

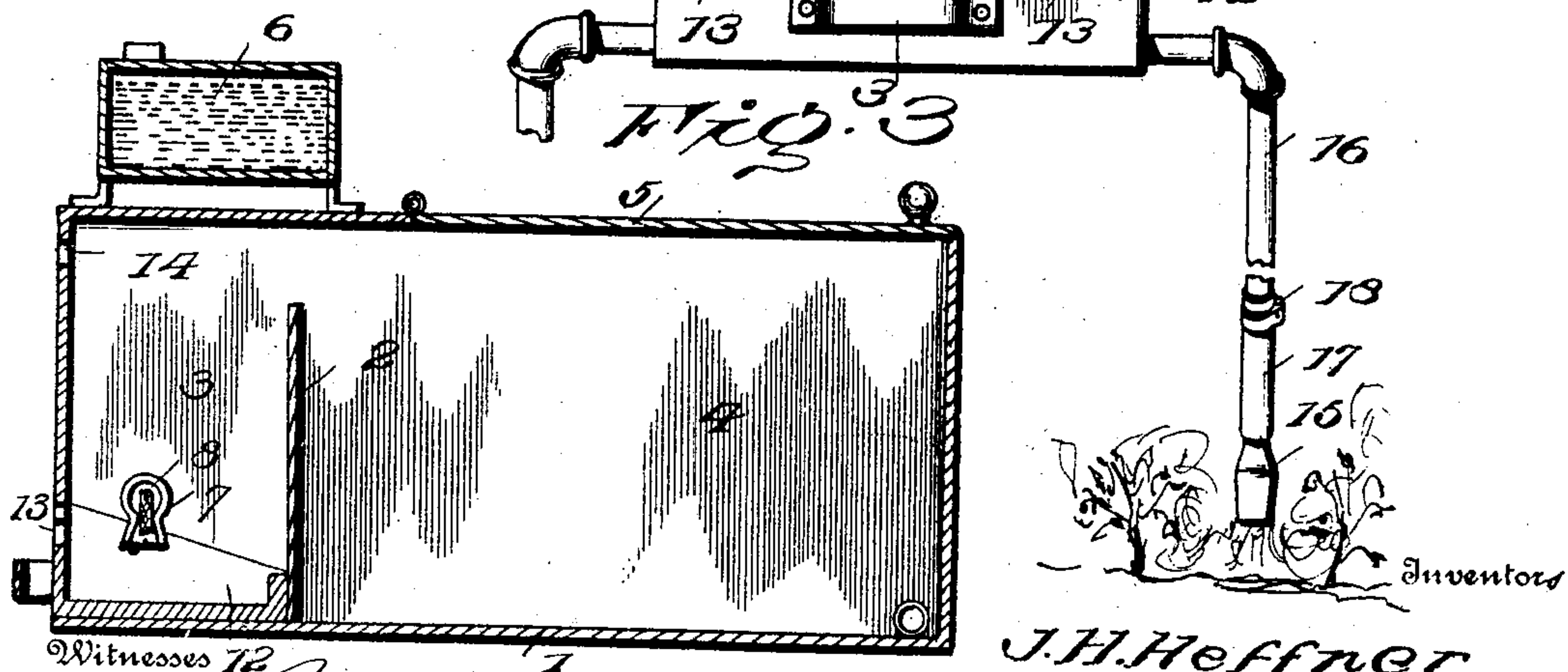
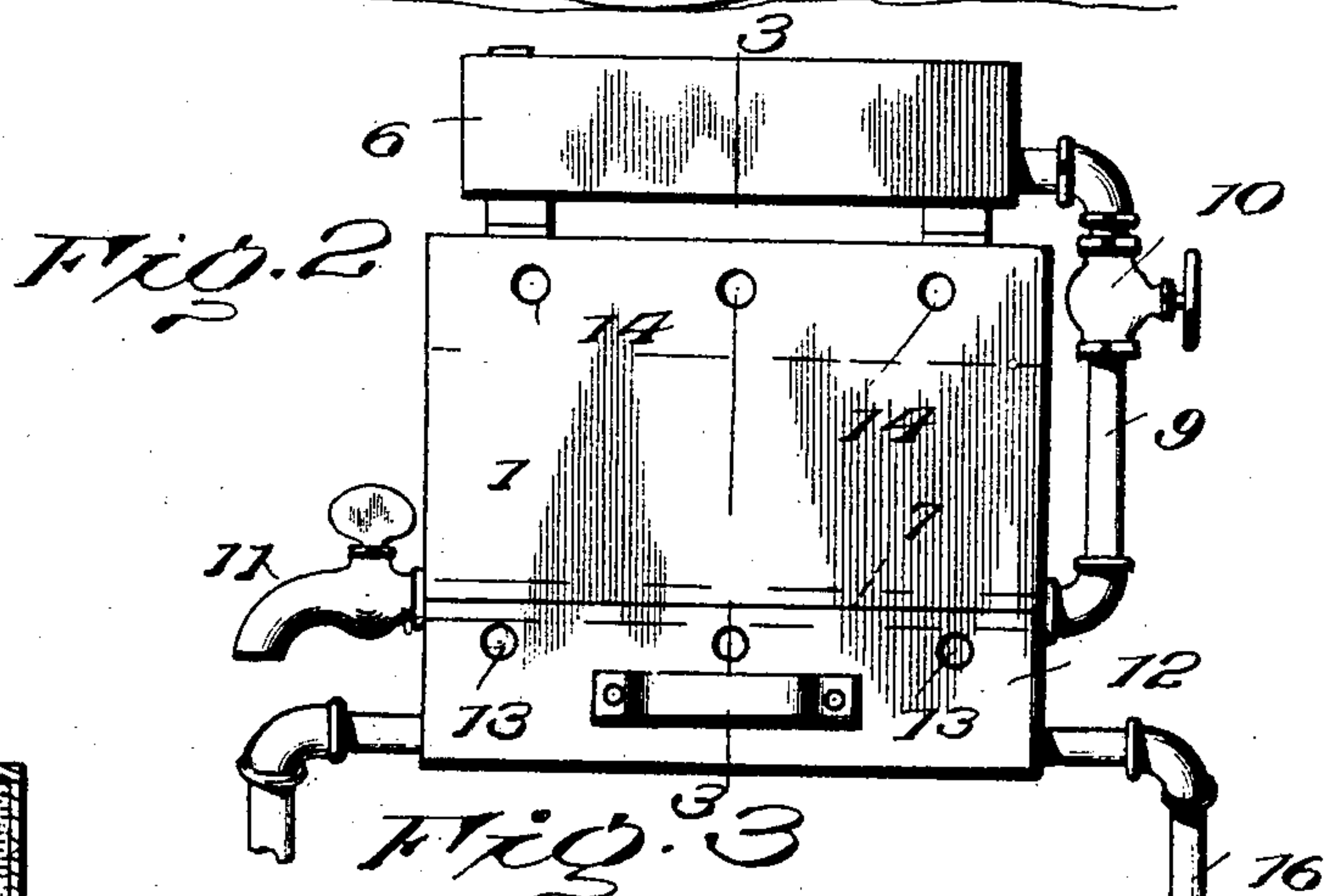
