

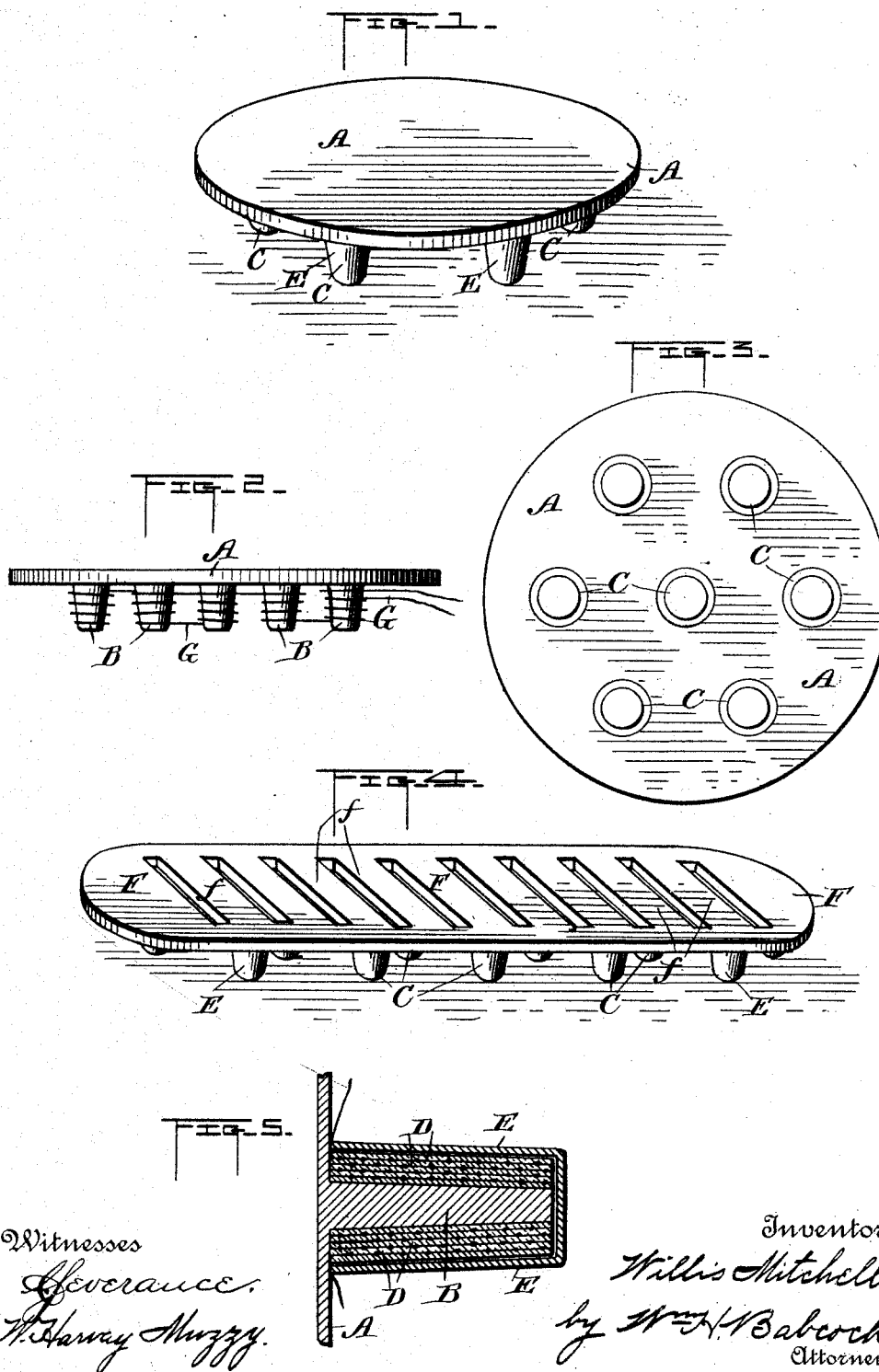
(No Model.)

