

J. C. GRIESEL.
 AUTOMATIC SWITCH FOR ELECTRIC IRONS.
 APPLICATION FILED FEB. 20, 1918.

Patented Aug. 13, 1918.
 2 SHEETS—SHEET 1.

1,275,552.

Fig. 1.

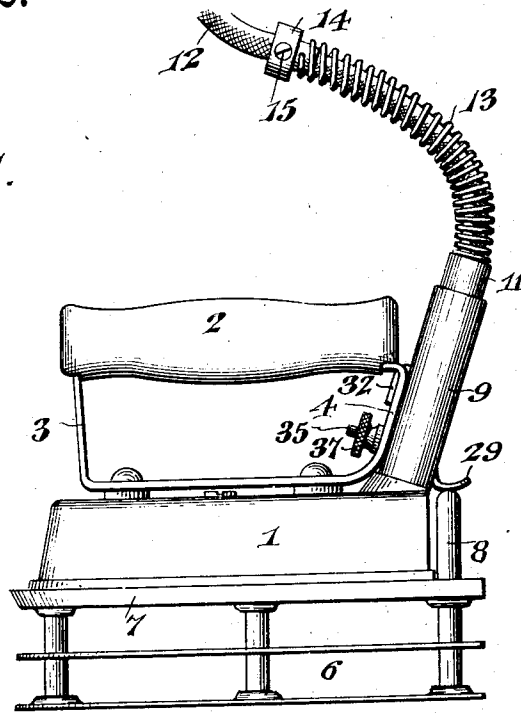


Fig. 7.

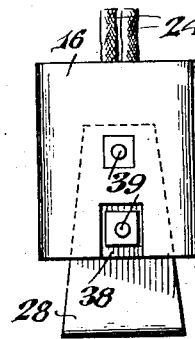


Fig. 2.

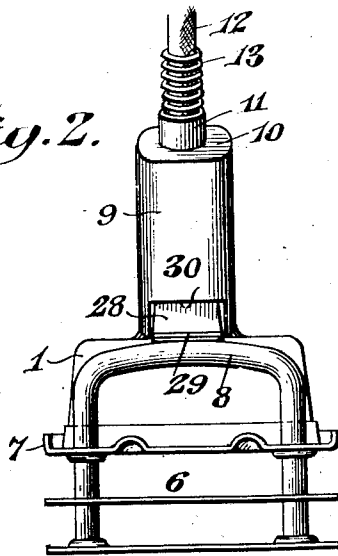


Fig. 8.

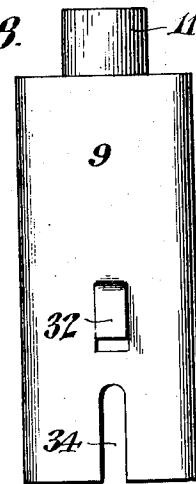
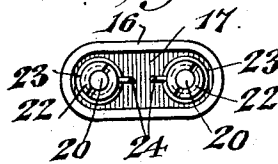


Fig. 9.



