

E. A. GRANT.
 APPARATUS FOR KILLING INSECTS.
 APPLICATION FILED MAY 16, 1914.

1,142,810.

Patented June 15, 1915.

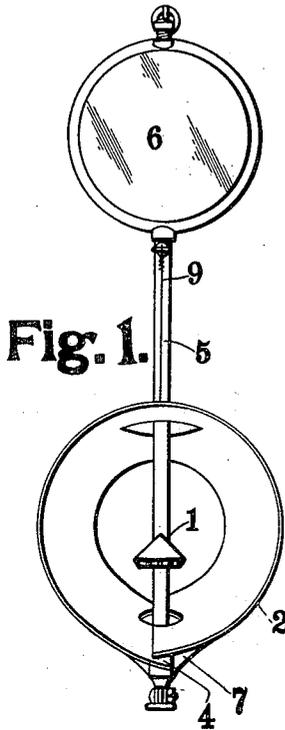


Fig. 1.

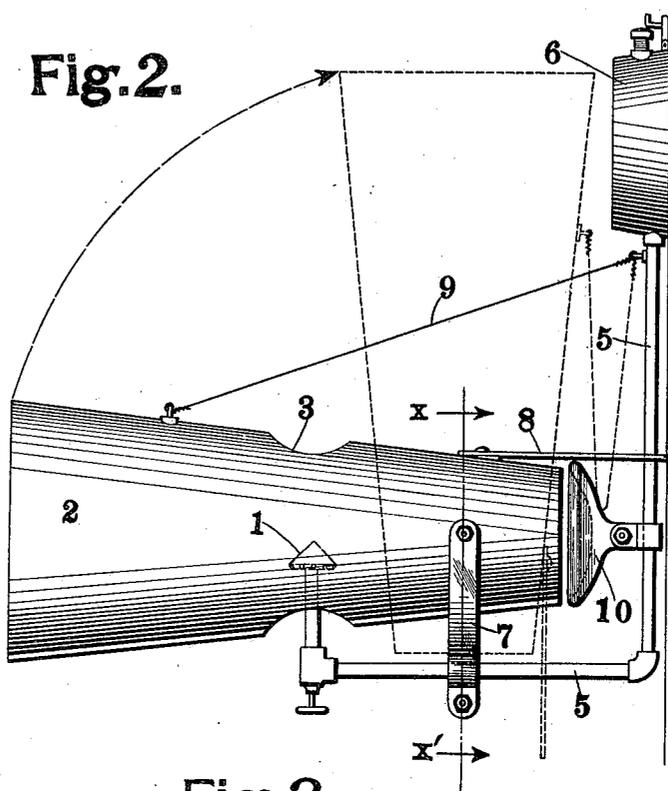


Fig. 2.

Fig. 4.

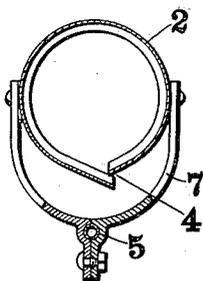


Fig. 3.

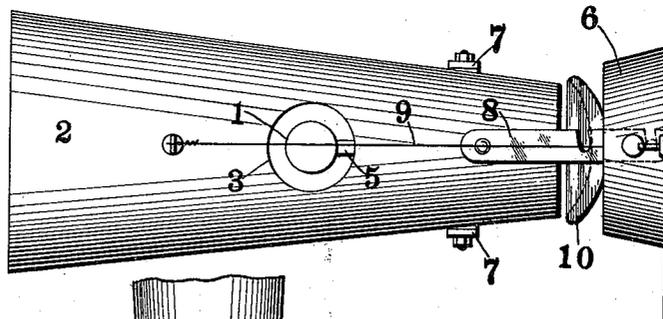
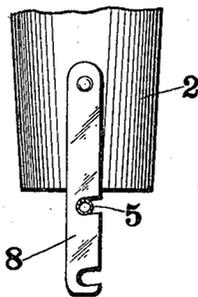


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR KILLING INSECTS.

1,142,810.

Specification of Letters Patent. Patented June 15, 1915.

Application filed May 16, 1914. Serial No. 838,955.

To all whom it may concern:

Be it known that I, EMORY A. GRANT, a citizen of the United States of America, residing at the city of Cleveland, county of Cuyahoga, State of Ohio, have invented a certain new and useful Apparatus for Killing Insects, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

A number of species of moth and night flying insects and their larvæ are quite destructive to vegetation, and my invention relates to a device to be placed in the fields to attract and destroy them. The device is also useful in chicken yards as a means of supplying insects for food for chickens.

