

No. 719,174.

PATENTED JAN. 27, 1903.

R. E. BERTHOLD.  
SELF IGNITING MANTLE.  
APPLICATION FILED SEPT. 5, 1902.

NO MODEL.

Fig. 2.

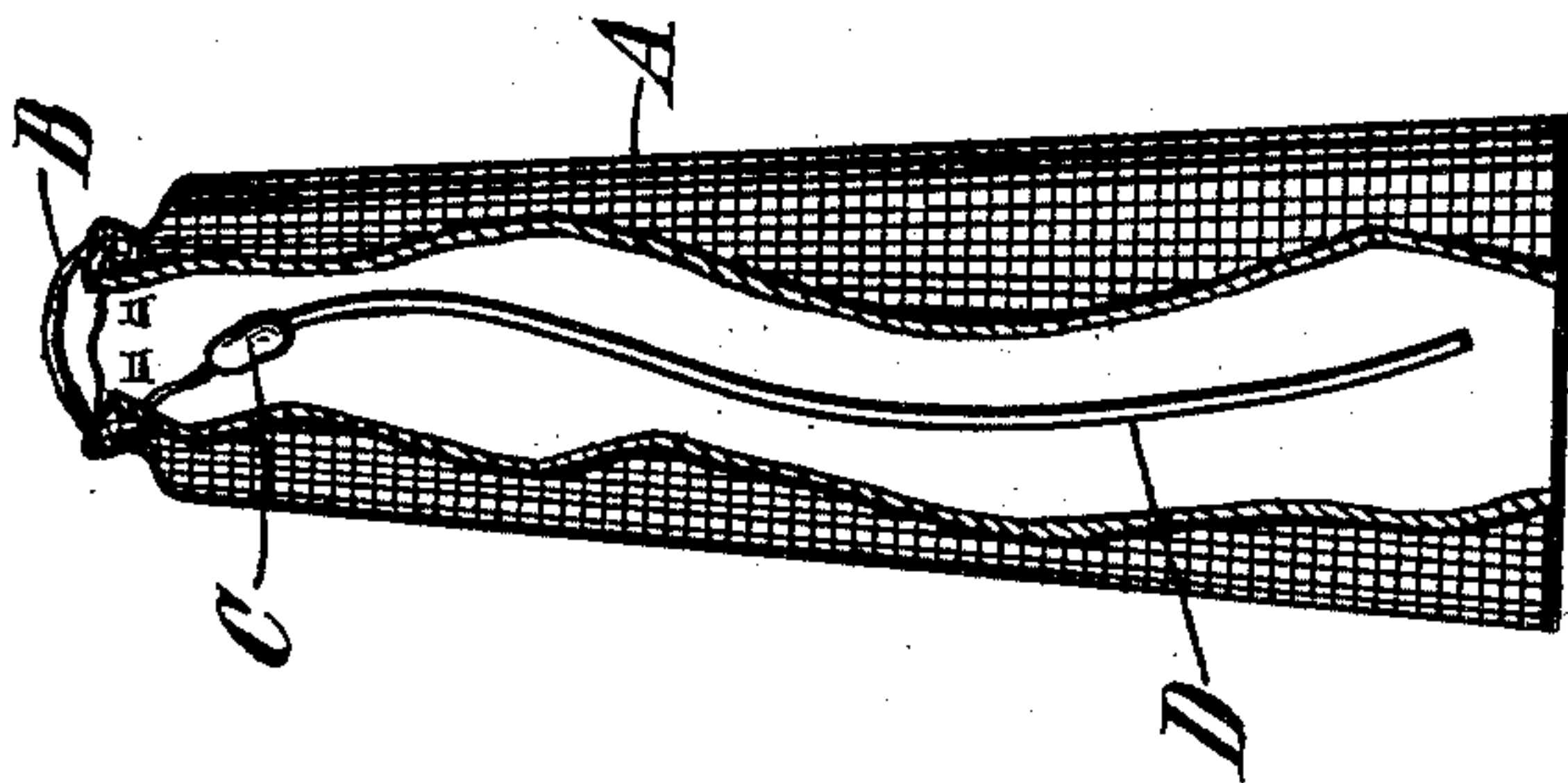
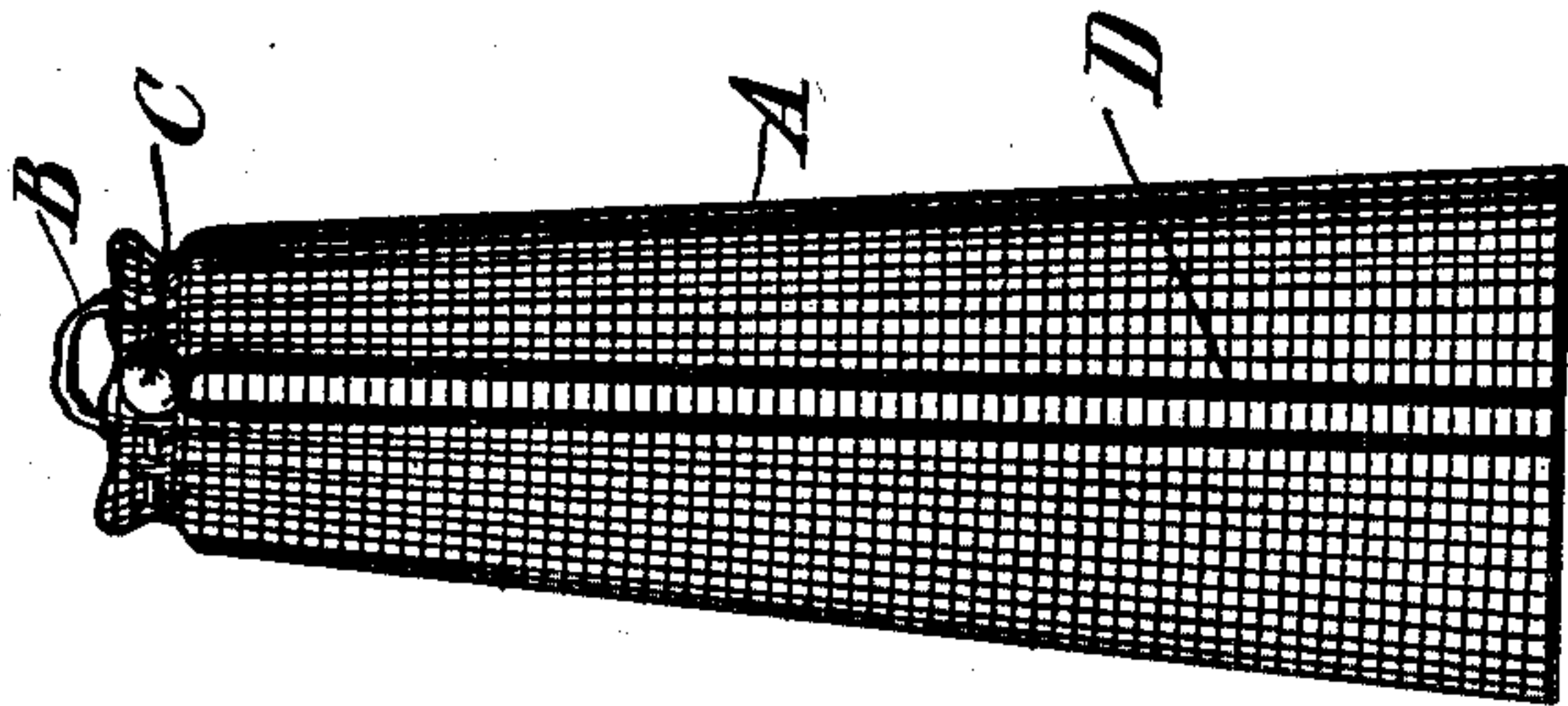


