No. 724,721. PATENTED APR. 7, 1903.

M. LOEWENTHAL.

ELECTRIC TOOL HOLDER.

APPLICATION FILED JULY 24, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

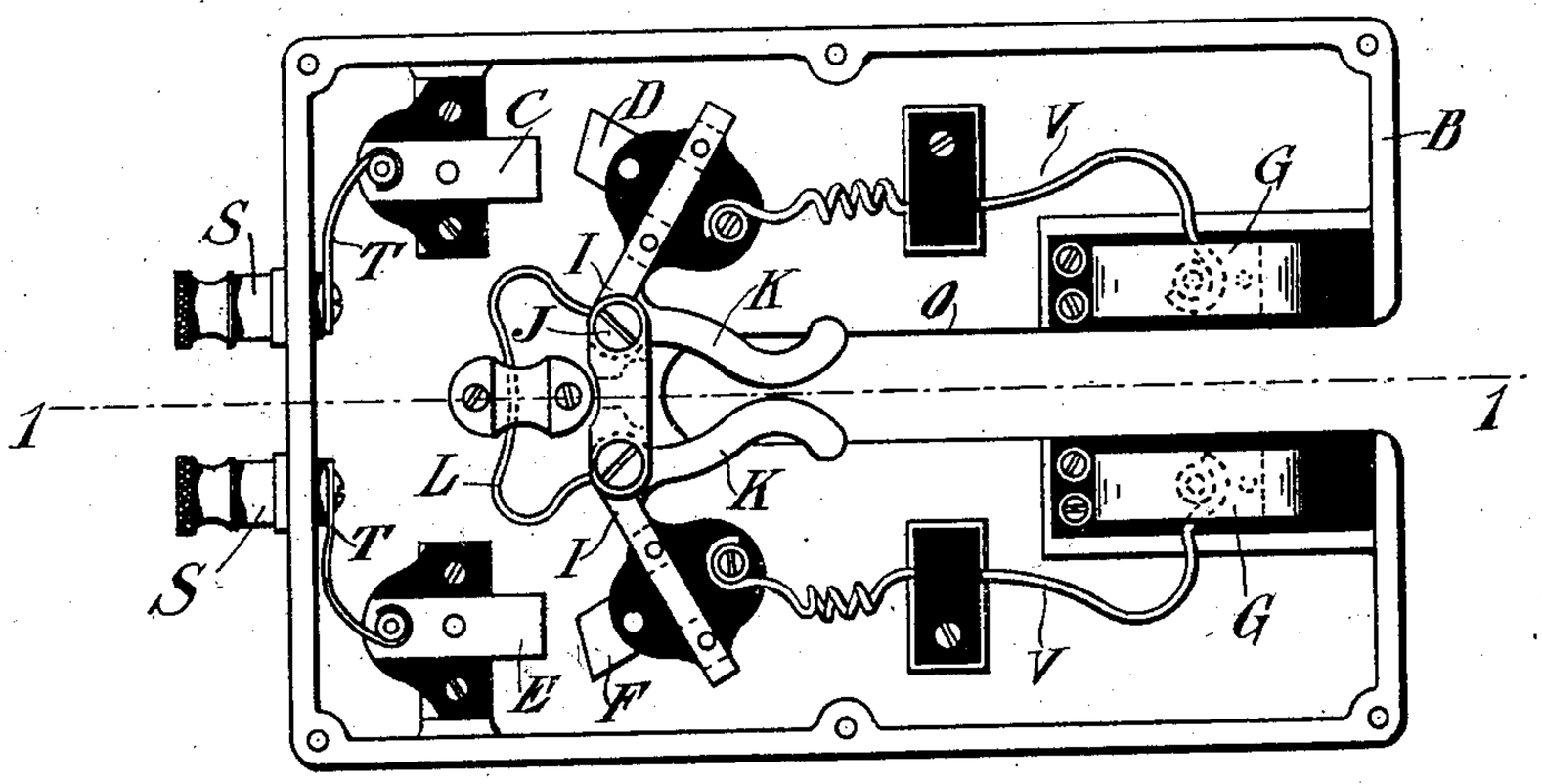
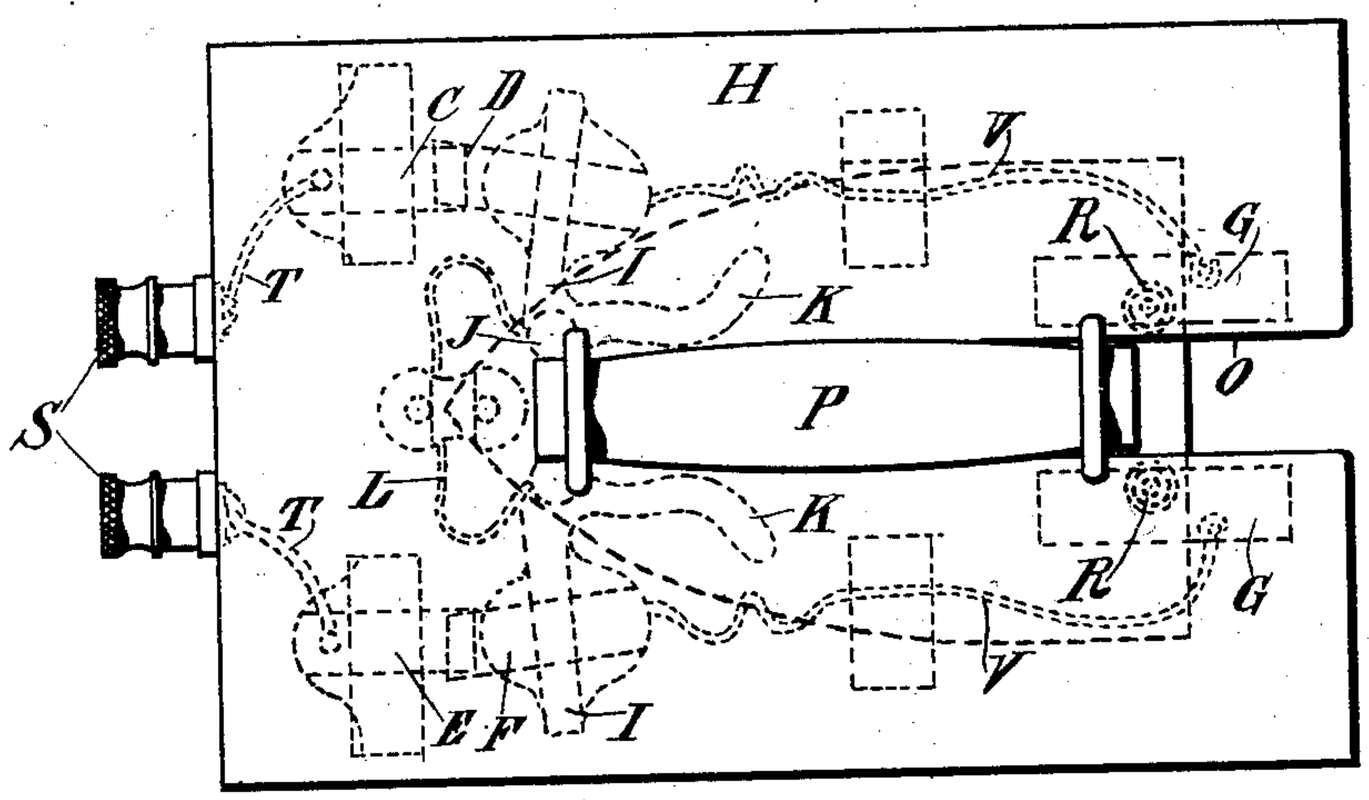


