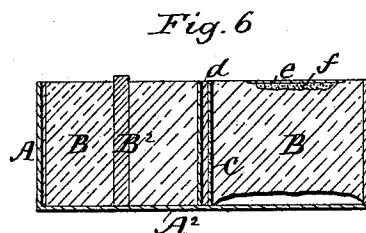
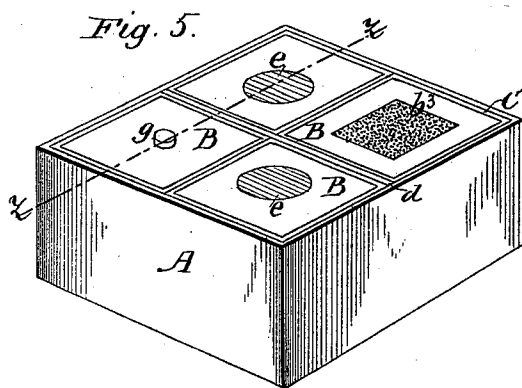
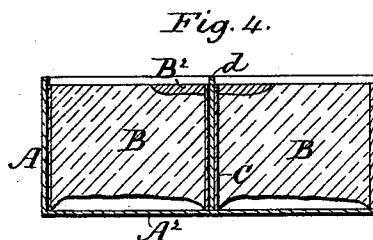
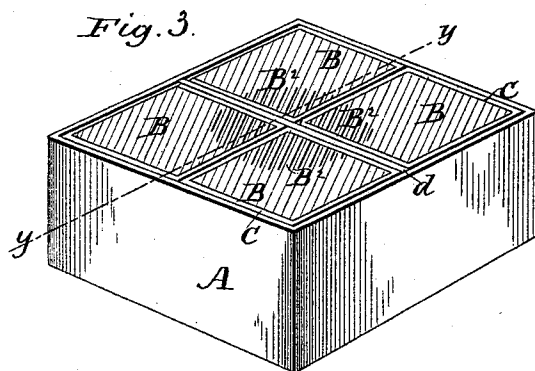
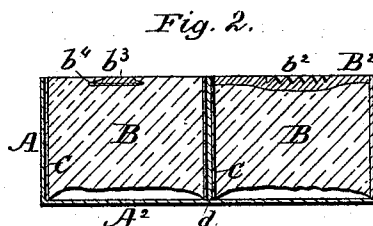
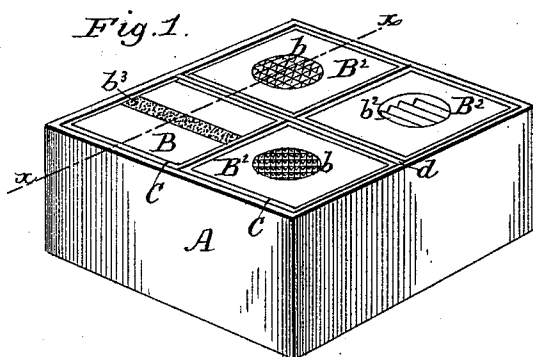


(No Model.)

R. W. JOHNSON.
SULPHUR CANDLE OR FUMIGATOR.

No. 499,325.

Patented June 13, 1893.



Witnesses:

A. B. Deppes
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Inventor:

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attly

UNITED STATES PATENT OFFICE.

ROBERT W. JOHNSON, OF NEW BRUNSWICK, NEW JERSEY.

SULPHUR CANDLE OR FUMIGATOR.

SPECIFICATION forming part of Letters Patent No. 499,325, dated June 13, 1893.

Application filed October 15, 1892. Serial No. 448,973. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. JOHNSON, a citizen of the United States, residing at New Brunswick, in the county of Middlesex, State of New Jersey, have invented certain new and useful Improvements in Sulphur Candles or Fumigators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to sulphur candles or fumigators used for disinfecting various localities, and for the destruction of insects; and the objects of my improvement are to produce new fumigators of convenient form and weight, and suitably packed in series to facilitate their storage and sale by druggists.

Another object is to produce a substantially wickless fumigator capable of being easily inflamed, and remains inflamed until it is entirely burned and vaporized.

I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a series of fumigators constructed in accordance with my invention. Fig. 2 is a vertical section of the same on line X X of Fig. 1. Fig. 3 is a perspective view of another series of fumigators constructed in accordance with my invention. Fig. 4 is a vertical section of the same on line y y of Fig. 3. Fig. 5 is a perspective view of another series of fumigators constructed in accordance with my invention. Fig. 6 is a vertical section on line z z of Fig. 5.

In said drawings, A, represents a rectangular box of non-inflammable material, preferably of card-board impregnated or coated with alum or silicate of soda. Said box is provided with a bottom A² of non-inflammable material. The top of said box may be provided with a cover, but it is generally coverless. When the fumigators are packed in large boxes for shipment, the layers of boxes are separated simply by sheets of paste-board.

