

(No Model.)

C. B. ASKEW.

ARTIFICIAL RESISTANCE FOR ELECTRIC CIRCUITS.

No. 412,449.

Patented Oct. 8, 1889.

Fig. 1.

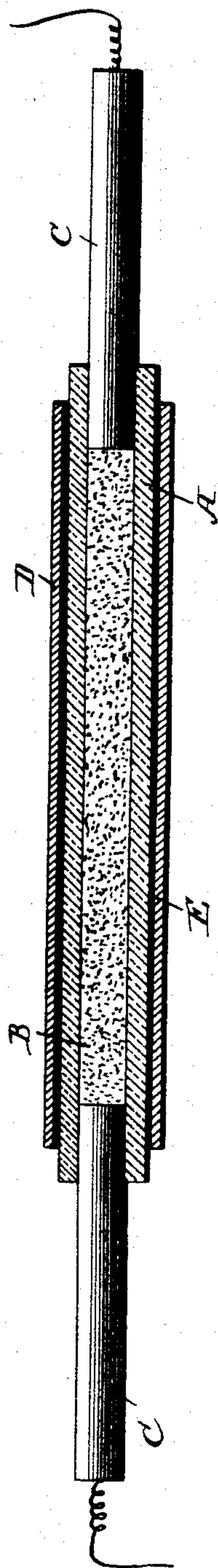


Fig. 2.

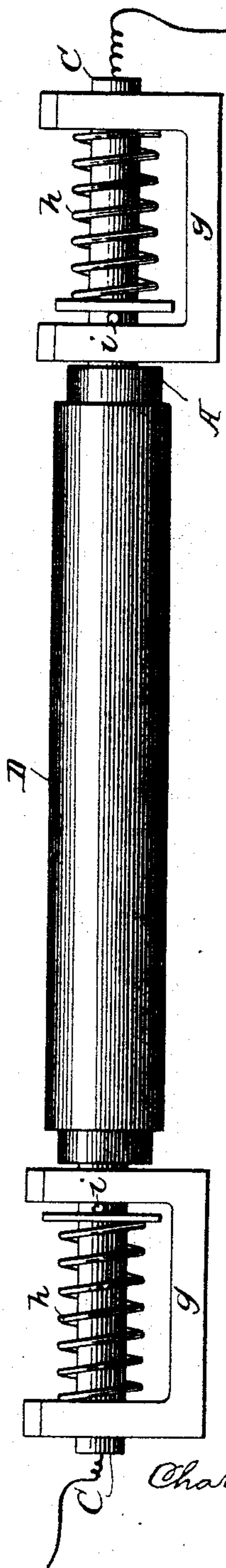
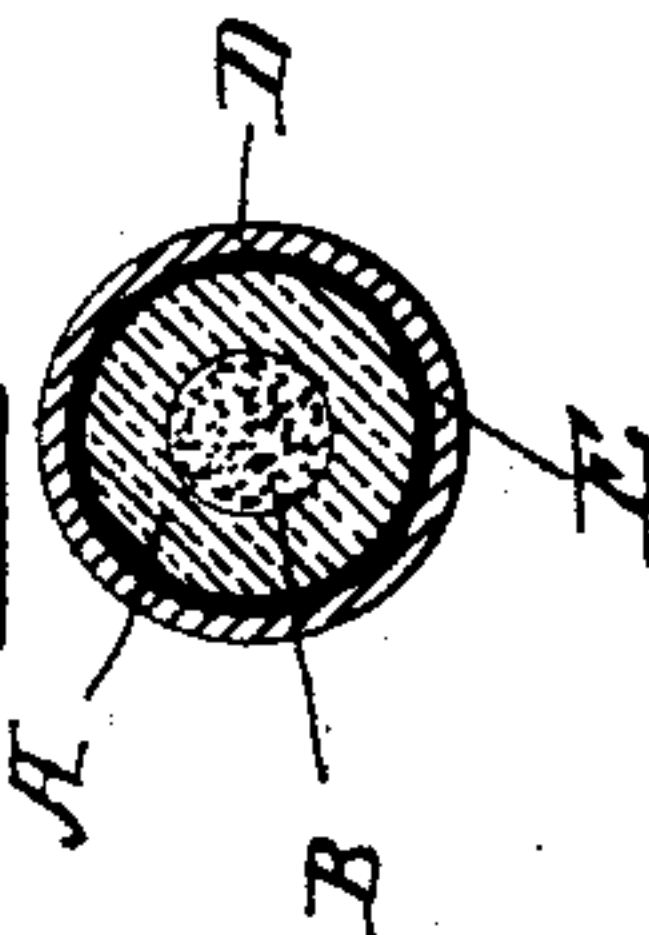


Fig. 3.