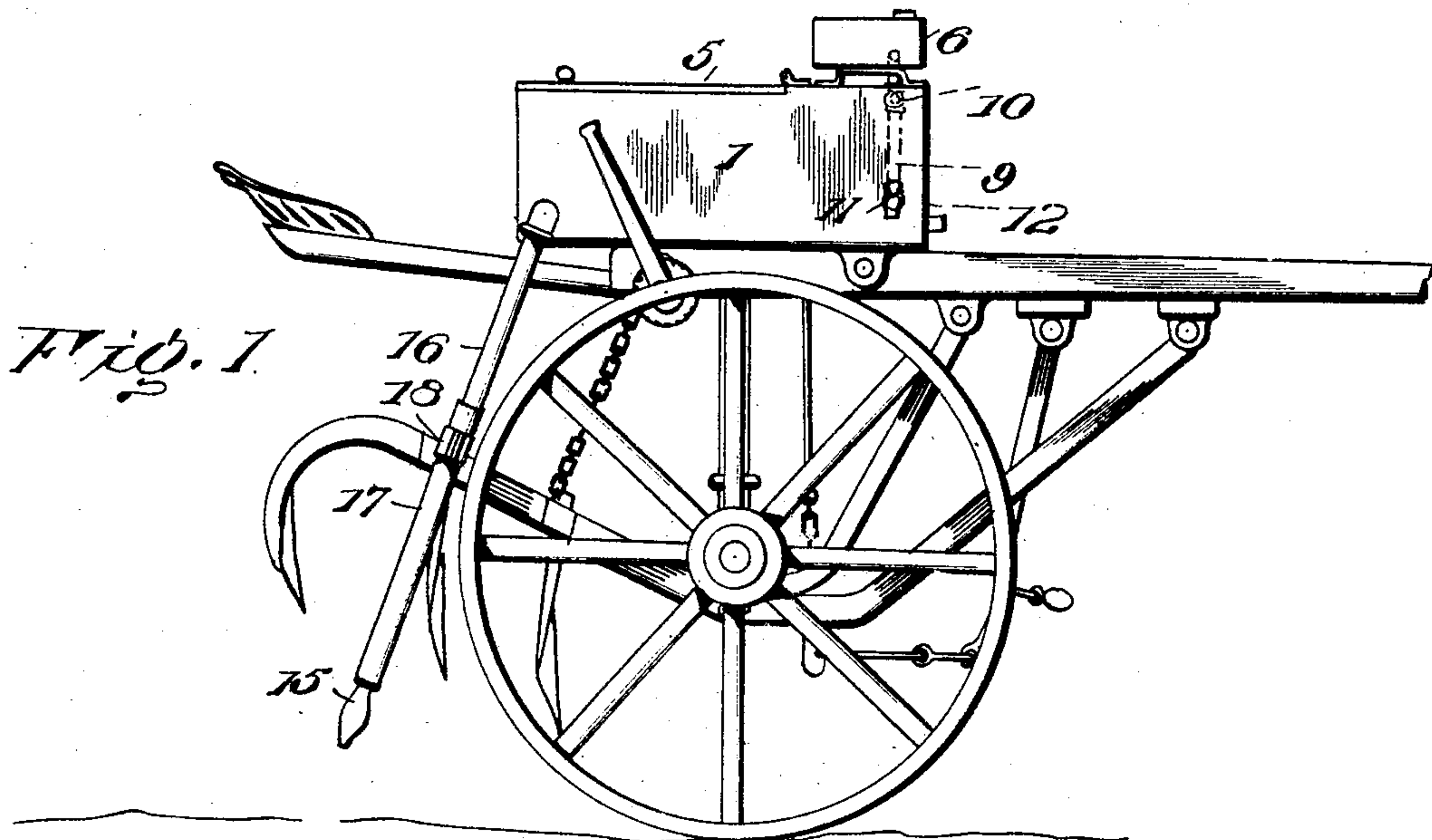
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PATENTED OCT. 4, 1904.

