Oct. 4, 1927. 1,644,139

J. E. MARSDEN

ELECTRIC SADIRON

Filed July 7, 1925 2 Sheets-Sheet 1

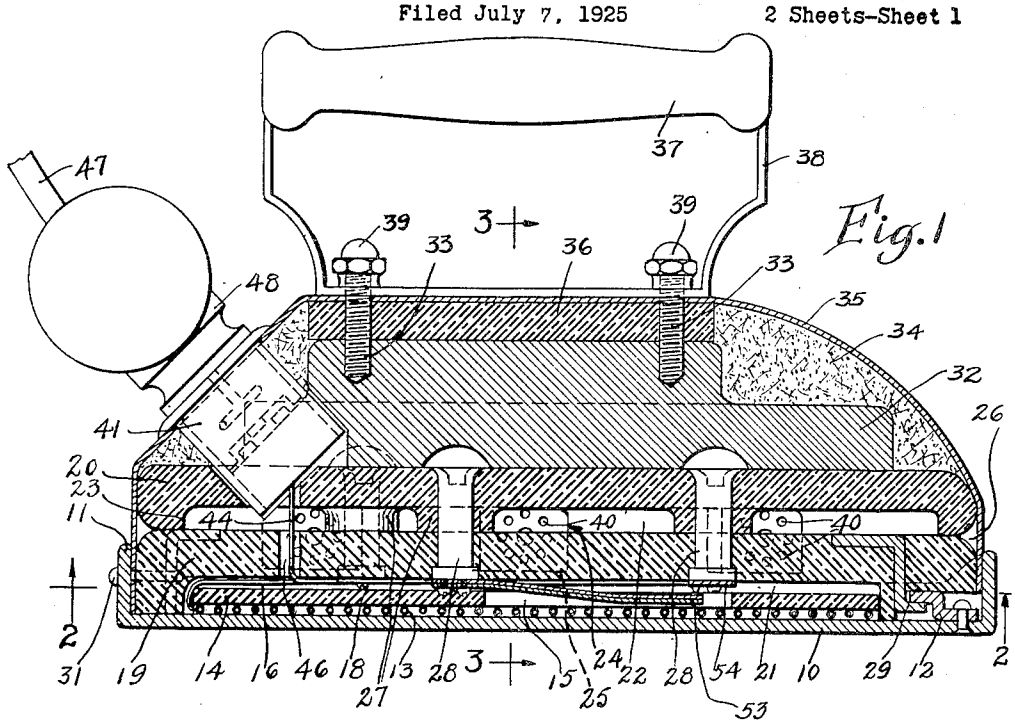



Fig. 1

