April 21, 1925. 1,534,689

W. COOPER

ELECTRIC HEATING DEVICE FOR BURNING AND DRYING PURPOSES

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FIG. 1.

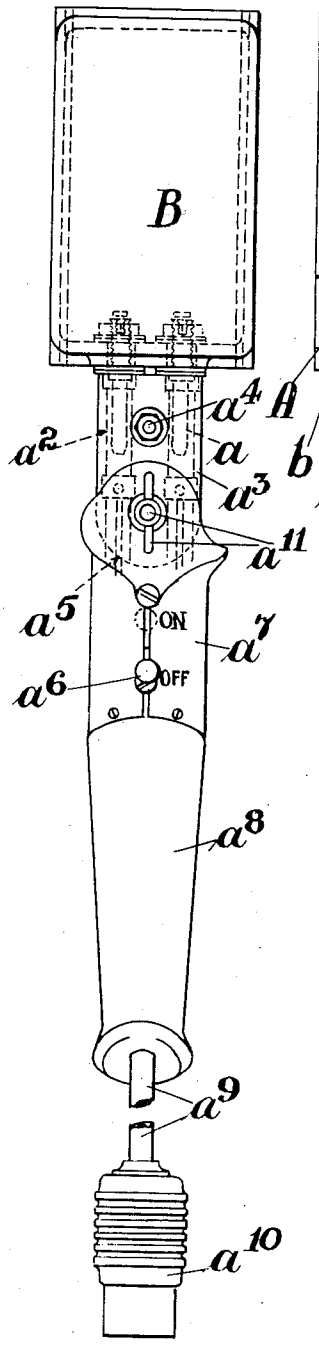


FIG. 2.

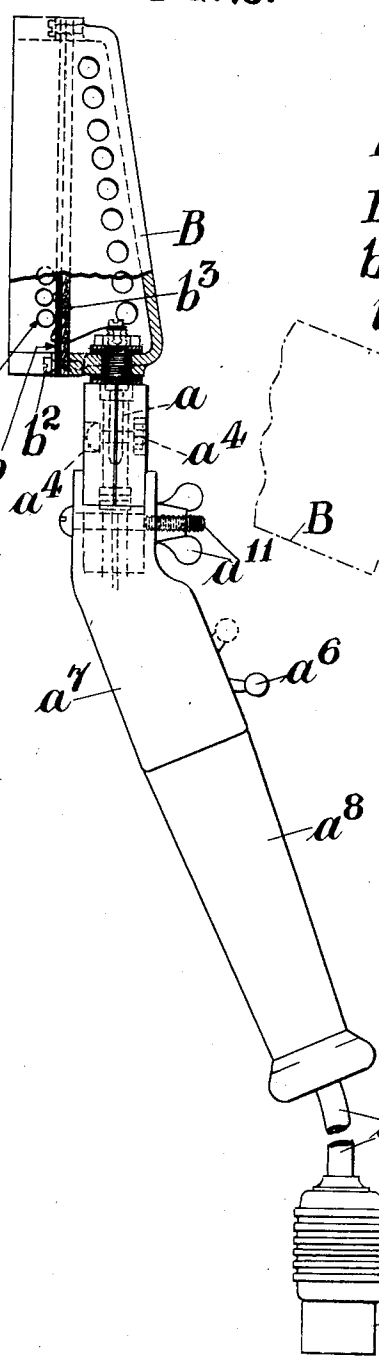
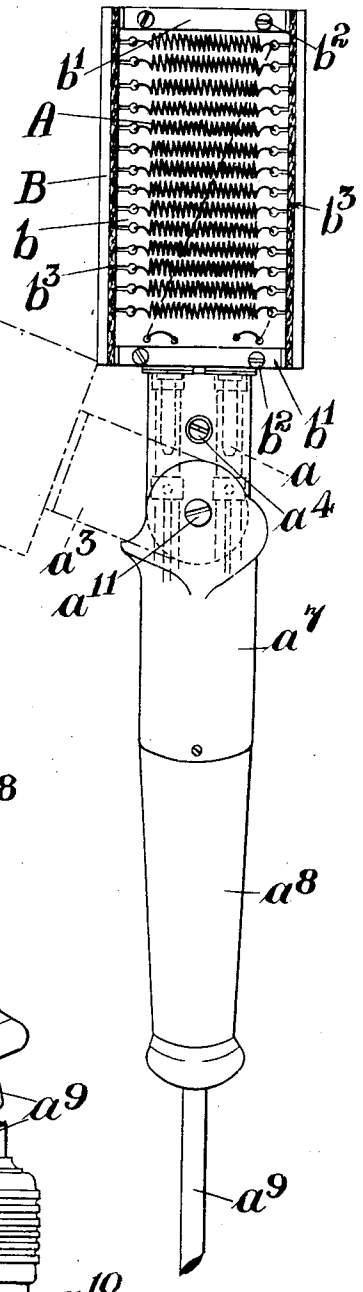