Fig. 1.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## SELF-IGNITING MANTLE.

SPECIFICATION forming part of Letters Patent No. 719,174, dated January 27, 1903.

Application filed September 5, 1902. Serial No. 122,155. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD EMIL BERTHOLD, a subject of the German Emperor, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Self-Lighting Mantles, of which the following is a specification.

My invention relates to what are known as "incandescent mantles" for lighting purposes; and the object of my invention is to make said mantles self-lighting, so that the use of matches or other outside means for lighting the escaping gas is dispensed with. To accomplish this result, I provide the mantle with a heat generating and transmitting device, which consists of two portions, one of which is so sensitive as to become heated to redness by the friction of the escaping gas, while the other part, somewhat slower in action, receives the heat transmitted from the first part, and becoming thereby highly incandescent ignites the passing gas. These igniting devices may be secured on the substance of the mantle itself in such manner as to be in the path of the escaping gas, or may be suspended on the interior of the mantle, as preferred. The primary or heating device may be either in the form of an attenuated wire, in which case I prefer to use platinum, although other substances sensitive to heat and capable of being made in the form of wire may be used, if desired, or this first heating substance may be in the form of strips or ridges running longitudinally of the mantle straight or zigzag, in which case I prefer for ease in putting it on to employ rhodium chlorid, although chlorids and trichlorids of other metals of the platinum group may be employed, if desired. For the secondary or igniting material I prefer to use "platinum black," so called, in the form of a pill or pellet of sufficient bulk to evolve heat enough to light the passing gas without appreciable delay. This pill or pellet is attached to and

receives heat from the primary body of platinum wire or rhodium chlorid.

In the accompanying drawings, Figure 1 represents an elevation of a mantle in which the heater is secured upon the substance itself. Fig. 2 is a similar elevation, partly broken away, to show the heating substance suspended within the interior of the mantle.

Same letters indicate similar parts in the different figures.

A is an incandescent mantle of the usual construction provided at the top with the asbestos supporting-loop B.

C is the pellet of platinum black or other material having catalytic action and either cemented or otherwise attached to the substance of the mantle or suspended therein, as preferred.

D is the primary heating-body, composed of rhodium chlorid, platinum wire, or other material, very difficult to fuse, but easily sensitized by heat to redness.

The mode of using my improved or self-lighting mantle consists simply in suspending it in the usual way above a gas-jet within the chimney.

Whenever the gas is turned on, the friction causes the primary heater D to glow and becomes somewhat incandescent. The heat therefrom is transmitted to the pellet C, which in its turn becomes white hot, and the escaping gas immediately bursts into flame, thereby making the mantle itself incandescent.

I claim—

A self-lighting mantle consisting of an incandescent mantle provided with a pellet of material having catalytic action and a number of strips of rhodium chlorid secured to said mantle and leading to said pellet.

RICHARD EMIL BERTHOLD.

Witnesses:

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A. M. LYNCH.