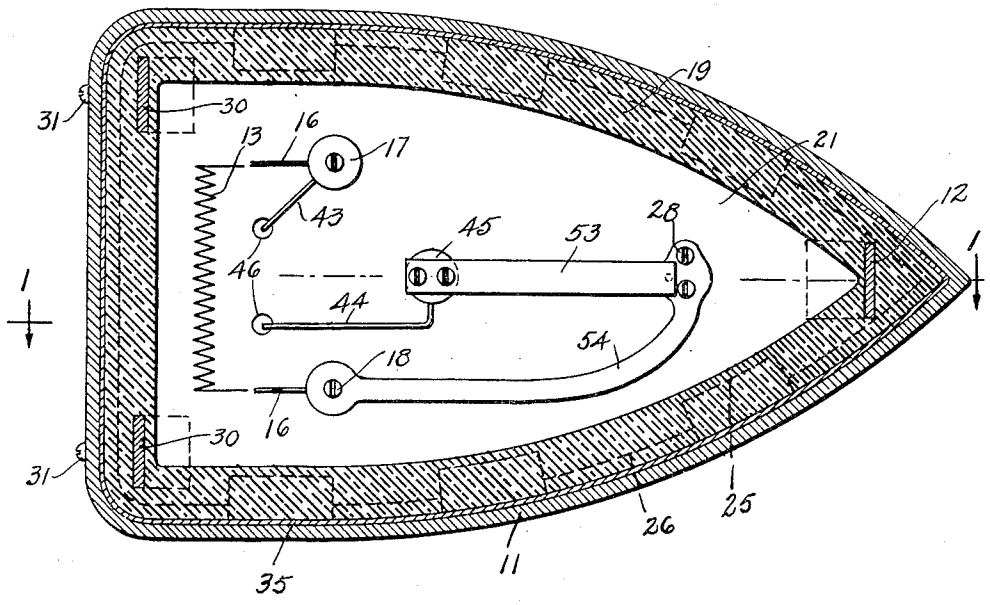



Fig. 2

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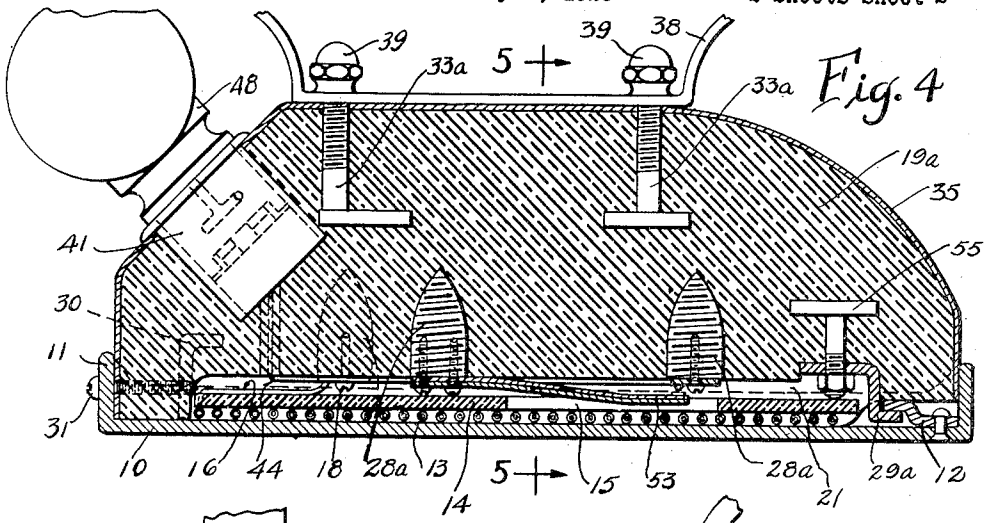



