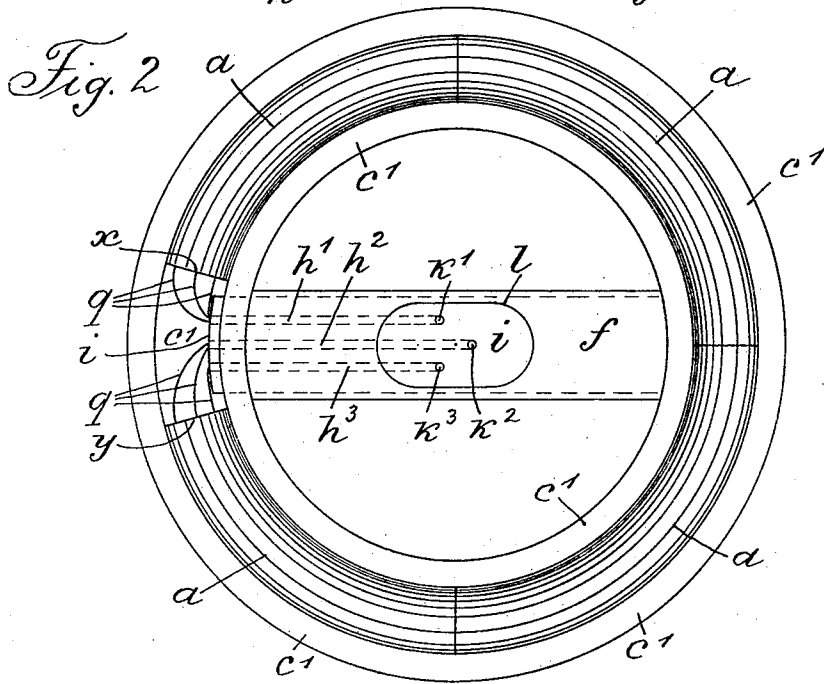
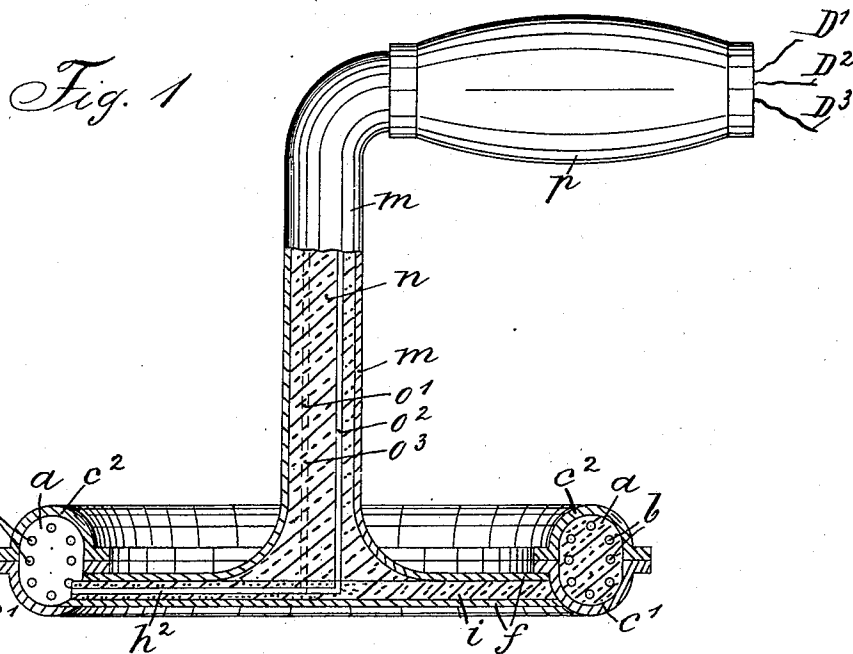


(No Model.)

F. W. SCHINDLER-JENNY.
ELECTRIC BOILER.

No. 559,223

Patented Apr. 28, 1896.



Witnesses:
Alfred T. Gage
M. C. Paul.

Inventor:
Friedrich Wilhelm Schindler-Jenny,
by H. G. Kuhnman,
Attorney.

UNITED STATES PATENT OFFICE.

FRIEDRICH WILHELM SCHINDLER-JENNY, OF KENNELBACH, AUSTRIA-HUNGARY.

ELECTRIC BOILER.

SPECIFICATION forming part of Letters Patent No. 559,223, dated April 28, 1896.

Application filed October 2, 1895. Serial No. 564,441. (No model.)

To all whom it may concern:

Be it known that I, FRIEDRICH WILHELM SCHINDLER-JENNY, a citizen of Switzerland, residing at Kennelbach, near Bregenz, Austria-Hungary, have invented new and useful Improvements in Electric Boilers, of which the following is a specification.

My invention relates to ring-shaped boilers in which resistance-wires are placed in a ring of refractory insulating material, which latter is contained in a hollow casing; and the object of my invention is to provide a most simple and most efficient apparatus.

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

Figure 1 is a partially sectional view of my boiler; and Fig. 2, a top view of the lower part of the casing, showing placed therein the ring which contains the resistance-wires.