Witnesses

Jno. G. Hinkel Jr.
W. S. McArthur

Charles B. Askew,
Inventor

By his Attorneys

Inte & Leeman

UNITED STATES PATENT OFFICE.

CHARLES B. ASKEW, OF CHICAGO, ILLINOIS.

ARTIFICIAL RESISTANCE FOR ELECTRIC CIRCUITS.

SPECIFICATION forming part of Letters Patent No. 412,449, dated October 8, 1889.

Application filed June 27, 1889. Serial No. 315,799. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. ASKEW, a citizen of the United States, residing at Chicago, Cook county, State of Illinois, have invented certain new and useful Improvements in Artificial Resistances for Electric Circuits, of which the following is a specification.

My invention relates to artificial resistance devices for use in connection with electric currents; and it has for its object a simple, cheap, and effective device for this purpose, which is capable of withstanding heavy currents and which shall not be liable to destruction from the same; and to these ends my invention consists in a device constructed as hereinafter pointed out.

In the accompanying drawings, I have shown, in Figure 1, a longitudinal section illustrating a preferred form of construction; Fig. 2, an extended view, and Fig. 3 a transverse sectional view.

Heretofore many devices have been proposed which shall operate as artificial resistance devices or rheostats, and many of them consist in general in the use of some non-conducting material inclosed in a receptacle.

One of the objects of my invention consists in producing an artificial resistance device which shall be able to withstand the effects of or carry heavy currents, which are liable to heat the resistance devices to a considerable extent and often destroy or injure them in this way.

Another object is to produce a simple device as an article of manufacture, which may be readily connected in any circuit and which will not occupy much space or be liable to derangement.

In carrying out my invention I make use of a receptacle A, preferably in the form of a tube, and this is made of porcelain or some similar or equivalent material which is capable of withstanding a high temperature without destruction. In this receptacle or tube is placed a resistance material B, which is preferably in the form of a powder and composed of plumbago or equivalent material, which offers a high resistance to the passage of the electric current. This material can be placed in the tube very loosely or under a certain degree of pressure and confined by

plugs or caps C, applied to the ends of the tubes, and the amount of material as well as the character and pressure applied can be determined, so that the device will offer a certain definite resistance to the passage of a given current. In this way resistance devices having different capacities may be made and so designated, if desired, and be ready for use whenever occasion offers.

The porcelain tube is covered with a protecting-tube D, of metal, which shall prevent accidental breakage of the tube, and, when desired, insulating or non-conducting material E may be placed between the porcelain and metal tubes. This insulating material is preferably a non-conductor of heat, as well as of electricity, for the reason that often the resistance offered to the current is so great as to cause the device to be highly heated, so that often the porcelain tube becomes hot, and therefore dangerous to handle and use. The tube may be supported in brackets g, into which extend the blocks C, of brass or other suitable material, and with these are connected the conducting-wires. Against a bearing i on each block bears one end of a spring h, which also bears on the bracket and tends to force the block toward the end of the tube, so that the supports will yield to a slight extent longitudinally under expansion of the tube. The plugs or caps are provided with suitable terminals, whereby the device may be readily included in any desired electric circuit. Instead of using plumbago or similar material alone, it may be mixed with any other poor conducting material having a higher or lower conductivity than plumbago, and in this way the tubes may be made having any desired resistance.

I have shown in the drawings a simple straight tube as a primitive form; but it is evident that the shape may be varied to suit the wishes of the user without departing from my invention.

What I claim is—

1. The combination, in a resistance device, of a refractory tube containing a refractory resistance material and inclosed in a refractory casing, substantially as set forth.

2. As a new article of manufacture, an artificial resistance device consisting of a tube

of porcelain, powdered plumbago in the tube, plugs forming terminals of the electric circuit and confining the plumbago, a protecting-covering of metal, and a non-conducting material between the porcelain tube and the protecting - covering, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES B. ASKEW.

Witnesses:

FORÉE BAIN,
M. F. ALLEN.