Fig. 4

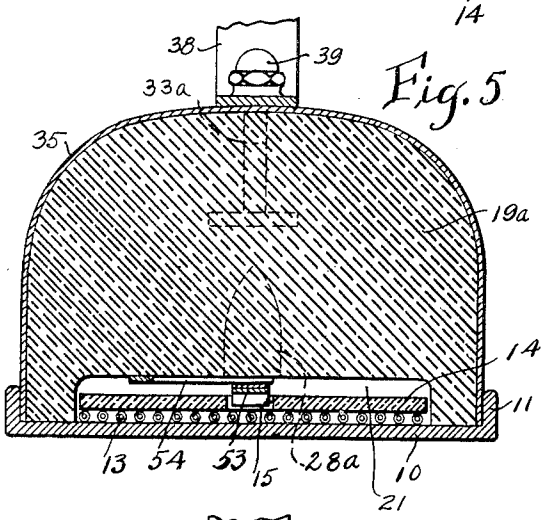



Fig. 5

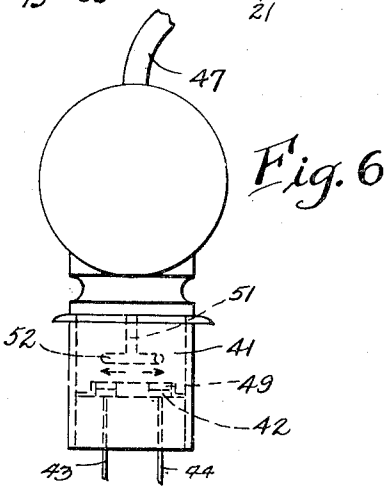



Fig. 6

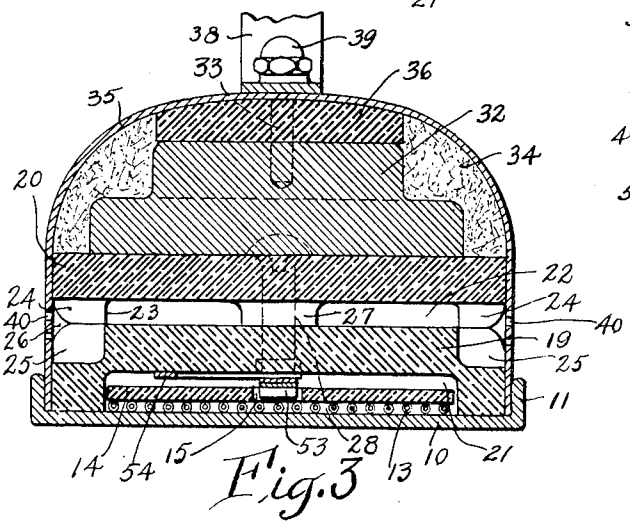



Fig. 3

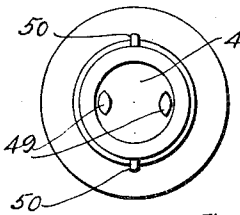



Fig. 7

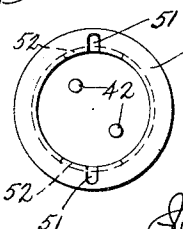



Fig. 8

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# UNITED STATES PATENT OFFICE.

JOHN E. MARSDEN, OF PHILADELPHIA, PENNSYLVANIA.

## ELECTRIC SADIRON.

Application filed July 7, 1925. Serial No. 41,938.

This invention relates to laundry or pressing appliances and has particular reference to an electric sadiron, having among its advantages the provision of a sadiron for the utmost economy of electricity together with absolute safety in operation, one that has automatic thermostatic control for turning off the current when a certain predetermined temperature is obtained, and turning on the current when the heat within the device drops below said predetermined point; one that may be constructed and assembled at a minimum cost; one that includes plug and socket connections so designed that when the plug is turned in one direction the circuit is completed, and when turned in the opposite direction the circuit is broken, but with an effective interlock in either of said extreme positions, and also the provision of a device that has special cooling means to prevent the accumulation of heat or overheating of the main body portion remote from the ironing surface and adjacent to the operator's hand.

With the foregoing and other objects in view the invention consists in the arrangement and combination of parts hereinafter described and claimed, and while the invention is not restricted to the exact details of construction disclosed or suggested herein, still for the purpose of illustrating a practical embodiment thereof reference is had to the accompanying drawings in which like reference characters designate the same parts in the several views, and in which—

Figure 1 is a vertical longitudinal section of a preferred embodiment of the invention.

Fig. 2 is a horizontal section looking upward from the plane of the line 2—2 of Fig. 1.

Fig. 3 is a vertical transverse section on the line 3—3 of Fig. 1.

Fig. 4 is a longitudinal section of a modification.

Fig. 5 is a vertical transverse section of the same on the line 5—5 of Fig. 4.

Fig. 6 is a detail of the plug and socket combined.

Fig. 7 is an end view of the plug.

Fig. 8 is an end view of the socket to receive the plug.

Referring now more specifically to the drawings I show my improved sadiron as comprising a shoe 10 of suitable material such as metal having the quality of rapid heat reception and transference, copper being well suited for this purpose. The shoe is provided with an upstanding peripheral flange or retaining member 11 to facilitate the attachment of the other main parts of the device. At 12 is indicated a catch secured within the point portion of the shoe.

Co-operating with the shoe and arranged in close proximity thereto or against it is a heating device such as an electric resistance coil 13 in substantially flat form and made substantially as a unit with a plate of insulating material such as fabricated asbestos formed to cover nearly the entire inner surface of the shoe and having a shape corresponding to the shoe. The plate 14 is solid and imperforate except for a narrow slot 15 along its forward central portion. The terminals 16 of the coil 13 lead to a pair of binding posts 17 and 18.