WITNESSES

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BY

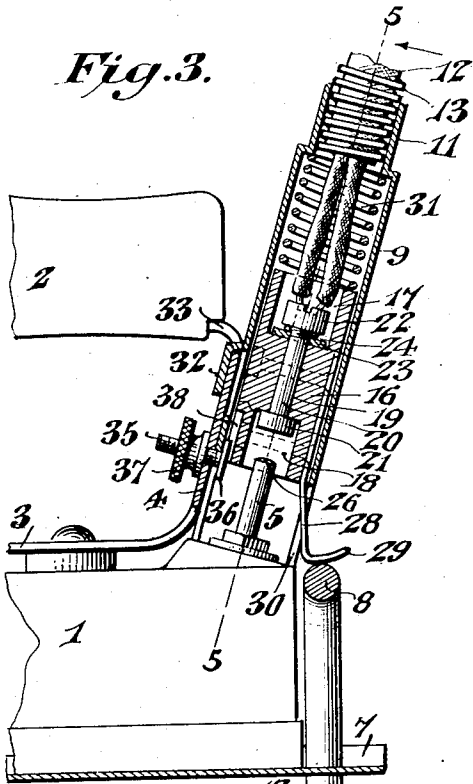
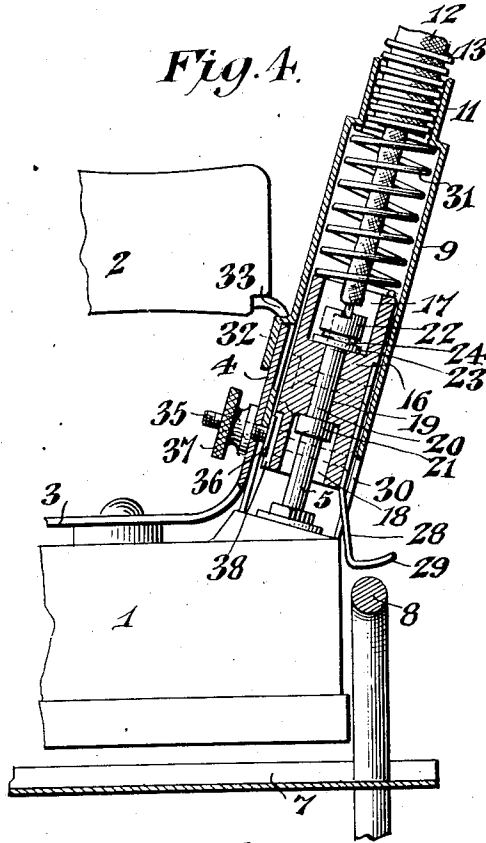
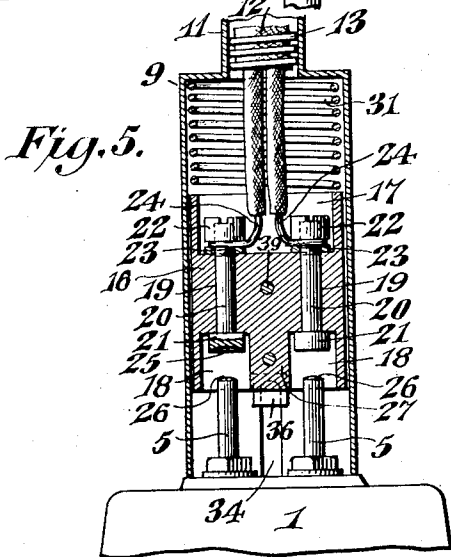
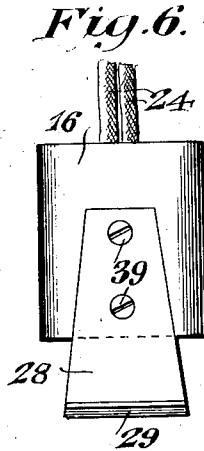
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WITNESSES

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AUTOMATIC SWITCH FOR ELECTRIC IRONS.

1,275,552.

Specification of Letters Patent.

Patented Aug. 13, 1918.

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To all whom it may concern:

Be it known that I, JOHN C. GRIESEL, a citizen of the United States, residing at Pottsville, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Automatic Switch for Electric Irons, of which the following is a specification.

This invention has reference to automatic switches for electric irons for laundry work, and its object is to provide a switch which, when the iron is placed upon a suitable stand, automatically causes the opening of the circuit; and when the iron is removed from the stand, the circuit becomes automatically closed.

The invention comprises a terminal contact carrying member arranged to be applied to an iron having contacts for its heating element which, when the carrying member is applied to the iron, are engaged by the contacts in said carrying member. The contacts of the carrying member are coupled up to a suitable flexible cord as is customary, which cord is provided with an attachment plug for connection to a house circuit.

The carrying member has the contacts therein so mounted that they will move within the carrying member for a limited distance, being yieldably held at one limit of their movement by a spring, and in such position being arranged to engage the terminals of the iron when the latter is removed from the stand. When, however, the iron is placed on the stand, a part provided on the stand engages a part on the movable contact holder of the carrying member to force such contact holder against its normal tendency, so that the circuit is broken between the contacts on the contact carrier or plug and the iron.

The invention will be best understood from a consideration of the following detailed description, taken in connection with the accompanying drawings forming part of this specification, with the further understanding that, while the drawings show a practical form of the invention, the latter is not confined to any strict conformity with the showing of the drawings but may be changed and modified so long as such

changes and modifications come within the scope of the appended claims.

In the drawings:—

Figure 1 is a side elevation of the iron upon a stand, with the parts so related as to break the circuit;

Fig. 2 is a rear elevation of the structure shown in Fig. 1;

Fig. 3 is a side elevation of the iron from the same side seen in Fig. 1, but limited to the rear end thereof and showing a contact carrier or plug in longitudinal section, the figure being drawn on a larger scale than Fig. 1;

Fig. 4 is a view similar to Fig. 3, with the iron lifted a short distance from the stand to show the position of the parts when the circuit is completed;

Fig. 5 is a section on the line 5—5 of Fig. 3;

Fig. 6 is a rear elevation of the movable contact holder in the plug;

Fig. 7 is a front elevation of the structure shown in Fig. 6;

Fig. 8 is a front elevation of the casing of the plug carrying the contact holder, but with the latter omitted;

Fig. 9 is a plan view of the contact holder omitting distant parts, and with the conductors connected to the contacts shown in cross section.

