Jan. 9, 1934. M. C. WALTER 1,943,100

ELECTRICAL MARKING DEVICE

Original Filed Dec. 16, 1929 2 Sheets-Sheet 1

Fig-1

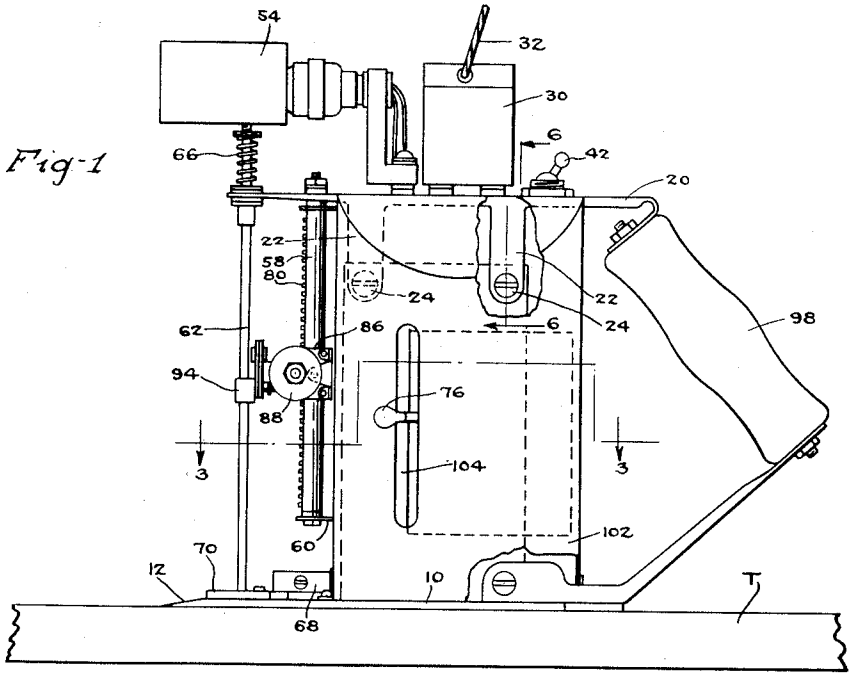


Fig-2.

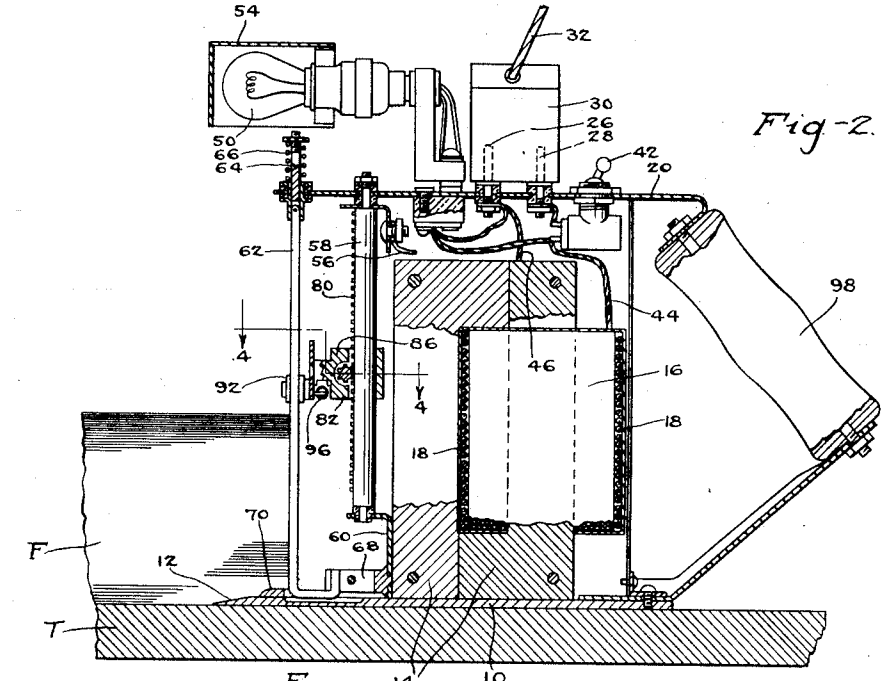
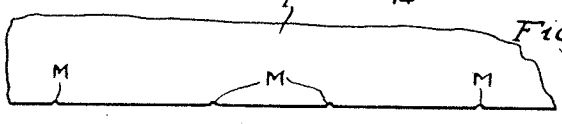


Fig-2A.