Above the shoe and plate 14 are body and filler devices having among other purposes the provision of sufficient weight for the purpose for which the utensil is provided, and the protection of the operator's hand from the heat that is necessary for laundry or pressing purposes. These parts may be termed broadly filler means and the same may be made of different materials, shapes, or constructions to accomplish the desired purposes. In Fig. 1 I show filler means including a pair of blocks of insulation 19 and 20. The block 19 is of a form to fit within the flange 11 of the shoe and is shown as provided with a flat upper surface and having a concavity 21 in its under surface within which are fitted the plate 14 and heating coil. The upper block 20 is likewise shown with an upper substantially flat surface and with a lower surface that is recessed at 22 to provide air spaces for cooling purposes. The periphery of this block 20 includes a flange 23 that is practically co-extensive with the block itself and forms a support where it rests upon the lower block 19. The flange, however, is interrupted at a number of points as at 24 which register with notches 25 formed in the lower block. A circumferential air passage 26 surrounds both the blocks constituting a clearance along the peripheral portions thereof for better circulation of cooling air which thus is free to pass through any of the openings or passage way just described, making it practically impossible for any material amount of heat to pass upward through or along the upper block 20. Fillets or lugs 27

extend downward from the block 20 across the space 22 at several places to suitably brace the upper block. Fasteners 28 for holding the blocks together as a unit and constituting points of attachment for the electric contacts pass through the blocks and these lugs for the purpose stated. The lower block 19 has molded or otherwise formed therein or attached thereto a series of anchor members 29 and 30, there being two of the latter at the rear end of the device and into them are screwed two screws 31 or their equivalent. The locking member 29 has a forwardly projecting point which takes under the catch 12 when the upper part of the device is slipped downward and forward into its place within the flange of the shoe.

Above the block 20 is shown a weight member 32 preferably of metal or its equivalent having therefore sufficient stability to provide means for attaching the handle as by means of a pair of screws or studs 33 tapped thereinto. Surrounding the block 32 is packing of a suitable fibrous material 34 which may be of asbestos or asbestos composition, and between the top of the weight block 32 and the top of the shell 35 is a ply or block of laminated asbestos 36.

The shell 35 is made of any suitable sheet material such as metal and does not require much weight or thickness. This member constitutes a protector or guard for the parts within, some of which are of a more or less breakable or fragile nature, and the shell is fitted closely within the flange 11 of the shoe. The handle 37 includes a bail 38 clamped against the top of the shell by means of nuts 39 co-operating with the upper ends of the screws 33. The shell is formed along its sides with a series of groups of holes 40 which complete the circulating system in connection with the air passages previously described.

The rear portion of the body and filler means is provided with a socket into which is fitted and securely held by any suitable means a socket piece 41 having a pair of contact pins 42 to which the wires 43 and 44 extend from the binding posts 17 and 45 respectively upward through holes 46 formed through the insulator blocks 19 and 20. Current from any suitable source such as the usual house current is conveyed to the mechanism already described by means of a cord 47 and plug 48 having two contact points 49 arranged in a peculiar manner with respect to the socket and the contact pins 42. The plug has preferably two locking pins 50 which enter correspondingly spaced bayonet slots 51 in the socket. The bayonet slots 51 are provided with T-heads 52 and the contact points and pins 42 and 49 are so related to one another and the bayonet slots that when the plug is inserted directly into the socket, the circuit is not completed except upon giving the plug a clockwise rotation. At this time the contacts 49 ride upon the pins 42 and complete the circuit in a well known manner. The pins 50 at this time are interlocked in one end of the bayonet slots and of course the plug is therefore locked in place in a manner well understood in electric connections. When, however, it is desired to switch off the current without detaching the plug the operator simply gives the plug a slight reverse rotation, bringing the pins 50 into the opposite ends of the bayonet slots, at which time the plug is still retained locked in position, but with the current shut off. Obviously to remove the plug from the iron, the operator gives a partial rotation so as to bring the pins 50 into registry with the open ends of the slots 51, when the plug will slip out of the socket.

