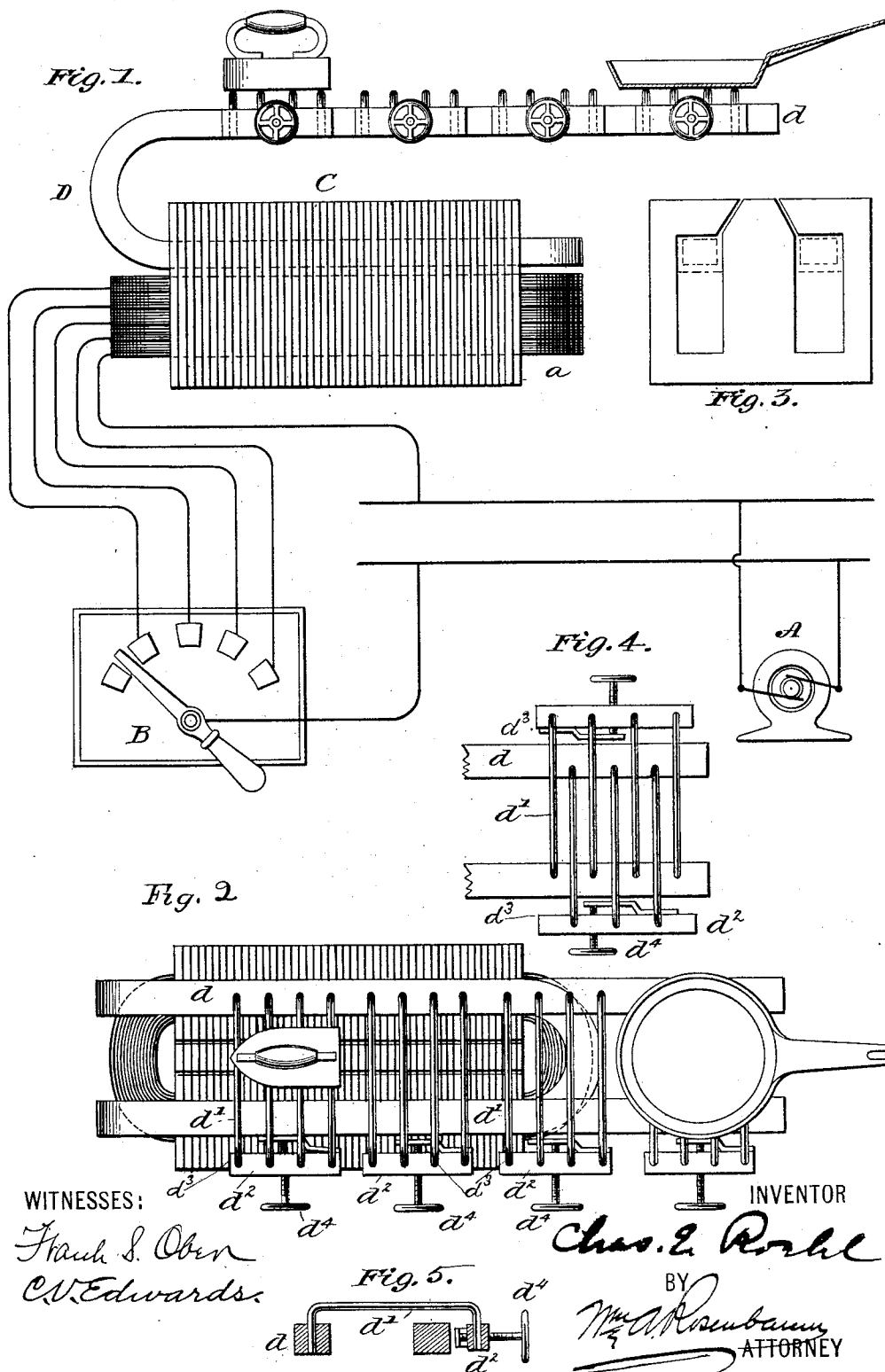


(No Model.)

C. E. ROEHL.
ELECTRIC STOVE.

No. 532,909.

Patented Jan. 22, 1895.



UNITED STATES PATENT OFFICE.

CHARLES EDWARD ROEHL, OF ST. JOSEPH, MISSOURI.

ELECTRIC STOVE.

SPECIFICATION forming part of Letters Patent No. 532,909, dated January 22, 1895.

Application filed January 4, 1894. Serial No. 495,698. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDWARD ROEHL, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Electric Stoves, of which the following is a full, clear, and exact description.

This invention relates to electric stoves or heaters, the primary object being to provide an apparatus which may replace the ordinary cooking stove of a kitchen.

