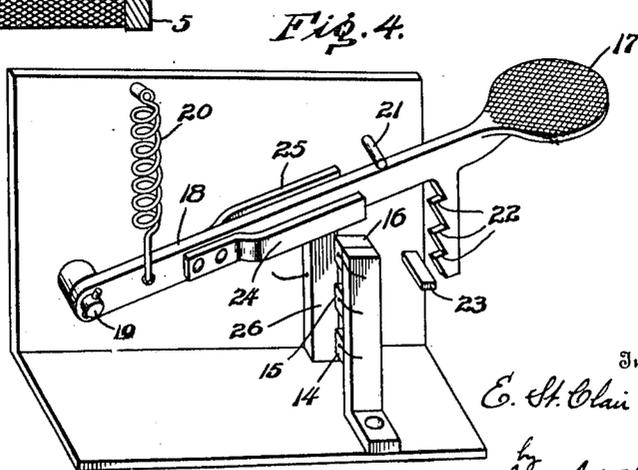
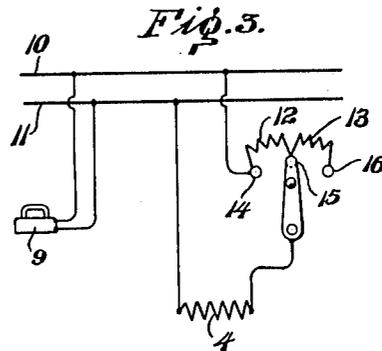
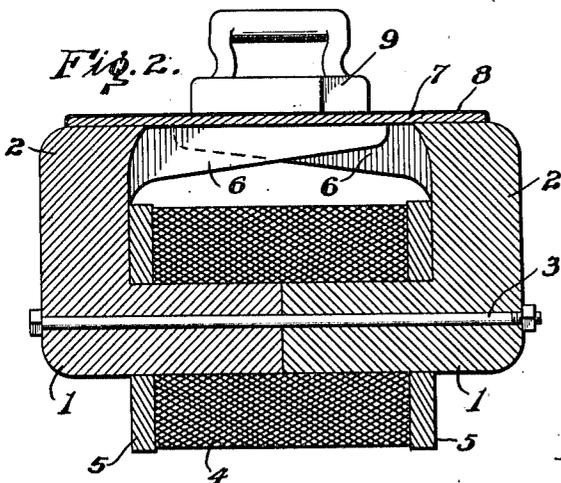
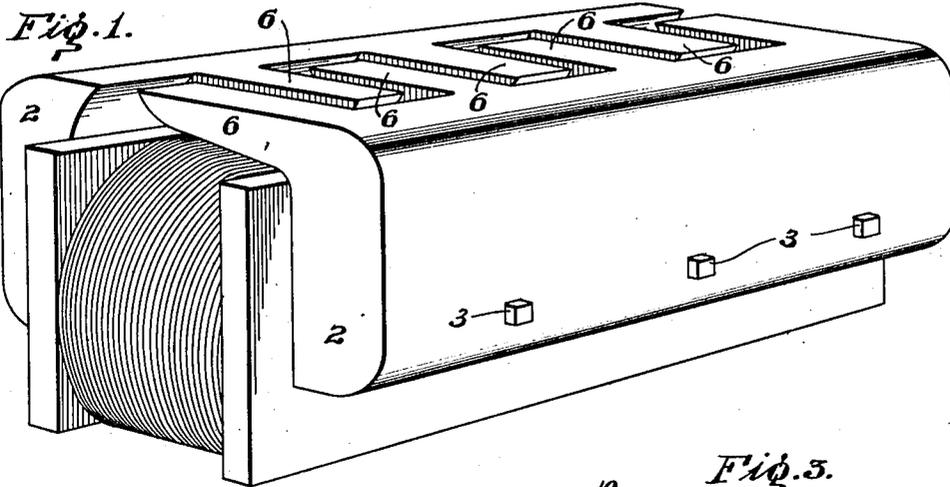


E. ST. C. CLAYTON.  
 ELECTROMAGNETIC IRONING BOARD.  
 APPLICATION FILED AUG. 8, 1907.

949,351.

