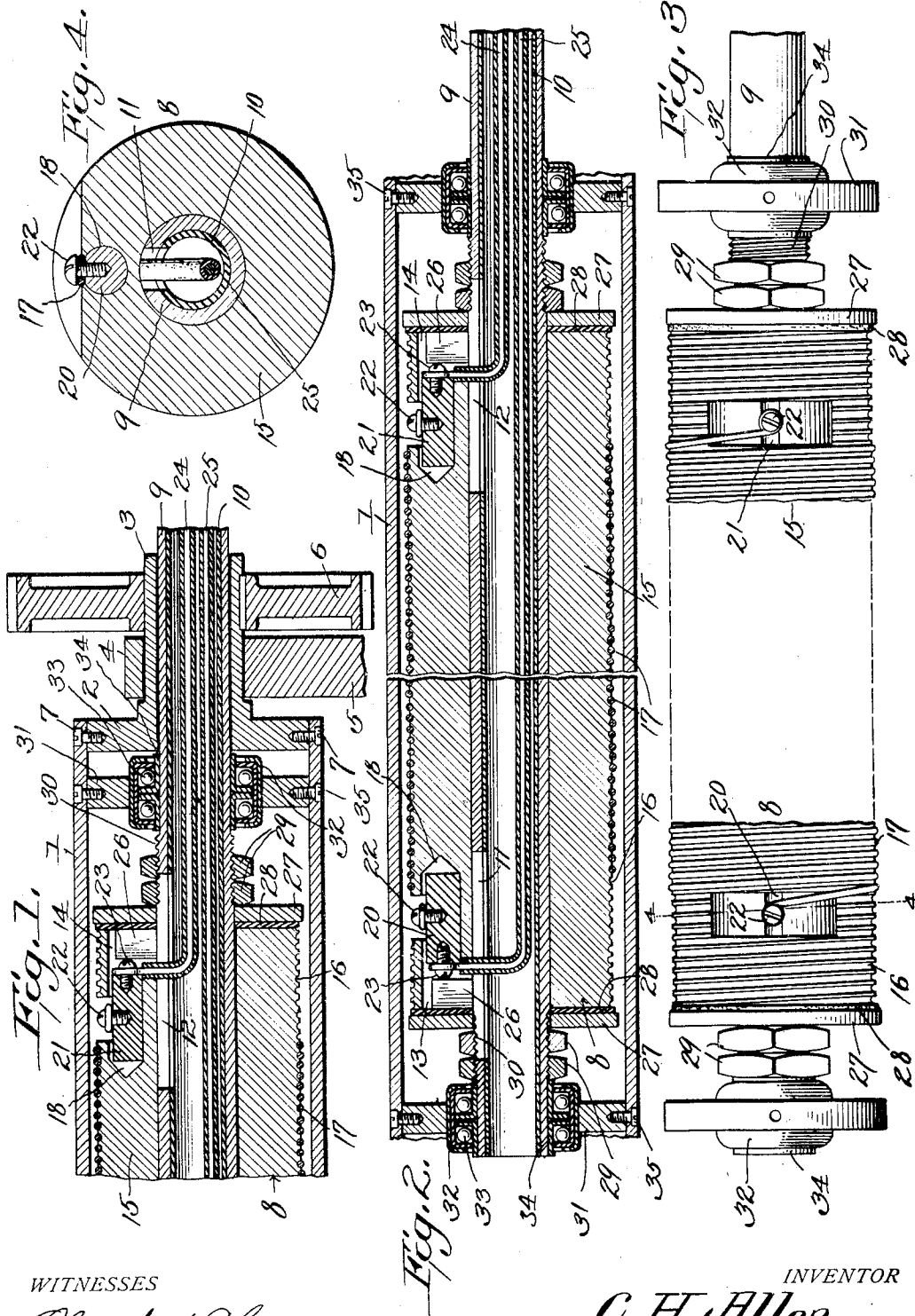


C. H. ALLEN.
ELECTRIC HEATER.

APPLICATION FILED MAY 26, 1911.

