

(No Model.)

M. LYTLE.

APPARATUS FOR DESTROYING VERMIN.

No. 246,620.

Patented Sept. 6, 1881.

Fig 1.

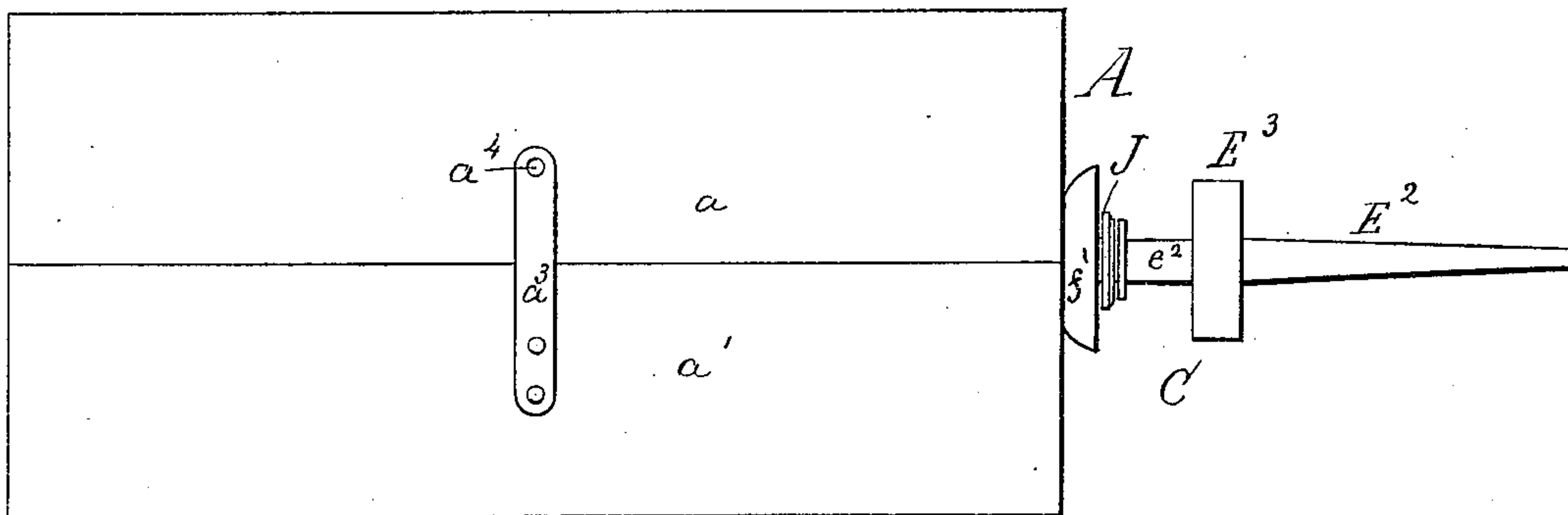


Fig 2

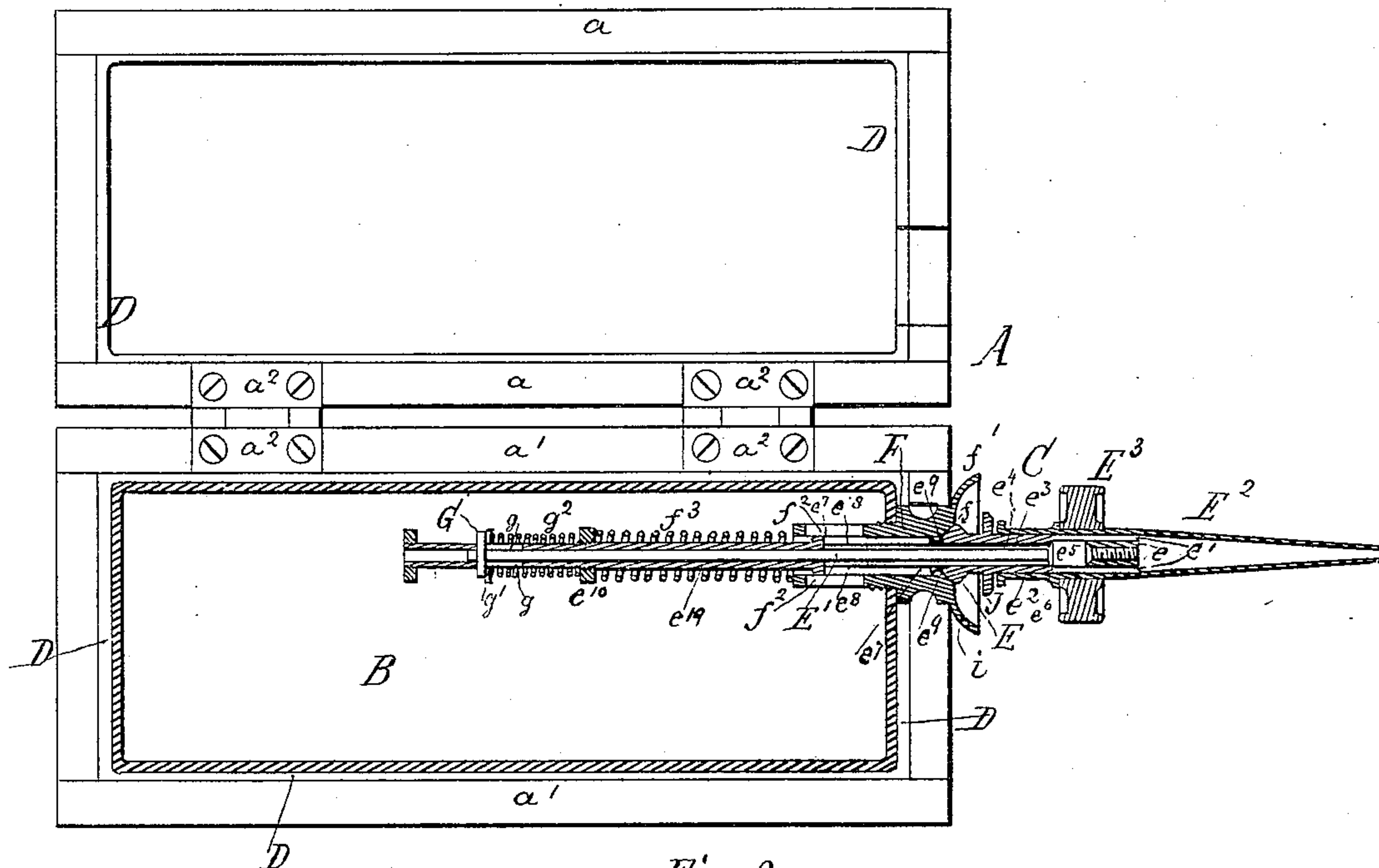
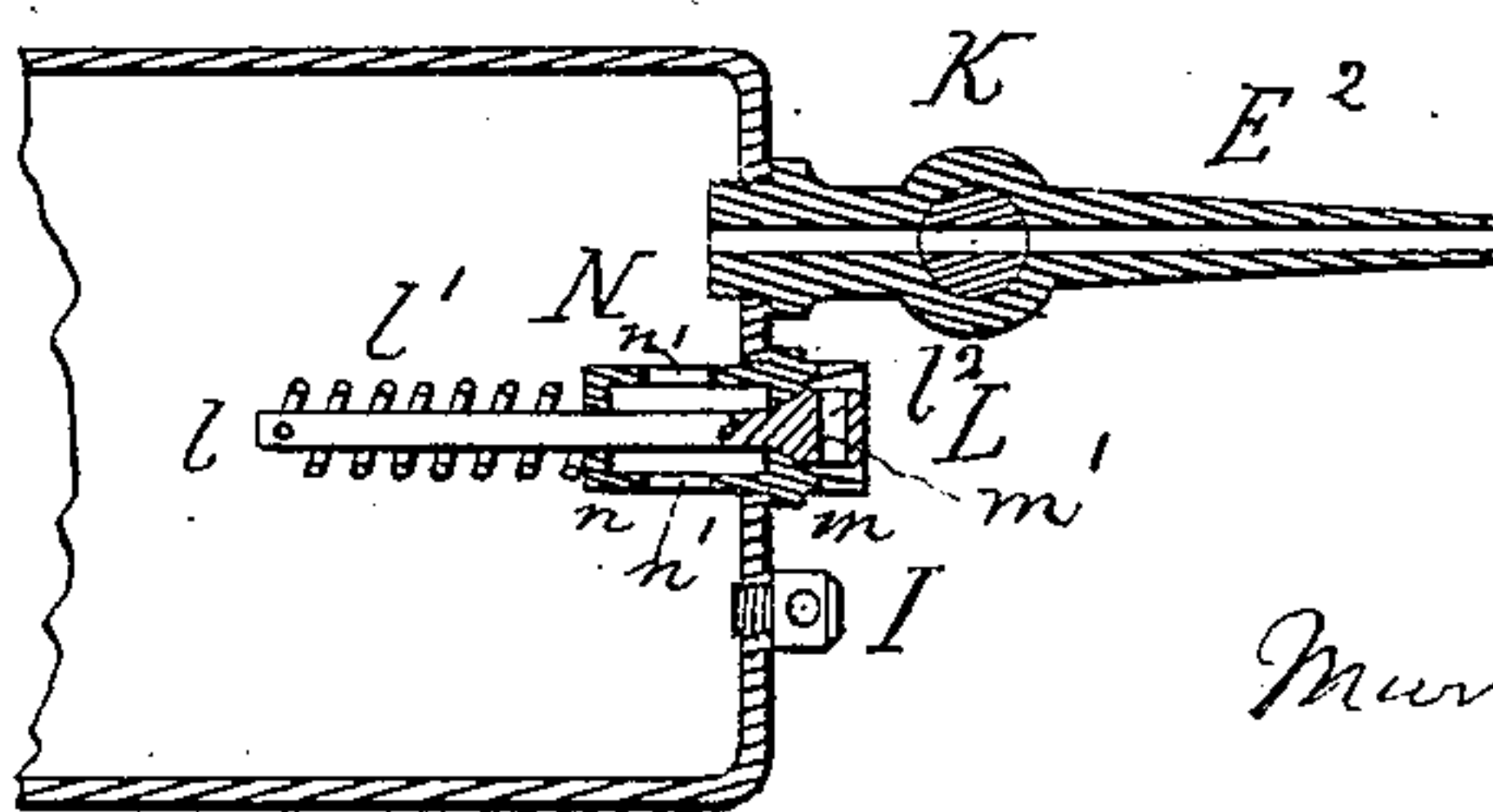


