

(No Model.)

H. F. WATTS.
ELECTRIC HEATING APPARATUS.

No. 400,978.

Patented Apr. 9, 1889.

Fig. 1.

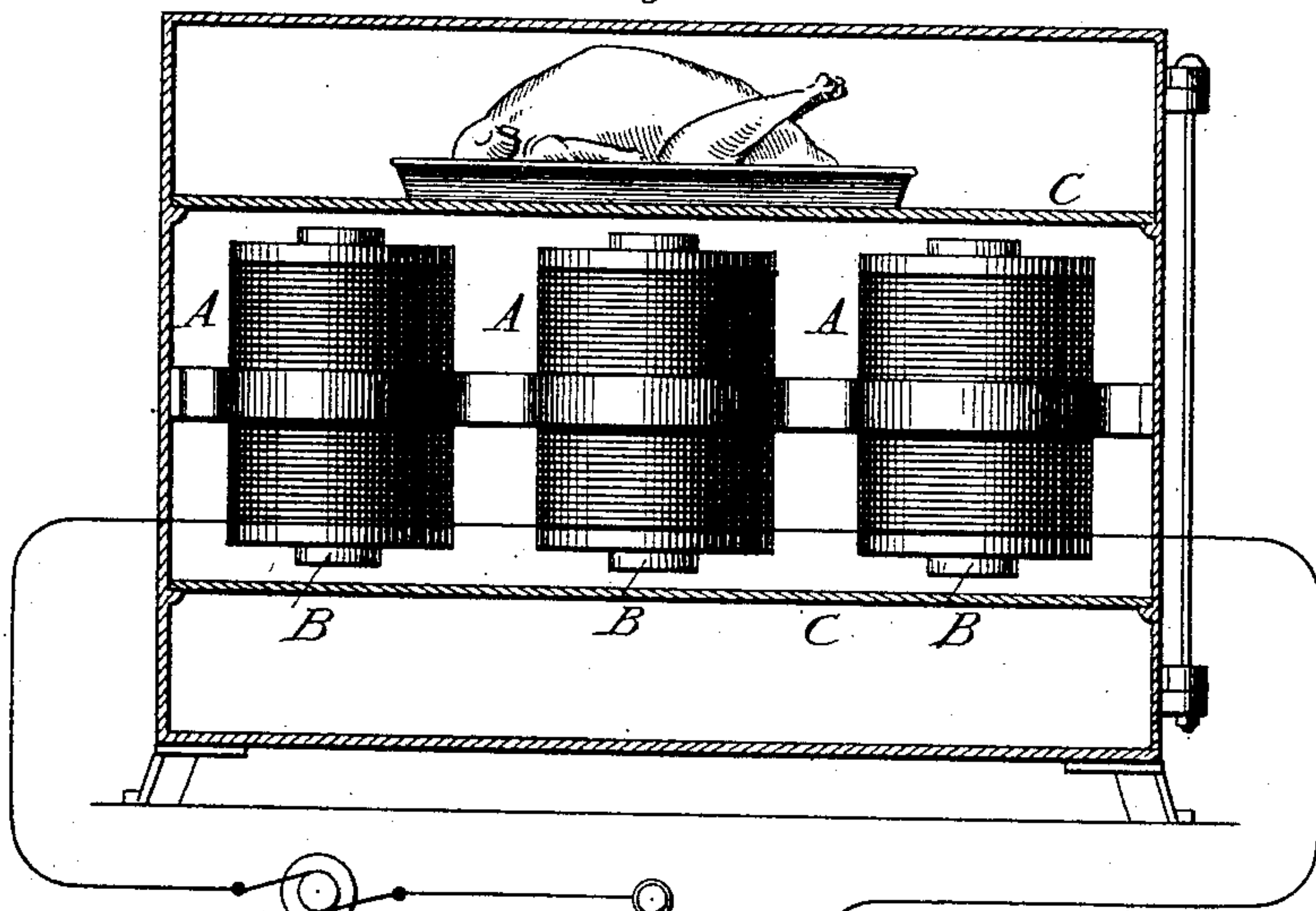


Fig. 2.

