

(No Model.)

J. M. MATTHEWS.

INSECT DESTROYING APPARATUS.

No. 284,034.

Patented Aug. 28, 1883.

Fig 1

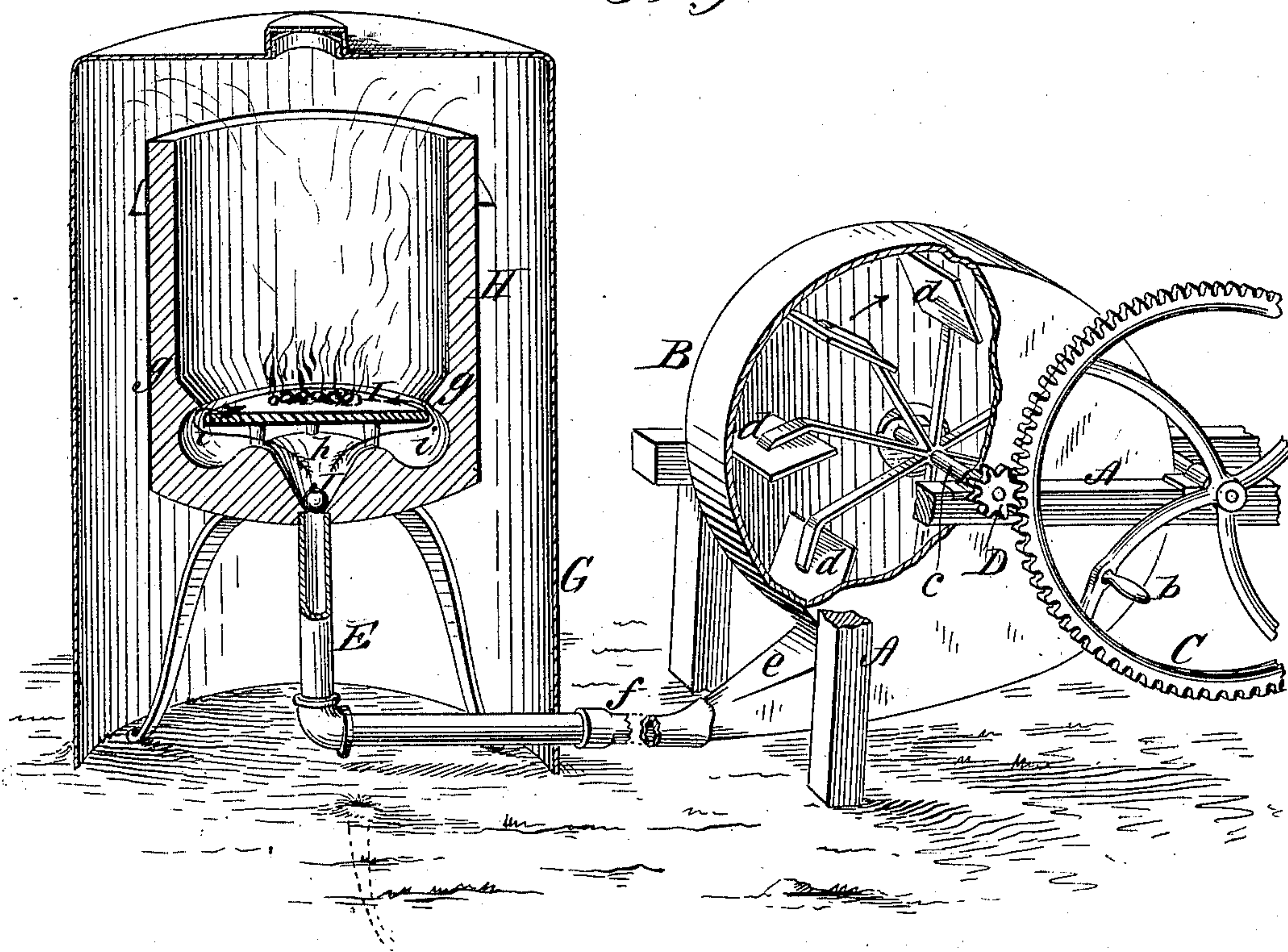
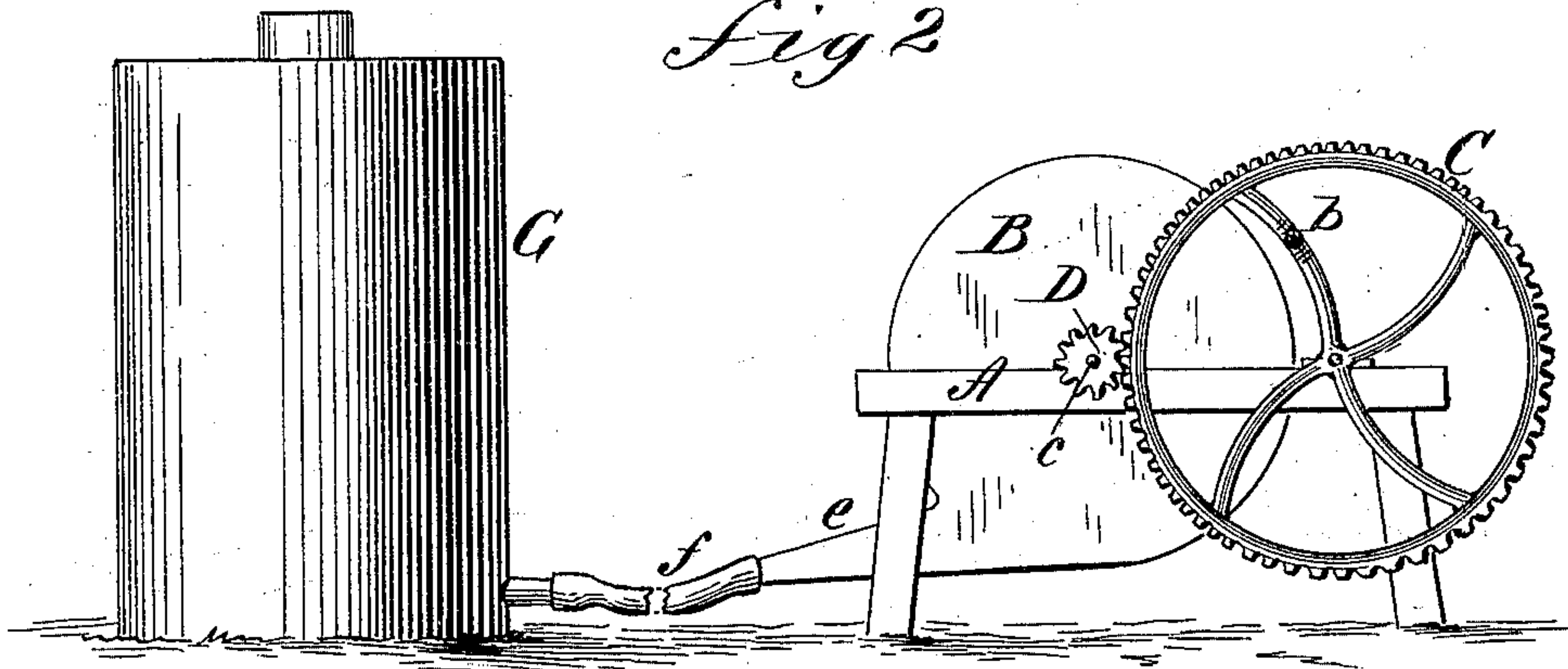


