No. 865,755. PATENTED SEPT. 10, 1907.

R. E. BERTHOLD.

SELF IGNITER.

APPLICATION FILED MAR. 28, 1907.

2 SHEETS—SHEET 1.

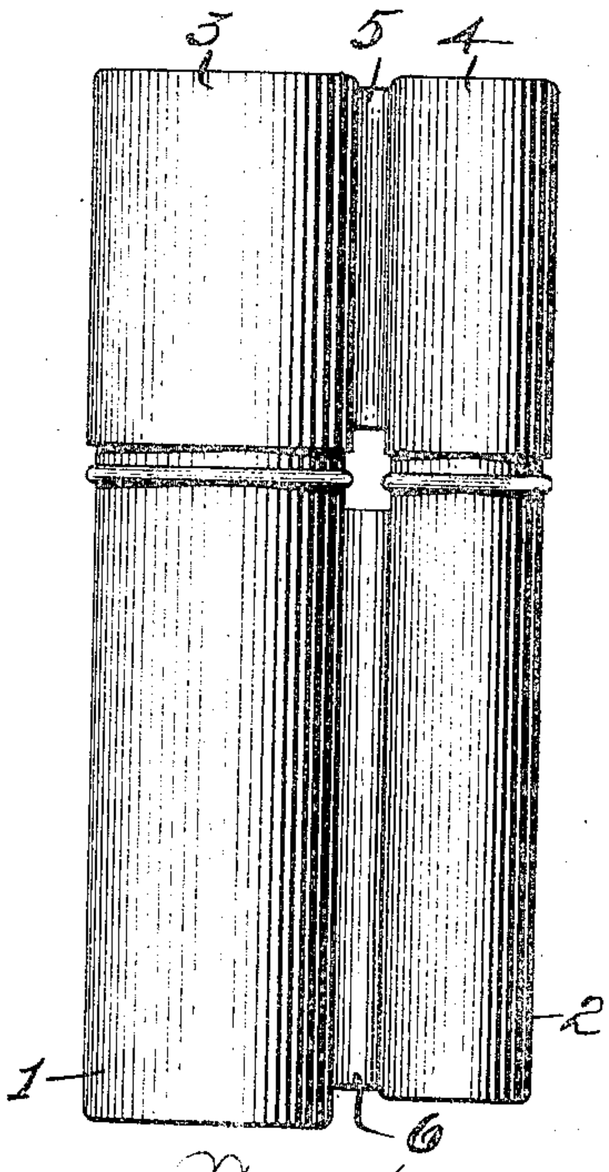

Fig. 1.

