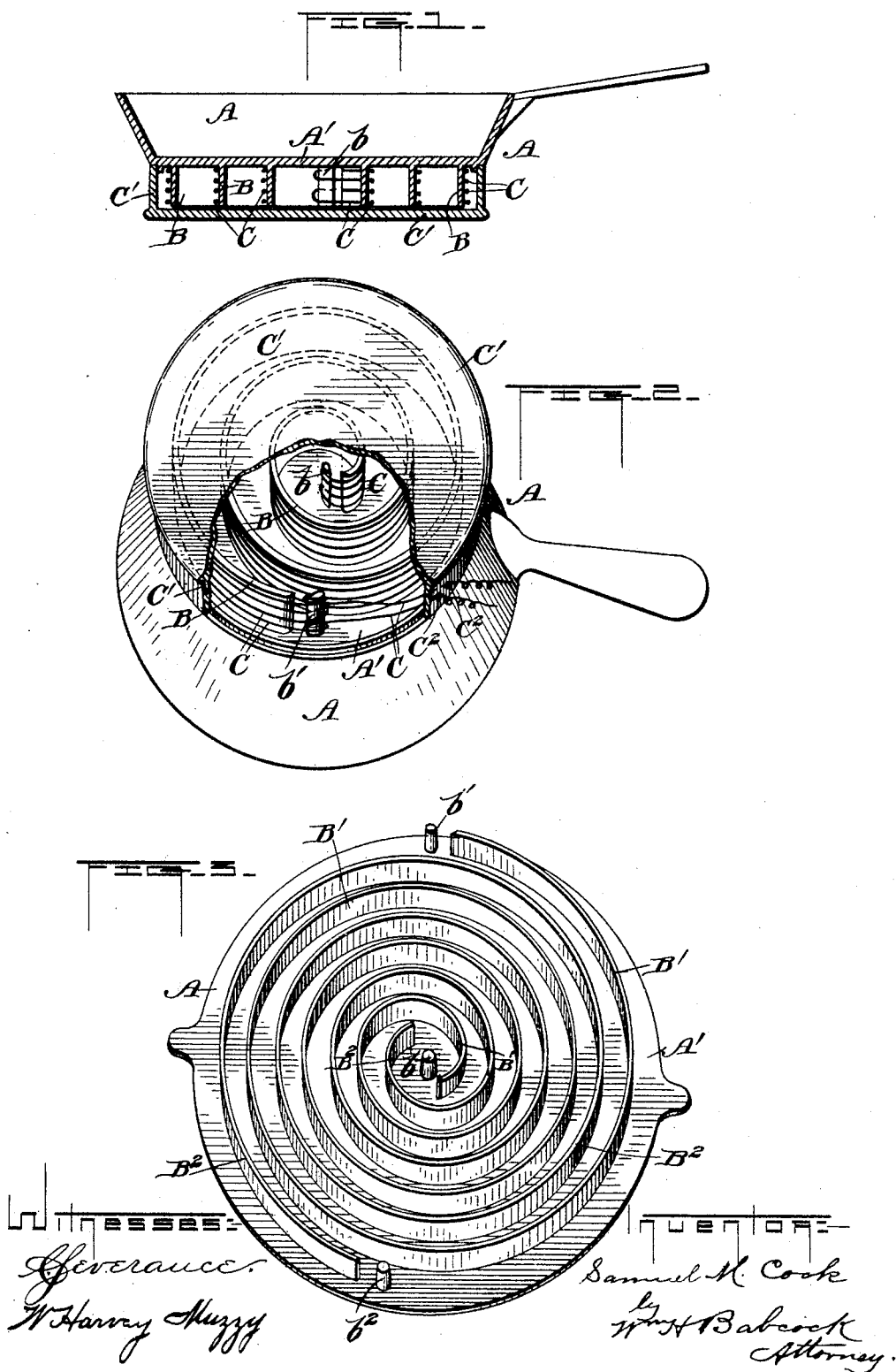


(No Model.)

