No. 704,847. Patented July 15, 1902.

C. MATTHEY-MEIER.

APPARATUS FOR DESTROYING BUGS OR OTHER INSECTS INFESTING DWELLINGS OR LIKE PLACES.

(Application filed Mar. 1, 1902.)

(No Model.)

FIG. 1.

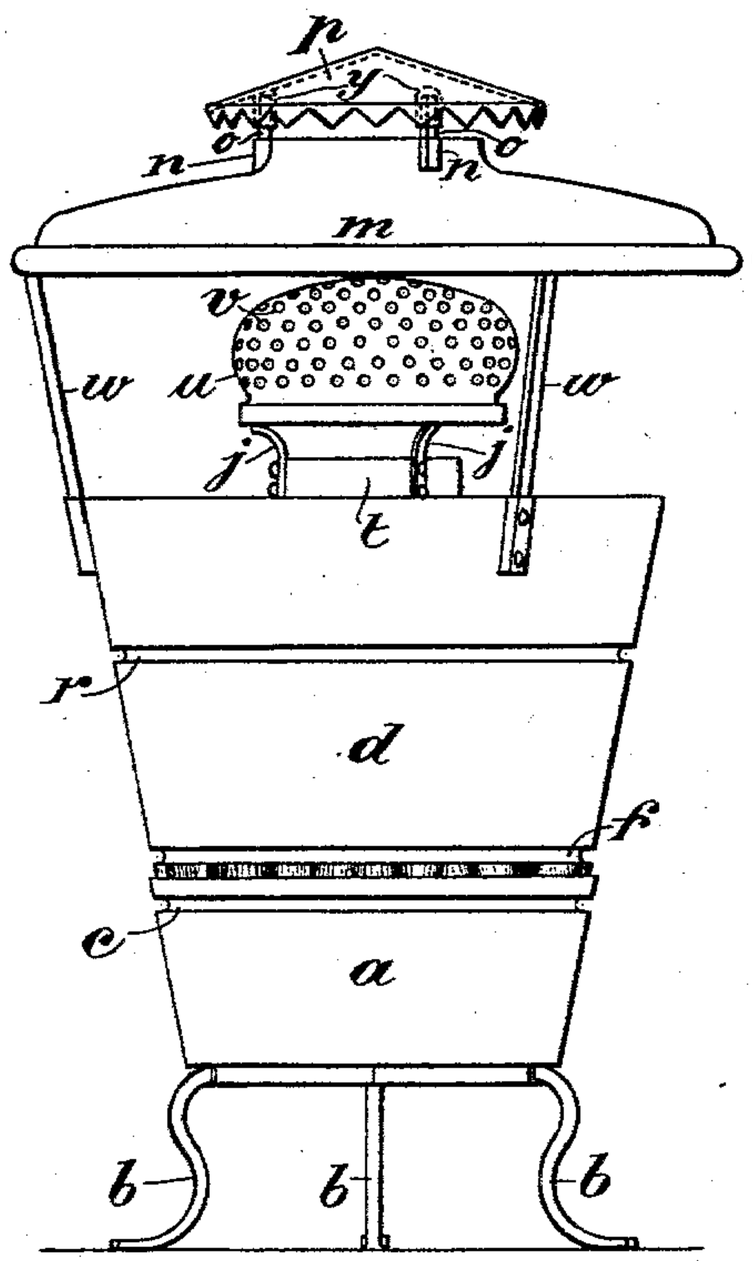


FIG. 2.

