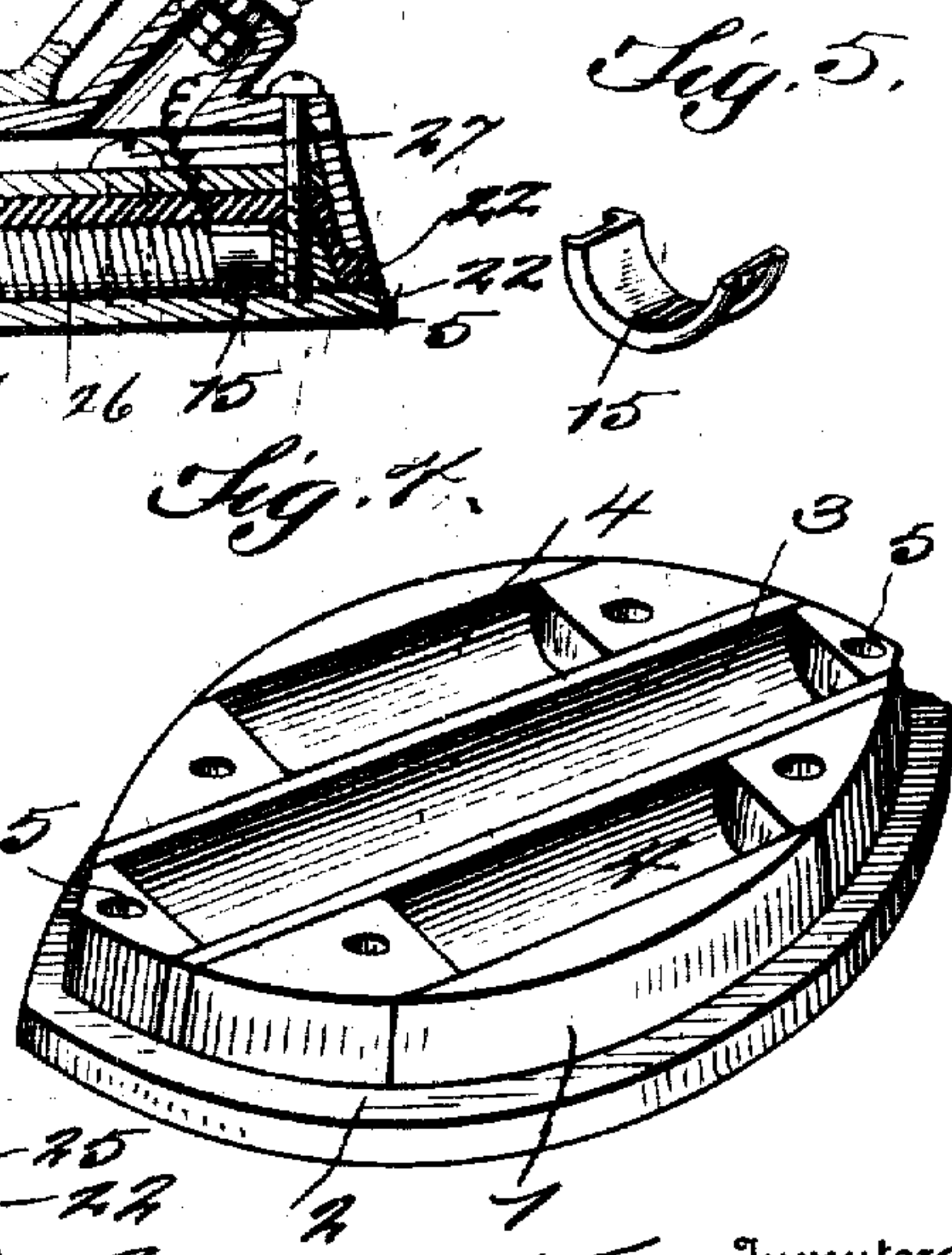
