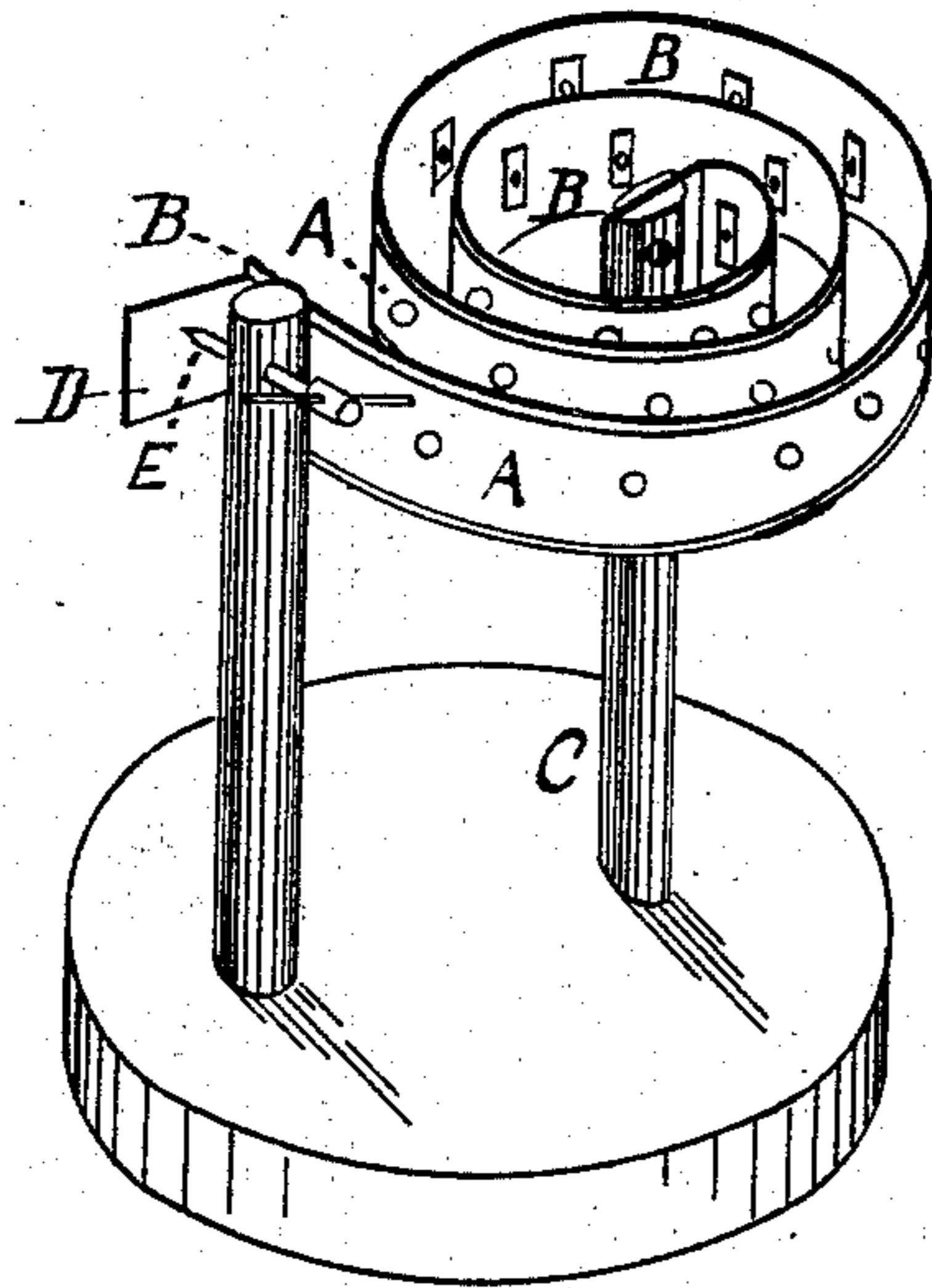


(Model.)

H. W. AXFORD.  
THERMOSTATIC COIL.

No. 252,069.

Patented Jan. 10, 1882.



WITNESSES.

Arthur G. Morey.  
Henry J. Regier.

INVENTOR.

Harris W. Axford By  
J. L. Chapin Atty.

# UNITED STATES PATENT OFFICE.

HARRIS W. AXFORD, OF CHICAGO, ILLINOIS.

## THERMOSTATIC COIL.

SPECIFICATION forming part of Letters Patent No. 252,069, dated January 10, 1882.

Application filed January 20, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, HARRIS W. AXFORD, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Thermostats for Incubators, of which the following is a specification, reference being had to the accompanying drawing, illustrating the improvement, in which the figure is a perspective view.

10 The nature of the present invention consists of a compound coil made of hard rubber and metal riveted together, and then bent, after softening the rubber, so as to stay in a desired form when it is cool. This coil differs from coils of  
15 two metals, inasmuch as the steel is first bent and then tempered, and the brass or other metal which is to expand more or less than the steel is also coiled to correspond with the steel coil, after which the two plates are riveted together;  
20 whereas in my thermostat the steel is taken from flat sheets of commercial steel plate and is held in a coiled form (except so much as it may set by the bending process) by the rubber; further, in the fact that the coils, after being  
25 formed, can be contracted or enlarged by the use of hot water to suit the position of any circuit-closer in the incubator.

In making my thermostat I take a piece of spring-steel one-half inch wide, No. 22, and  
30 about twelve and three-eighths inches long, and a strip of hard rubber the same width, twelve inches long and one-sixteenth inch thick, and rivet them together at intervals of about one inch, and bend the surplus length (three-  
35 eighths of an inch) of the metal outward to come in contact with a pivot and make the connection. The two plates are then subjected to a heat of boiling water or steam for a minute or two till the rubber is soft. The two plates are  
40 then coiled by the ordinary means, and the rub-

ber becomes set so soon as cooled, so that it will be more efficient, soft, and sensitive where the temperature does not much exceed that necessary for incubating eggs.

A represents the steel plate, and B the rubber plate, which, after being bent as stated, is secured to a post, C, so that by the expansion of the coils the end D of the spring may come in contact with the point E and make connection in the ordinary manner. The bent end D is, however, only a matter of convenience, as it is only necessary that the steel come in contact with the point E.

An important advantage in the manufacture of my thermostats is that they can be made at less cost than where coiled steel-springs are employed, inasmuch as flat spring-steel plates can be cut in strips and combined with the rubber, as stated, by an ordinary mechanic, and double spring-coils can be made to suit any sized oven at no extra cost of tools without the delay and extra cost of obtaining steel springs which are coiled. Further than this, coils may be enlarged or contracted to suit any circuit-closer, which is not the case with thermostat-coils now obtainable in the market.

I claim and desire to secure by Letters Patent—

A thermostatic coil composed of a plate of hard rubber and a plate of spring-steel, the hard-rubber being bent so as to hold the spring-steel in a coiled form, that it may constantly tend to enlarge the coil and give increased sensitiveness to the thermostat, as and for the purpose specified.

HARRIS W. AXFORD.

Witnesses:

G. L. CHAPIN,  
A. G. MOREY.