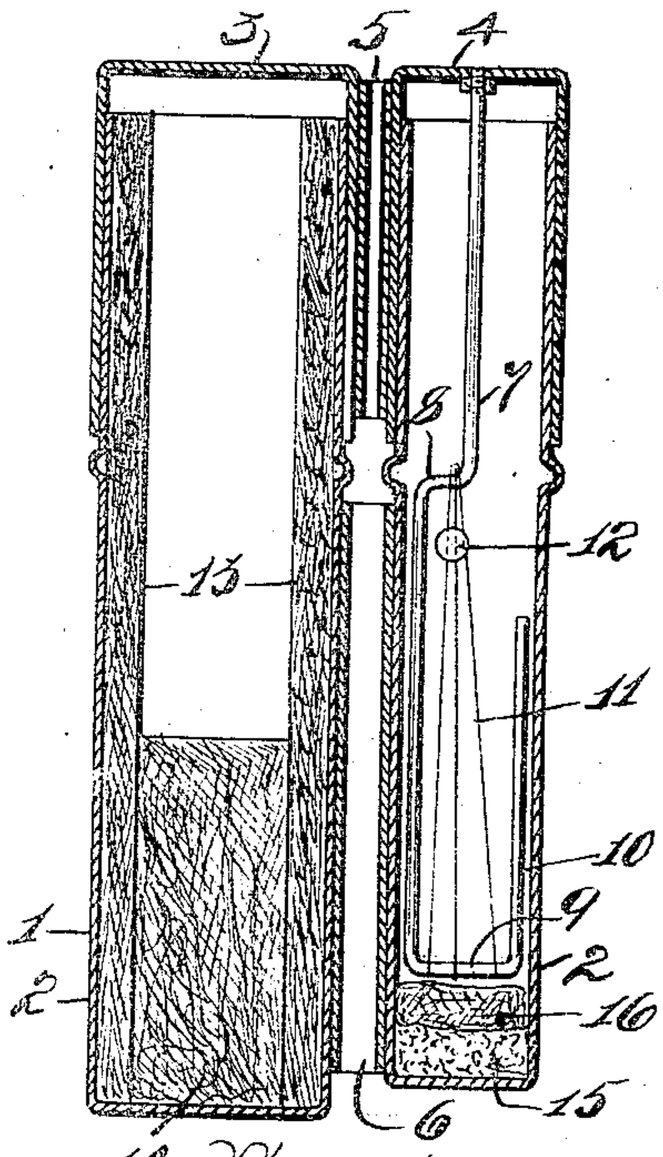

Fig. 2.

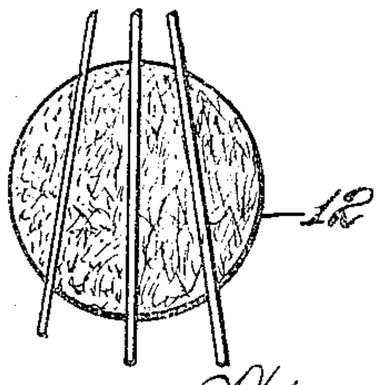

Fig. 4.

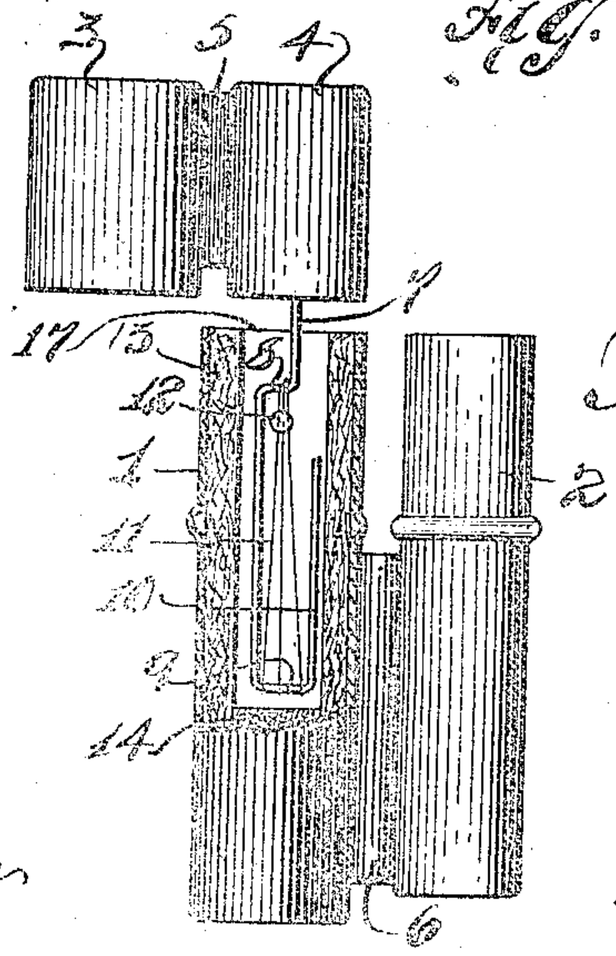

Fig. 3.

Witnesses:
C. A. Jarvis
William Norris

Inventor:
Richard E. Berthold
By Munn & Co
Attorneys.

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2 SHEETS—SHEET 2.

Fig. 5.

