

(No Model.)

C. T. KINGZETT.
SULFUR CANDLE.

No. 539,061.

Patented May 14, 1895.

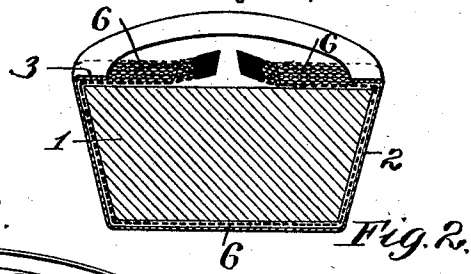
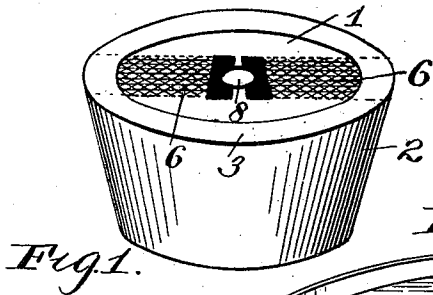


Fig. 3.

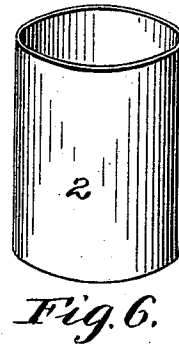
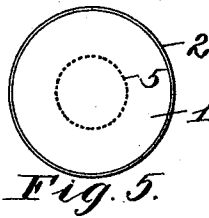
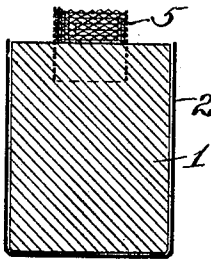
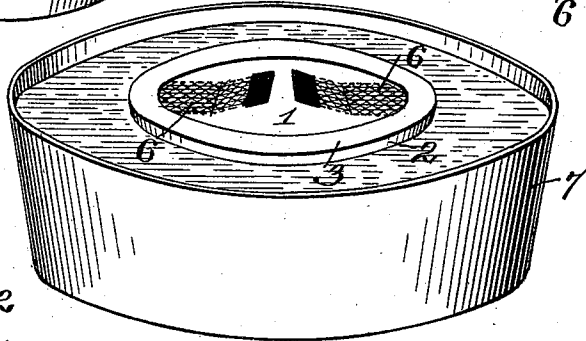


Fig. 8.

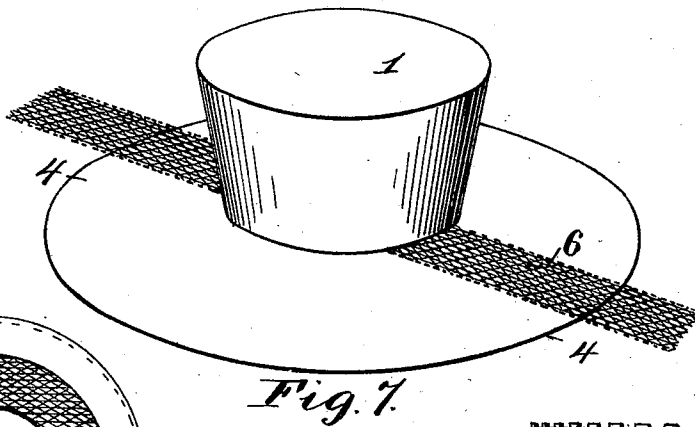
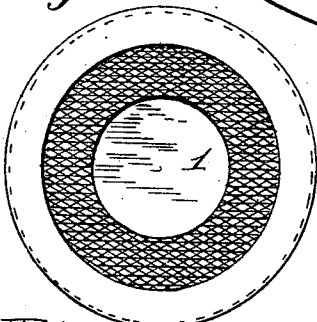
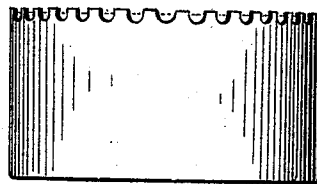


Fig. 9.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES THOMAS KINGZETT, OF LONDON, ENGLAND.

SULFUR CANDLE.

