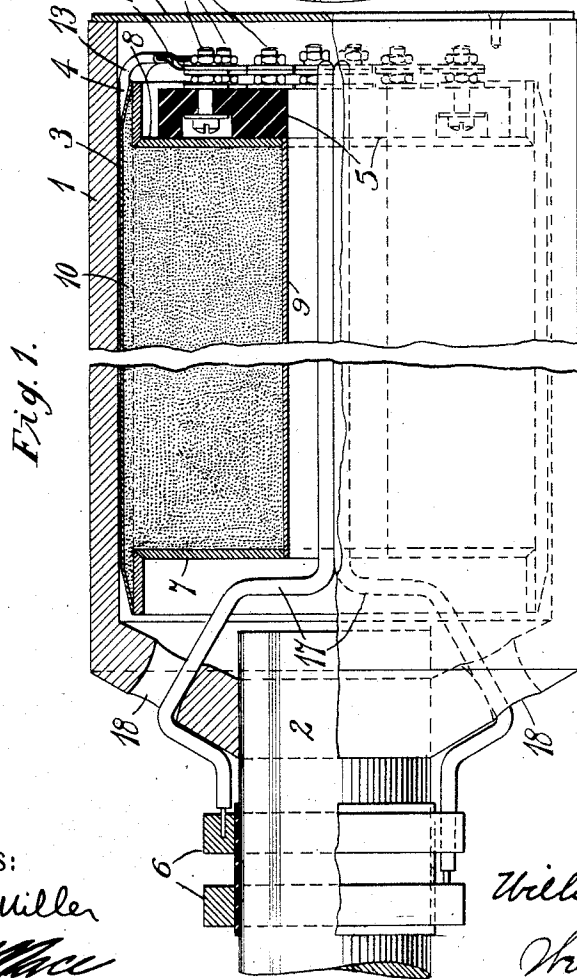
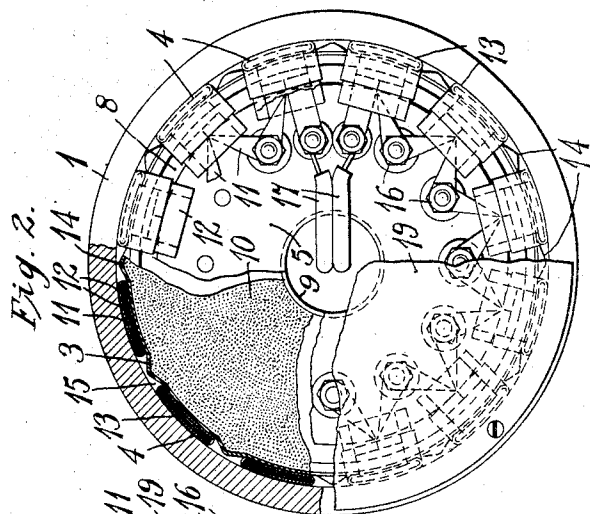


W. S. HADAWAY, JR.
ELECTRICALLY HEATED LAUNDRY ROLL.
APPLICATION FILED MAR. 1, 1911.

1,042,433.

Patented Oct. 29, 1912.



WITNESSES:

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ELECTRICALLY-HEATED LAUNDRY-ROLL.

1,042,433.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed March 1, 1911. Serial No. 611,693.

To all whom it may concern:

Be it known that I, WILLIAM S. HADAWAY, Jr., a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Electrically-Heated Laundry-Rolls, of which the following is a specification.

My invention relates to electrically heated laundry rolls and similar apparatus, and it has for its object to provide a simple and durable device of the above indicated class which shall be so constructed that the component heater units are maintained under considerable pressure and are individually and readily removable.

Another object of my invention is to provide a device which shall be efficient and effective in operation and shall embody ample heat-storage capacity.

It is old in the art to provide a laundry roll with an electric heater which is subjected to pressure but heretofore such heaters have constituted a single unit which is generally wound around a cylindrical core structure. The objection to this type of construction resides in the fact that, if a defect occurs in the heater, the operation of the entire device is affected and it usually becomes necessary to ship the roll, as a whole, to the factory for repairs or renewals.

According to my present invention, I provide an electrically heated laundry roll embodying a plurality of individual heater units which are removably disposed between the outer shell or roll and a yielding inner shell of corrugated sheet metal which is filled with powdered soap-stone or a similar heat-retaining substance. Each heater unit constitutes a complete device which is subjected to pressure by being driven into the space between the outer roll and the yielding inner shell. Furthermore, the heater units may be electrically connected, in any desired manner, upon a readily accessible terminal board located at one end of the roll. Thus, it is evident that, in case of a defective heater, it may be readily disconnected and removed and replaced by a new heater unit without seriously disturbing the normal operation of the apparatus.

My invention is illustrated in the accompanying drawings, of which—

Figure 1 is a view, partially in side eleva-

tion and partially in section, of a laundry roll constructed in accordance with my invention and Fig. 2 is an end view, partially in section, of the device shown in Fig. 1.