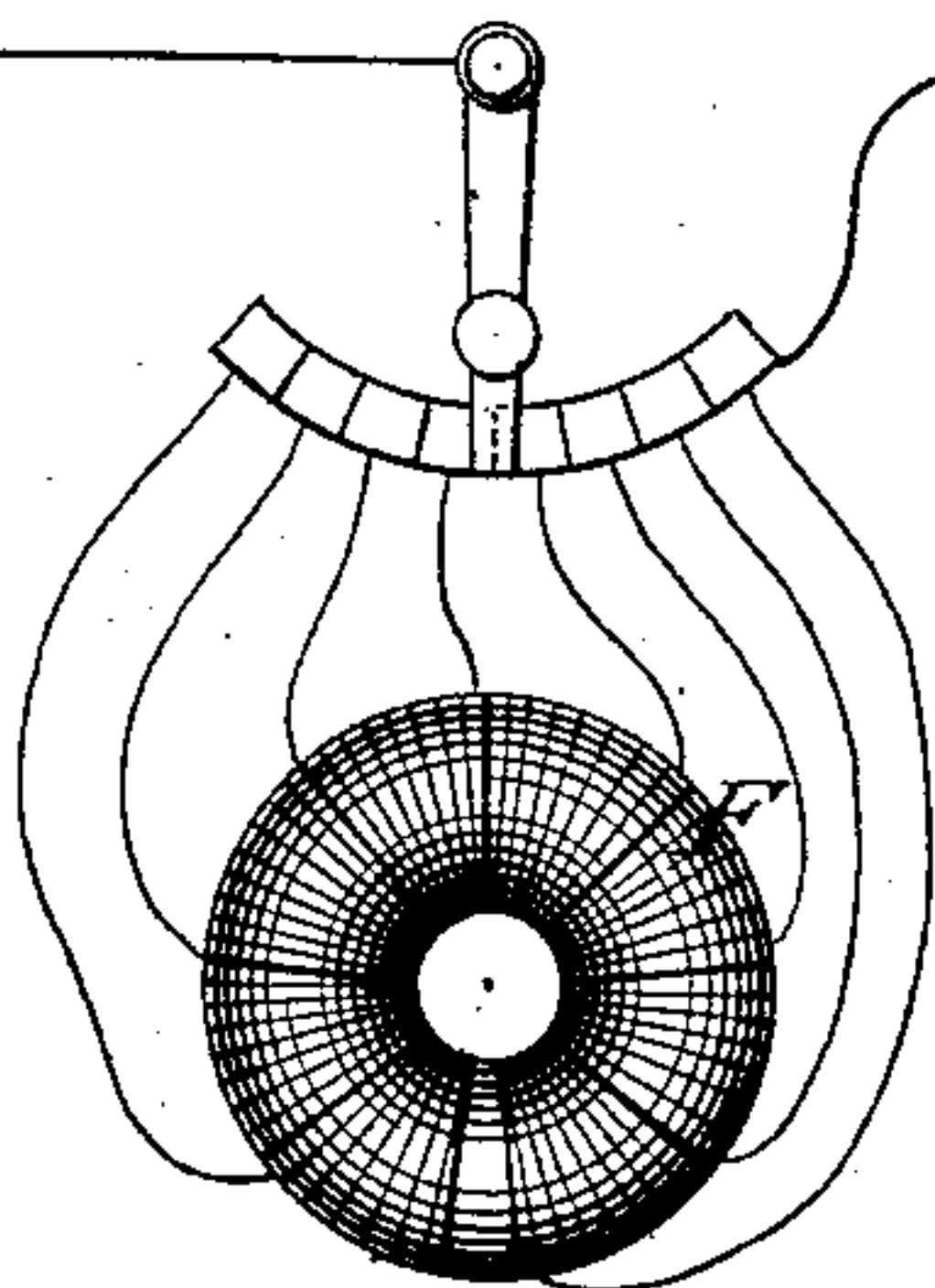
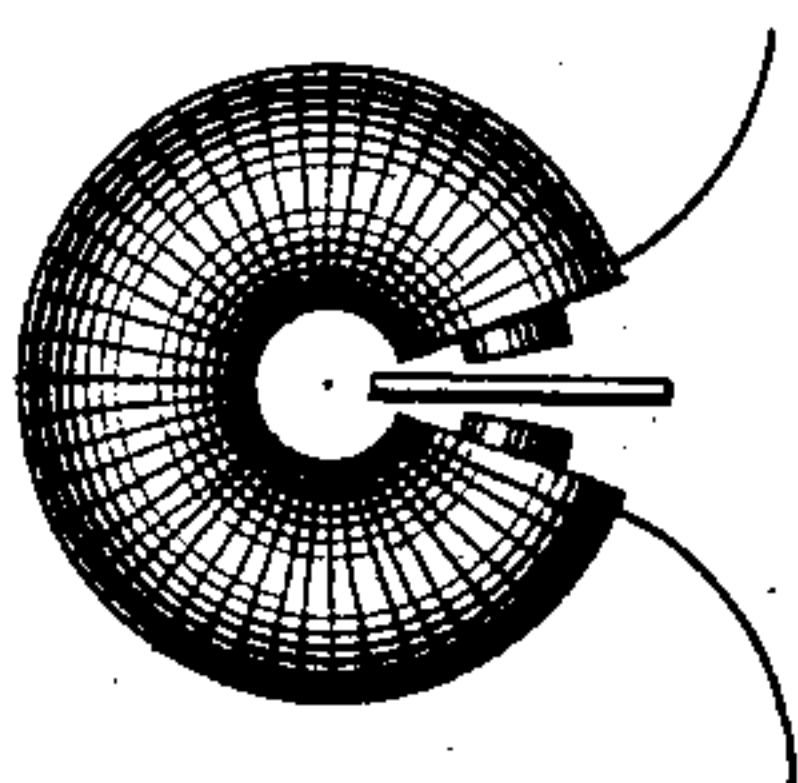