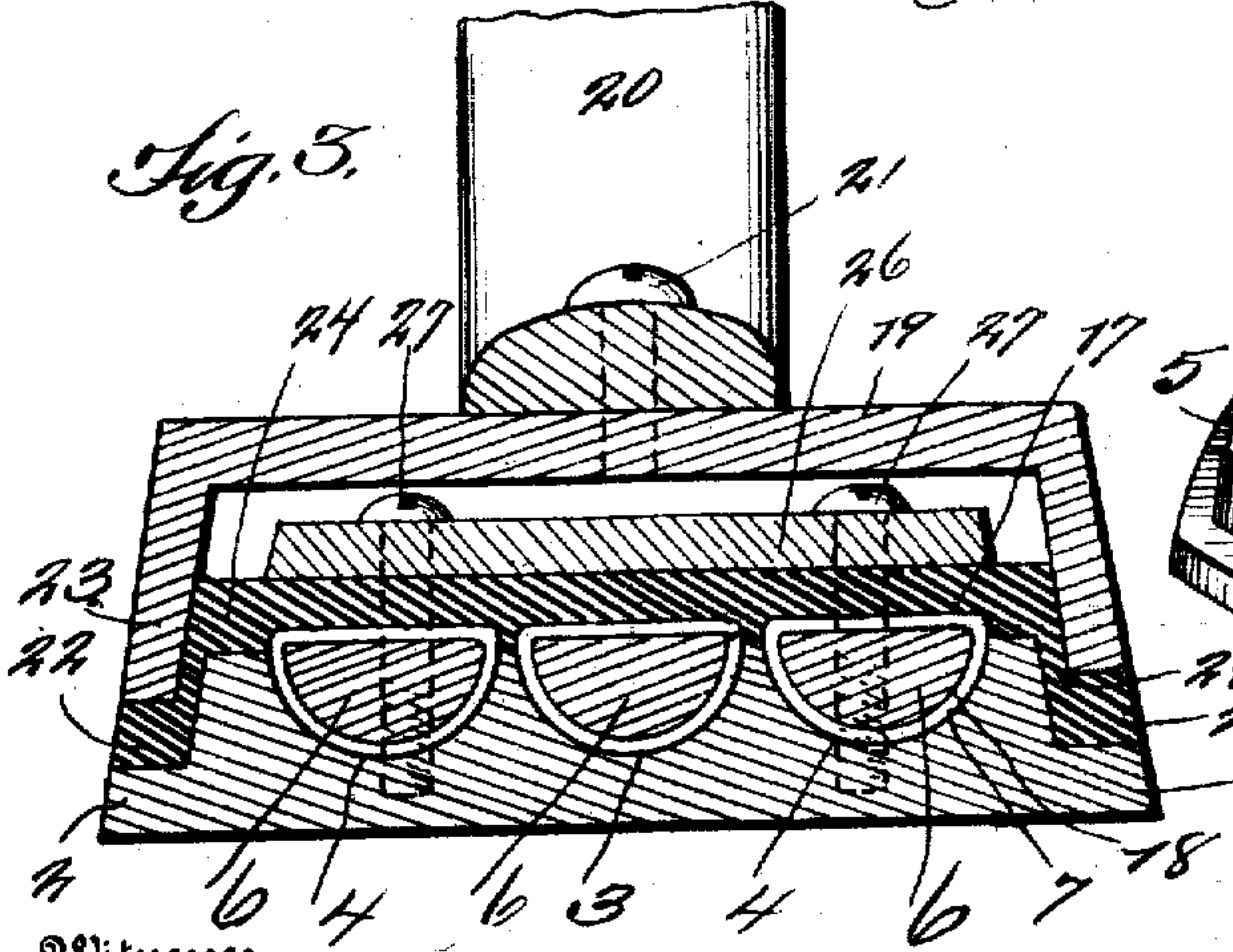