1,037,573.

Patented Sept. 3, 1912.



WITNESSES

Oliver W. Holmes
Paul Wright

INVENTOR

C. H. Allen
E. B. Stocking Attorney

UNITED STATES PATENT OFFICE.

CHARLES H. ALLEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO TROY LAUNDRY MACHINERY COMPANY, LIMITED, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW YORK.

ELECTRIC HEATER.

1,037,573.

Specification of Letters Patent.

Patented Sept. 3, 1912.

Application filed May 26, 1911. Serial No. 629,550.

To all whom it may concern:

Be it known that I, CHARLES H. ALLEN, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Electric Heaters, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to electric heaters, and more particularly to electric heaters adapted to be used in connection with laundry machinery and is herein shown installed within an ironing roll, the main object of the invention being to provide a heater which is so constructed that great heat will be produced with a comparative low voltage.

20 Another object of the invention is to provide a heater which is so constructed that the same can be stationarily mounted within a rotary ironing machine, thereby overcoming the difficulties now existing with electric heaters which have been heretofore used in connection with ironing machines.

30 A further object of the invention is to provide an electric heater having a body formed of soap-stone or any other suitable insulating material, in the periphery of which is embedded a heating coil which, when thrown into the circuit of a current, will heat the entire length of the body to a uniform temperature in order to thoroughly heat the ironing roll in which the heater is placed.

40 A still further object of the invention is to provide novel means for securing the lead and return wires to the heater proper whereby the heating coil will be in direct circuit with the source of supply.

45 Another object of the invention is to provide novel means for centering and holding the heater within the ironing roll whereby the roll will rotate freely around the heater upon suitable bearings.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

50 In the drawings—Figure 1 is a longitudinal section through the end portion of an ironing roll showing the application of my improved heater thereto; Fig. 2 is a

longitudinal vertical section through the ironing roll and heater, the end portions of the roll being broken away; Fig. 3 is a top plan view of the heater detached, partly broken away; and Fig. 4 is a section taken on line 4—4 of Fig. 3.

Like numerals of reference refer to like parts in the several figures of the drawings.

In the drawing, 1 indicates an ironing roll of any suitable construction, but is herein shown having open ends in which are secured heads 2 having bearing sleeves 3 which are mounted in suitable bearings 4 formed in the standards 5 of the frame of the machine. The roll is so mounted that it rotates freely in the bearings and at one end, as shown, is provided with a gear 6 for rotating the same. The heads 2 which are arranged at each end are secured in position by set-screws 7 in order to allow the heads to be detached or attached so as to place within the same heater 8 which is the essential part of my invention and which will be later fully described.

The heater 8 comprises a tubular core 9 formed of any suitable metal having its inner face covered by insulation 10 of asbestos and said core is adapted to be loosely mounted within the bearing sleeves 3 of the heads 2 and at one end extends outwardly as shown. The core 9 is provided with longitudinal slots 11 and 12 adapted to register with cut out portions 13 and 14 formed in the annular body 15 which fits snugly on the core and is preferably formed of soap-stone but may be formed of any other suitable insulating material. The periphery of the body 15 is provided with a spiral groove 16 in which is embedded a resistance or heating wire 17 which is wound therein to form a coil and is preferably formed of tungsten steel.

95 The body 15 is provided with longitudinal bores 18 in alinement with each other extending therein from each end in which are mounted connecting plugs 20 and 21 to which the respective ends of the heating coil formed by the wire 17 are connected by binding posts 22, the ends of said wire passing through slots formed in the body. The plugs are also provided with binding posts 23 at their ends to which are connected the ends of lead and return wires 24 and 25

which pass into the end of the core as clearly shown in Fig. 2 and up through the slots formed therein. It will be noted that the heating coil does not extend the full length of the body 15 and the wire 17 is preferably of a diameter slightly smaller than the diameter of the groove in which it is seated in order to allow the same to expand.