The ring *a*, which contains the electric conductors or resistance-wires, is run through by longitudinal circular channels *b*, preferably placed near its outer surface. It may be made in one piece or composed of several parts joining to each other with their ends, as shown in Fig. 2, and fills up the hollow of a ring-shaped casing of metal, the two parts *c'* *c''* of which I prefer to detachably connect together.

Fig. 2 represents the lower part *c'* of the casing and the ring *a* placed therein. The latter part is crossed by a hollow bridge *f*, likewise filled up by a strip *i* of refractory insulating material, projecting at one end to the left of the drawings into the hollow of the casing, ring *a* being retrenched opposite to that end of strip *i*. Strip *i* is provided with longitudinal channels *h'* *h''* *h'''*, discharging at *h'* *h''* *h'''*, respectively, on the upper side of its middle part, which is left free by an opening *l* in the upper wall of bridge *f*. A tube *m* is connected to the said bridge, joining with its trumpet-shaped lower end to the opening *l*, and is likewise filled up by a cylinder *n* of refractory insulating material, the lower end thereof being in contact with strip *i* through opening *l*, and longitudinal channels *o'* *o''* *o'''* are provided in the cylinder *n*, joining to the discharging-openings *k'* *k''* *k'''*, respectively.

Tube *m* is bent to the side at its upper end and provided with a handle *p*.

The resistance-wires and the connecting-wires are disposed as follows: A thin resistance-wire *q* passes through each of the channels *b* of ring *a*, the wire being either simply thread-shaped or spirally coiled. All the wires discharging from the end *x* of ring *a* enter the channel *h'* of strip *i*, while the wire ends discharging from the other end *y* of ring *a* are assembled in two groups, three of the eight wires, as illustrated, entering the channels *h''*, and the remainder—i. e., five in the present instance—entering channel *h'''*. The said groups of resistance-wires pass through the openings *k'* *k''* *k'''* to the channels *o'* *o''* *o'''* of the cylinder *n*, and are connected in groups to the connecting-wires *D'* *D''* *D'''*, respectively, which project from the handle *p*, as shown, Fig. 1. The latter wires are insulated in any convenient manner against each other and the walls of tube *m* and handle *p*. By these means wire *D'* being connected to the end of all the resistance-wires and wires *D''* *D'''* to the other end but of five or three of the resistance-wires, respectively, the operator is enabled, by conveniently combining the wires *D'* *D''* *D'''* to the outer main line, to heat either but three, or but five, or finally all the resistance-wires in order to regulate the degree of the heat developed.

When connecting, say, the negative main-line wire to wire *D'* and in the same time the positive main-line wire to wire *D''* or to wire *D'''*, there will be heated either five or three of the resistance-wires accordingly; but when connecting the positive main-line wire in the same time to both wires *D''* *D'''* there will be heated all the resistance-wires at once.

If there shall be had no reference to regulating purposes, all the wires *q*, discharging from the end *y* of ring *a*, may be combined to one group, and the number of channels *h* *o*, openings *k*, and wires *D* should be reduced to two and two.

It will be obvious that in order to increase the regulating faculty the discharging ends of the resistance-wires may be combined to more than two groups and the number of the

respective channels, openings, and connecting-wires accordingly increased.

Although it will be convenient to lead freely the resistance-wires through the respective channels of ring *a*, strip *i*, and cylinder *n*, so as to be enabled to easily remove the wires in case of repairing or changing the same when partially or wholly damaged without being needed to throw away the several insulating-bodies, I do not confine my invention thereto, which is independent of placing the resistance-wires in or securing to the said insulating-bodies, whether they may be leaded freely or firmly connected thereto by embedding the same into the several insulating-bodies or afterward filling up the channels by a plaster and the like. My invention likewise comprehends, broadly, the combination of a ring-shaped insulating-body and a casing, no matter whether the parts of the latter are detachably or not detachably connected together.

What I do claim, and desire to secure by Letters Patent, is—

1. An electric boiler consisting of a ring-shaped heating-body of refractory insulating material, containing resistance-wires longitudinally extending through the heating-body, and a casing in close contact with the said heating-body, substantially as set forth and for the purpose specified.

2. An electric heater consisting of a ring-shaped heating-body of refractory insulating material, containing resistance-wires longitudinally extending through the heating-body

near its surface, and a casing in close contact with the said body substantially as set forth and for the purpose specified.

3. An electric boiler consisting of a ring-shaped heating-body of refractory insulating material, containing resistance-wires longitudinally extending through channels of the heating-body, and a casing in close contact with the said heating-body, substantially as set forth and for the purpose specified.

4. An electric boiler consisting of a ring-shaped heating-body of refractory insulating material, containing resistance-wires longitudinally extending through channels of the heating-body near its surface, and a casing in close contact with the said heating-body, substantially as set forth and for the purpose specified.

5. An electric boiler consisting of a ring-shaped heating-body of refractory insulating material, containing resistance-wires longitudinally extending through the heating-body, and a casing in close contact with and detachably connected to the said heating-body, substantially as set forth and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRIEDRICH WILHELM SCHINDLER-JENNY.

Witnesses:

H. WINTSCH,
F. C. TENNI.