H. R. OCHS.

FUMIGATOR OR DISINFECTING LAMP.

APPLICATION FILED MAR. 17, 1915.

**1,173,210.** Patented Feb. 29, 1916.

*Fig. 1.*

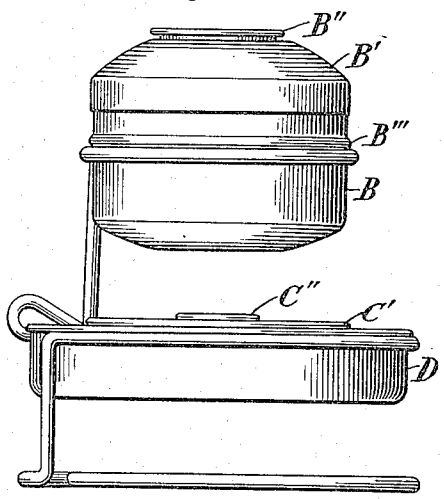



*Fig. 3.*

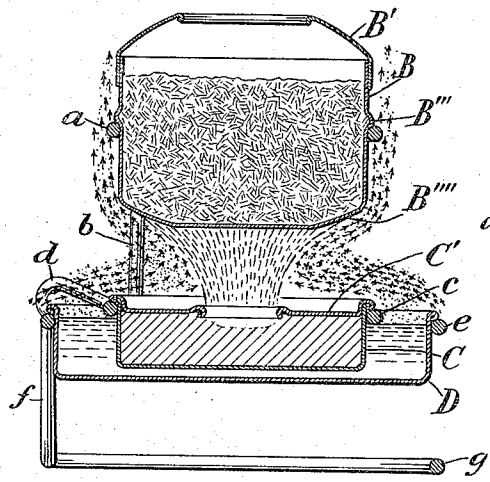
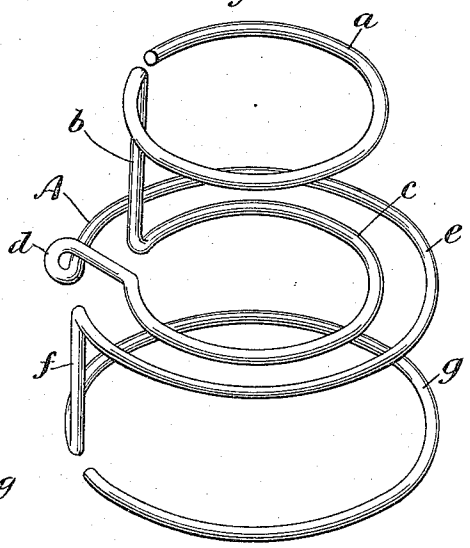



*Fig. 2.*




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# UNITED STATES PATENT OFFICE.

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## FUMIGATOR OR DISINFECTING-LAMP.

1,173,210. Specification of Letters Patent. Patented Feb. 29, 1916.

Application filed March 17, 1915. Serial No. 15,102.

*To all whom it may concern:*

Be it known that I, HENRY R. OCHS, a citizen of the United States, and a resident of Westport, in the county of Fairfield, State of Connecticut, have invented certain new and useful Improvements in Fumigators or Disinfecting-Lamps, of which the following is a specification, reference being had to the drawings referred to, which are made a part hereof.

My invention relates to the class of fumigators known quite generally as "fumigating candles," and among its objects are to produce such a fumigator extremely simple, compact and cheap, with, however, perfect reliability and safety in use in the hands of ordinary laymen.

Fumigating apparatus is made in various sizes, but the expensive or large apparatus is operated outside the chamber to be treated, so that the apparatus can be under the direct and constant care of some one. On the other hand, fumigating candles or lamps are placed in the room to be disinfected, and when once started the room is closed and sealed, and the lamp inaccessible for any adjustment, and its proper action can only be determined after the time allowed for fumigation is over. Therefore, if not certain of action and reliable, the failure cannot be determined until after the lapse of time, and all the work incident to fumigation must be repeated if the lamp has failed. Likewise the danger of setting fire, or damage liable through emanation of soot, will happen without detection until the period of fumigation is over, with resultant serious consequences.