The thermostatic control is effected by means of an automatic switch 53 interposed between the wires 44 and 16 of the heating coil. The thermostat 53 is attached to the binding post 45 and has make-and-break connection with the end of a connector 54 secured to the front binding post 28. Said connector leads back to the binding post 18. These parts are connected within the concavity 21 of the lower block 19. The thermostat 53 lies along and substantially fills the slot 15 of the heater plate 14. In a manner well understood, when the temperature reaches a certain point at the heating coil and hence at the thermostat 53, the thermostat will bow downward at its free end and break the contact between it and the connector 54. The moment, however, that the temperature is reduced sufficiently the thermostat will assume its normal position or form and again complete the circuit, thus insuring that a substantially uniform heat will be maintained at the coil and so at the shoe 10.

The form of the device shown in Figs. 4 and 5 is substantially the same as that already described in so far as the shoe and heating and electric control features are concerned. The shell 35 likewise is or may be the same. The filler members above described, however, are replaced by a single body member or block $19^a$ of insulation such as compressed asbestos fibrous material having sufficient strength and rigidity to constitute firm anchorages. For instance, the anchor $29^a$ is secured to the anchor bolt 55 molded in the front portion of the block $19^a$, and the anchor members 30 are molded in the rear portion thereof. In the top are secured or molded anchor screws $33^a$ for the same purpose as above described in connection with the handle. The contact posts are shown in this form as comprising lag screws $28^a$ screwed directly into the body of the block of insulation.

It will thus be seen that I produce a sadiron of unusually simple and cheap construction and one that is not likely to get out of order. In my experience with articles of this general nature I have observed that the difficulty with an electric sadiron is usually that it overheats and is not only dangerous to property, but is almost certain to quickly burn itself out at the resistance coil or connections, whereas in this improvement that is so constructed as to be maintained uniformly of a moderate temperature, no such dangerous conditions can obtain. The heating element being so closely associated with the shoe which being of pure copper is the best conductor of heat, insures quick, almost instantaneous, heating thereof for practical purposes, and the heat generated and maintained in this manner, while sufficiently high for the purpose for which the article is intended, never heats the body or upper portion of the device, and consequently, the operator's hand is not subjected at any time to burning condition. No auxiliary mechanism such as a heat guard as commonly used with sadirons is required. The element of economy of electricity also must be emphasized, resulting from the automatic switch control at the thermostat.

I claim:

1. An electric sadiron comprising a shoe, a body above the shoe, locking means securing said body to said shoe comprising stationary engaging members borne by said body and said shoe and engageable by a relative horizontal movement of said body with respect to said shoe, and retaining means for confining said body against further movement with respect to said shoe, said retaining means including an upwardly directed flange extending along the edge of the shoe, said locking means comprising a hook positioned within the tip of the shoe and opening rearward, and a forwardly directed hook on the body to engage the hook aforesaid, said body being undercut to pass above the first mentioned hook, said body being seated within the flange by a movement as aforesaid while the hooks are being engaged, said retaining means including a screw at the rear of the iron passing through the flange and engaging the body.

2. An electric sadiron comprising a shoe, an electric heating coil adjacent to said shoe to impart heat thereto, a body of insulation above the heating coil, and a casing enclosing said body of insulation to protect the same, the body of insulation comprising a plurality of spaced layers of insulation forming a horizontal air chamber therebetween, said casing having air openings to permit air to flow into said chamber.

3. An electric sadiron comprising a triangular shoe having an upwardly directed flange extending along the edge thereof, a heating coil positioned adjacent to said shoe, an engagement member secured to the front end portion of the shoe, a layer of insulation above the heating coil and having locking means for engaging the engagement member, an upper layer of insulation positioned on the first mentioned layer in spaced relation thereto to form an air chamber, means securing said layers together, a metal weight member on the upper layer of insulation, a casing to form a strong uniform exterior for the sadiron and with the lower edge portion of the casing extending toward the shoe to lie within the flange thereof, a handle for the sadiron, means securing the handle, the casing, and the weight member together as a unit, the casing having openings to permit of a flow of air to said air chamber, movable means being provided at the rear of the sadiron for securing the casing to the flange.

In testimony whereof I affix my signature.

JOHN E. MARSDEN.