Referring to the drawings, there is shown an iron 1 provided with a handle 2 having a flat strap or bar 3 supporting the handle on the iron, this strap 3 being provided with a rear upstanding portion 4 which is utilized in a manner to be hereinafter described. The iron at its rear portion has upstanding terminal lugs or pins 5. The structure so far described may be such as is ordinarily provided in electric irons, and needs no special description, since the particular construction of the iron does not necessarily enter into the present invention.

There is also provided a stand 6 with a top portion 7 designed to receive, support and place the iron 1, and this stand may follow the usual custom except that at the rear of the stand there is an upstanding member 8 shown as in the form of an arch, although such particular form is not at all obligatory.

There is also provided a casing 9 shown as of oval cross section, although such particular shape is not mandatory. At one end, the casing is open, and at the other end, which
 5 in operative position is the upper end, there is a closing wall 10 with a central neck 11 designed to be entered by a flexible cord 12 about which for a suitable distance there is applied an open wire coil 13. At one end,
 10 the coil enters and is secured to the neck 11, and at the other end is provided with a collar 14 arranged to be attached to the cord 12 by a screw 15 or otherwise, so that the cord 12 is made fast to the casing or shell 9 by the
 15 screw 15, the arrangement being such that pull upon the cord 12 will be resisted by the wire coil 13 which may be of elastic nature. The coil 13 also prevents any sharp bends in the cord 12, especially adjacent to the neck
 20 11, thereby avoiding breaks in the cord 12.

Within the shell or casing 9, which may be of even size throughout its length, there is located a block 16 also of oval cross section to conform to the interior shape of the shell
 25 9. The block 16 is made of some suitable insulating material, which material is also of a refractory nature to resist heat. Porcelain answers the purpose, and there are other insulating materials having the desirable quality. At one end the block 16,
 30 which is somewhat elongated, is formed with a longitudinal cavity 17, and at the other end with twin cavities 18 on opposite sides of its longitudinal center line. Each
 35 cavity 18 joins the cavity 17 through a passage 19 through which there extends a bolt 20 having within the respective cavity 18 a head 21, and within the cavity 17 is screw threaded to receive a nut 22. Clamped be-
 40 tween each nut 22 and a suitable washer 23 on each bolt 19, is one end of an electric conductor 24 forming part of the cord 12 which, as is customary, is provided with
 45 one from the other. Each head 21 is or may be recessed at one end, as shown with relation to one of the heads in Fig. 5 at 25. These recesses are designed to seat the ex-
 50 posed ends of the pins 5 which may be slightly rounded as shown at 26 for the purpose. The reason for providing two cavities or sockets 18 is to prevent any danger of arcing between the heads 21 when the circuit is broken, the block 16 being formed with a
 55 web or wall 27 between the two cavities or recesses 18.

Fast to one broad face of the block 16 is a plate 28 extending below the block when the latter is in place in the casing 9 and
 60 terminating in a foot 29 formed by suitably bending the plate 28. The casing 9 has at its lower end an opening 30 through which the plate 28 extends, so that the foot 29 is in the path of the arch 8 which engages the

foot 29 when the iron is placed upon the
 stand 6, forcing the block 16 lengthwise of the casing 9 toward that end provided with the neck 11. Within the casing 9 between the block 16 and the top 10 of the casing 9 there is lodged a spring 31 constantly urg-
 70 ing the block 16 toward that end of the casing remote from the top 10.

The casing 9 is provided on the side remote from the opening 30 with a tongue 32
 75 outset from the casing and in position to pass through a slot 33 in the upstanding end 4 of the handle bar 3, so that the casing is held from pulling away from the handle bar and also is limited in its movement toward the body of the iron by the tongue
 80 32 and the upstanding member 4. To further hold the casing 9, it has a longitudinal entering recess 34 in the end remote from the neck 11, and in the face remote
 85 from the opening 30. The recess 34 is traversed by the stem of a bolt 35 having at one end a head 36 engaging the inner wall of the casing 9, and at the outer end of the bolt 35, which is suitably threaded, there is applied
 90 a thumb nut 37 or other suitable binding device for clamping the head 36 of the bolt tightly against the inner wall of the casing 9, and said casing to the upstanding portion
 95 4 of the handle bar 3. To accommodate the head 36, the block 16 has a recess 38 formed in it.

The plate 28 is held to the block 16 by bolts 39 traversing the block, but the plate may be secured to the block in any other
 100 suitable manner. When the iron is suitably placed upon the stand 6, resting directly upon the plate 7, the foot 29 engages the arch 8 before the iron reaches the stand, and consequently, the block 16 is forced against the action of the spring 31 for a sufficient
 105 distance to hold the heads 21, which constitute contact terminals, out of engagement with the pins 5, which also constitute contact terminals belonging directly to the iron. Under these circumstances, no current flows,
 110 even though the ordinary attachment plug usually supplied with electric irons be inserted in a socket in the house circuit. When it is desired to use the iron, the circuit may be completed by lifting the iron from the
 115 stand, whereupon the expansion of the spring 31 forces the block 16 lengthwise of the casing 9, so that the heads 21 engage the pins 5, this condition prevailing so long as the iron is in use and not located on the
 120 stand in the manner shown in Figs. 1, 2 and 3.