Patented Feb. 15, 1910.



Witnesses

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 His Attorney

# UNITED STATES PATENT OFFICE.

EDWARD ST. CLAIR CLAYTON, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF  
TO H. M. COSH, OF BALTIMORE, MARYLAND.

ELECTROMAGNETIC IRONING-BOARD.

949,351.

Specification of Letters Patent.

Patented Feb. 15, 1910..

Application filed August 8, 1907. Serial No. 387,677.

To all whom it may concern:

Be it known that I, EDWARD ST. CLAIR CLAYTON, a citizen of the United States, residing at Baltimore, State of Maryland, have invented certain new and useful Improvements in Electromagnetic Ironing-Boards, of which the following is a specification.

My invention relates to ironing boards or kindred devices, and particularly to means for producing a magnetic field beneath or about the ironing board surface to act upon the smoothing iron, goose, etc., to cause a pull or attractive force to be exerted upon the smoothing iron or goose resulting in a greater pressure upon the cloth or other material under treatment.

It is the object of my invention to derive sufficient pressure upon the work even when a small or light weight iron is employed, and to enable heavy and light ironing to be done with one and the same iron.

It is a further object to permit the operator to use a light iron to relieve him from the necessity of lifting a heavy iron, thus permitting him to perform his work more easily or to perform more work with the same effort.

It is the further object of my invention to vary the degrees of pressure to be exerted by the iron upon the work, and to cause these variations instantaneously at the will of the operator and without increased physical effort on his part.

My invention resides also in other features hereinafter described and claimed.

For an illustration of one of the forms my invention may take reference is to be had to the accompanying drawing, in which:

Figure 1 is a perspective view of a magnet system adapted to be disposed beneath a board or smoothing surface. Fig. 2 is a cross sectional view of the magnet system and board or smoothing surface, the pole pieces and the smoothing iron being shown in elevation. Fig. 3 is a diagrammatic view illustrating the circuit connections of the apparatus. Fig. 4 is a perspective view illustrating a foot control switch.

Referring to Figs. 1 and 2, 1, 1 are masses of iron, steel, or other suitable magnetizable material forming the cores of the electromagnet 2. The cores 1, 1 are secured together by bolts 3. The magnetizing coil or winding 4 is wound upon a suitable frame 5 and surrounds the cores 1, 1. Interleaved

pole pieces 6, 6 are formed integral with or secured to the magnetic masses 2, 2. These poles 6 interleave when the parts are assembled forming a series of adjacent poles of opposite polarity and magnets of high density. The cores 1, 1 and masses 2, 2 are made relatively large, while the pole pieces 6, 6 are made relatively small, thus causing magnetization at high density in the pole pieces 6 and working them nearly to saturation. The air gap between adjacent poles 6, 6 is so designed and proportioned, that the magnetic lines of force issuing from the poles 6, 6 radiate and extend upwardly through the board or member 7 and through the mat or cloth covering 8, through the iron, steel, or other magnetizable material of the sad iron or smoothing iron 9. The board 7 and the mat 8 are of non-magnetic material, the former may be of wood, fiber, or some non-magnetic metal, while the mat 8 is customarily of cloth or other suitable material. These lines of force extending into and through the smoothing iron 9 attract said iron 9 forcibly on to the mat 8, thus increasing the pressure upon the cloth or other material being pressed or ironed. This attractive force enables one to secure sufficient pressure on the work even with a light weight iron.

The poles 6, 6 and the intervening air gap are preferably designed that the iron 9 will always extend over more than one pole. The poles 6 are preferably made quite numerous and practically evenly distributed beneath the smoothing surface of the board, so that the magnetic attraction will not noticeably vary at different points on the surface.

The construction of pole pieces and magnet shown affords the shortest path for the magnetic lines, thus minimizing magnetic leakage.

The cores 1, 1, masses 2, 2 and poles 6, 6 may be made of cast metal molded of soft steel or gray iron and joined together by the bolts as described. It is to be understood, however, that laminated iron construction may be employed, particularly where alternating current is employed in the magnetizing coil 4. But even when the alternating current is employed the solid construction of Figs. 1 and 2 may be employed, the resulting heat being rather an advantage than a disadvantage in heating the board 7 and mat 8.