To be more exact, the apparatus which I have invented is electrically heated and is so constructed that the cooking utensils or other devices used in a kitchen in connection with the stove may be heated by merely placing the said devices upon the heater in the same manner that they would be manipulated in connection with an ordinary stove.

In another application filed by me on the 22d of November, 1893, Serial No. 491,628, I have described and claimed an apparatus much similar to the one herein referred to, but the present invention is an improvement upon the invention described in the earlier application.

In the accompanying drawings, Figure 1 represents a side elevation of my improved electric stove, shown somewhat conventionally and illustrating also the electric circuits. Fig. 2 is a plan of the same without the circuits. Fig. 3 is a transverse section of the magnetic core of the electrical apparatus. Fig. 4 is a detail showing a modification. Fig. 5 shows a cross section of a portion of the secondary conductor.

My electric stove is operated by alternating, pulsating, intermittent, or other irregular currents, and embodies the principle of a transformer.

A represents a source of current of the nature specified and *a* the primary coil of the transforming apparatus of the stove. The coil is supplied with current from the source A and is divided into a number of sections and connected with a suitable switching apparatus B, by which any number of sections may be made active at will. C is the magnetic core of the transforming apparatus. It is constructed in any of the usual ways, being preferably of laminated iron and having a

cross section similar to that shown in Fig. 3. In inductive relation to this magnetic core is placed a copper bar D of large cross section, which is bent or looped into the form shown in the several figures. This bar constitutes a secondary coil or circuit of the transforming apparatus. Its free ends *d* are arranged parallel to each other and with their upper surfaces in the same horizontal plane, to form a kind of table similar to the top of a stove. To one of these free ends *d* is permanently attached a series of rods *d'* of material of higher electrical resistance than copper. The connection between these rods and the bar *d* may be of any suitable character, but I have shown them bent and extending into holes therein. The rods extend transversely from one of the bars *d* above and across the other and the series of rods is divided up into gangs or sections of four, or any other desired number, and the free ends of each gang are connected to a common metallic block *d*² which is arranged parallel to the copper bar and in substantially the same plane, but out of contact therewith. Each block is provided with a contact brush or spring *d*³ and an adjusting screw *d*⁴, by means of which the spring may be thrown into contact with the bar *d*. In this manner the electric circuit is completed across the ends *d*, *d* and the entire secondary is thereby short circuited through the rods *d'*. In this secondary circuit, therefore, the rods will form the part of highest resistance and the relative resistances of these parts will be designed so that when the proper current is induced in the secondary circuit the rods only will be the parts heated, in the manner hereinafter described.

It is obvious that it makes no difference which of the bars *d*, *d* the rods *d'* are permanently fixed to, and in fact the sections or gangs of the rods may be alternately fixed to one and the other of the bars. Furthermore, in Fig. 4 is illustrated a construction in which the rods of one gang alternate with those of another, the fixed ends of the rods being connected respectively to the bars. In this way, and in various other ways which are obvious, the heating devices may be concentrated in a small space and the regulation of the heat accomplished by throwing into circuit any number of the rods.

When the electric currents of the character hereinbefore mentioned are flowing in the primary coil *a* and the circuit of the secondary is closed across the bars *d*, *d* through one or more of the rods *d'*, a heavy current of low potential will be induced in the secondary circuit which, being confined therein, will tend to heat it and the portions of this circuit of greatest resistance will be heated to the highest degree. These portions, being the rods *d'*, will, if properly constructed, be rapidly heated to a very high heat and any device such as a stew pan, kettle, flat iron, or other kitchen utensil which is placed upon or adjacent to the rods *d'* will be heated by conduction and radiation therefrom and cooking may be accomplished with the ordinary utensils and the same manipulated in the old fashioned manner. Figs. 1 and 2 show kitchen utensils in position upon the stove to be heated. Narrow strips of mica may be placed between the utensil and the rods if desired, to prevent the current from flowing through the utensil itself and thus modifying the resistance.

The bar *D* constituting the secondary conductor is here shown as bent into a single convolution and its ends only bridged by the

rods *d'*, but it is to be understood that the bar may have any number of convolutions and that the bridge pieces *d'* may be arranged to bridge the adjacent convolutions in substantially the same manner as they are arranged to bridge the ends of the single convolution shown in the drawings.

Having thus described my invention, I claim—

In an electric stove or heater, the combination of a transformer or other electrical inductorium whose secondary coil is normally open, a series of high resistance rods in positive electrical connection with one side of a convolution of the secondary coil, said rods being grouped into sections or gangs, those of each section being connected to a common block, *d*², of conducting material, and a contact spring and adjusting screw therefor whereby said block may be thrown into and out of electrical connection with the other side of said convolution of the secondary coil.

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

CHARLES EDWARD ROEHL.

Witnesses:

JOS. B. SHIRLEY,
G. W. CALDER.