For continued heating or when first heating the iron, it may be set on the stand slightly forward of the open circuit position,
 125 thus permitting the foot 29 to escape from the arch 8. This, however, is not the normal position of the iron on the stand for such

normal position of the iron on the stand prevents heating since the circuit is automatically broken by the engagement of the foot 29 with the arch 8. The proper placing of the iron on the stand is insured by providing the top portion 7 with a marginal flange somewhat larger than the top of the iron but close enough to the size of the iron to prevent any movement of the latter which would cause the foot 29 to escape from the arch 8. This contributes markedly to the safety of the device from overheating and thereby preventing the probability of fire and also to economize while the iron is not in actual use, thereby saving considerable in operating expenses.

It has been proposed to provide electric irons with automatic cut-out switches depending for their action upon setting the iron on one end, but there is then the liability of upsetting the iron, with the result that the circuit is closed and the iron heated with disastrous results. Such cannot occur with this invention, since when the iron is not in use, it is placed flat upon a stand where the support is broad, and the liability of upsetting is reduced to a minimum.

The screw 35 and nut 37 constituting a clamp bolt serve to hold the casing 9 to the iron against displacement thereon. If it is desired to adjust or remove the casing, this may be done by loosening the nut 37, whereupon the casing may be adjusted or wholly removed as desired.

What is claimed is:—

1. The combination with an electric iron provided with circuit terminals, of a device carried by the iron and in turn carrying other circuit terminals movable toward and from the first-named circuit terminals, and a stand on which the iron is supported in a substantially horizontal position, said stand and device having coacting parts for causing the second-named circuit terminals to move away from the first-named circuit terminals when the iron is placed on the stand.

2. The combination with an electric iron having exposed circuit terminals, of a casing attachable to the iron to cover the circuit terminals on the iron, an elastically yieldable member within the casing provided with circuit terminals movable with the yieldable member into and out of contact with the circuit terminals on the iron, a stand for the iron, and coacting means on the stand and on the yieldable member for engagement when the iron is placed on the stand in the substantially horizontal position to move the elastically yieldable member against its normal tendency, whereby to hold the circuit terminals separated and thereby break the circuit at the terminals.

3. An electric iron provided with circuit terminals and a casing carried by the iron in

position to cover the circuit terminals, said casing inclosing an elastically yieldable insulating block with circuit terminals thereon movable with the block into and out of engagement with the circuit terminals on the iron, and said block having means for engaging an iron support to move the block and its circuit terminals into position to separate the terminals.

4. An electric iron provided with exposed circuit terminals, a casing secured to the iron, an insulating block within the casing and movable lengthwise thereof, a spring within the casing having a constant tendency to move the block toward the circuit terminals on the iron, contacts carried by the block in position to engage the contacts on the iron, and a member on the block projecting through the casing to the exterior thereof for engaging a relatively fixed part to move the block in opposition to the spring to separate the circuit terminals on the block from those on the iron.

5. An electric iron provided with circuit terminals, a casing for covering the circuit terminals, other circuit terminals within the casing insulated from and movable lengthwise of said casing into and out of engagement with the first-named circuit terminals, elastic means for constraining the second-named circuit terminals into engagement with the first-named circuit terminals, and means for rigidly connecting the casing to the iron to hold said casing in position on the iron and for releasing said casing for removal thereof from the iron.

6. An electric iron provided with circuit terminals, a casing secured to the iron in position to cover the circuit terminals, an insulating block within the casing, circuit terminals carried by the block in position to engage the circuit terminals on the iron, a spring within the casing tending to move the circuit terminals on the block into engagement with the circuit terminals on the iron, means on the block in position to engage a fixed object for moving the block against the action of the spring to separate the circuit terminals of the block from those of the iron, electric conductors connected to the circuit terminals on the block and extending to the exterior of the casing, and an elastic coil fast to the casing and to the conductors exterior to the block for resisting strains on the conductors tending to pull them loose from the circuit terminals to which they are connected.

7. An electric iron provided with exposed circuit terminals, and having a handle with supporting means therefor connecting it to the body of the iron, a casing inclosing the circuit terminals on the iron and provided with yieldable circuit terminals having a constant tendency to engage the circuit ter-

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minals on the iron, and connections for se-
curing the casing to the holding means for the
handle of the iron, including a bolt entering
the casing and extending through the handle
5 support to clamp the casing to the handle
support or to release it therefrom.
In testimony, that I claim the foregoing as

my own, I have hereto affixed my signature
in the presence of two witnesses.

JOHN C. GRIESEL.

Witnesses:

WILLIAM H. ENT,
F. S. FREILER.