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

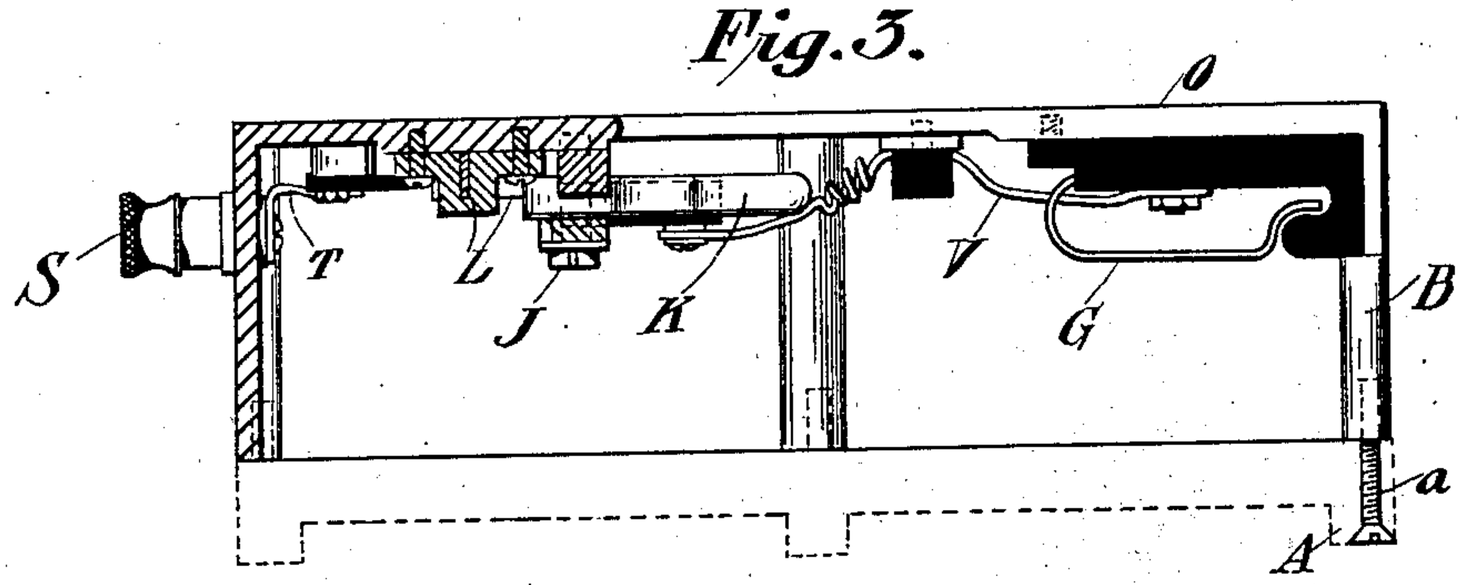


Fig. 4.

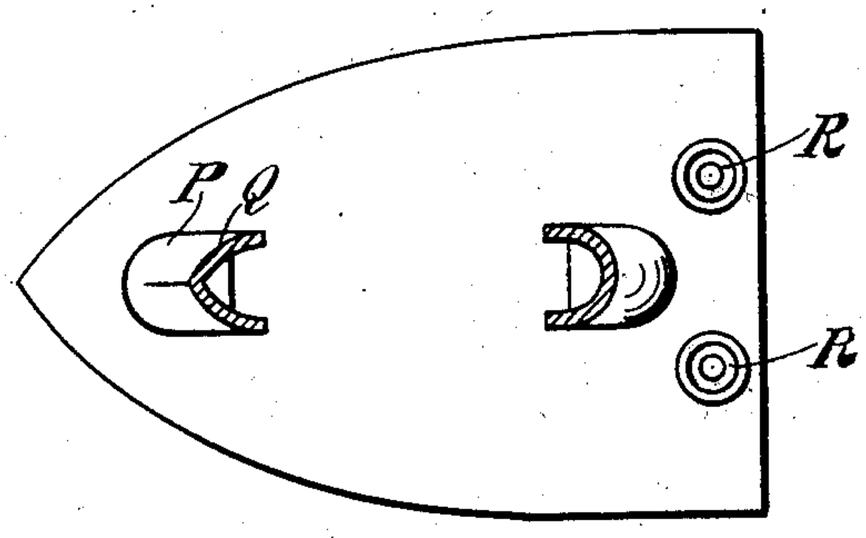
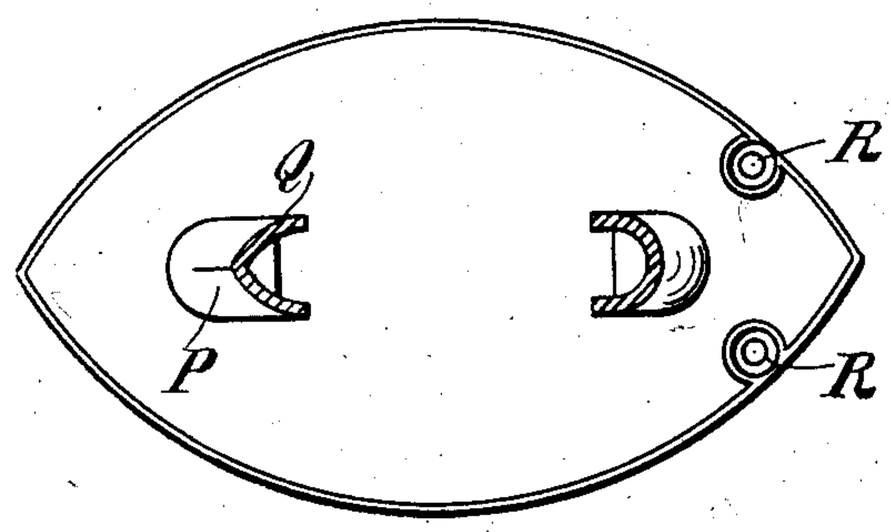