W. MITCHELL.

ELECTRICALLY HEATED GRIDIRON.

No. 491,322.

Patented Feb. 7, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIS MITCHELL, OF MALDEN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE
AMERICAN ELECTRIC HEATING COMPANY, OF BOSTON, MASSACHUSETTS.

ELECTRICALLY-HEATED GRIDIRON.

SPECIFICATION forming part of Letters Patent No. 491,322, dated February 7, 1893.

Application filed July 2, 1892. Serial No. 438,803. (No model.)

To all whom it may concern:

Be it known that I, WILLIS MITCHELL, a citizen of the United States, residing at Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Electro-Magnetically-Heated Frying-Pans and Gridirons; 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.

This invention has for its object to produce a frying pan or gridiron which is electrically heated not only by the heat of resistance but by that of electro-magnetic induction. To this end a flat plate is provided with cores of magnetic metal and on these electric heaters are fitted consisting of helically wound wire with suitable insulating partitions, or an electrical conductor forming part of a circuit and coated with insulating material may be wound from core to core.

In the accompanying drawings Figure 1 represents in perspective a frying pan constructed in accordance with my invention, and having the heaters hereinafter described; Fig. 2 represents a side elevation of the same having simply a wire wound on the studs; Fig. 3 represents a plan of the same; Fig. 4 represents a gridiron constructed on the same principle; and Fig. 5 represents a detail longitudinal section of one of the preferred forms of heaters.

A designates the flat plate which forms the body of the frying pan. This is preferably of magnetic material.

B designates studs or cores of magnetic material formed on or attached to the under side thereof, these studs and this body being integral as shown and as preferred. These studs also serve as supporting legs for the frying pan or gridiron as shown.

C designates electric heaters consisting in each instance of an electric conductor wound in successive helicoidal layers, with interposed insulating cylindrical partitions D and having an external metallic shell E outside of the exterior cylindrical wall or partition. The

whole forms an approximately cylindrical or conoidal heater having a conoidal bore for fitting on one of the said studs or cores, to which a similar conoidal shape is given. The said conductor extends from heater to heater connecting the mall in series as shown, the whole forming part of an electric circuit. It is not necessary, however, that this method of connection should be chosen. More than one conductor and circuit may obviously be used, and where only one is used it need not pass from heater to heater in regular order.

Instead of using the heater aforesaid I may simply pass from stud to stud an electric conductor G Figs. 2 and 3, winding it helically on each, the said conductor being coated with insulating material and forming part of an electric circuit. When a current of electricity is sent through the said conductor or through the said heaters, a certain amount of heat will be generated by resistance. In addition to this electro-magnetic induction will be set up in the said cores, and also in the said plate forming the body of the article, if the latter is of magnetic material. The additional heat generated by this induction will be available of course in frying. If the said plate be non-magnetic it will act only as a conductor for the heat generated in the cores. It is therefore preferable to make the said plate or body also of magnetic material, thereby increasing the amount of heat-producing induction.

As shown in Fig. 4, I may use a slotted body F instead of the solid one before described, the slots forming gridiron bars *f*. The arrangement and operation of the cores or studs and heaters are as before; but the article becomes a gridiron instead of a frying pan.

In using the term "flat" I do not mean to exclude any moderate amount of concavity or convexity or other slight formal change.

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

1. A frying-pan or gridiron consisting of a flat plate provided with integral studs C which

also serve as supporting legs, in combination
with electrical heaters applied to the said
studs for the purpose set forth.

2. A frying pan or gridiron provided with
5 magnetic studs or cores in combination with a
conductor wound on the said studs or cores
in successive concentric helices, these being
separated from each other by approximately

cylindrical partitions or layers of insulating
material substantially as set forth. 10

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

WILLIS MITCHELL.

Witnesses:

EDWIN W. PIERCE,
PELATIAH R. TRIPP.