FIG. 3.



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FIG. 4.

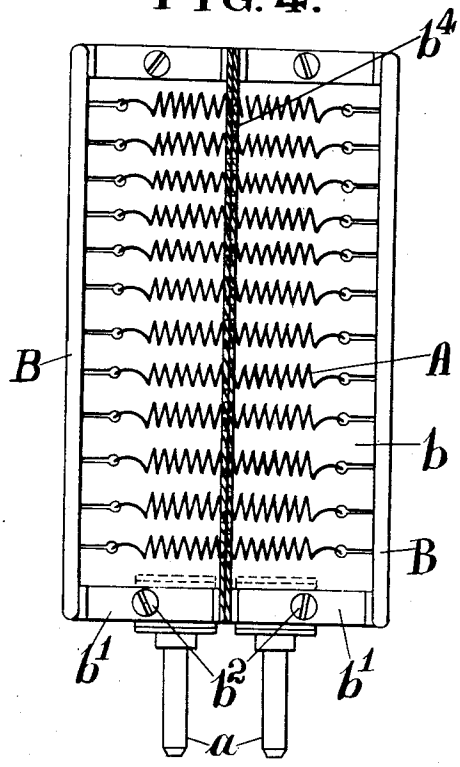


FIG. 5.

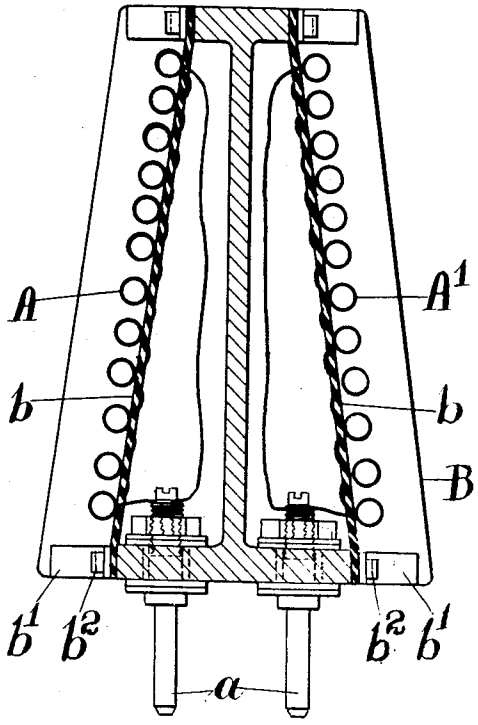


FIG. 6.

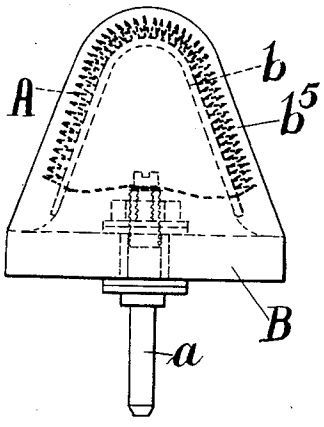
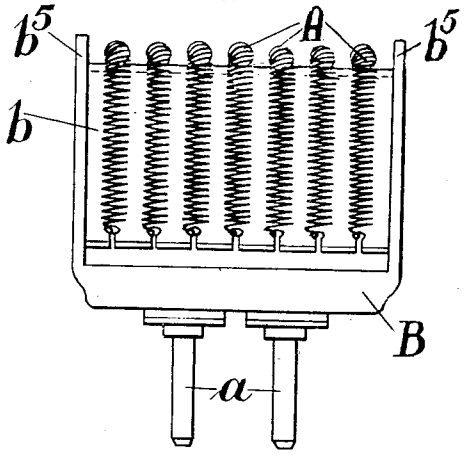


FIG. 7.