The small fumigator or disinfector is well known, but those heretofore on the market have been unreliable and dangerous in many respects. For instance, those with a wick are frequently found after use to have caused damage by soot, or the wick has become displaced, giving such a large flame as to reach and destroy the disinfecting gas,—or the flame has gone out,—or the fire or scorching of articles adjacent to the candle have resulted in damage and sometimes conflagrations.

Among the objects of my invention is the production of a lamp overcoming the various defects recited, and embodying other advantages as will hereinafter more particularly appear.

In the particular form of my invention herein described and shown in the accompanying drawings: Figure 1 is a side elevation. Fig. 2 is a perspective view of the frame. Fig. 3 is a sectional elevation.

In the particular form illustrated, A is a frame consisting of a single piece of wire bent to form a stand and suitably support all parts; B is a metal container for the disinfectant, which also serves as a boiler; C is a metal box containing the solidified alcohol used as the fuel; D is a shallow pan surrounding the fuel box C.

The disinfectant container B, has a removable cover B′, permitting it to be readily filled with formaldehyde until used; B‴ is a lateral corrugation to position the box in the support; and B⁗ is a generally curved or rounded bottom. The fuel box C has a pressed metal top C′, and a central opening with a friction cap C″, the solidified alcohol being inserted through the opening and the opening made of a predetermined size which will afford a flame of exactly the right size. The pan D is open on the top and has a beaded top edge to engage its support.

The frame A has a substantially circular top *a*, adapted to snugly fit the box B and engage the lateral corrugation B‴, thereby holding it in the predetermined position with relation to the other parts. The frame bends downward, having the upright support *b*, which at its bottom may be slightly kinked, and the continuation of the wire is bent into a circular support or ring *c*, adapted to engage the box C and hold it the predetermined distance under the box B, and particularly to hold it firmly in a central position. The continuation of the frame wire takes a bend *d*, and then merges into the ring *e* a little below the plane of the ring *c*, but at a greater diameter, and adapted to encircle the pan D, the twist *d* being so fashioned as to clear the beaded edge of the pan D. The wire frame continuation in the upright *f*, which, at its bottom merges into the ring *g*, forms the base for the stand.

It will thus be seen that the formaldehyde may be packed in the box B, sealed, and will preserve the disinfectant, until used, while the box may thereafter be most readily inserted into the ring *a*. The box C can be separately filled with its fuel, and the pan D first inserted into its supporting

ring *e*, and thereafter the fuel box C readily slipped into its encircling ring *c*. Thus all parts may be made separately and filled separately, affording greatest economy in these operations, and thereafter all may be slipped quickly, without the slightest trouble, into the frame A, and will then have their proper relative positions to insure the proper functioning of the fumigating candle when used.

In addition to the economy in manufacture and assembly, the construction is compact and not liable to derangement, while the base *g* supports all parts the desired distance above the object on which the fumigating candle is placed.

The solidified fuel being carried in a sealed metal box is entirely safe for transportation, and by accurately proportioning the orifice in the top of the box, and having the box the right distance below the formaldehyde can, the proper size of flame is insured, which will heat the formaldehyde and gasify it at a proper rate, without any chance of the flame spreading around the formaldehyde can, thereby avoiding the chance of the flame coming into contact with the formaldehyde gases emanating from the top of the can. As the space around the flame is entirely free, there is no obstruction which would cause sooting of the flame, which is also further insured by the rounded bottom on the can B.