J. H. HEFFNER & E. Z. KIDD.  
INSECT DESTROYER AND FUMIGATOR.

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NO MODEL.



Witnesses 12

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# UNITED STATES PATENT OFFICE.

JOHN H. HEFFNER AND EUGENE Z. KIDD, OF THORNTON, TEXAS.

## INSECT-DESTROYER AND FUMIGATOR.

SPECIFICATION forming part of Letters Patent No. 771,366, dated October 4, 1904.

Application filed February 11, 1904. Serial No. 193,166. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN H. HEFFNER and EUGENE Z. KIDD, citizens of the United States, residing at Thornton, in the county of Limestone and State of Texas, have invented certain new and useful Improvements in Insect-Destroyers and Fumigators, of which the following is a specification.

The object of this invention is to protect plant life from the ravages of insects, and particularly to destroy the boll weevil or worm, which is destructive to cotton-plants and which materially reduces the harvest, besides depreciating the value of the material gathered by cutting the fibers and shortening the same.

The present invention provides a fumigator of novel formation and particularly designed for utilizing crude oil or petroleum, either singly or in combination with pine-tar, sulfur, and cresolic. Combined with the fumigator are distributing-pipes for delivering the smoke and fumes upon the plants infested with insects and parasites for destruction thereof without injuring the growth.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a machine embodying the invention. Fig. 2 is a rear view thereof, the truck being omitted and the lower portion of one of the distributing-pipes being broken away. Fig. 3 is a central longitudinal section of the fumigator, the truck being omitted.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

