April 21, 1925. 1,534,542

A. E. REIMERS ET AL.

ELECTRICALLY HEATED SADIRON

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Fig. 1.

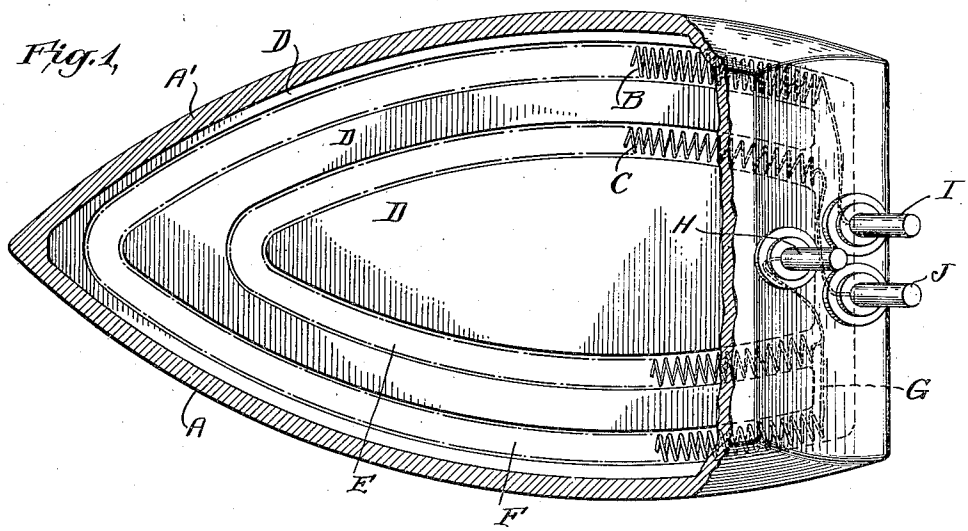


Fig. 2.

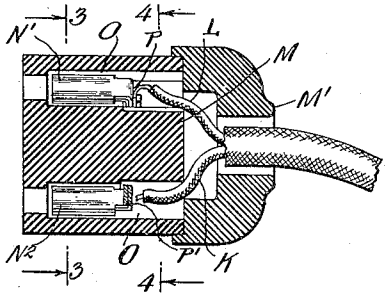


Fig. 9.

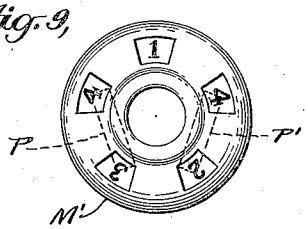


Fig. 4.

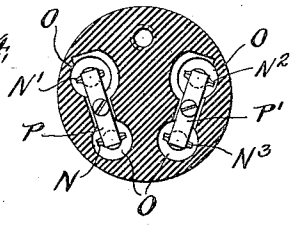


Fig. 3.

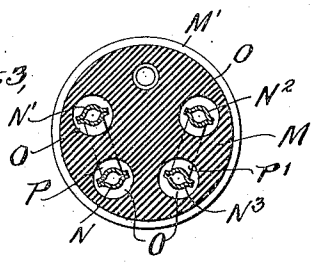
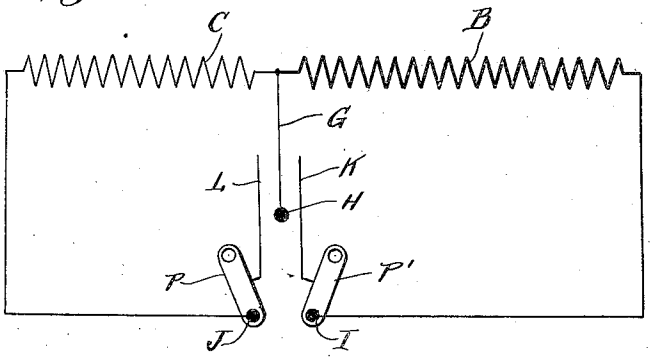


Fig. 5.