Within the boxes A, is placed the series of preferably four small fumigators B, each weighing about a quarter of a pound. Said fumigators are preferably in the form of cubes, to permit a closer packing thereof, although they may be cylindrical, or of other forms.

The fundamental principle of this inven-

tion consists in producing a sulphur fumigator of a molded block of sulphur having its sides inclosed in a box, and also having attached to, or incorporated into, its upper face, a chemical compound more readily inflammable than sulphur. Various forms may be given to the compound, and various means used to secure it to the upper face of the molded block, as will be hereinafter described.

In Fig. 1, the sulphur blocks B, have incorporated in their upper faces, a chemical compound B² of sulphur and chlorate or nitrate of potash, or other well known chemical combustible; and while said compound B² is yet plastic, a seal is impressed therein, the face of said seal being so corrugated as to produce either diamond-shaped projections as at b or ridges as at b² which will facilitate the ignition of the chemical compound, and consequently of the block of sulphur. The igniting compound shown at b³ in Figs. 1 and 2, consists of a mixture of charcoal, nitrate of potash and sulphur having two of its edges embedded in the sulphur of the block and preferably made to adhere first to a small strip of paper b⁴. The blocks are preferably molded within their inclosure C which is formed of a suitably creased strip of either thin paste board or cardboard, either plain, or treated with non inflammable material as alum or silicate of soda or it may be asbestos board. The blocks are generally molded with their intended upper-faces down upon a smooth surface, but may be upon any other desired surface. To mold the block provided with igniting compound shown at b³ said compound is first deposited and made to adhere to the strip of paper b⁴; and said charged strip is placed with the compound downward upon a smooth surface and the endless mold or box C placed around it. Melted sulphur is then poured into said box C until it substantially fills it, and is allowed to congeal therein. The melted sulphur is thus made to inclose the edges of the paper b⁴ and retain the igniting compound b³ secured to the block. To produce the other blocks shown in Fig. 1 each box C is placed on a smooth surface and a small quantity of the igniting compound B² is poured therein, and on top thereof melted sulphur is immediately poured, and forms a solid body with said compound as soon as it

has congealed, no division line being apparent between the two.

In the fumigators shown in Figs. 3 and 4 the igniting compound B^2 is located at one corner of each, so that when placed within the box A, in the order shown in said figures, the four blocks can be fired simultaneously with one lighted match, and the combustion will begin in the center of the box A. To keep the burning sulphur from overflowing the box A, the latter is made slightly larger than the sum of the volumes of the boxes C, but the latter are kept immovable during transportation within the box A by a strip of paste-board d inserted between the boxes C; but said strip can be easily removed before firing the fumigators; or to facilitate the removal of the latter from the box A if they are sold singly or to be fired separately.

In the box of fumigators shown in Fig. 5 the fumigator having a square igniting surface represented therein at b^3 is produced substantially as described at b^3 in Fig. 1. The surface is only larger and of different form.

The ignitors shown at e in Fig. 5 consist of a small piece of oiled or waxed tissue paper e inclosing a mixture f of powdered sulphur and chlorate of potash. To produce this fumigator, the paper e is placed upon a smooth surface and a small quantity of the powdered mixture placed upon it. The box C is then placed around it, and melted sulphur poured in the latter. The sulphur being thus made to adhere to the paper e retains the igniting mixture secured to the block of sulphur.

Another modified form of ignitor is shown at g in one of the blocks represented in Fig. 5. In this construction a block B is first molded of sulphur. Said block is afterward bored, and within the cavity thus obtained a melted compound g of sulphur and nitrate of

potash is poured to have an ignitor extended deeply within the block. Said ignitor g may also be produced first in the form of a small cylinder and retained vertically within the box C while melted sulphur is poured around it.

Having now fully described my invention, I claim—

1. A sulphur fumigator consisting of a molded block of sulphur having upon one of its faces and incorporated therein a chemical salt more inflammable than sulphur.

2. A sulphur fumigator consisting of a molded block of sulphur having upon a portion of one of its faces and incorporated therein, a chemical salt more inflammable than sulphur, in combination with a non flammable block inclosing said chemically prepared block.

3. A series of sulphur fumigators, each consisting of a molded block of sulphur having incorporated in one of its faces a chemical salt as chlorate of potash and inclosed in a box, in combination with a non-flammable box inclosing the boxed fumigators.

4. A fumigator consisting of a series of molded blocks of sulphur, each block having one of its faces provided with a chemical salt more inflammable than sulphur and all the blocks inclosed in a non flammable box.

5. A fumigator consisting of a series of rectangular blocks of sulphur each inclosed in a non flammable box, and all the boxed blocks of the series inclosed in a non flammable box substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT W. JOHNSON.

Witnesses:

THOS. G. PHINNY,
J. W. JOHNSON.