Fig. 4.

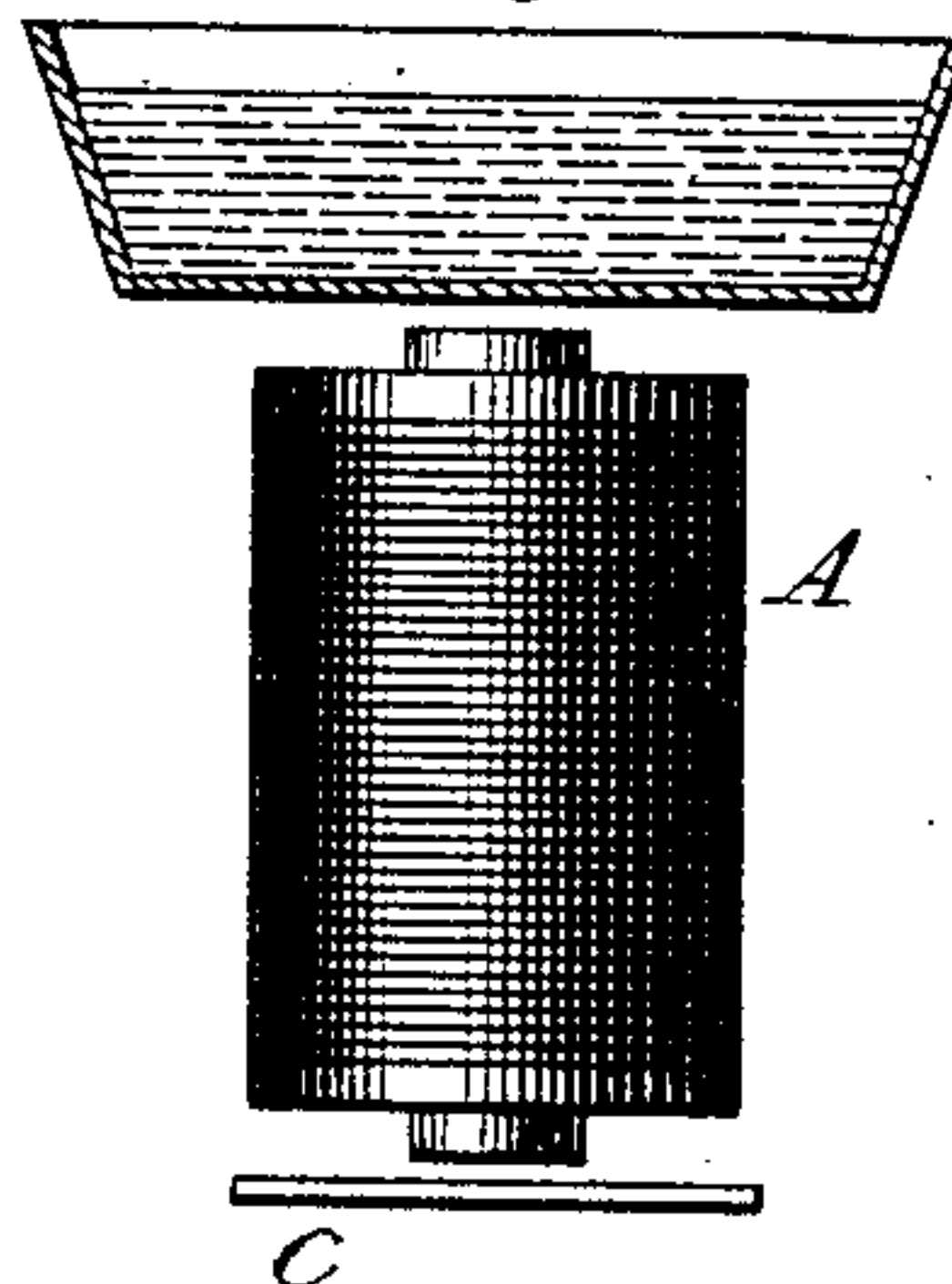