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ELECTRICALLY HEATED SADIRON

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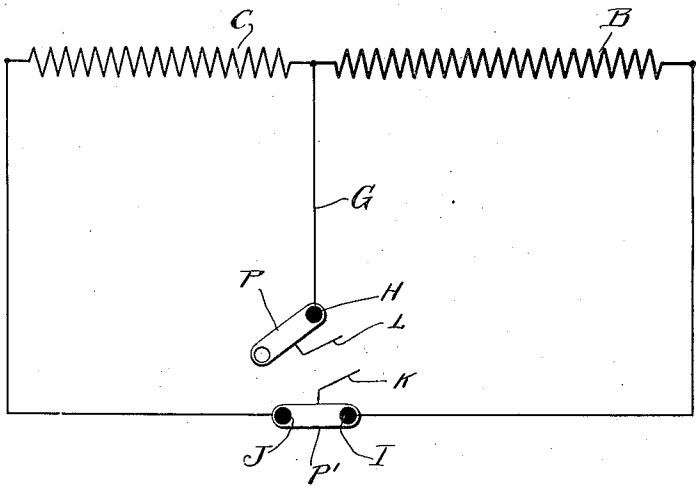


Fig. 6,

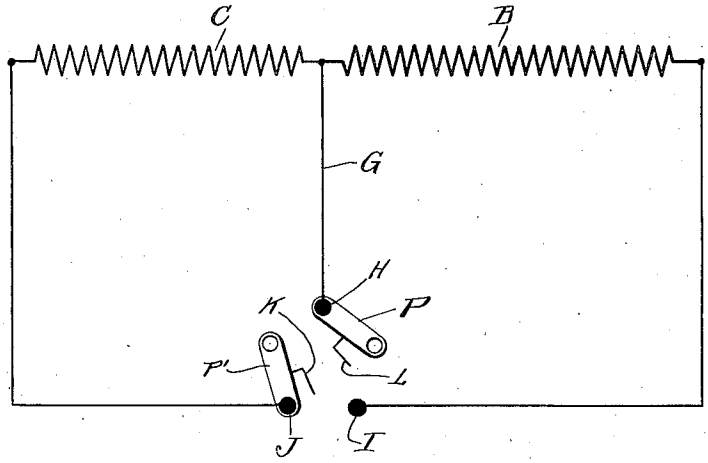


Fig. 7,

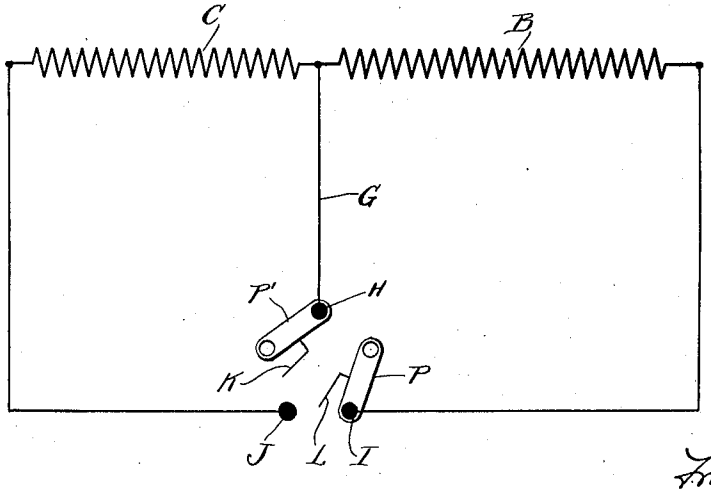


Fig. 8,

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Patented Apr. 21, 1925. 1,534,542

UNITED STATES PATENT OFFICE.

ALFRED E. REIMERS, OF NEW YORK, N. Y., AND CHARLES C. WAITE, OF ROSELLE PARK, NEW JERSEY.

ELECTRICALLY-HEATED SADIRON.

Application filed October 11, 1920. Serial No. 416,087.

To all whom it may concern:

Be it known that ALFRED E. REIMERS and CHARLES C. WAITE, citizens of the United States, and residents of the city of New York and Roselle Park, in the county of New York and in the county of Union and States of New York and New Jersey, respectively, have invented certain new and useful Improvements in Electrically-Heated Sadirons, of which the following is a specification.