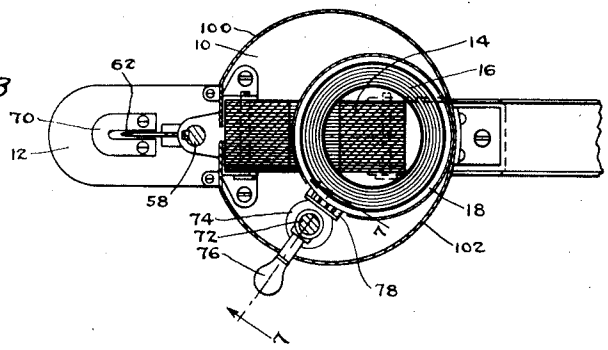
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ELECTRICAL MARKING DEVICE

Original Filed Dec. 16, 1929 2 Sheets-Sheet 2

Fig-3



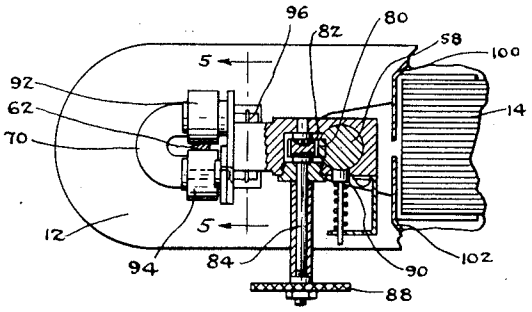


Fig-4

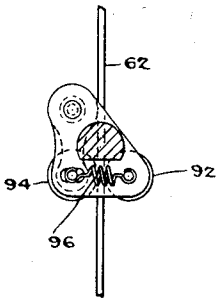


Fig-5

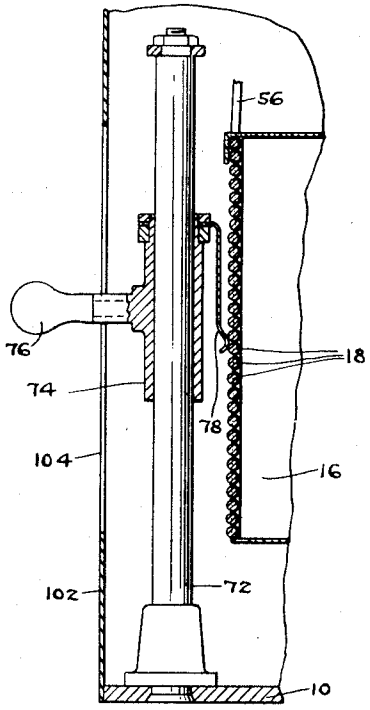


Fig-7

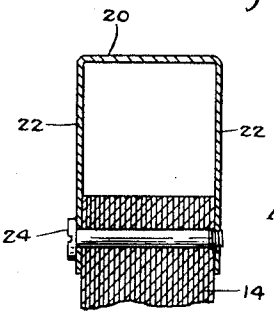


Fig-6

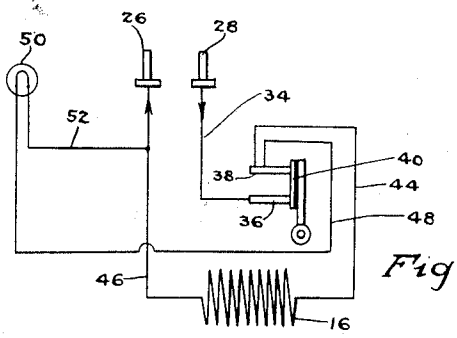


Fig-8

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UNITED STATES PATENT OFFICE

1,943,100

ELECTRICAL MARKING DEVICE

Morley C. Walter, Minneapolis, Minn.