SPECIFICATION forming part of Letters Patent No. 539,061, dated May 14, 1895.

Application filed July 24, 1894. Serial No. 518,480½. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES THOMAS KINGZETT, a subject of the Queen of Great Britain, and residing at Elmstead Knoll, Chislehurst, London, county of Kent, England, have invented certain new and useful Improvements in Fumigators, of which the following is a specification.

My invention relates to that class of devices often known as fumigators or fumigating candles, commonly made of sulphur or a mixture thereof, and having a suitable container adapted to keep the sulphur from dispersion as it melts under the heat of its consuming flame. In the use of such fumigators it is desirable to supply to the gases or fumes evolved by combustion an aqueous vapor for the formation with such gas or gases of the desired sulphurous acid gas. Such aqueous vapor is ordinarily furnished by burning the fumigator in immediate proximity to a body of water, commonly by placing the fumigator in the water so as to be almost completely immersed therein. When this is done it is desirable or necessary to the complete combustion of the sulphur to surround the fumigator, or that portion thereof which is immersed, with a water-proof covering or container in order to prevent the wetting of the sulphur by the water which would prevent its perfect combustion, or cause spitting with consequent danger of starting fires. In order that the heat of combustion may be readily communicated to the water for the production of an aqueous vapor as aforesaid, such water excluding containers have heretofore been made of a good conductor of heat of rigid non-flexible material, such as commercial tin plate, but the expense of such vessels or containers is a material objection to their employment, oftentimes exceeding the value of the candle.

It is the object of my present improvement to supply a fumigator incased in a water-excluding container of very cheap character and which is a better conductor of heat and which will better promote the generation of aqueous vapor, when the fumigator so incased is immersed in water, than the tin vessels or containers above mentioned. To this end I combine with the fumigator of sulphur, or a mixture thereof, a sheet of metallic foil in such manner that all parts of the fumigator to be immersed in water will be covered and protected. The foil is preferably applied in

a sheet with the middle of the latter upon the bottom of the fumigator and its edges folded or bent up upon the sides of the candle. The extreme edge of the sheet of foil may be bent over upon the top surface of the fumigator, or may terminate at or above its upper edge, as found most desirable, or may on its upper margin be perforated or serrated. The covering of foil may, however, be formed upon a suitable mandrel and the sulphur or mixture thereof, while in a fluid condition, may be poured into the container thus previously formed.

The fumigator may be supplied with an igniter embedded in the body of the candle in the usual manner, or such igniter may be combined with the fumigator by being placed upon its exterior with its ends projecting above the top of the fumigator and the sheet of tin foil then applied to the exterior as aforesaid; or the igniter may be laid in a U-shaped strip within the container and having its ends projecting above the edge thereof and the molten sulphur then poured in upon the igniter, or the igniter may take the form of a strip or circle stretched across or over the face of the fumigator and secured by means of the edge of the foil which is folded over the edges of the strip. While the container thus produced may be very readily combined with the fumigator, and is very inexpensive, it will nevertheless sufficiently protect the sulphur from the water and will readily conduct heat to the latter for the purpose already described.

Such being the general nature of my improvements, I have shown in the accompanying drawings means for carrying the same into practical effect, without limiting my invention in its useful applications to the particular constructions or shapes which, for the sake of illustration, I have delineated.

In said drawings, Figure 1 is a perspective view of a fumigator embodying my invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a perspective view of the fumigator immersed in water and ready for combustion. Fig. 4 is a vertical sectional view of another form of fumigator also embodying my invention. Fig. 5 is a plan view of the same. Fig. 6 is a perspective view of a container of tin foil formed upon a mandrel and ready to receive the sulphur. Fig. 7 is a perspective view of a fumigator, with its igniter, and a

sheet of tin-foil about to be applied thereto to form a container. Fig. 8 is a plan view of a fumigator having applied thereto a circular igniter secured by the edge of the container. Fig. 9 is a side view of a fumigator having its container serrated on its upper edge.

Referring to the drawings, 1 indicates the body of the fumigator or candle formed of sulphur or a mixture thereof.