Fig 2



WITNESSES:

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JAMES M. MATTHEWS, OF SAN ANTONIO, TEXAS.

INSECT-DESTROYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 284,034, dated August 28, 1883.

Application filed December 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. MATTHEWS, of San Antonio, in the county of Bexar and State of Texas, have invented certain new and useful Improvements in Ant and other Insect Destroying Apparatus, of which the following is a full, clear, and exact description.

This invention relates to apparatus—such as has been used for destroying ants in their beds—in which a vessel having an open bottom, but closed top and sides, and containing a furnace for burning obnoxious substances, is projected into or made to form a close joint with the ground, and which has a fan or pump combined with it that causes the fumes from the furnace to enter the ant-holes in the ground. These apparatuses have been variously constructed, and been attended with so many disadvantages, either as affecting their durability, economy, labor of working, or efficiency, that they now are seldom, if ever, employed.

The object of my invention is to remove these defects and to produce an ant-destroying apparatus which shall be efficient, durable, and labor-saving, and which can readily be put together and taken apart when required.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 represents a partly-broken sectional and perspective view of an apparatus embodying my invention, and Fig. 2 a side elevation of the same.

A is a frame, on which is mounted a blast-fan, B, operated by a hand-crank or handle, *b*, on a spur-wheel, C, which gears with a pinion, D, on the shaft *c* of the fan-blades *d*. Air from the fan is forced through a diminishing tube, *e*, and hose or other connecting-tube *f*, into and through an elbow discharge-pipe, E, to the furnace of the apparatus, the lower or horizontal arm of said elbow-pipe passing through one side of or under the bottomless vessel G, which contains the furnace, while the upper arm of said pipe projects upward to give a central discharge in an upward direction. The furnace H may rest by a tripod on the ground, or be suspended by lugs or ears from the upper portion of the interior of the vessel G. This general construction admits of a ready

detachment of the parts, either for removal or repair, and the hose or pipe *f* may be of any desired length to facilitate working of the apparatus in different places. The vessel or outer case, G, has an opening in its top for feeding the furnace with fuel and sulphur, and which is closed by a suitable lid or stopper, forming what is known as a "sand-joint."

The furnace H is made of sheet-iron, lined with clay, *g*, which protects the metal of the furnace. In order to thus add to the durability of the furnace and to avoid waste of fuel and sulphur, a grating for the fire-bed is dispensed with, and an earthen plate or tile, I, of fire-clay, raised by a tripod, or otherwise, above the bottom of the furnace-body, and arranged over a blast-distributing chamber, *h*, is substituted therefor. The blast discharged from the elbow-pipe E enters the distributing-chamber *h*, and from thence passes into a bulge or recess, *i*, in the side of the lining *g*, which deflects it toward the center of the furnace over the plate I, to produce a perfect combustion of the fuel and sulphur thereon, the blast coming from all sides alike on the fire. The raised fire-bed plate I protects the discharge-nozzle or end of the elbow-pipe E, and the blast being delivered in an upward direction, as described, and deflected onto the burning mass, does away with the objection which attaches to a side delivery of the blast onto the fuel, that would cause the fuel and sulphur to burn in a line with the blast in a crosswise direction to the furnace, and, further, cause a bank of charred fuel and unconsumed sulphur to bank up on either side of the furnace, besides exposing the end of the blast-tube, to be destroyed by the action of the fire and gases.

Arranged within the chamber *h* is a ball-and-socket valve, J, of fire-clay or other suitable material, made to automatically close the delivery end of the pipe E. This valve keeps the sulphuric-acid gas or noxious fumes from falling back into the tube E when the blast is stopped, thus preventing destruction of or injury to the blast device and its connections with the furnace; also preventing the escape of the noxious and offensive gases into the outside air, and economizing or preventing waste of the fumes.

The apparatus is applied by clearing a spot

on the surface of the ant-bed where one or more holes are exposed, care being taken not to close the holes. Over these holes is set the furnace H, and over the whole the case G, which
5 is pressed firmly into the earth and packed with earth to prevent leakage. Connection is then made with the fan by the tube *f* and the furnace charged with fuel and sulphur, which is ignited, after which the fan is started, caus-
10 ing the fumes to be forced into the holes in the ant-bed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

15 1. The clay or earth lined furnace H, constructed with a side bulge or recess, *i*, and chamber *h* in the base-portion of its lining, in combination with the raised fire-bed tile or plate I, the upwardly-discharging blast-pipe

E, and the outer bottomless case or vessel, G, substantially as specified. 20

2. The valve J, in combination with the upwardly-discharging blast-pipe E, the furnace H, the outer bottomless case or vessel, G, and a blast device or devices on the exterior of the case, essentially as and for the purpose herein
25 set forth.

3. The combination of the blast-fan B, the connecting tube or hose *f*, the elbow blast-pipe E, having an upward discharge, the furnace H, with its raised fire-bed plate I, and the outer
30 bottomless case or vessel, G, substantially as specified.

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Witnesses:

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