Application December 16, 1929, Serial No. 414,393
Renewed August 23, 1933

4 Claims. (Cl. 219—29)

My invention relates to electrical marking devices. While intended particularly for marking the edges of a pile of fabric material, it is obvious that the device may be used for marking other objects. In marking garments such as ladies' bloomers, a large number of layers of the fabric is cut to shape at one time. Then by means of a pattern placed on top of the pile, vertical marks are made on the margin of the pile to indicate where gores, tucks, etc., are to be made when the proper pieces are sewed together to make a garment. Heretofore the method employed for this marking has been tedious and not altogether reliable. An object, therefore, is to provide a device in which is embodied a resistance element which may be highly heated and by means of which the desired marks may be quickly burned in the edges of a pile of fabric material.

The full objects and advantages of my invention will appear in connection with the detailed description thereof, and the novel features of my inventive idea will be particularly pointed out in the claims.

In the accompanying drawings which illustrate a practical embodiment of my invention,—Fig. 1 is a side elevational view of the device. Fig. 2 is a view largely in vertical section. Fig. 2A is a fragmentary top plan view of a pile of fabric material. Fig. 3 is a view in horizontal section on the line 3—3 of Fig. 1. Fig. 4 is a view in section on the line 4—4 of Fig. 2 on an enlarged scale. Fig. 5 is a view in section on the line 5—5 of Fig. 4. Fig. 6 is a view in section on the line 6—6 of Fig. 1 on an enlarged scale. Fig. 7 is a view in section on the line 7—7 of Fig. 3, on an enlarged scale. Fig. 8 is a wiring diagram view.

Referring to the construction shown in the drawings, the numeral 10 designates a base member which is made in the form of a disk as shown in Fig. 3 having a front projection 12 which is thinned down as will be understood from Figs. 1 and 2. Secured to and extending up from the base 10, there is a plurality of laminated iron plates 14 which when assembled produce a built up structure which is open in the center so as to produce two vertical members. One of these members as is evident from Fig. 3, forms a core for the primary coil 16 of a transformer, the secondary coil 18 thereof consisting of a much coarser wire wound around the primary. A longitudinal plate 20 extends above the structure 14, being supported in spaced relation thereto by downturned lugs 22 whose lower ends are secured to the laminated structure by screws 24 as will be understood from Fig. 6. Two terminals 26 and 28 are insulatively secured to the plate 20 for receiving a plug 30 to which are attached wires 32 for supplying current from any convenient source of electricity. A wire 34 connects the terminal 28 to a contact member 36 of a switch as shown in Fig. 8. This switch includes a second contact member 38 and the two contact members are adapted to be bridged by a member 40 which is adapted to be operated by a push member 42. The contact member 38 is connected by a wire 44 with one end of the primary coil 16, the other end of which is connected by a wire 46 with the terminal 26. A wire 48 connects the contact member 38 with an electric lamp 50 from which a wire 52 leads to the wire 46 to constitute a return wire. The lamp 50 is supported from the front of the plate 20 and is provided with an overhead reflector 54 which throws the light down upon the work as will be understood from Fig. 2. The upper end of the secondary coil 18 is connected by a wire 56 with a vertical rod 58 which is insulatively supported between the plate 20 and a bracket 60 extending up from the base. A resistance element 62 is secured at its upper end to a bolt 64 which passes insulatively through the plate 20 and above this plate is surrounded by a coiled spring 66 by means of which the resistance element is tensioned. The lower end of the resistance element is electrically connected to a lug 68 extending out from the bracket 60 so that the lower end of the resistance element is electrically connected with the base 10 and the laminated structure 14. A nose 70 is secured to the projection 12 in spaced relation to the lower end of the element 62. A post 72 extends up from the base 10 and this post carries a slide 74 to which is attached a knob 76, for moving the slide up and down. The slide carries a spring contact finger 78 adapted to engage the convolutions of the secondary coil 18, these convolutions at all possible places of engagement by the finger being stripped of insulating material. The rod 58 previously referred to is provided with rack teeth 80 engaged by a pinion 82 secured to a shaft 84 rotatably carried by a block 86 which is adapted to slide up and down on the rod when the shaft 84 is turned by means of a thumb wheel 88 secured to the outer end of the shaft. The block 86 carries a spring-pressed detent 90 as shown in Fig. 4 which frictionally engages the rod 58 for holding the block in adjusted position. The block 86 also carries two rollers 92 and 94 which are in electrical engagement with opposite sides of the resistance element 62 and are held in contact therewith by a coiled spring 96. A handle member 98 for