Our invention relates to electrically heated sad irons and the object of our invention is to provide a sad iron which may be heated to different degrees of temperature and also in which certain parts of the iron may be heated to a higher temperature than other parts thereof.

A further object is to provide simple and durable means for directing the current from the main line or conductor to the selected circuit or circuits comprising the heating coils or elements located in the body of the iron.

A further object is to provide an iron having conduits formed therein to hold the heating elements and leading therethrough in such manner as to permit the front or small end of the iron as well as the edge portions adjacent the sides of the iron to be heated in a given period of time to a higher temperature than that of the middle area.

Referring to the drawings which form a part of this specification,

Fig. 1 is an illustrational plan view of a sad iron showing the conduits and heating elements located in the base or body portion, and the cover shown partly in section mounted thereon.

Fig. 2 is a longitudinal sectional view of an improved coupling or switch by means of which the electricity is conducted from the main line to the selected circuits through the heating elements in the iron;

Fig. 3 is a cross-sectional view of the coupling taken on line 3—3 of Fig. 2;

Fig. 4 is a cross-sectional view taken on line 4—4 of Fig. 2;

Fig. 5 is a diagrammatic view showing the heating elements connected in series;

Fig. 6 is a diagrammatic view showing the heating elements connected in multiple;

Fig. 7 is a diagrammatic view showing the lesser heating elements connected in circuits;

Fig. 8 is a diagrammatic view showing the greater heating elements connected in circuit; and

Fig. 9 is a plan view of the coupling switch with the numerals thereon which indicate the position in which the coupling must be placed on the iron to couple the selected heating elements or elements in circuit.

A indicates the body of a sad iron in which is formed two separate conduits or conduits B and C respectively formed in plastic insulating material D located within the body portion as illustrated. A′ indicates the cover portion. Located in each of these conduits is an electrical heating element, preferably formed in the shape of a helical coil to provide a large heating surface and resistance. These heating elements are indicated by E and F respectively, the element E being the lesser and element F the greater in heat capacity. In the present case element E is designed to work at 100 volts and use 225 watts and element F is designed to use 450 watts of electricity.

Since the front end A′ and outer edges of the iron come in contact with the moist surface of the material to be ironed first, we have provided a heating element of greater capacity for the edge portion of the iron than at the middle portion thereof, and since the front end of the iron is narrower than the back end thereof, it presents less radiating surface and therefore becomes more highly heated than the back end. By arranging the coils as illustrated this desired end is attained.

One end of each of the coils E and F are connected together by a leading conductor G of greater capacity than that of the heating elements, and this conductor is connected to the coupling-pin H. The greater heating element F is connected to the coupling-pin I and the lesser heating element is connected to the coupling-pin J. K indicates the positive pole and L the negative side of the line.

The coupling-pins H, I and J are located on a circle, I and J being 72 degrees apart from centre to centre and H being spaced 144 degrees from J measured from their nearest positions respectively. The coupling M is provided with corresponding conduits spaced 72 degrees apart and located on a circle of the same diameter, and

indicated by O, O, O, O respectively, and in these conduits are contact plates indicated by N, N′, N², and N³ which are bifurcated and formed to fit snugly over the coupling-pins H, I and J as will be readily understood. Two of these contact plates N and N′ are connected together by cross-piece P and contact plates N² and N³ are connected together by a cross-piece P′, and the leading wires K and L are connected to these cross-pieces as indicated. The cap M′ of the coupling switch M is provided with figures 1, 2, 3, 4, 4 respectively spaced apart from each other on a circle corresponding to conduits in the coupling and these figures are used to indicate the respective circuit connected by the coupling. When the coupling is placed on the coupling-pins so that figure 1 is over coupling-pin H, the circuit is closed as illustrated in Fig. 5 of the drawings, showing the heating elements connected in series.

When the figure 2 on the cap is placed over coupling-pin H the circuit is closed as illustrated in Fig. 8 of the drawings, showing the heating element B only in closed circuits.

