own breadth, substantially as and for the purpose set forth.

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

WILLIS MITCHELL.

Witnesses:
P. R. TRIPP,
WILLIAM WALDEN.