The plugs 20 and 21 are held in position by keys 26 which are forced into position by head plates 27 having their inner faces lined with asbestos as shown at 28 and said head plates are forced against the end of the body and locked by set nuts 29 mounted on the threaded portions 30 of the core 9. By this construction, the keys and plugs can be readily detached by removing the head plates.

In order to allow the ironing roll to rotate freely around the heater and at the same time to hold the heater centrally therein, I provide the ironing roll 1 with rings 31 carrying ball races 32 which co-act with balls 33 carried by ball races 34 mounted upon the core of the heater as clearly shown, said rings being secured in position by set screws 35 in order to allow the same to be detached to install the heater therein.

From the foregoing description, it will be seen that I have provided an electric heater comprising a body of insulating material having a spiral groove formed in its periphery in which is seated a heating and resistance coil. It will also be seen that the ends of the heating coil are connected to plugs mounted in the body to which the lead and return wires are connected, leading from any suitable source of supply, whereby the coil, when thrown into the circuit of a current having a comparatively low potential, will become heated in the well known manner which, in turn, will heat the body to a uniform temperature throughout its length so as to give out the greatest amount of heat possible in order to thoroughly heat the ironing roll.

Having described my invention and set forth its merits what I claim and desire to secure by Letters Patent is—

1. An electric heater comprising a tubular core, a body of insulating material arranged on said core, connecting plugs detachably mounted in the opposite ends of said body, a heating coil arranged around said body, a lead wire connected to one of said plugs, a return wire connected to the other of said plugs, said wires passing through the tubular core, and means for securing said plugs in position within said body.

2. An electric heater having a central tubular core provided with an insulated inner face, said core having slots formed therein, a body of insulating material arranged over said core having slots register-

ing with the slots of said core and provided with plug sockets in communication with said slots, said body having a spiral groove in its periphery, detachable connecting plugs arranged in said sockets, a heating coil arranged in said spiral groove having its ends connected to said plugs, and a lead wire and a return wire extending into said core from one end thereof and connected respectively to said connecting plugs.

3. An electric heater comprising a tubular core having an insulated inner face and provided with longitudinal slots and threaded portions, an annular body arranged on said core having a spiral groove in its periphery, said body being provided with plug sockets, connecting plugs arranged within said sockets, a lead wire connected to one of said plugs and a return wire connected to the other plug, said wires extending through the slots of said core, and a heating coil arranged within the groove of said body having its ends connected respectively to the plugs.

4. An electric heater comprising a tubular core having an annular body provided with a spiral groove in its periphery, said body being provided with plug sockets communicating with slots formed in said body, a heating coil seated in said groove, plugs mounted in said sockets connected to the ends of said coil, lead and return wires connected respectively to said plugs, keys engaging said plugs, and head plates carried by said core having insulated inner faces engaging the ends of said body and said keys.

5. An electric heater comprising a tubular core having an annular body arranged thereon formed of insulating material, a heating coil arranged on said body, connecting plugs mounted in the ends of said body connected to said coil, said connecting plugs being connected respectively to a lead and a return wire, keys engaging said plugs, said core having threaded portions, and head plates arranged on the ends of said body and secured in position thereon by nuts mounted on the threaded portions of said core.

6. An electric heater comprising a tubular core having threaded end portions, an annular body arranged on said core provided with a spiral groove in its periphery, a heating coil arranged on said body in said groove, connecting plugs mounted in said body connected to the respective ends of said coil, lead and return wires connected respectively to said connecting plugs, head plates arranged on said core against said body, and nuts mounted on the threaded portions of said core engaging said head plates.

7. An electric heater comprising a tubular core having an insulated inner face, an

annular body provided with spiral grooves arranged on said core, said body and core being provided with communicating slots, a heating coil seated in said grooves, and lead
5 and return wires extending through the slots of said body and core and connected to the respective ends of said coil.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. ALLEN.

Witnesses:

J. HOERMANN,
WM. KROGMAN.