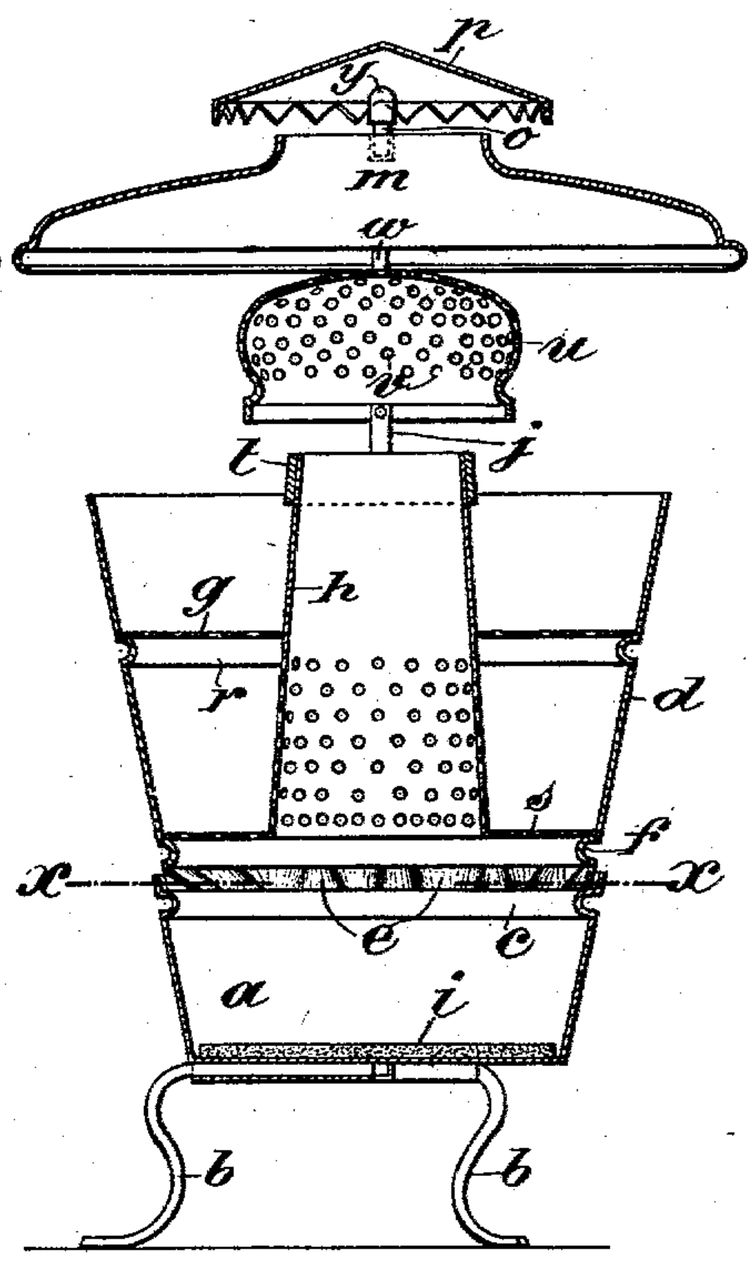


FIG. 3.

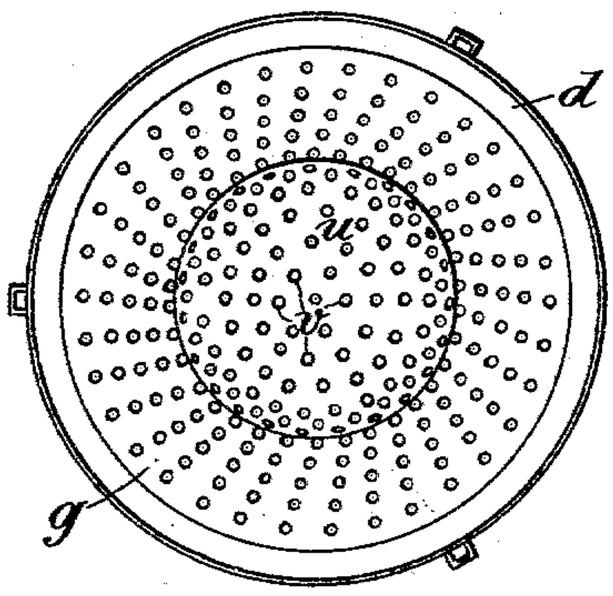
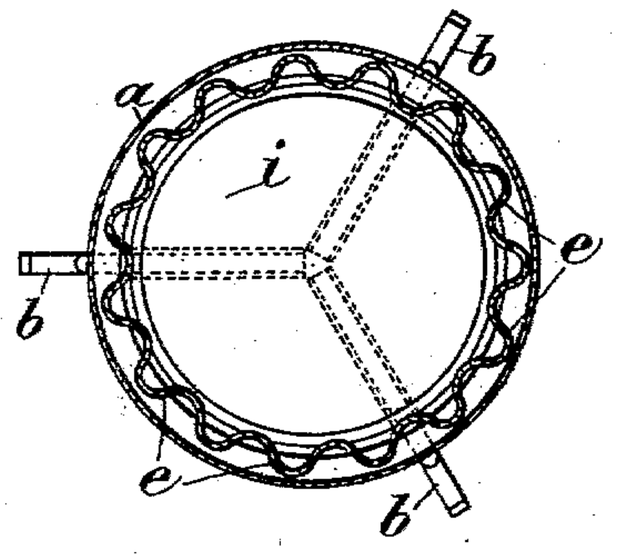


FIG. 4.