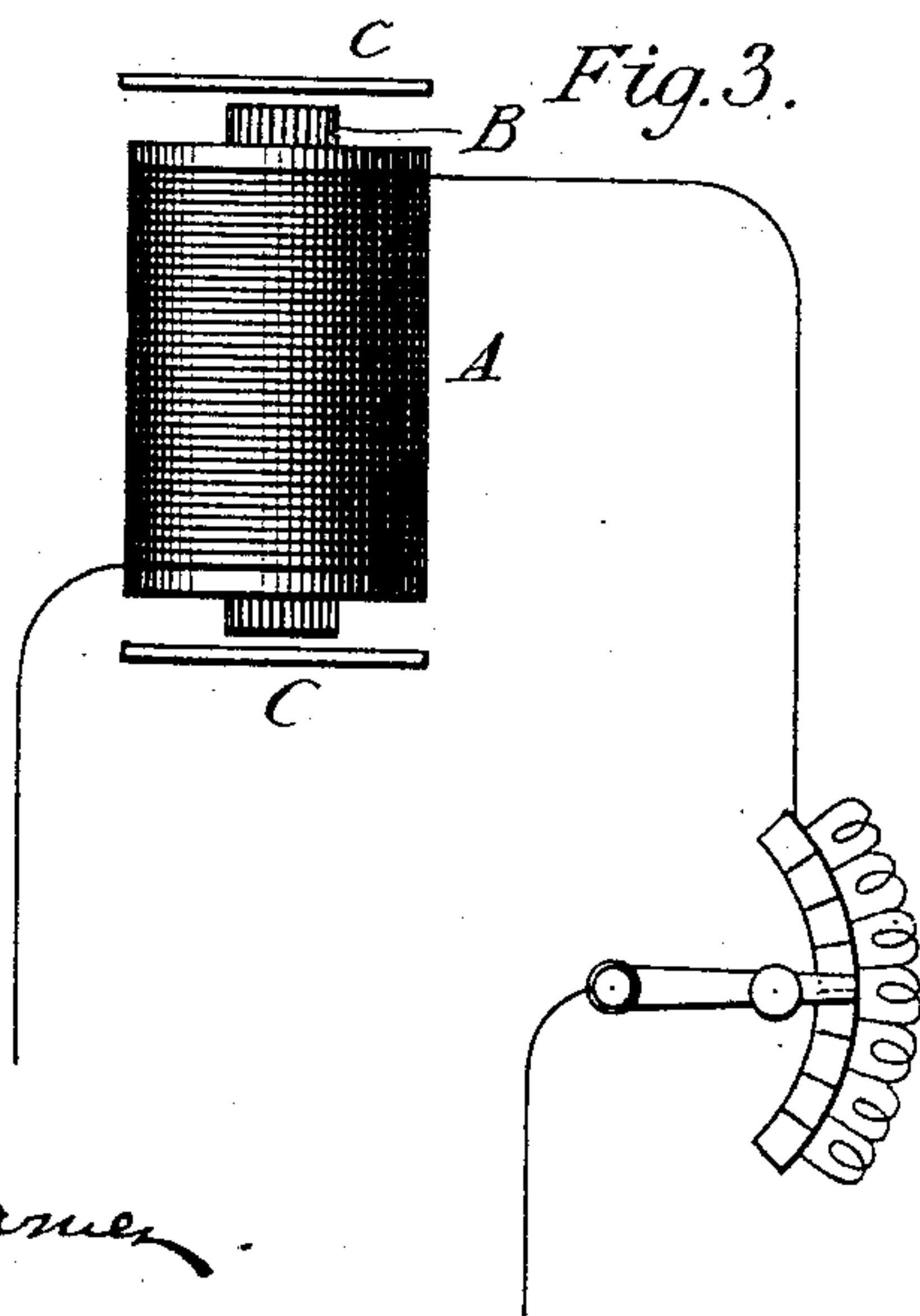