The winding 4 may perform a heating function beside that of producing magnetism in which case the conductor may be of such material and of such cross section with respect to the current to be used that it will generate considerable heat which should be communicated by conduction to the poles 6, 6 and thence to the smoothing surface.

Referring to Fig. 3, 10 and 11 show the supply conductors of an electric circuit across which is connected the heating coil of the iron 9. Obviously, however, the iron 9 need not be electrically heated. The coil 4 is connected in series between the conductors 10 and 11 through the resistance coils 12 and 13 connected to the contacts 14, 15, 16. By cutting in or out these coils, or more of them if desired, the number of ampere turns produced by the winding 4 may be varied at the will of the operator and thus vary the pressures exerted by the iron 9 upon the work. For this purpose, a foot switch may be employed, one form of which is seen in Fig. 4. 17 is a foot treadle at the end of the lever 18, pivoted at 19 and capable of slight lateral motion on said pivot 19. A spring 20 serves to keep the lever 18 raised against the stop 21. Teeth or notches 22 are formed on an extension from the lever 18 and are adapted to engage the stud 23. A slight outward movement serves to free the teeth from the stud 23 and the lever 18 may be moved upwardly or downwardly. These teeth serve to hold the lever 18 in different positions. Carried by, but insulated from the lever 18, are the two flexible or resilient contacts 24 and 25 electrically connected together. 25 serves to make contact with the long or continuous contact 26 while the contact 24 serves to engage the separated contacts 14, 15, 16 between which are connected the coils 12 and 13 as shown in Fig. 3. In the position shown in Fig. 4, the circuit is open. To give the first degree of pressure, the operator presses the treadle 17 and notches the first tooth under the stud 23, in which case the contact 16 is placed into communication with the continuous contact 26, thus causing current to flow through both resistances 12 and 13 and the winding 4. By pushing the treadle down to the next notch, the resistance 13 is cut out and the iron is attracted with still greater force. By catching the last notch under the stud 23, the resistance 12 is cut out of circuit and the iron is attracted with the greatest force.

By the apparatus heretofore described, it is obvious that with a light iron considerable pressure may be exerted upon the material under treatment and that the amount of pressure may be varied at the will of the

operator and practically instantaneously; and that less physical effort will be required on the part of the operator to attain the result that has been accomplished heretofore by heavier irons acted upon only by gravity.

What I claim is:

1. An ironing board magnet comprising a core or cores, and a plurality of interleaving poles, the pole faces being located in substantially the same plane.

2. In combination, an ironing board, an iron adapted to cooperate therewith, a plurality of interleaving magnetic poles associated with said board and projecting a field into the region of the smoothing surface of said board, said poles being of such size and so disposed that said iron always covers more than one pole.

3. In combination, an ironing board, an electro-magnet having interleaving poles associated therewith and extending its field into the region of the smoothing surface of said board, and an iron electrically heated by current derived from said circuit and adapted to be employed in said field.

4. In combination, an ironing board, an associated electro-magnet having a plurality of interleaving poles associated with the magnet core, the poles having faces disposed in substantially the same plane, said poles extending their field into the region of the smoothing surface of said board, and a smoothing iron adapted to bridge more than one of said interleaving poles.

5. In combination, an ironing board, and a magnet disposed beneath said board and having its poles covered by said board, said magnet having interleaving poles whose field extends into the region of the smoothing surface of said board.

6. In combination, an ironing board, and a magnet disposed beneath said board and having its poles covered by said board, said magnet having interleaving poles whose field extends into the region of the smoothing surface of said board, said board being of non-magnetic material.

7. In combination, an ironing board, a magnet disposed beneath said board and having its poles covered by said board, said magnet having interleaving poles whose field extends into the region of the smoothing surface of said board, said board being of non-magnetic material, and a non-magnetic mat upon said board.

In testimony whereof I have hereunto affixed my signature in the presence of the two subscribing witnesses.

E. ST. CLAIR CLAYTON.

Witnesses:

M. A. DOHONY,  
JOHN C. ROTH.