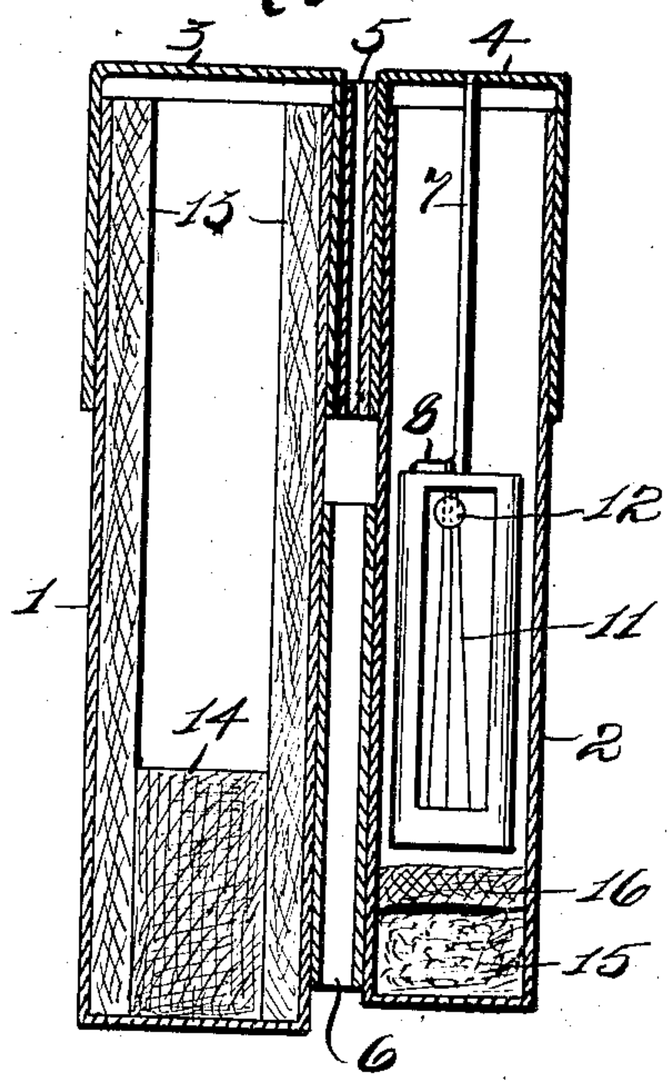
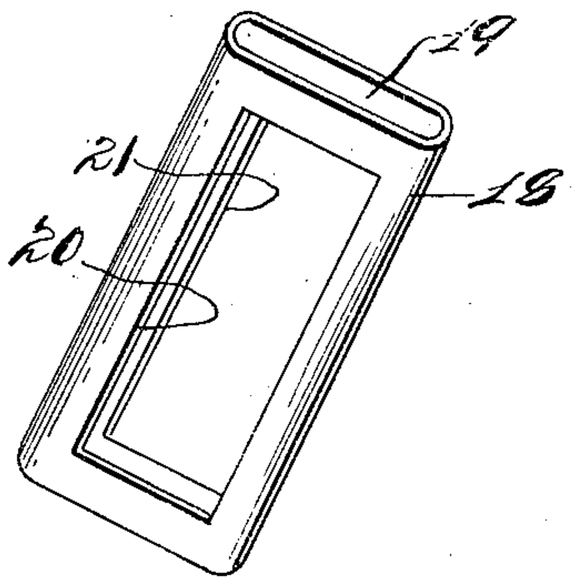


Fig. 6.



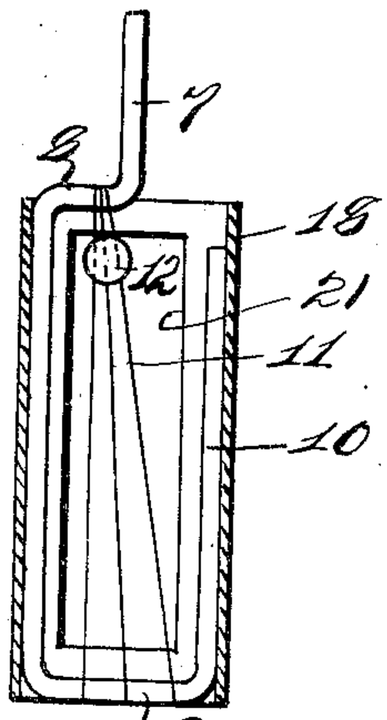


Fig. 7.