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ELECTRIC-TOOL HOLDER.

SPECIFICATION forming part of Letters Patent No. 724,721, dated April 7, 1903.

Application filed July 24, 1902. Serial No. 116,870. (No model.)

To all whom it may concern:

Be it known that I, MAX LOEWENTHAL, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Electric-Tool Holders, of which the following is a specification, accompanied by drawings.

My invention relates to tool-holders for electrically-heated tools, and is especially adapted as an electric-iron holder for holding the iron and completing circuit thereto while it is being electrically heated, although my invention may be used with any electric tool to which it is applicable.

The objects of my invention are to improve upon the general construction of electric-tool holders, to simplify their construction, securing certainty of operation and reduced liability of derangement, and to prevent sparking at the tool-contacts, whereby the contacts on the tool may be maintained uninjured during the life of the tool.

Further objects of my invention will hereinafter appear; and to these ends my invention consists in apparatus for carrying out the above objects constructed and arranged and having the general mode of operation substantially as hereinafter fully described and shown in this specification and accompanying drawings, in which—

Figure 1 is a bottom plan view with the bottom removed of apparatus embodying my invention, showing the internal construction of the holder. Fig. 2 is a top plan view looking down upon the cover of the apparatus with an electric iron in position with circuit completed thereto. Fig. 3 is a longitudinal sectional view on the line 1 1 of Fig. 1; and Figs. 4 and 5 are plan views, partly in section, of electric flat-irons adapted to be used in connection with my improved holder.

Referring to the drawings, upon a suitable base A, which may be of insulating material, as slate, is arranged a frame B of any suitable shape and arrangement, but shown in this instance as substantially rectangular in form and hollow and made of any suitable material, as cast-iron. Means are provided for securing the frame B to the base A, as by suitable bolts *a* passing through the base and screwed into sockets in the frame.

According to my invention coöperating contacts C D and E F are provided adapted to be actuated by suitable means, as by the tool to be heated, to close the electric circuit for heating the tool, and other contacts G are provided adapted to coöperate with contacts on the tool, whereby the tool may be included in the electric circuit. While various arrangements of parts may be provided for carrying out my invention, in this instance I have shown the contacts C and E as stationary and suitably secured to the frame in any convenient position, as beneath the top H of the frame. The contacts D and F are shown normally out of contact with C and E and adapted to be moved to complete circuit therewith. As a convenient arrangement the contacts D and F are shown as carried upon levers I, pivoted, as at J, to the frame and provided with arms K, with which a bearing portion on the tool to be heated is adapted to coöperate and force the arms K apart to complete circuit between the contacts C D and E F. Suitable means may be provided for normally holding said contacts open, as shown, a spring L being provided for this purpose, suitably secured to the frame and bearing upon the levers I. The contacts D and F, carried by said levers, are suitably insulated therefrom, the contacts C and E also being suitably insulated from the top H of the frame B.

