No. 660,723. Patented Oct. 30, 1900.

W. E. DAVIS.

TREEING IRON.

(Application filed Sept. 7, 1899.)

(No Model.)

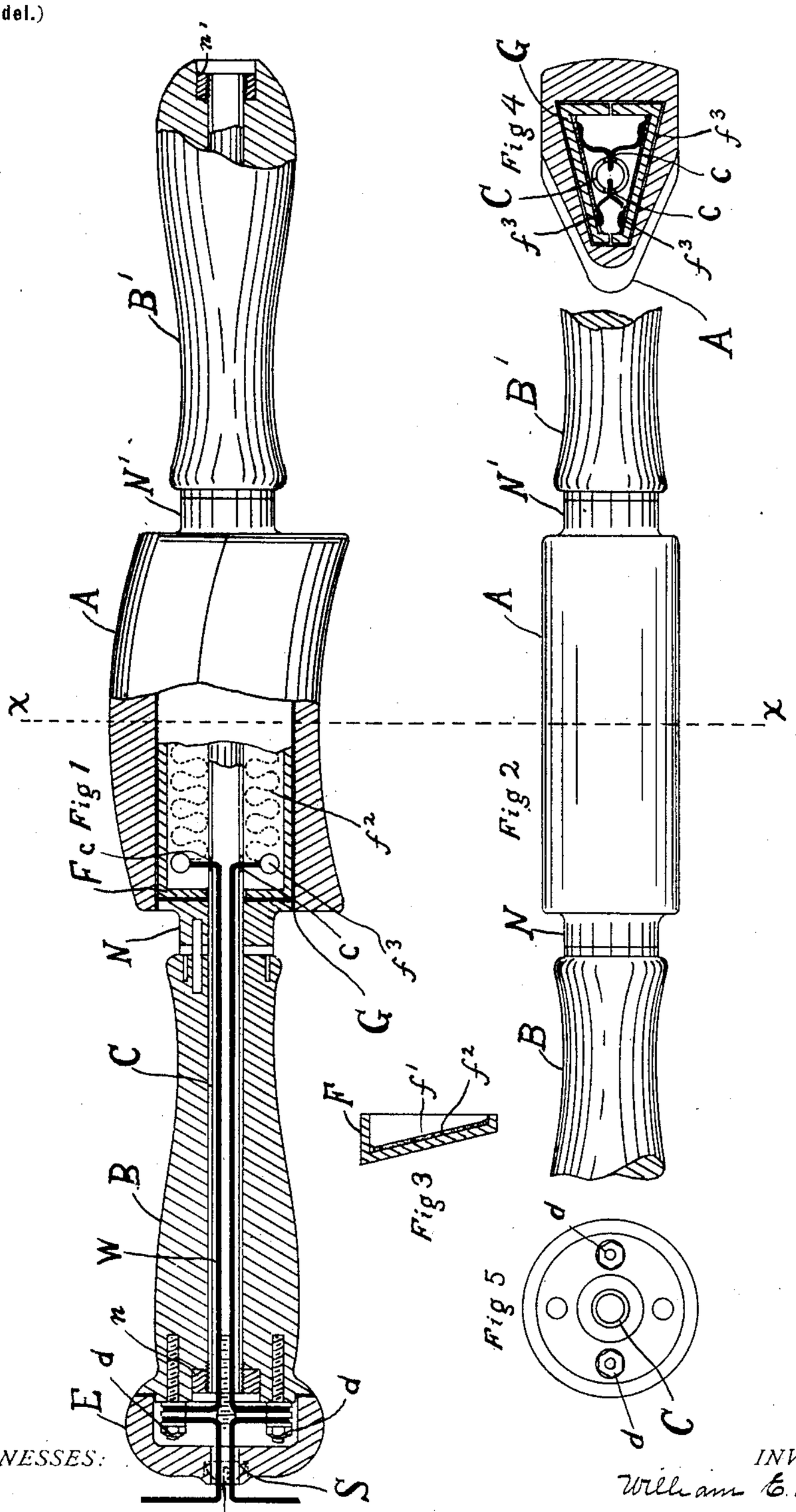

Fig 3

Fig 5

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TREEING-IRON.

SPECIFICATION forming part of Letters Patent No. 660,723, dated October 30, 1900.

Application filed September 7, 1899. Serial No. 729,790. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. DAVIS, a citizen of the United States of America, and a resident of Somerville, county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in the Construction of Electrically-Heated Tools, of which the following is a specification.

The object of this invention is to improve the construction of electrically-heated implements and tools wherein the heating resistance is placed within the tool, which is made hollow for the purpose. By my invention herein described the construction and repair of such tools are greatly facilitated and the resistances are disposed in such manner as to communicate heat to the working faces of the tool quickly and economically, and thus to increase the readiness and adaptability of the tool.

The invention is exceptionally useful with tools which are necessarily small in size and which therefore do not lend themselves readily to the application of electrical heating devices as heretofore constructed.

I illustrate the invention as embodied in an iron for treeing boots and shoes in such manner as to adapt it for electroheating. The advantage of electric heating for a tool of this description lies chiefly in the fact that an electrically-heated device retains a constant temperature and is not liable to become soiled by contact with flame. The efficient adaptation of electric heating devices to an iron of this description requires the application of special contrivances, and to these special contrivances the following specification is addressed.