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April 21, 1925. 1,534,689

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ELECTRIC HEATING DEVICE FOR BURNING AND DRYING PURPOSES

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FIG. 8.

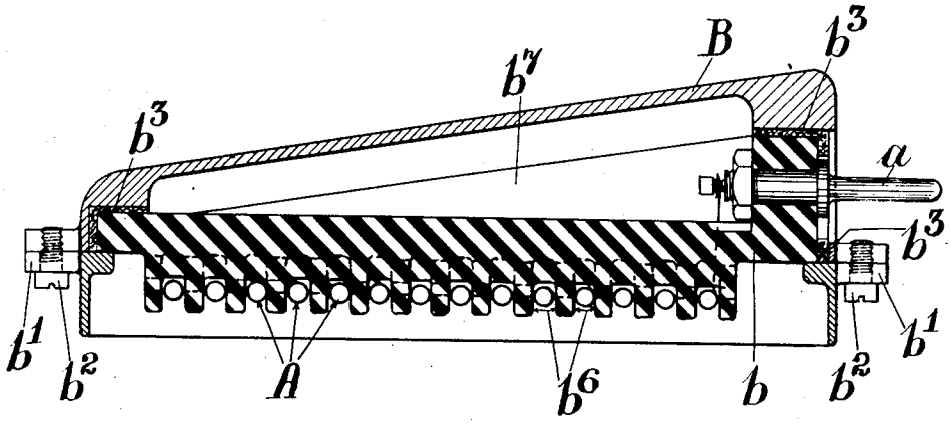
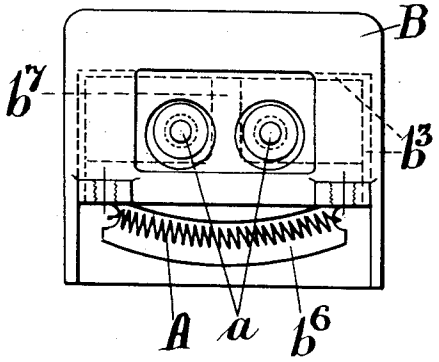


FIG. 9.



INVENTOR.

William Cooper

by Herbert W. Jenner,

Attorney

Patented Apr. 21, 1925. 1,534,689

UNITED STATES PATENT OFFICE.

WILLIAM COOPER, OF HUDDERSFIELD, ENGLAND.

ELECTRIC HEATING DEVICE FOR BURNING AND DRYING PURPOSES.

Application filed December 14, 1922. Serial No. 606,852.

To all whom it may concern:

Be it known that I, WILLIAM COOPER, residing at 7 St. Thomas Road, Huddersfield, England, have invented an Electric Heating Device for Burning and Drying Purposes, of which the following is a specification.

This invention relates to an electric heating device that is primarily intended for removing paint from doors, window frames and the like but can also be used for drying the surface of sand moulds in foundries, or for any other purpose to which it may be found to be applicable.

According to this invention the electric heating device comprises one or more resistance elements mounted in a holder which is suitably shaped for passing over the surface to be heated and for bringing the heating element in close proximity thereto, so that when such element is heated to the required temperature by an electric current under the control of the operator such heat is radiated directly on to the surface to be treated.

In the accompanying drawings:—

Fig. 1 is a plan, Fig. 2 an elevation partly in section, and Fig. 3 an inverted plan of an electric heater constructed in accordance with this invention.

Fig. 4 is a plan and Fig. 5 a section of an electric heater for use in connection with two circuits of different voltages.

Fig. 6 is an end view and Fig. 7 a side view of an electric heater for treating flat and curved surfaces.

Fig. 8 is a section and Fig. 9 an end view showing a modified construction of heater.

A indicates the resistance element, and B the holder.