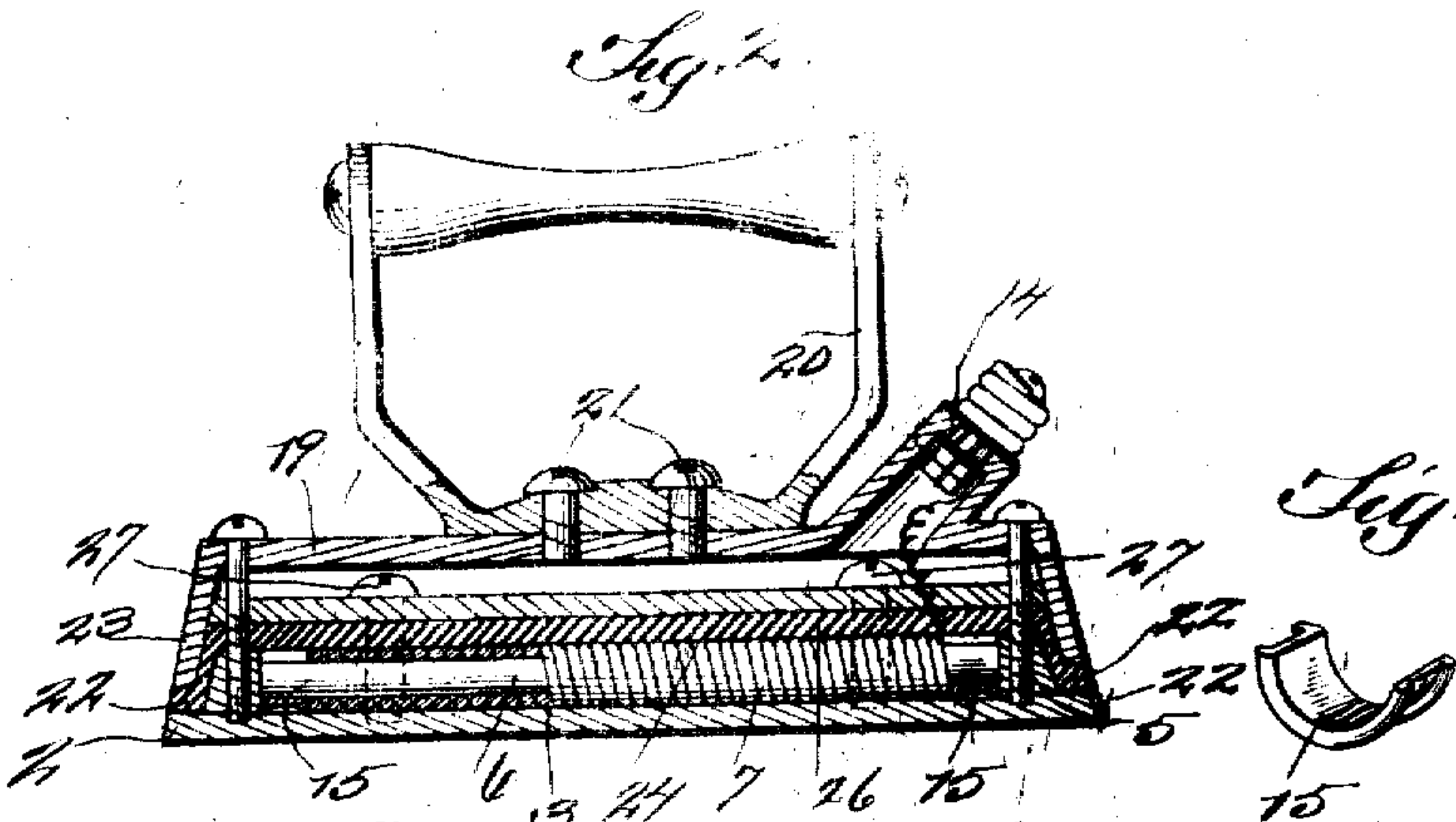