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APPARATUS FOR DESTROYING BUGS OR OTHER INSECTS INFESTING DWELLINGS OR LIKE PLACES.

SPECIFICATION forming part of Letters Patent No. 704,847, dated July 15, 1902.

Application filed March 1, 1902. Serial No. 96,219. (No model.)

To all whom it may concern:

Be it known that I, CONSTANT MATTHEY-MEIER, a citizen of the Swiss Republic, and a resident of Basle, Switzerland, have invented new and useful Improvements in Apparatus for Destroying Bugs or other Insects Infesting Dwellings or Like Places, of which the following is a full, clear, and exact description.

This invention relates to the destruction of bugs and other insects infesting dwellings and like places, and has for its object the construction of an apparatus for effecting the purpose by means of a poisonous gas produced by the complete combustion of sulfur or other substances in a closed chamber.

It consists, essentially, of a kind of pan, supporting near its upper part a truncated conical envelop of sheet-iron, at the lower part of which are provided apertures adapted to insure the entry of the air for combustion into the apparatus. The said truncated conical envelop carries an internal grate or perforated annular disk designed to receive the sulfur or other material to be burned and connected to a kind of vertical central chimney, preferably of a truncated conical form, which is prolonged toward the top above the said grate designed to receive the sulfur or other material. This chimney will preferably be connected below the said grate designed to receive the sulfur or other material to a second grate or perforated annular sheet-iron disk, also carried by the truncated conical envelop, the chimney being pierced with holes around the whole of the circumference in that portion which lies between the said grates or perforated disks. This chimney is preferably crowned by a hood or cap perforated with holes, and at the same time the said truncated conical envelop is surmounted by an annular hood, held at a certain distance from its upper end, and crowned by a hood of its own, so as to prevent the flame developed by the combustion of sulfur or other material being able to attain a great height above the apparatus, and thus remove any danger of setting fire to the apartment.

In the drawings annexed a form of construction of the apparatus is given as an example.

Figure 1 is an elevation. Fig. 2 is a vertical section. Fig. 3 is a plan, and Fig. 4 represents a horizontal section on the line $x\,x$ of Fig. 2.

a is the pan, provided with three detachable feet b, which simply engage in sockets arranged on the bottom of the pan. Just below the upper end of the pan an annular ledge c projects inward, on which rests the lower part of a truncated conical envelop of sheet-iron, d, corrugated at its lowest part, so as to form nearly vertical channels arranged to insure the entry of the air for combustion into the apparatus in a nearly vertical direction. This truncated conical envelop d has two internal horizontal ledges $f\,r$, on which rest, respectively, two perforated horizontal annular disks $s\,g$, connected together by a central vertical truncated conical chimney h, perforated with holes around its circumference on the portion situated between the two disks $s\,g$ and prolonged toward the top above the perforated disk g, which receives the sulfur or material to be burned and to have its upper end above the envelop d. On the upper extremity of the chimney h is arranged a detachable ring t, connected by three supports j to a cap u, so as to form a sort of hood. The cap u is perforated with a number of holes v. At its upper end the truncated conical envelop d carries three sockets, into which are stepped three movable supports w, on which rests an annular hood m, an inferior border of which is engaged over the upper extremities of the said supports w. This hood m carries in its turn, near to the interior edge, three vertical sockets n, in which are engaged three movable supports o, on which rests, through the medium of three sockets y, a truncated conical roof p, constituting, with the said supports o, a kind of hood.

To use this apparatus for the destruction of bugs and other insects in a room, the process of operation is as follows: The pan a having been furnished with a pad i impregnated with alcohol—for example, a pad of felt or cotton wool impregnated with alcohol—and the upper perforated plate g having been furnished