The resistance element A comprises a number of wire coils supported upon an insulating backing b which may be constructed from mica, fire clay, porcelain or other suitable refractory insulating material. The insulating backing b is secured to the holder B by clamping plates b^1 and screws b^2 and interposed between the backing b and the holder is an asbestos lining b^3. The opposite ends of the heating element are attached to terminals a which are adapted to enter metal sockets a^2 that are clamped between two portions of an insulating holder a^3 by a bolt and nut a^4. The sockets a^2 are connected by wires a^5 with a switch a^6 that is mounted in a casing or a handle a^8 and is connected to a length of flexible cable a^9 that is attached to a plug a^{10} or other electric fitting. The socket holder a^3 is attached to the switch casing a^7 by a bolt and thumb screw a^{11} so that it can be swivelled in relation thereto as shewn in Fig. 3. The modification shewn in Figs. 4 and 5 is provided with two separate heating elements A A^1 for circuits of two different voltages. For example the heating element A may be applicable for use in connection with a 100 volt circuit and the heating element A^1 be applicable for use in connection with a 200 volt circuit. When the width of the holder is increased it is provided with a micanite or other suitable stay b^4 which is secured between two adjacent clamping plates b^1 and prevents the heating element A from sagging and coming in contact with the surface to be treated. In the modification shewn in Figs. 6 and 7 the heating element A is mounted on an approximately V shaped backing b surmounted by correspondingly shaped sides or flanges b^5 so that it can be moved over flat surfaces or be inserted into grooved, or moulded surfaces. In the modification shewn in Figs. 8 and 9 the backing b is moulded from a suitable refractory material with grooves b^6 for the coils of the heating element A. It is formed at the back with a rib b^7 which prevents short circuiting and it is secured to an aluminium or other metal holder B by clamping plates b^1 and screws b^2, a lining b^3 of asbestos being interposed between the backing and the holder.

What I claim as my invention and desire to secure by Letters Patent in the United States is:—

1. An electrically heated hand tool, comprising a handle, a socket holder of insulating material carried by the handle, a removable resistance holder, a pair of slidable pin and socket connections for securing the two holders together, an insulated resistance element secured in the resistance holder, and means for passing an electric current through the resistance element and the said pair of connections.

2. An electrically heated hand tool as set forth in claim 1, and having the socket holder pivoted to the handle and provided with means for clamping it in various positions to the handle.

3. An electrically heated hand tool comprising in combination a handle, a metal casing attached to said handle a clamping de-

vice constructed from insulating material attached to said casing, two metal connecting devices mounted in said clamping device and means for securing them in position therein, a switch arranged in electrical connection with the metal connecting devices, a flexible connection arranged in electrical connection with the switch and terminating at its free end in a connector, a resistance element, a backing constructed from refractory insulating material for supporting said element, metal contacts attached to said backing arranged in electrical connection with the resistance element and adapted to make a detachable connection with the metal connecting devices carried by the clamping device, a metal casing for supporting the backing and arranged to present the resistance element in suitable proximity to the work.

4. In an electrically heated hand tool, a resistance element, a backing constructed from refractory insulating material for supporting said element, metal connecting devices carried by said backing and electrically connected with the resistance element, the said parts comprising a single unit, a metal casing for carrying said unit and means for enabling the unit to be inserted and removed from the casing.

5. In an electrically heated hand tool a plurality of resistance elements, a backing constructed from refractory insulating material for supporting said elements, terminal contacts attached to said backing and electrically connected with said elements, a metal casing for carrying said unit and provided on the back with supporting legs and on the front with detachable plates, on removing which the resistance elements, backing, and terminal contacts can be inserted and removed as one unit.

6. In an electrically heated hand tool the combination of a heating element, backing, casing and terminals arranged to constitute one unit; and a handle, switch, flexible connection and terminals another unit, the terminals on the respective units being arranged to make a plug and socket joint with one another.

7. In an electrically heated hand tool a unit comprising a resistance element, backing, metal casing and terminals, another unit comprising a tubular handle jointed holder, switch, flexible connection and terminals, the said terminals being arranged to make a plug and socket joint with one another and the handle being arranged at an angle in relation to the resistance element.

In testimony whereof I affix my signature.

WILLIAM COOPER.