When figure 3 is over coupling-pin H the heating element C only is in closed circuit.

When figure 4 is over the coupling pin H the heating elements B and C are connected as illustrated in Figure 6 of the drawings.

By the arrangement of the circuits and elements of construction as disclosed herein it is obvious that the iron may be heated to the temperature required for ironing different kinds of material and a change from one circuit to another may be effected in a simple way easy for a person unskilled in the use of tools to adjust and use in a practical manner.

The shape of the conduits B and C has been found in practice to be excellent for the purpose designed and by locating the greater heating element outside of and adjacent the edge of the iron has demonstrated the superiority of this arrangement over irons heretofore made in so far as we are informed.

Having thus described our invention, we claim as new:—

1. An electrically heated sad iron having three coupling-pins located at the apices of an isosceles triangle, two heating elements of different heating capacity located in said iron, the element of greater heating capacity being located close to the side of the iron, the element of lesser heating capacity being located nearer to the middle of the iron than is the element of the greater heating capacity, the ends of the elements being connected with the pins, and a coupling-switch adapted to contact with said coupling pins and connect said heating elements in predetermined relation, said switch having four contact terminals two of which are connected together to form one pole and the other two connected together to form the opposite pole of an electric circuit.

2. In an electrically heated sad iron having coupling-pins thereon, the combination of two heating elements, one of which is of greater heating capacity than the other and located within said iron adjacent to the outer edge and toe of the iron, the ends of said elements connecting with said pins, and a coupling-switch to contact with said coupling-pins for selectively connecting in circuit said heating elements in combination or each individually and independently of the other.

3. In an electrically heated sad iron having coupling-pins thereon, the combination, of two heating elements located in said iron and disposed in a manner substantially parallel to the sides of the iron, the ends of said elements connecting with said pins, and a coupling switch to contact with said coupling-pins for connecting in circuit said heating elements in combination or each individually and independently of the other, said switch provided with markings for properly determining each selected circuit.

4. In an electrically heated sad iron having coupling-pins thereon, the combination of an inner and an outer heating element within said iron, the ends of said heating elements connected with said pins and a coupling switch to contact with said coupling-pins for selectively connecting in circuit said heating elements, in combination or each individually and independently of the other.

5. In an electrically heated sad iron having a plurality of coupling-pins thereon, the combination of two heating elements within said iron, one of which is of greater heating capacity than the other and located nearer the sides of the iron and running substantially parallel thereto, the ends of said element connecting with said pins, and a coupling-switch to contact with said coupling-pins for selectively connecting in circuit said heating elements in combination, or each individually and independently of the other, said switch controlling the heat to a greater or lesser degree of heat when operated in combination.

6. An electrically heated sad iron having three coupling-pins thereon, two heating elements located in said iron extending substantially parallel to each other, the ends of which connect with said pins, and a coupling-switch adapted to contact with said coupling-pins and connect said heating elements in predetermined relation, said switch having four contact terminals two of which are connected together to form one pole and the other two connected together to form the opposite pole of an electric circuit.

7. An electrically heated sad iron having two heating elements located in said iron

and a coupling switch adapted to be connected with said heating elements whereby either may be operated separately or both together, said switch having four contact terminals two of which are connected together to form one pole and the other two connected together to form the opposite pole of an electric circuit.

8. In combination with an electric sad iron having two heating elements of different heating capacity of a coupling switch for selectively connecting the heaters in circuit in combination or individually and independently of the other to give four different degrees of heat.

9. In combination with an electric sad iron having two heating elements of different heating capacity of a coupling switch for selectively connecting the heaters in circuit in combination or individually and independently of the other to give four different degrees of heat, said switch provided with markings to properly determine each selected circuit.

Signed at Roselle Park, in the county of Union and State of New Jersey, this thirtieth day of September A. D. 1920.

CHARLES C. WAITE.

Witness:

W. S. HULICK.

Signed at New York city, in the county of New York and State of New York this 4th day of October A. D. 1920.

ALFRED E. REIMERS.

Witness:

FRANK M. ASHLEY.