My electric-tool holder, as stated, is especially designed for use with an electric iron, and in this instance the top H of the frame is provided with an aperture in the form of a slot O, adapted to receive the handle P of the electric iron, in Fig. 2 an electric iron being shown within the holder. In Figs. 4 and 5 different forms of electric irons are shown, a portion of the handle P of each being shown in section to illustrate the nose or bearing portion Q, shown in this instance on the handle, for entering between the arms K and forcing them outwardly to complete circuit between the coöperating contacts on the frame as the iron is placed within the holder. As the iron is withdrawn from the holder by moving the nose Q from between the arms

K the spring L causes circuit to be broken at the coöperating contacts. Suitable means, as stated, shown as contacts G, are provided for including the iron in the electric circuit. These contacts G may be of any suitable construction, but in this instance are shown as spring-contacts suitably secured to but insulated from the top H of the frame B. These contacts G are of such length and so arranged that as a tool is placed within the holder it first comes into contact with the electric contacts, as R, on the tool, and then the circuit is completed between the coöperating contacts C D and E F. As the tool is removed from the holder the arrangement of contacts G is such that circuit is first broken between the coöperating contacts C D and E F and then the contacts R on the tool or iron moved away from the spring-contacts G. By this arrangement sparking is confined to the cooperating contacts C D and E F, so that the contacts R on the tool are maintained bright and are prevented from oxidation and burning during the life of the tool. Likewise, since all the sparking occurs within the holder and out of sight of the operator the operator is not liable to be startled by sparking or in any way injured in operating the tool. In order to complete the electric circuits, suitable binding-posts S are provided upon the frame and insulated therefrom, and connections are made from said posts by wires T to contacts C and E, while from the contacts D and F circuit is completed, by means of flexible connections V, to the spring-contacts G. The current being supplied from any suitable source to the binding-posts S, the circuit is normally open at C D and E F; but when the iron is thrust within the holder the circuit is completed at the coöperating contacts as long as the tool is left within the holder and thrust forward to its farthest position. It will be readily seen that by withdrawing the tool slightly the circuit may be broken at the coöperating contacts, in which case the iron may be left within the holder without circuit being completed thereto, so that it will not continue to be heated.

In the drawings, as in Fig. 2, an electric flat-iron is shown within the holder, the contacts R being provided upon the iron and it being understood that, as in the usual electric flat-iron, suitable heating means are provided within the iron, as an electric resistance connected in circuit with the contacts R. These contacts are shown in substantially the same relative position on each form of iron shown in Figs. 4 and 5, and no matter what the form of the iron may be it will be seen that it may be utilized in my improved holder. The same irons provided with contacts R may also be utilized in other forms of holders or with an electric circuit direct, since the contacts R are shown in the form of sockets adapted to receive plugs for completing the circuit.

Obviously some features of my invention may be used without others, and my invention may be embodied in widely-varying forms.

Therefore without limiting myself to the construction shown and described or enumerating equivalents I claim, and desire to obtain by Letters Patent, the following:

1. In an electric-tool holder, the combination of normally open coöperating contacts carried by the holder and adapted to be actuated by insertion of the tool, and other contacts electrically connected to the first-named contacts and adapted to complete circuit to the tool when engaged by the latter, substantially as and for the purposes set forth.

2. In an electric-tool holder, the combination of normally open coöperating contacts adapted to be closed by the tool, and other contacts on the holder electrically connected to the first-named contacts and adapted to be engaged by the tool prior to the closing of the normally open contacts and to complete the circuit to the tool when the normally open contacts are closed by the tool, substantially as described.

3. In an electric-tool holder, the combination of a frame, contacts on the frame, pivoted contacts coöperating therewith and adapted to be actuated by the tool, and other contacts electrically connected with the pivoted contacts and adapted to be engaged by the tool for completing circuit to the tool, substantially as and for the purposes set forth.