In the drawings, Figure 1 represents a longitudinal elevation, in part section, of a treeing-iron embodying the electroheating device. Fig. 2 shows a top view of the middle portion of the treeing-iron. Fig. 3 is a cross-section of one of the divisions of the electroheating device itself. Fig. 4 is a cross-section of Fig. 2 at the line *x x;* and Fig. 5, an end view of one of the handles of the treeing-iron with its cap removed, showing the manner of introducing the leading-wires of the electroheating device.

The iron A has itself the external form usual in such tools and contains a cavity G, running from end to end of the iron, the said cavity being adapted to the reception and retention of the electroheating device.

The form of electric heater which has proved exceptionally advantageous for the heating of small articles—such as sad-irons, &c.—is that usually known as the "enamel resistance," which consists of a fine resistance-wire, usually German silver, which is reflex in form and is laid flat in a coat of enamel which is in contact with the surface of the metal to be heated. The attachment of the enamel resistance to a flat surface is comparatively easy; but where, as in the case of a treeing-iron, the entire external surface of the iron itself must be available for heating purposes the attachment of an enamel resistance to all sides of an interior cavity presents a different and more difficult problem. This is obviously true when one reflects that in process of attachment of an enamel resistance the enamel itself is in a fluid or semifluid condition. In order to facilitate the construction of the enamel resistance for use within a heating-iron, such as a treeing-iron, I construct a box, preferably of sheet metal, which is adapted to fit within the cavity in the iron itself. This box is made in several sections, which fit together and are held in juxtaposition by pressure contact when the several sections of the box are assembled and placed in the proper cavity intended for their reception.

In Fig. 3 of the drawings is shown one division or section of a heating-box adapted to a treeing-iron.

A trough F, shaped out of sheet metal, is provided on one of the internal surfaces with an enamel resistance. The enamel coating f' incloses a reflexed resistance-wire f^2. Terminal pieces f^3, in contact with the resistance f^2, emerge from the enamel coating at suitable places and provide means for attaching the leading-in wires. Ample space for an adequate resistance for heating a treeing-iron will be provided on two surfaces only of the double box F, and for this reason I have shown only two sections, which, as indicated in Fig. 4, fit together within the cavity G of the iron A. If, however, a larger surface is desired for a resistance, the heating-box may be con-

structed of four flat sides, which when assembled come in contact at their edges and are held in place within the cavity of the iron.

The handles B B′ of the treeing-iron are of the usual form and are attached to the end blocks N N′ in the usual manner. These end blocks N N′ fit the openings of the cavity G in the iron A. A tubular backbone C, which extends from end to end of the tool, provides the means whereby the several parts are held firmly together and also affords a convenient conduit for the passage of the leading-in wires W to their terminals f^3. Binding-screws d d serve in the usual manner for the outer attachment of the wire W. These wires are led into the cavity in the box F through lateral apertures c in the tubular backbone C. Nuts n n' are threaded to the ends of the tube W and serve to hold the parts of the tool tightly in place. A cap E, suitably hollowed to admit the heads of the binding-screws d, slips over the end of the handle B and is secured thereto by screws S. A central hole h in the cap E provides for the admission of the wires from the outside.

The structure of the heating-box F facilitates the enameling of the resistance upon each section thereof, and the sections when assembled form a complete box and are in close metallic heating conductive contact with the inner surface of the cavity G, so that the heat generated in the resistance is really in immediate communication with the iron A, which by reason of its bulk and specific heat capacity prevents undue heating of the resistance-wires themselves.

There are other modes of securing a resistance-wire to a flat surface and in close heat-conductive contact therewith, and plates or "boxes," such as I have described above, may be prepared in such other modes and be at the same time susceptible of internal application to a tool in the manner described above.

What I claim, and desire to secure by Letters Patent, is—

1. The combination in an electrically-heated tool, of an electroheating-box, composed of separable sections, with electrical resistances disposed in the inner surfaces of the box, and a tool-body provided with a cavity adapted to the reception and retention of the said electroheating-box, substantially as described.

2. The combination, in an electrically-heated tool, of an electroheating-box, composed of separable thin metal sections having resistances disposed in enamel coatings on the inner surfaces of the box, and a tool-body provided with a cavity adapted to the reception of said box, the outer metal surfaces of the box-sections in heat-conductive contact with the inner surfaces of the cavity of the tool-body, substantially as described.

3. In a boot-treeing iron, the combination of an electroheating-box composed of separable sections with electrical resistances disposed on the inner surfaces of said box, an iron provided with a cavity adapted to the reception of the said electroheating-box, handles fitted to the ends of the iron, and a tubular backbone extending longitudinally through the handles and the electroheating-box, the said tubular backbone provided with lateral apertures wherethrough the feed-wires pass to the electrical resistances of the box, substantially as described.

4. In a treeing-iron, the combination of separable electroheating-plates, an iron provided with a cavity for the reception of the said plates, end blocks fitting the said cavity and a backbone passing through the end blocks and the cavity with means thereon for clamping the end blocks against the heating-plates thereby firmly securing the latter, substantially as described.

Signed by me at Sanford, Maine, this 8th day of August, 1899.

WILLIAM E. DAVIS. [L. S.]

Witnesses:
FRED J. ALLEN,
B. L. GORDON.