S. M. COOK.
ELECTRIC HEATER.

No. 497,771.

Patented May 23, 1893.



UNITED STATES PATENT OFFICE.

SAMUEL M. COOK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE AMERICAN
ELECTRIC HEATING COMPANY, OF SAME PLACE.

ELECTRIC HEATER.

SPECIFICATION forming part of Letters Patent No. 497,771, dated May 23, 1893.

Application filed January 17, 1893. Serial No. 458,674. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. COOK, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Electric Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Heretofore in electrically heated devices and utensils considerable difficulty has been encountered in winding the wire, especially when studs or similar projections are formed on the bottom or some other part of the article, and serve as cores for the said wire. To obviate all such inconveniences, I provide the article to be heated (or to be used as a heater) with a coiled flange preferably on its bottom and wind the wire on the said flange. It is often desirable to guard against magnetization of an iron article thus constructed. To this end I provide at each end of the said flange a post formed with the article but detached from the flange in order that the wire may be turned about these posts to reverse the winding.

In the accompanying drawings Figure 1 represents a vertical central section through an electrically heated article constructed and wound in accordance with my invention. Fig. 2 represents an enlarged perspective view of the same inverted and partly broken away; and Fig. 3 represents a detail perspective view, inverted, of the bottom plate of such an article modified by a double spiral flange.

In the accompanying drawings A designates a skillet or frying pan having its bottom A' provided with a coiled flange B and posts or studs *b b'*, one of the latter being arranged at each end of the said flange, but a little beyond the same. The stud *b* is at the center of the article and the stud *b'* near its periphery. A wire C, forming part of an electric circuit and insulated in any convenient way, is wound from end to end of this flange and back again, turning about the posts, so that the coils are alternately in opposite directions. A shell or casing C' fits into or against the said bottom-plate A' and covers the said

flange and wire. The ends of the wire pass out through holes C² C² in the side of the said shell. When the current of electricity is sent through the said wire the reverse coiling neutralizes the tendency to magnetize the flange and the article, which would produce that effect if the winding were all one way. The curves of the coil are so large that the wire is applied quickly, easily and tightly, without straining.

As shown in Fig. 3, I sometimes prefer to make use of a double flange, that is to say two flanges B' B² coiled into each other in reverse directions. These flanges have in common the central stud *b* arranged as before described. The stud *b'* as before is at the outer end of one them and a third stud *b²* is similarly arranged at the outer end of the other. The winding in this case is from the inner end of one flange about the central post and to the other flange thus producing the effect of reversing the helical current alternately while the winding continues and thus preventing magnetization.

To make the invention clear, it is shown as applied to one form of household article; but of course it may be used with any other or with stoves and electrical heaters generally.

Any article or device on which a coiled flange or flanges may be formed in combination with a wire wound thereon and forming part of an electric circuit will be within the said invention, if the wire be reversed in the winding as set forth.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A heater or electrically heated article provided with a coiled flange, in combination with a wire which is wound on the said flange and reversed in the winding to prevent magnetism, the said wire forming part of an electric circuit substantially as set forth.

2. A heater or electrically heated article provided with a coiled external flange or flanges, in combination with a wire wound thereon, and a casing or shell which covers the said flange and wire, but allows the latter to pass out through it to form part of an electric circuit as set forth.

3. A heater or electrically heated article
provided with a coiled flange in combination
with a conductor of electricity which is wound
on the said flange and forms part of an elec-
5 tric circuit substantially as set forth.

4. A heater or electrically heated article
provided with a coiled flange and studs which
are slightly separated from the ends of the
said flange, in combination with a conductor
10 which forms part of an electric circuit and is

wound on the said flange and the said studs,
the latter serving to reverse the winding sub-
stantially as set forth.

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

SAMUEL M. COOK.

Witnesses:

PELATIAH R. TRIPP,

THOS. P. PARSONS.