In the accompanying drawings, which illustrate one form of apparatus embodying my invention, Figure 1 is a front elevation, Fig. 2 a side elevation, and Fig. 3 a top plan view of the apparatus; Fig. 4 is a view partly in section and partly in elevation, the section being taken on the line $w-w'$ of Fig. 2; Fig. 5 shows a detail of construction.

1 represents a flame burner having inclined sides and preferably cone shaped with the burner openings distributed around the periphery as shown.

2 is an opaque hood, preferably of funnel shape, surrounding the burner and extending a substantial distance in front of the burner. It is provided with a ventilating opening 3 above the burner and with a longitudinal opening 4 in the lower portion extending throughout its entire length, preferably being somewhat enlarged immediately beneath the burner. The edges of the hood so overlap at the opening 4 as to prevent passage of light directly to the ground except through the enlarged space immediately beneath the burner.

5 is a fuel supply pipe connected with the fuel reservoir 6. The hood 2 is pivotally supported on a bracket 7 carried by the fuel supply pipe 5.

8 represents a connecting clamp provided with two notches adapted to engage the supply pipe whereby the hood 2 may be held in either the full line or dotted line position shown in Fig. 2. The hood may be further

supported by the wire 9 also connected to the fuel pipe.

10 is a reflector supported on the supply pipe and positioned at one end of the funnel shaped hood 2 and adapted to reflect the light from the burner and direct it toward the other and larger end of the hood. The bracket 7 is so positioned with relation to the rear end of the hood that the hood may be raised up as shown in dotted lines in Fig. 2 in order that the burner may be readily accessible and also to place the apparatus in convenient shape for shipment.

My device is particularly effective for the purpose intended in that it concentrates the light from the burner and directs it to a considerable distance and in that when the insects have entered the open end of the funnel hood, its converging walls and, to same extent, the air drafts created by the burner quickly direct them into a zone of sufficient heat to kill them. The opening in the bottom of the funnel permits the dead insects to drop out of it and the inclination of the sides of the burner allows the insects that may fall on it to slide off and the burner openings are so positioned that they cannot be obstructed by dead insects.

Having fully described my invention, what I claim as new and desire to secure by Letters-Patent of the United States is:

1. In a device of the character described, the combination of a funnel shaped member open at one end and provided with a longitudinal opening extending substantially throughout its length, the edges of said member being overlapped at said opening, and a burner within the funnel and beneath the ventilating opening.

2. In a device of the character described, the combination of a funnel shaped member open at one end and provided with a longitudinal opening in the lower portion and a ventilating opening, a burner within the funnel and beneath the ventilating opening, a supply pipe for the burner, a bracket supported on the supply pipe and supporting the funnel, and a reflector for directing the light from the burner.

3. In a device of the character described, the combination of a funnel shaped hood open at one end and provided with a longitudinal opening in the lower portion, a burner within the hood and above the opening in the lower portion thereof, means for

pivotaly supporting the hood, and means for holding the hood in fixed position on its pivots.

3 4. In a device of the character described, the combination of a flame burner, and an opaque member surrounding said burner and extending a substantial distance in one direction therefrom, said member being provided with an unobstructed light discharging opening and a longitudinal opening extending substantially throughout its length.

10 5. In a device of the character described, the combination of a flame burner, a supply pipe therefor, a bracket on the supply pipe, 13 an opaque member surrounding said burner and extending a substantial distance in one direction therefrom, said member being pivotaly supported from the supply pipe and provided with a light discharging opening and an opening beneath the burner.

20 6. In a device of the character described, the combination of a burner having an inclined upper surface and burner openings positioned below the termination of said surface, an opaque member surrounding

said burner and extending a substantial distance in one direction therefrom, said member being provided with a light discharging opening and an opening beneath the burner.

7. In a device of the character described, 30 the combination of an opaque funnel-shaped member having an unobstructed opening at one end and provided with a ventilating opening and a longitudinal opening in the lower portion, a burner having an inclined 35 upper surface and positioned within the funnel and beneath the ventilating opening, a supply pipe for the burner, a bracket supported on the supply pipe and pivotaly connected with the funnel, additional connecting means between the funnel and supply pipe, and a reflector for directing the light from the burner. 40

In testimony whereof, I have hereunto set my hand and affixed my seal in the presence 45 of the two subscribing witnesses.

EMORY A. GRANT. [L. s.]

Witnesses:

FREDERICK A. ONSTINE,
ROBT. J. GARDEN.