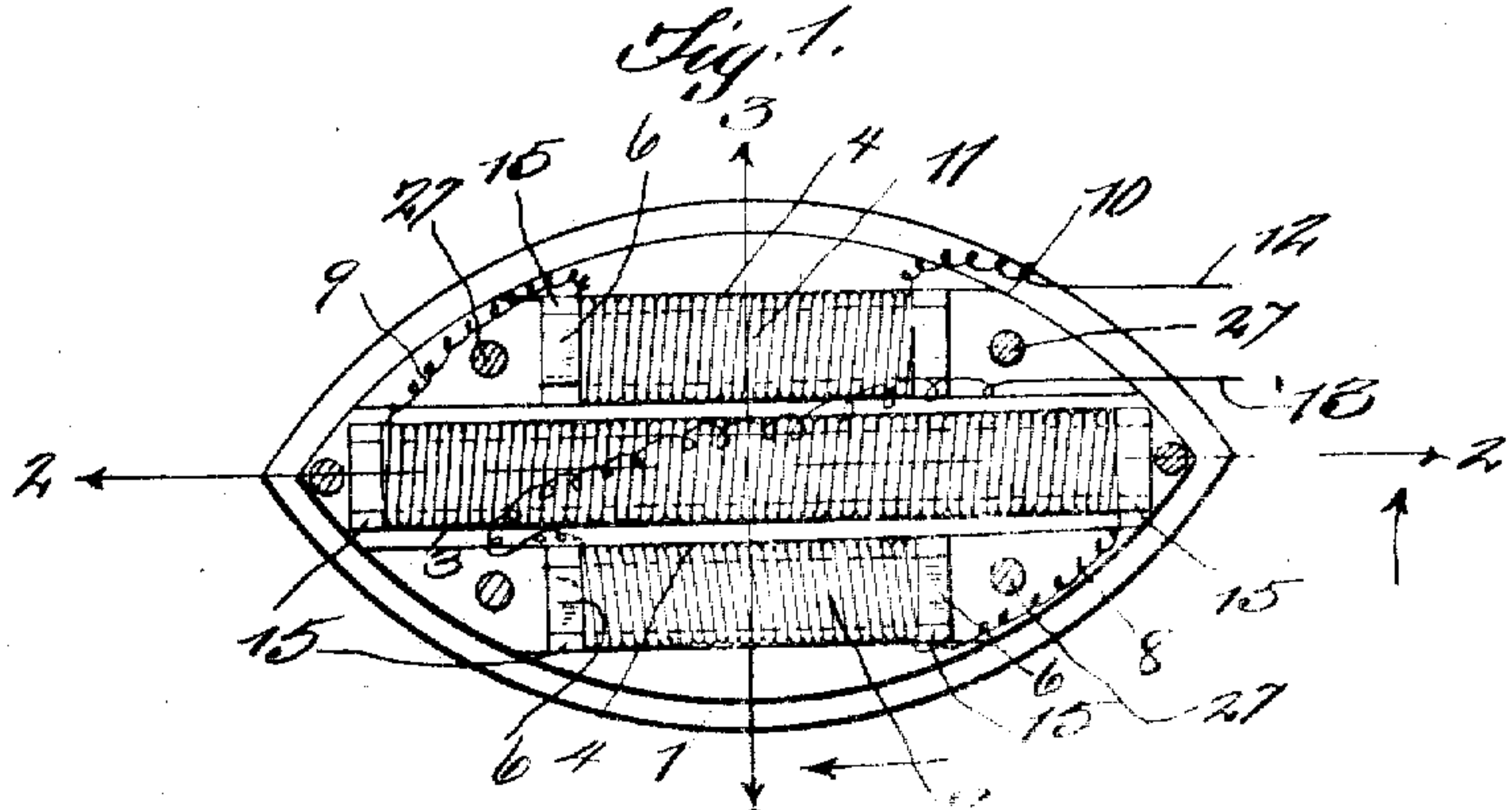