Fig 3.



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MURDICK LYTLE, OF OIL CITY, PENNSYLVANIA.

APPARATUS FOR DESTROYING VERMIN.

SPECIFICATION forming part of Letters Patent No. 246,620, dated September 6, 1881.

Application filed July 16, 1880. (No model.)

To all whom it may concern:

Be it known that I, MURDICK LYTLE, a citizen of the United States, residing at Oil City, in the county of Venango and State of Pennsylvania, have invented a new and useful Apparatus for Destroying Vermin by the use of either hot water or steam, of which the following is a specification.

My invention relates to improvements in apparatuses for destroying vermin, in which a portable boiler is used inclosed in a removable non-conducting case, and provided with a nozzle, outlet cock or valve, safety-valve, and an eye wherewith to suspend and hold it for the purpose of inserting it into and removing it from its inclosing-case; and the objects of my improvements are to make the apparatus portable by hand; to make it small enough to be easily handled and used in close or contracted places, as between the corners and spaces of bedsteads or other furniture, for the destruction of bedbugs, roaches, and other vermin, or in the holes and abodes of mice, rats, and the like; and also to facilitate the generation of steam by putting the boiler into a common stove fire. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of my apparatus. Fig. 2 is a top view of the non-conducting case thrown open, and a horizontal section of the boiler therein. Fig. 3 is a detail sectional view of one end of the boiler with a modified construction of the discharge-nozzle and safety-valve.