manipulating the device is secured at its lower end to the base 10 and at its upper end to the plate 20. The primary and secondary coils are surrounded by two half-round cover members 100 and 102, the latter having a vertical slot 104 for the shank of the knob 76.

The operation and advantages of my invention will now be understood. When an alternating current is supplied to the primary coil 16, it magnetizes the iron plates 14, thereby causing surges of magnetic flux first in one direction and then in the other. Since this magnetic flux passes through the secondary coil 18 as well as through the primary coil, it induces an alternating current in the secondary coil. This induced current in the secondary is large in quantity and of low voltage so that the resistance element 62 in the circuit of the secondary is highly heated. The path of the current through the primary coil 16 is obvious from Fig. 8. The induced current in the secondary coil goes through the spring finger 78, the post 72, the base 10, the lug 68, the resistance element 62, the rollers 92 and 94, the block 86, the rod 58 and the wire 56 connected with the upper end of the coil 18. It is obvious that the heating of the element 62 may be increased and decreased by moving the contact finger 78 up and down and that the effective length of said element may be decreased and increased by moving the rollers 92 and 94 up and down. Fig. 2 shows the manner in which the device is employed for marking a pile of fabric F which lies on a table T. With the resistance element 62 heated to the proper degree according to the character of the material, the operator grasps the handle 98 and pushes the resistance element against the edge of the fabric pile at successive places where the marks are to be made, these marks being indicated at M in Fig. 2A. The projection 12 and the nose 70 will readily pass underneath the pile on account of their thin forward edges.

I claim:

1. An electrical marking device comprising a base member, a laminated sheet iron structure extending up from said base, a primary coil supported by said structure, means for connecting said coil to a source of electricity, a secondary coil adjacent said primary coil, a plate supported above said laminated structure, a resistance element adapted for marking supported by said plate and said base, and means for connecting said resistance element with said secondary coil.

2. An electrical marking device comprising a base member having a sharp edge at the front thereof, a laminated sheet iron structure extending up from said base, a primary coil supported by said structure, means for connecting said coil to a source of electricity, a secondary coil wound around said primary coil, a plate supported above said laminated structure, a resistance element adapted for marking extending between said base and said plate at the front of the device, means for connecting said resistance element with said secondary coil, and a handle attached to the rear of the device.

3. An electrical marking device, comprising a base member, a transformer carried by said base member having primary and secondary windings, means for varying the effective length of the secondary winding, a support mounted above said transformer, a resistance element for marking extending between said support and said base at the front of the device, means for connecting said resistance element with the secondary winding, and means for varying the effective length of said resistance element.

4. An electrical marking device, comprising a base member, a transformer carried by said base member having primary and secondary windings, a support mounted above said transformer, a resistance element for marking extending between said support and said base at the front of the device, means for connecting said resistance element with the secondary winding, and means for varying the effective length of said resistance element.

MORLEY C. WALTER.