Referring in detail to the drawings, the device herein shown comprises an outer roll 1, a shaft 2, an inner shell 3, a plurality of heater units 4 and a terminal board 5.

The outer roll 1 is substantially tubular in shape and one end thereof is rigidly secured to the shaft 2 which carries a plurality of slip rings 6.

The inner shell 3 is constructed of corrugated sheet metal which is wrapped into the form of a cylinder and is supported at its ends by plates 7 and 8, which are rigidly connected together by an axially disposed tube 9. The ends of the corrugated inner shell 3 may be soldered or otherwise suitably secured to the end plates 7 and 8. The space between the corrugated shell 3, tube 9, and end plates 7 and 8 is filled with powdered soap-stone 10, or other suitable and yielding heat-retaining substance. The external diameter of the inner shell 3 is slightly less than the internal diameter of the outer roll 1, in order that said shell may be readily inserted within said outer roll.

The heater units 4 are of like construction and each comprises a resistance element 11 of the zig-zag ribbon type which is interposed between sheets of insulation 12 and is incased in a metal sheath 13. Any suitable type of incased heater may be employed, although I prefer one similar to that shown and described in detail in my co-pending application, Serial No. 493,405, filed May 1, 1909, and assigned to the Westinghouse Electric & Manufacturing Company.

The corrugations 14 on the inner shell 3 are, of course, not restricted to any particular form, but depend entirely upon the type and form of heater unit 4 which is employed. As shown, the corrugations 14 are so located that a plurality of wide and thin spaces 15 are provided between the outer roll 1 and the inner shell 3 to receive the wide and relatively thin incased heater units 4 constructed as set forth in the aforesaid co-pending application.

The terminal board 5 is suitably secured to the end plate 8 and is provided with a plurality of bolt-and-nut connectors 16 which are disposed in an annular row con-

centric with the axis of the roll and are readily accessible from the free end thereof. The connectors 16 are electrically connected to the slip rings 6 by means of conductors 5 17 which lie within the tube 9 and project through openings 18 in the end of the roll 1.

In assembling the device, the inner shell structure 3, as a whole, is placed within the roll 1 and the heater units 4 are individually driven into the spaces 15 between the roll 1 and the inner shell 3, whereby a considerable pressure is produced and maintained upon the heater units, as will be readily understood. By reason of the corrugated sheet 15 metal shell and its filler of powdered substance, an element of yielding or flexible quality is secured which facilitates the operation of driving the heater units into position and maintain them in intimate contact with the outer roll. The terminals of the several heaters are then connected to the bolt-and-nut connectors 16 in a well known manner, and an end plate 19 is suitably fastened in position to protect the terminal 20 board from dirt and injury.

It is evident that the heater units may be electrically connected in series or in series-parallel relation, as desired. Furthermore, many structural modifications may be effected 30 without departing from the spirit and scope of my invention and I desire that only such limitations shall be imposed as are indicated in the appended claims.

I claim as my invention:

35 1. An electrically heated roll comprising an outer shell, an inner shell of relatively thin and yielding material, a body of powdered material disposed in said inner shell, and a plurality of heater units interposed 40 longitudinally between said outer and inner shells.

2. An electrically heated roll comprising an outer shell, an inner shell of relatively thin and yielding material, and a plurality 45 of heater units interposed longitudinally between said outer and inner shells.

3. An electrically heated roll comprising

an outer shell, a corrugated inner shell of yielding material, and a plurality of removable heater units compressed within the 50 space between said outer and inner shells.

4. An electrically heated device comprising an outer cylinder, a corrugated concentric inner cylinder of relatively thin material, a body of yielding heat-retaining material contained in said inner cylinder, and 55 a plurality of separately removable sheathed heater units secured under pressure between said outer and inner cylinders.

5. An electrically heated device comprising an outer shell, a concentric inner shell of relatively thin and flexible material, a body of yielding heat-retaining material contained within said inner shell, and a plurality of incased heater units interposed 60 longitudinally between said shells and maintained under pressure.

6. An electrically heated device comprising an outer cylinder, a yielding longitudinally corrugated core therefor, and a plurality of heater units disposed longitudinally 65 between said cylinder and said core.

7. An electrically heated roll comprising an outer shell, an inner core having longitudinal recesses in its surface, and a plurality 75 of heater units removably disposed in said recesses and in intimate contact with said outer shell.

8. An electrically heated roll comprising an outer shell, an inner corrugated shell, a 80 body of yielding heat-retaining material contained in said inner shell, a plurality of incased heater units removably disposed between said outer shell and said inner shell, and a terminal board located within one end 85 of said roll to which said heater units are individually connected.

In testimony whereof, I have hereunto subscribed my name this fifteenth day of February 1911.

WILLIAM S. HADAWAY, JR.

Witnesses:

ALFRED HALVERSON,
EDWARD MEAD.