G. W. CARPENTER, J. RASMUSSEN & F. B. McCROSKY.  
ELECTRIC HEATER.

APPLICATION FILED APR. 16, 1908.

Patented Apr. 6, 1909

916,994.



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# UNITED STATES PATENT OFFICE.

GEORGE W. CARPENTER, JOHN RASMUSSEN, AND FREDERICK B. McCROSKY, OF ONTARIO,  
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## ELECTRIC HEATER.

No. 916,994.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed April 16, 1908. Serial No. 427,496.

*To all whom it may concern:*

Be it known that we, GEORGE W. CARPENTER, JOHN RASMUSSEN, and FREDERICK B. McCROSKY, citizens of the United States of America, and residents of Ontario, in the county of San Bernardino and State of California, have invented certain new and useful Improvements in Electric Heaters, of which the following is a specification.

10 This invention relates to certain new and useful improvements in electric heaters, and while in the present instance the invention is shown as applied to an electrically heated  
15 sad iron it is to be understood that the application is not to be so restricted but that its usefulness extends to stoves or heaters of any or all kinds in which the source of heat is electricity augmented by cores shaped and placed substantially as hereinafter set forth.  
20 The invention has for its objects among others to provide a simple and efficient heater having the cores so shaped and disposed as to give the greatest possible contact between the resistance wire and the bottom plate,  
25 giving perfect contact which is maintained by pressure of a lid upon an asbestos or analogous plate or layer upon the top of the cores. By our construction the heat is confined nearer the bottom of the under plate  
30 where it is manifestly required. The construction is such that the expansion of the cores caused by the heating of the wires increases the contact of the wire and the surface of the walls of the grooves in which the  
35 same is placed; at the same time longitudinal movement of the cores caused by expansion is unrestricted. When applied to a sad iron, particularly one that is double-ended, three  
40 cores are employed which are so disposed as to distribute the heat more evenly over the under surface of the iron and nearer the points, also permitting the use of larger wire,  
45 wound coarser thereby obviating the hitherto common trouble of the current jumping across intervening spaces and causing the wire to burn out. At the end of the cores we  
50 employ metallic clips from the former to the body of such iron. We introduce the electric current into the wire on the cores by means of an ordinary porcelain socket plug  
55 firmly attached to the lid of the iron. This plug is of standard size and we are thus enabled to attach our iron or heater to any lamp cord by simply removing the lamp  
bulb from the socket and screwing the lamp

socket on said porcelain plug. By this means we are enabled to control the heat of the iron by means of the switch in the socket without disconnecting the cord or removing any plug.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the 60 accompanying drawings which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a top plan of our improved double-ended iron with the lid removed. 70 Fig. 2 is a longitudinal vertical section on the line 2—2 of Fig. 1. Fig. 3 is a vertical cross section on the line 3—3 of Fig. 1. Fig. 4 is a perspective view of the body portion of the iron showing its grooves. Fig. 5 is a per- 75 spective view of one of the clips removed.

Like numerals of reference indicate like parts throughout the several views.

Referring to the drawings 1 designates the body of the iron having the surrounding 80 flange 2 at its lower portion and upon its upper face formed with parallel depressions or grooves 3 and 4, as seen best in Fig. 4. These grooves or depressions are machined in the top surface of the body portion and 85 are substantially semicircular in form so as to give perfect contact with the cores which they are adapted to receive. At opposite ends the body portion is formed with the screw-threaded openings 5 for the reception 90 of the screws which retain the lid in place. In these grooves or depressions are designed to be received the cores. The latter are designed to make perfect contact in these grooves or depressions and each core com- 95 prises a metallic body 6 of brass or other suitable material around which is wound the wire 7. Each of these cores is substantially D-shaped or semicircular in cross section, as seen best in Fig. 3, being arranged with their 100 flat faces uppermost so as to give greatest possible contact between the resistance wire and the bottom plate without restricting necessary movement of the cores due to the expansion and contraction. Upon refer- 105 ence to Fig. 1 it will be noted that the central core extends from end to end of the body portion of the iron so as to distribute the heat to the points thereof, the other cores being disposed upon opposite sides of the 110



central core. These cores are properly connected up, as seen, by the wires 8, 9, 10 and 11 in Fig. 1, the terminals 12 and 13 being designed to be connected with the porcelain socket plug 14 of well known construction, the connection being made in the usual way.

15 are sheet metal clips conforming to the shape of the outside of the semi-circular half of the cores and of a thickness to correspond to the thickness of the wire and insulation. These clips form a close metallic connection between the core and the body of the iron to transmit the heat from the former to the latter. Suitable insulation 17 and 18 is employed upon opposite sides of the resistance wire of the coils.

19 is the lid. It is provided with suitable handle 20 secured thereto by suitable means as the screws 21. This lid carries the socket plug 14 just referred to which is designed for the attachment of the ordinary lamp socket with its switch so that the current may be readily applied and controlled.