4. In an electric-tool holder, the combination of a frame, contacts on the frame and pivoted contacts coöperating therewith, said pivoted contacts being normally maintained open and provided with arms adapted to be actuated by the tool to complete circuit, and other contacts on the frame electrically connected to the pivoted contacts and adapted to be engaged by the tool for completing circuit to the tool, substantially as and for the purposes set forth.

5. In an electric-tool holder, the combination of a frame, contacts on the frame, pivoted contacts to coöperate therewith and provided with arms adapted to be actuated by the tool, and spring-contacts electrically connected to the pivoted contacts and adapted to be engaged by the tool for completing circuit to the tool, substantially as and for the purposes set forth.

6. In an electric-tool holder, the combination of contacts on the holder for making contact with the tool, and coöperating normally open contacts on the holder electrically connected to the first-named contacts and adapted to be closed last and opened first, by the insertion and withdrawal of the tool, whereby sparking is prevented at the tool, substantially as and for the purposes set forth.

7. In an electric-tool holder, the combination of contacts on the holder for making contact with the tool, and coöperating contacts on the holder electrically connected to the first-named contacts and adapted to be actu-

ated by the insertion of the tool for making and breaking the supply-circuit, substantially as and for the purposes set forth.

8. In an electric-tool holder, the combination of a base for supporting the tool, a frame provided with contacts adapted to complete circuit to the tool, and other coöperating contacts electrically connected to the first-named contacts and provided with spring-controlled arms adapted to be actuated by the tool to complete the electric circuit for heating the tool, substantially as and for the purposes set forth.

9. The combination of a holder, a tool removably fitted in the holder, a heater in the tool, contacts on the exterior of the tool forming the terminals of the heater, contacts on the holder to engage those on the tool, normally open contacts on the holder electrically connected to the other contacts thereon, and adapted to be closed by the tool when inserted in the holder, substantially as set forth.

10. The combination of a holder, a tool removably fitted in the holder, a heater in the tool, contacts on the exterior of the tool forming the terminals of the heater, contacts on the holder to engage those on the tool, normally open spring-actuated contacts on the holder electrically connected to the other contacts thereon, and adapted to be closed by the tool when inserted in the holder, substantially as set forth.

11. In an electric-tool holder, the combination of a base for supporting an electric iron, a frame provided with a slot for the reception of the iron-handle, contacts arranged beneath the top of the frame, and pivoted arms provided with contacts coöperating with the said contacts and adapted to be operated to close circuit by a bearing portion on the iron to be heated, and other contacts on the holder electrically connected to the pivoted contacts and adapted to be engaged by the iron to complete the circuit thereto, substantially as and for the purposes set forth.

12. In an electric-tool holder, the combination of a base for supporting an electric iron, a frame provided with an opening for the reception of the iron-handle, normally open cooperating contacts arranged beneath the top of the frame and adapted to be actuated by a bearing on the iron-handle, and other contacts on the holder electrically connected to said normally open contacts and adapted to complete circuit through the iron when engaged by the latter, substantially as and for the purposes set forth.

13. In an electric-tool holder, the combination of a base for supporting an electric iron, a frame provided with an opening for the reception of the iron-handle, normally open cooperating contacts arranged beneath the top of the frame and adapted to be actuated by a bearing on the iron-handle, and other contacts adapted to complete circuit to the iron, substantially as and for the purposes set forth.

14. In an electric-tool holder, the combination of the contacts connected to complete circuit to the tool, and other normally open coöperating contacts in circuit therewith and adapted to be automatically closed last and opened first as the tool is placed in the holder and removed therefrom, whereby sparking occurs between the said last-named contacts, substantially as set forth.

15. The combination of a tool, a separate frame, contacts on said frame coöperating with contacts on the tool, and means automatically operated by the insertion of the tool for preventing sparking between the said contacts on the stand and those on the tool, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MAX LOEWENTHAL.

Witnesses:
JOHN B. COLE,
CHAS. M. RODGERS.