Fig. 3.



WITNESSES:

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HENRY F. WATTS, OF SANDUSKY, OHIO.

ELECTRIC HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 400,978, dated April 9, 1889.

Application filed November 22, 1888. Serial No. 291,553. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. WATTS, a citizen of the United States, residing in Sandusky, in the county of Erie and State of Ohio, have
5 invented certain new and useful Improvements in Electric Heating Apparatus, of which the following is a specification.

My invention relates to electric heating apparatus, the object being to provide means
10 whereby heat may be obtained through the energy of electric currents, and to make such heat available for all domestic purposes of cooking and heating.

The invention therefore consists of an electric coil or coils surrounding a magnetic core or
15 cores and metallic plates placed in inductive relation with said core or cores. When alternating currents flow in the coils, the metallic plates, by reason of the induced alternating
20 currents generated therein, are raised rapidly to a high degree of temperature. This is utilized in a manner best suited to the purpose for which it is required.

In the accompanying drawings, Figure 1
25 represents a view of a section of what I term an "electric oven," showing the circuits. Fig. 2 shows a modification of the heating apparatus; Fig. 3, a view of the single coil with
30 plates and an ordinary resistance inserted to regulate the amount of current, and consequently resultant heat; and Fig. 4 is a view of the device when arranged to heat a liquid of any kind.

Referring to the drawings by letter, A A
35 represent a coil having a core of bunched wires B.

C C are plates, which are placed closely adjacent to either one or both ends of the cores of the coils. These plates and coils are supported in any suitable manner by a bracket
40 or frame. If a number of coils are used, they are to be placed in a single circuit, and the circuit also includes an alternating-current generator.

45 It is obvious that when alternating currents flow through the coils the plates become the

seat of induced alternating currents of much greater volume, and they are therefore rapidly raised to a high temperature.

Referring more particularly to Fig. 1, the
50 coils and plates are shown located in a box or oven. Material to be cooked or heated is placed upon the plates, as illustrated. The heat may be regulated by an ordinary resistance, as is represented conventionally in Fig. 55
3; or the heat may be controlled by placing in circuit a reaction-coil, F, (illustrated in Fig. 1.) This latter method of regulation is perhaps preferable to the ordinary resistance, inas-
60 much as it is less wasteful of energy.

I have described the magnet-cores as constructed of wires. They may also be solid metal, in which case the cores themselves are heated. The plates are also shown in one
65 piece. They may be built up in any manner desired which may be deemed best suited for the purpose. It is also obvious that the plate may serve as the bottom of a vessel in which a liquid is heated, as shown in Fig. 4.

Having described my invention, I claim— 70

1. In an electric heating apparatus, a coil or coils in which alternating currents flow, said coil or coils having magnetic cores, in combination with a metallic plate or plates arranged adjacent to the said cores, whereby
75 the flow of said alternating currents will cause the heating of said plates.

2. In an electric oven, a coil or coils having magnetic cores, in combination with the metallic wall or walls of said oven, the said cores
80 extending into close proximity to said wall or walls, whereby the flow of alternating currents in the coils will cause the walls of the oven to become heated.

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

HENRY F. WATTS.

Witnesses:

THOMAS MCKENNA,
JOHN T. BEECHER.