Witnesses:
C. A. Jarvis
Lillian Harris

Inventor
Richard C. Berthold
By Munn & Co
Attorneys.

UNITED STATES PATENT OFFICE.

RICHARD E. BERTHOLD, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO WILLIAM F. HOLCOMBE, OF NEW YORK, N. Y.

SELF-IGNITER.

No. 865,755. Specification of Letters Patent. Patented Sept. 10, 1907.

Application filed March 28, 1907. Serial No. 365,137.

To all whom it may concern:

Be it known that I, RICHARD E. BERTHOLD, a subject of the Emperor of Germany, residing at New York city, borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Self-Igniters, of which the following is a clear, full, and exact description.

This invention relates to ignition devices, more particularly to that class known as self-igniters, the object being to provide an improved inexpensive portable and compact igniter which can be carried in a pocket.

My improved device is adapted in one chamber to carry a combustible vapor producing medium which will ignite when brought into contact with the igniting element hereinafter described, and the device is also provided with a separate chamber adapted to contain a moisture absorbing medium for the purpose of keeping the igniting element dry.

A further feature of my invention is to provide a protector for the igniting element, to prevent breakage or mutilation thereof.

To these and other ends which will hereinafter appear, my invention comprises the novel features of improvement and combination and arrangement of parts which I will now proceed to describe and finally claim, reference being had to the accompanying drawings forming part thereof, wherein—

Figure 1 is a side elevation of my improved self-igniter, shown closed; Fig. 2 is a central vertical section thereof; Fig. 3 is a side elevation, on a reduced scale, partly in section, showing the manner of producing a flame; Fig. 4 is an enlarged sectional view of the platinum sponge and wires; Fig. 5 is a central vertical section of the casing and shows a protecting sheath over the igniting element; Fig. 6 is an enlarged detail perspective view of the sheath; and Fig. 7 is an enlarged detail view of the lower end of the igniter, the sheath therefor being in section.

Like numerals of reference are intended to indicate corresponding parts in the several views.

The views in the accompanying drawings illustrate the preferred form in which my improved igniter may be embodied, but it will of course be understood that the essential features of my invention may be constructed in other suitable forms.

Referring to said drawings, the numeral 1 indicates the combustion chamber of my improved device, and 2 indicates the storage chamber thereof, while 3 and 4 indicate, respectively, the caps therefor. The chambers 1 and 2 may be connected by the separator or bridge-piece 6, or in any other manner, the caps 3 and 4 being likewise connected by the member 5. The cap 3 is for the purpose of preventing the combustible element from evaporating from the chamber 1 when the igniter is not in use.

The cap 4 has attached thereto, in any suitable manner (in this instance screwed), a frame 7, which is offset at 8, and at its lower end terminates in a horizontally disposed member 9 and an upwardly extending protecting arm 10.

Between the offset 8 and horizontal member 9 I stretch a fine platinum wire 11, the said wire being looped a number of times to form a network, as shown in Fig. 2. Adjacent to the offset 8, the said wire or strands pass through a platinum body or sponge 12, or any other material capable of becoming incandescent when brought into contact with a combustible vapor. This construction is highly advantageous, as the proximity of the sponge to the wire causes the heat therefrom, when incandescent, to be more readily imparted to the strands of the wire 11, whereby a quicker combustion is effected. The offset 8 is for the purpose of facilitating the attachment of the wire 11, the broader member 9 permitting the wire to be arranged in the form of a fan or net.

