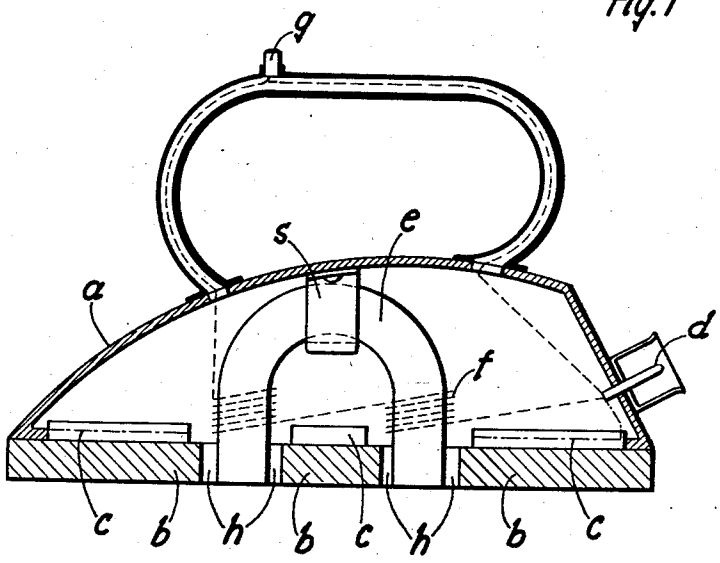
July 5, 1938. C. MULLER 2,122,694

ELECTRIC IRON

Filed Sept. 7, 1937

Fig. 1



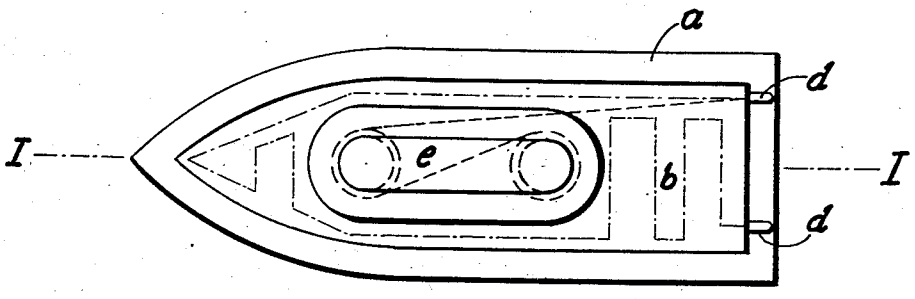


Fig. 2

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ELECTRIC IRON

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Application September 7, 1937, Serial No. 162,688
In Germany November 25, 1935

3 Claims. (Cl. 219—25)

The present invention relates to an electrically heated flatiron with electromagnetically produced pressing force, in which the heating device and the magnet device for producing the pressing force are separated from each other spacially and electrically and the poles of the electromagnet project through the bottom plate of the iron.

In the known electric flatirons having electromagnetic accessories for producing the pressing force, the electromagnetic devices are in part united with the heating device. In one case, for example, the magnet winding is identical with the heating coil, while in other cases the magnet cores serve at the same time as heat transmitting means for the iron. Such a consolidation has important disadvantages. For instance, for a magnet coil the windings should be insulated, there should be a large number of coils, and the wire should be fine, whereas for a heating coil insulation is dispensed with in order to improve the heating effect and a coarse winding is required. Likewise it is disadvantageous to use the magnet core as a body for transmitting the heat, because the permeability of the iron decreases with rising temperature. Besides, the resistance increases with temperature, so that by combining the heating coil and the magnet coil for producing the magnetic action, the effectiveness of the magnet is reduced.

It is known already to separate spacially and electrically the heating device and the magnet device for producing the pressing force, but the arrangements of this kind were not a satisfactory solution of the problem of making a full use of the magnetic force and preventing of an unfavorable action of the heating device on the magnet device. In one known device the poles of the magnet do not extend through the bottom plate to the surface on which the iron rests, so that stray flux passes through the bottom plate of the iron, and the heating device is located between the magnet poles, so that only a slight heating action is achieved. In another known device the core and coil of the magnet device are subjected directly to the action of the heating body by conduction and radiation.

According to the invention a complete separation and prevention of all disturbing reciprocal influences between the electromagnetic device and the heating device are accomplished by extending the poles of the electromagnet through the bottom plate of the iron, down to the surface on which the iron rests, and by providing an air gap between the poles and the bottom plate. Preferably the magnetic winding and the heating coil are connected in parallel and there is provided in the handle of the iron a switch for cutting out only the magnet winding.

The invention is illustrated by an example shown in the drawing, wherein

Fig. 1 is a longitudinal vertical section through the iron on the line I—I of Fig. 2, and

Fig. 2 is a somewhat diagrammatic plan view of the iron shown in Fig. 1.

A flatiron *a* of any desired shape has a divided bottom plate *b*, upon which heating elements *c* are mounted in known manner. The heating of these elements is provided for by electrical connection with a socket *d*. In the flatiron is an electromagnet *e* mounted upon a support *s*, the windings *f* of which magnet are connected to the socket *d* in parallel with the heating elements. A switch button *g* of any desired kind is provided in the magnet circuit for cutting the magnet in and out of operation at will. The switch *g* can be so constructed, for example as a rheostat, that it also serves to regulate the magnetic excitation. In order to prevent the magnetic lines of force from passing from the magnet poles through the bottom plate *b*, the magnet poles can be spaced from the bottom plate *b*, as indicated by the free spaces *h* in the drawing; or the plate *b* can be made of a material of low magnetic permeability. The top of the ironing board must be a polished iron plate covered with cloth.

Since the pressing force is created by the electromagnet, there can be used for the construction of the iron a material of lower specific gravity than that heretofore required for producing a sufficient pressure.

I claim:—

1. In an electric iron, a bottom plate, an electric heating element mounted on said bottom plate, an electromagnet mounted in said iron comprising a core and a winding distinct from said heating element, the poles of said core extending through said bottom plate so that their ends are flush with the lower face of said bottom plate, said bottom plate being spaced sufficiently from said poles to ensure magnetic and thermic insulation of said poles.

2. In an electric iron, a bottom plate, an electric heating element mounted on said bottom plate, an electromagnet mounted in said iron comprising a core and a winding distinct from said heating element, said bottom plate having apertures of larger cross section than said core and the po'es of said core projecting through said apertures with an air gap between and terminating flush with the lower face of said bottom

plate, said air gap ensuring magnetic and thermic insulation of said poles.

3. In an electric iron, a bottom plate, an electric heating element mounted on said bottom plate, an electromagnet mounted in said iron comprising a core and a winding distinct from said heating element, said bottom plate having apertures therein with the poles of said core extending through the apertures of said bottom plate so that their ends are flush with the lower face of said bottom plate, and so that the apertures insulate said poles from said bottom plate magnetically and thermally, a socket on said iron, means connecting said heating coil and the winding of said electromagnet in parallel to said socket, a handle for said iron, a switch device for controlling the circuit of said electromagnet, said switch being constructed as a button in the uppermost point of said handle.

CURT MÜLLER.