with sulfur or a mixture of sulfur and carbon or of any other appropriate combustible ingredients, the alcohol of the pad *i* is now lighted by means of a match and the room is left with the door closed, (all the exit-orifices from the room having been closed, so that the gases developed by the combustion of the materials produce their maximum effect.) By its combustion, assured by the air entering by the channels *e* and by the draft set up in the chimney *h*, the alcohol of the pad *i* sets fire to the sulfur or other material placed on the perforated plate, and the poisonous gases developed by such combustion distribute themselves in the chamber and exercise their destructive action on the bugs and other insects, the combustion being assured by the air entering the apparatus by the channels *e*. The sulfur or other fusible ingredient which by reason of this combustion can flow from the upper perforated plate onto the lower plate and passing through this into the pan *a* meets on its passage the air entering by *e* and burns equally, giving off poisonous gases, which are distributed into the room through the free spaces between the supports *w* and *o*. The gases in passing preferably travel through the upper plate *g* and through the perforations of the chimney *h* and up this chimney or simply through this chimney, according to the position when the combustion takes place.

This apparatus permits the rapid combustion of sulfur and other materials to be effected and the development in a relatively short time of a large quantity of poisonous gas, insuring the immediate and certain destruction of bugs and other insects. By reason of the arrangement of the cap *t u*, hood *m*, and cap *o p*, which prevents the flame from the combustion of sulfur or other material being discharged vertically, there need be no fear that the flame can set fire to the apartment or place where the apparatus is in use.

What I claim is—

1. An apparatus for destroying bugs and other insects infesting dwellings and the like by the combustion of sulfur or a mixture of sulfur and carbon or other combustible material capable of producing on combustion poisonous gases, consisting of an inferior pan, a truncated conical envelop of sheet metal put on the upper end of said pan, carrying an internal annular grate adapted to receive the combustible material to be burned and being provided on its lower part below the grate with downward-directed air-inlet channels, and an upright chimney connected to the grate and arranged within the said truncated conical envelop so as to extend upward above the said grate.

2. An apparatus for destroying bugs and other insects infesting dwellings and the like by the combustion of a combustible material capable of producing on combustion poisonous gases, consisting of an inferior pan, a truncated conical envelop of sheet metal put on the upper end of the pan, carrying two superposed internal annular grates the upper of which is designed to receive the combustible material to be burned, and being provided on its lower part with downward-directed air-inlet channels, and an upright chimney within the said envelop, connecting the two grates and arranged so as to extend upward above the upper grate, this chimney being perforated with holes around its circumference at that part situated between the said two grates, substantially as described.

3. An apparatus for destroying bugs and other insects infesting dwellings and the like by the combustion of a combustible material capable of producing on combustion poisonous gases, consisting of an inferior pan, a truncated conical envelop of sheet metal put on the upper end of the pan, carrying an internal annular grate to receive the combustible material and being provided on its lower part below the grate with downward-directed air-inlet channels, an upright chimney connected to the grate and arranged within the said truncated conical envelop so as to extend upward above the grate, a perforated cap on the chimney and an annular hood carried and held by the said envelop at a certain distance above this latter and surmounted by a cap so as to prevent the combustion-flame from attaining a dangerous height above the apparatus, substantially as described.

4. An apparatus for destroying bugs and other insects infesting dwellings and the like by the combustion of a combustible material capable of producing on combustion poisonous gases, consisting of an inferior pan, a truncated conical envelop of sheet metal put on the upper end of the pan, carrying two superposed internal annular grates the upper of which is designed to receive the combustible material to be burned and being provided on its lower part with downward-directed air-inlet channels, an upright chimney within the said envelop, connecting the two grates and arranged so as to extend upward above the upper grate, this chimney being perforated with holes around its circumference at that part situated between the said two grates, a perforated cap on the chimney and an annular hood carried and held by the said envelop at a certain distance above this latter and surmounted by a cap so as to prevent the combustion-flame from attaining a dangerous height above the apparatus, substantially as described.

5. An apparatus for destroying bugs and other insects infesting dwellings and the like by the combustion of a combustible material capable of producing on combustion poisonous gases, consisting of an inferior pan, a truncated conical envelop of sheet metal put on the upper end of the pan, carrying two superposed internal annular grates the upper of which is designed to receive the combustible material to be burned, an upright chim-

ney within the said envelop, connecting the two grates and arranged so as to extend upward above the upper grate, this chimney being perforated with holes around its circumference at that part situated between the said two grates, and air-inlet apertures, below the lower grate, near the lower part of the said envelop.

In witness whereof I have hereunto signed my name, this 15th day of November, 1901, in the presence of two subscribing witnesses.

CONSTANT MATTHEY-MEIER.

Witnesses:
GEORGE GIFFORD,
AMAND RITTER.