Suitable insulation 22 is disposed between 25 the bottom face of the flange 23 of the lid and the flange 2 of the body portion, as seen best in Fig. 3, while suitable material, as for instance asbestos 24, is placed over the cores, and extends downwardly, as seen at 25, so as to thoroughly insulate the parts. Upon 30 the upper surface of this insulation 24 is a plate 26 held down by pressure through the medium of the screws 27, as seen best in Fig. 3. This pressure is applied to the upper 35 flat surfaces of the cores so as to force their lower rounded surfaces, which latter and their cooperating grooves may be of any shape having a curved or rounded form upon their under surfaces, into close contact 40 with the walls of the grooves, or depressions. This shape of groove and core gives the greatest possible contact between the resistance wire and the bottom plate through the inner walls of the grooves in the latter.

45 Modifications in details may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is:—

50 1. In an electric heater, a body portion having rounded grooves in its upper face, and cores disposed in said grooves, said cores having flat upper faces and rounded under surfaces conforming to the shape of the 55 grooves.

2. In an electric heater, a body portion having rounded grooves in its upper face, cores disposed in said grooves, said cores having flat upper faces and rounded under 60 surfaces conforming to the shape of the grooves, and insulation compressed against the upper flat faces of said cores.

3. In an electric heater, a body portion having rounded grooves, cores fitting said 65 grooves and having flat upper faces, and

metal clips conforming to the under faces of the bodies of the cores to form close contact between the same and the body of the heater.

4. In an electric heater, a body portion having rounded grooves, cores fitting said 70 grooves and having flat upper faces extended above the upper face of said body portion, metal clips independent of and conforming to the under faces of the bodies of the cores to form close contact between the 75 same and the body of the heater, insulation bearing on the upper faces of the cores, and means for applying pressure to said insulation.

5. In an electric heater, a body portion 80 having longitudinal grooves, cores seated in said grooves with flat upper faces extended above the top face of said body portion, a lid connected to said body, insulation bearing directly upon the winding of said cores, a 85 pressure plate upon said insulation and a socket plug mounted upon said lid and connected with the terminals of said cores.

6. In an electric heater, a body portion having rounded longitudinal grooves, cores 90 seated in said grooves and having flat upper faces extended above the top of said body portion, a lid connected to said body, a socket plug mounted upon said lid and connected with the terminals of said cores, and metal 95 clips independent of and conforming to the under surfaces of the cores and forming a close metallic connection between the body portions of the cores and the body of the iron. 100

7. In an electric heater, a double-ended body portion having a central groove in its upper face extended to the ends thereof and grooves upon opposite sides of said central groove, said grooves being substantially 10 semicircular in cross section, cores in said grooves having flat upper faces and rounded under surfaces, insulation upon the flat faces of the cores, means for applying pressure to said insulation, and a lid. 11

8. In an electric heater, a double-ended body portion having a central groove in its upper face extended to the ends thereof and grooves upon opposite sides of said central groove, said grooves being substantially 11 semicircular in cross section, cores in said grooves having flat upper faces and rounded under surfaces, insulation upon the flat faces of the cores, means for applying pressure to said insulation, a lid, and a socket plug on 12 said lid connected with the terminals of the wind of said cores.

9. In an electric heater, a double-ended body portion having a central groove in its upper face extended to the ends thereof and 13 grooves upon opposite sides of said central groove, said grooves being substantially semicircular in cross section, cores in said grooves having flat upper faces and rounded under surfaces, insulation upon the flat faces 14

of the cores, means for applying pressure to said insulation, a lid, a socket plug on said lid connected with the terminals of the wind of said cores, and metallic clips conforming  
5 to the shape of the under surfaces of the bodies of said cores and forming a close metallic connection between the same and the body of the iron.

10 In an electric heater, a body portion having a surrounding flange at its base and upon its upper face formed with parallel rounded grooves, the one at the center thereof extending substantially from point to

point, the portions of said body at the ends of the grooves being formed with openings, 15 and the whole adapted to serve in connection with removable cores and a lid and compression devices.

Signed by us at Ontario California this 8th day of April, 1908.

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