Within the chamber 1, I place a lining or wick 13 of any absorbent non-combustible element, such as asbestos, mineral wool, or even an ordinary cotton wick. In the bottom of the said chamber I place a body of similar medium 14, the lining or wick 13 and body 14 of said material being saturated with any combustible vapor producing medium, such as alcohol, ether, gasolene or the like. It is not intended or necessary for the perfect operation of my igniter that any of the combustible medium be retained in the chamber in bodily form, a thorough saturation of the wick only being necessary.

In order to absorb any dampness that may find its way into the chamber or casing 2, I place in the bottom thereof calcium chlorid, or similar substance, 15, and cover the same with absorbent cotton 16 to act as a retaining means therefor. The chlorid acts to absorb any moisture that may adhere to the platinum wire, thus keeping same dry and preventing deterioration thereof.

In order to use the igniter, the frame 7 with the wire 11 thereon is placed in the chamber 1, as shown in Fig. 3, and as soon as the sponge 12 comes in contact with the gases in the chamber, it will become incandescent, as will also the wire 11, whereby the vapor is ignited. The frame is then withdrawn and a flame will be emitted from the mouth 17 of the chamber 1, which flame can be used to light cigars or for other purposes.

In Fig. 5, I have shown the lower end of the frame 7 as provided with a protecting sheath 18 which is adapted to be slid over the end of the frame 7 and frictionally held, after the wire 11, and sponge 12 have been affixed thereto. The sheath 18 has a central pocket 19 which is adapted to receive the lower end of said frame 7. Openings 20, 21 are formed in the sides of the frame to

permit of the passage of the combustible gases through the net formed by the wires 11. By means of the sheath 18 the wires 11 are kept out of contact with the wick 13, the fingers or other obstructions, and thus preventing breakage or mutilation thereof.

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

1. A self-igniter, comprising a combustion-chamber, an independent chamber or case attached thereto at the side thereof, means for retaining a combustible vapor producing medium in said combustion chamber, a material capable of catalytic action when brought in contact with said vapor, normally retained in said independent chamber or case, a removable closure for said combustion chamber and said case adapted to simultaneously close the combustion chamber and said case, said case-closure supporting the material capable of catalytic action.

2. A self-igniter comprising a combustion chamber adapted to retain a combustible vapor producing medium, a casing or chamber attached thereto, a material in said casing adapted to absorb moisture, means for igniting said vapor and adapted to be removably held in said casing, and caps for said chamber and said casing.

3. A self-igniter, comprising a combustion chamber adapted to retain a combustible vapor producing medium, a casing or chamber attached thereto, a moisture absorbing element in said casing, a retaining means for said moisture absorbing element, and a detachable closure for said chamber and said casing.

4. A self-igniter, comprising a combustion chamber, a combustible vapor producing medium therein, an independent casing or chamber connected thereto, a body of calcium chlorid in said casing, retaining means for said calcium chlorid also in said casing, an igniting element for said vapor, and a detachable closure for said chamber and said casing.

5. A casing, a material capable of catalytic action when brought in contact with a combustible vapor removably held therein, a body of calcium chlorid in said casing, and an absorbent covering therefor.

6. An igniter, comprising a combustion chamber, a casing attached thereto, a removable closure for said chamber and said casing, a platinum structure adapted to be normally retained in said casing, said platinum structure being adapted for insertion into said chamber when said closure is removed, a wick in said chamber adapted to retain a combustible vapor producing medium, a body of calcium chlorid in said casing, and means for retaining said calcium chlorid in said casing.

7. A self-igniter comprising a combustion chamber, an independent chamber or case connected thereto at the side thereof, means for retaining a combustible vapor producing medium in said combustion chamber, a material capable of catalytic action when brought in contact with said vapor, normally retained in said independent chamber or case, and removable united closures for said combustion chamber and said case.

Signed at New York city this 26th day of March 1907.

RICHARD E. BERTHOLD.

Witnesses:
WILLIAM HARRIS,
EDWARD A. JARVIS.