As shown in Fig. 2, the water placed in the pan D encircles the fuel box C, thereby preventing the fuel box from coming into contact with objects which might be scorched or set fire to. In addition the currents of air feeding the flame to cause combustion, pass radially inward from around the device as indicated by arrows, and pass over the annular water space, while the currents so set up, as well as the products of combustion of the flame would pass upward along the sides of the box B, and in this manner vapor rising from the water in the pan D, would be carried up along the sides of the can B, as indicated by stippling, which brings the water vapor into contact with the formaldehyde gas above the can B. This would not be possible if there were any lateral projections on the can B, or in the frame, but the construction lends itself most admirably to insure a certain amount of vapor mingling with the formaldehyde gas, which therefore increases its efficiency in fumigation.

It will be seen that my improved fumigating candle is extremely cheap to manufacture, the separate parts may be assembled with the utmost simplicity, or parts may be replaced for defective ones in course of manufacture, or otherwise, without the slightest trouble; the disinfectant, as well as the fuel are preserved against deterioration or danger in hermetically sealed metal cases, which may be opened by any one without a special device; while there is no necessity for any adjustment of flame or parts,—but the safe and reliable operation of the candle is insured even in the hands of the most inexperienced layman, and its use involves nothing more than the application of a match after removal of the caps and the insertion of a small amount of water in the bottom pan, if desired. The proportion of parts is such that the amount of fuel is just sufficient to completely gasify the formaldehyde, and when the operation is completed the parts of the candle are simultaneously exhausted without any danger whatsoever from flame or other cause. The candle may then be thrown away, as the construction is so cheap as to make it unwarrantable to reship or renew parts for reuse; but if desired extra packed cans and fuel boxes may be supplied.

In addition to the many advantages that will appear from the above, it may be noted that formaldehyde for devices of this sort, has not heretofore been packed in all-metal cans with friction caps or other suitable means to positively avoid deterioration; nor has solidified alcohol been used in this manner for this purpose, with its peculiar advantages already recited.

Various changes may be made in size or dimensions and in other respects, without departing from the spirit of my invention, but

What I claim and desire to secure by Letters Patent is:

1. A stand for a fumigating candle comprising a single piece having a base, a supporting portion for a separable solidified fuel box adapted to hold said box a fixed distance above the base, a second supporting portion of the frame adapted to hold a metallic disinfecting can removably a predetermined distance above the fuel box, and means for holding a water pan around the fuel box.

2. A fumigating candle comprising separable parts readily attachable and detachable from a common frame, including a metallic can with formaldehyde supported in the upper portion of said frame, a solidified alcohol box and burner spaced centrally by said frame under the can, and a water pan surrounding said box supported substantially in the plane thereof and of greater extent laterally, said frame providing a separate ring support for each of said separable members, and a supporting base.

3. A fumigating candle comprising a metallic container can for formaldehyde, having a cap and adapted when open to constitute a generator for formaldehyde gas, a fuel box adapted to contain solidified alcohol, and having a cap and adapted when open to constitute a burner for heating said can, a

suitable stand to support said generator and burner in proper relation, and into which stand said generator can and burner box may be independently and readily inserted and removed, and means for removing any excess heat from said burner box.

4. In a fumigating candle, a formaldehyde can and generator, a solidified fuel box and burner, a stand to support said burner above the base and having a member to support the formaldehyde can above the burner, and provided with means to support a water-pan around said fuel box.

5. In a fumigating candle, a formaldehyde can and generator, a solidified fuel box having an aperture constituting a burner, a stand to support said burner above the base and a member on said stand to support the can above the burner and means for maintaining the constant rate of evaporation of said alcohol.

6. A stand for a fumigating candle comprising a one-piece bent wire, four spring rings formed by the convolutions of said bent wire, three of such spring rings forming respectively slip supports for a disinfectant can, a fuel burner and a water-pan, and the bottom ring forming a base, the water-pan ring being adjacent to and of greater diameter than the fuel-burner ring.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses, this 15th day of March 1915.

HENRY R. OCHS.

Witnesses:
CHAS. F. HENDRICKS,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."