For convenience of transportation and movement over the field the fumigator is illustrated in Fig. 1 as mounted upon a truck of any structural type and is propelled by hand or other

power. The fumigator proper comprises a box 1 of any capacity and shape and is subdivided by partition 2 into chambers or compartments 3 and 4. The part 3 constitutes the combustion-chamber, and the part 4 the smoke or fumes chamber. The box is closed upon all sides, and the chambers 3 and 4 are in communication by means of the space provided between the upper edge of the partition 2 and the top of the box. Access is had to the interior of the smoke or fumes chamber 4 by means of the hinged cover 5. The tank or reservoir 6 for containing the oil for supplying the burner 7 in the combustion-chamber is located upon the box 1 and preferably above the combustion-chamber to admit of the crude oil being heated, so as to increase its fluidity. The crude oil may be such as derived from the Beaumont district or other locality, and in the event of it being desired to combine therewith a chemical agent—such as sulfur, cresolic, or the like—the same is added to the oil in the reservoir or tank 6 and passes with the oil to the burner. The burner 7 preferably consists of a pipe passed through the lower portion of the combustion-chamber and having a slot in its lower side in which is fitted a strip 8 of asbestos or mineral wool and which acts in the capacity of a wick to absorb the oil and feed the same to the flame by capillary attraction. The burner 7 is connected by pipe 9 with the lower portion of tank or reservoir 6 and is provided with a controlling-valve 10, by means of which the flow of oil to the burner may be regulated. The opposite end of the burner is provided with a drain-cock 11, by means of which heavy oil or residuum may be drawn off at intervals, so as to maintain the burner in prime condition and obviate choking of the feeder 8. A pan 12 is slidably fitted in an opening in the front side of the box, so as to admit of removal of any matter that may accumulate in the bottom portion of the combustion-chamber. The front of the pan 12 is provided with a series of openings 13, to supply air to the flame, and other openings 14 are provided in the upper portion of the front wall to supply air for mixing with the smoke and fumes.

The products of combustion—such as smoke, fumes, and the like—arising from the flame



pass from the combustion-chamber into the chamber 4, in which they are cooled prior to application to the plants or crop to be cleared of destructive germs and insects. Distributing-pipes extend from the chamber 4 and connect with the lower rear portion thereof and terminate in nozzles 15, of any make or pattern best calculated to disseminate the germ-killing medium. The distributing-pipes are adjustable and comprise telescoping sections 16 and 17, secured in the located position by means of clamps 18. By providing for lengthening and shortening of the distributing-pipes the nozzles 15 may be adjusted to the required elevation to suit the height of the plants to be treated, as will be readily comprehended. The distributing-pipes may be of metal or hose pipe or a combination of the two, as desired.

In the operation of the invention the oil to be burned is placed in the reservoir or tank 6 and is permitted to pass to the burner in desired quantity by means of the valve 10, and when ignited the products of combustion pass from the chamber 3 into the chamber 4 and from the latter through the distributing-pipes to the nozzles 15 and from thence to the plants to be treated. The machine is drawn over the field in such a manner as to admit of the smoke and fumes, as taken from the nozzle 15, to be directed upon the plants, thereby destroying the insect pests feeding thereon. Any agent—such as pine-tar, sulfur, or the like—may be combined with the oil, so as to produce a medium that will insure destruction of the insects.

Having thus described the invention, what is claimed as new is—

1. In an insect-destroyer and fumigator, a box subdivided into chambers which are in communication at their upper portions, a

burner located in one of the chambers for generating the smoke, fumes or other insect-destroying medium, and distributing-pipes connected with the lower portion of the other chamber, substantially as set forth.

2. In an insect-destroyer and fumigator, the combination of a box subdivided into chambers, a burner located in one of the chambers, and distributing-pipes connected with the other chamber and composed of telescoping sections to admit of adjustment to the height of the plants, substantially as specified.

3. An insect-destroyer and fumigator comprising a box subdivided into communicating chambers, a burner arranged in one of the chambers for generating the insect-destroying medium, means connected with the other chamber for disseminating said insect-destroying medium, and a tank or reservoir containing oil mounted upon the box and arranged directly above the chamber having the burner, substantially as set forth.

4. In an insect-destroyer and fumigator, the combination of a box subdivided into communicating chambers, a burner arranged in one of the chambers, means connected with the other chamber for disseminating the insect-destroying medium, a reservoir located above the box for containing the oil for supplying the burner, and a drain-cock connected with said burner for drawing off the residue, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN H. HEFFNER. [L. s.]  
EUGENE Z. KIDD. [L. s.]

Witnesses:

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J. R. WILSON.