2 is a container of tin or lead foil applied to the exterior of the candle so as to cover and exclude water from its bottom and sides. Such container may terminate just at the upper edge of the candle, or may be folded over upon the top surface of the latter as indicated at 3, in order to better prevent the edge of the container from being caught and stripped or rubbed from the face of the candle. The container may be preliminarily formed in any suitable manner as indicated in Fig. 6, or it may be applied to the exterior of a candle in the form of a sheet as indicated in Fig. 7, by the numeral 4.

The igniter for facilitating the ignition of the candle may be formed of bobbinet or other foraminated or suitable material embedded in the candle and projecting above the top thereof in circular or other form as indicated at 5, in Fig. 4, or said igniter may be in the form of a strip as shown at 6. This strip may be situated upon the exterior of the candle, passing around the bottom thereof with its ends projecting as shown in Figs. 1 and 2. In such case the igniter lies immediately upon the inner surface of the container, and may be placed in the latter before the sulphur is poured in. The ends of the strip 6 are coated with sulphur, and, when about to be ignited, may be bent upward slightly above the top of the fumigator, as seen in Fig. 3, so as to burn readily. These ends are rendered by their sulphur coating very stiff and brittle and are liable to become broken off, or lose their film of sulphur, unless some means is adopted for their protection. According to my invention said ends lie flat upon the top of the fumigator, Fig. 1, when the latter is packed for transportation and until it is made ready for use as above mentioned, and any liability of their becoming broken is thus obviated. Said ends may be connected by a bead 8 of sulphur applied while molten, as an additional safeguard against their being broken or torn off; or such bead may connect the said ends with the top surface of the candle.

As shown in Fig. 8 the igniter may be in annular form, engaged all around its edge by the bent-over edge of the container. When thus constructed the igniter is very effectively protected against being broken in packing and transportation.

When it is desired to burn the fumigator, it is placed in water in a suitable vessel 7, as seen in Fig. 3, the top of the candle being level with or only slightly above the surface of the water. The igniter 6 is then ignited and the combustion of the candle begins. As

the flame reaches that portion of the foil container the outer surface of which is in contact with the water, heat is rapidly conducted through the foil and abstracted by the water, and to such a degree that the melting of the foil so in contact with and excluding the water is prevented. A thin film of sulphur may be left unconsumed upon the inner face of the container, but otherwise the sulphur will ultimately be entirely consumed. The considerable amount of heat thus imparted to the water around the container generates aqueous vapor which rises and mingles with the fumes from the burning sulphur, producing the desired germicidal sulphurous acid.

I find that foil suitable for the above described use is ordinarily tin foil, or tin and lead (alloy) foil, or common lead foil.

Instead of applying the middle of the foil-sheet to the bottom of the candle, the foil may be wound around the candle and its edges interlocked along the side and bottom of the latter to form a seam which will be practically water-tight.

By the use of my invention the candle provided with its container while having the above described advantages, will also be neat, and lighter, and occupy less room in packing than as now put up. With all sizes of candles the container can be made to fit neatly and need not project above the top edge of the candle, as it can be folded down flat upon the top surface thereof.

In contradistinction to keeping in stock containers completely formed and of rigid material which occupy considerable space, the metallic foil may be kept in stock in flat condition ready for immediate use or to be shaped or formed upon fumigators of any desired size.

Should the metallic foil container or its joints or folds fail to be absolutely water-tight, the water will be excluded from the fumigator by the film of sulphur which will be left unconsumed over such opening or openings.

I claim—

1. A fumigator of sulphur or a mixture thereof, incased in a container of metallic foil, substantially as set forth.

2. A fumigator consisting of a candle of sulphur or a mixture thereof, having an igniter around its exterior with an end or ends above the top of the candle, and a container of metallic foil enveloping the bottom and sides of said candle and igniter, substantially as set forth.

3. A fumigator of sulphur or a mixture thereof having an igniter which is folded down flat upon the surface of the candle and detachably secured on said surface by a bead or portion of sulphur, as set forth.

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

CHARLES THOMAS KINGZETT.

Witnesses:

FREDERICK MOLL,
MAXIMILIAN ZINGLER.