Similar letters refer to similar parts throughout the several views.

A is the removable inclosing non-conducting case; B, the boiler, and C the escape.

The case A may be of any convenient shape, and of a size adapted to the hand of the operator. It is divided along its axis into two equal parts, a and a' , which are united by hinges a^2 , and when closed are held together by a spring-hasps, a^3 , and pin a^4 . This case is lined internally with plaster-of-paris or other suitable non-conducting material, as at D, which may be of any desired thickness, and which completely surrounds the boiler when the case A is closed, and thus prevents the heat of the boiler from rendering the case so hot as to make it unfit to handle.

The boiler B occupies a central position in the case A, and so prevents one portion of the case from becoming warmer than another. At one end the boiler is provided with an escape, C, and safety-valve E, which are shown united in Figs. 1 and 2 and separated in Fig. 3. In Fig. 2 the escape consists of a long valve-rod, E' , and a nozzle, E^2 . The nozzle E^2 is provided with a non-conducting collar, E^3 , and an inner bridge, e , into which one end of the rod E' is screwed, and at the sides of which passages, as at e' , are formed, which communicate with the main passage of the nozzle. From the bridge e the nozzle extends backward with a straight uniform bore, as at e^2 , into which an extension, e^3 , of the safety-valve E is fitted, and thus an expansion-chamber, e^4 , is formed. In this chamber a valve, e^5 , is provided upon the rod E' , which valve is lodged in a valve-seat, e^6 , in the extension e^3 of the safety-valve. The valve e^5 is of smaller diameter than the bore of the extension e^2 , so as to allow the steam to pass into the passages e' . The safety-valve E is hollow, and has a hollow shank, e^7 , with lateral openings e^8 , which shank e^7 fits into a funnel, F, while the valve E is lodged in a valve-seat, f , in the flaring part f' of the same.

In rear of the valve E an annular groove, e^9 , is provided upon the shank, and the lateral openings e^8 extend into said groove, in order to provide means for the steam to reach the valve outside the shank.

The extension e^3 is provided with a collar, J, near the valve E, whereby the valve may be lifted from its seat either by hand or by means of a suitable lever, in order to fill the boiler. The funnel F is screwed or otherwise fastened to the boiler, and has inside the boiler lateral openings f^2 , which coincide with those e^8 on the valve-shank. The valve-shank e^7 has an extension, e^{10} , of reduced diameter, which passes through a central opening in the closed end of the funnel, and beyond the same is provided with a nut, e^{10} . Between the end of the funnel F and the nut e^{10} a spiral spring, f^3 , is placed, which keeps the valve E in contact with its seat. In rear of the nut e^{10} the extension e^{10} is provided with two slots, g , in which a pin, G, in the end of the rod E' moves. A washer, g' , bears against the pin G, and between this washer and the nut e^{10} a spiral

spring, g^2 , is placed, which keeps the valve e^5 upon its seat e^6 .

The flaring part f' of the funnel may be provided with a hole, i , whereby the boiler may be lifted by means of a hook when it is moved from the stove to its case; but, if preferred, said hole may be omitted and an eyebolt, I , (see Fig. 3,) fastened to the boiler to serve the same purpose.

10 Operation: The boiler is removed from its case and set upon its free end. The valve E is now lifted up and water poured into the flaring part f' of the funnel. The water finds its way into the boiler through the valve and the lateral openings e^3 and f^2 of the valve and funnel shanks. When the boiler is sufficiently filled it is placed in the fire of a stove near by and allowed to remain until a proper amount of steam generated has escaped through the safety-valve and the boiler has steam-room within it, whereupon it is removed by means of a hook and placed in the case A . The case is now closed upon the boiler and locked by the hasp, and the apparatus is ready for use.

25 When steam is to be blown into a corner or crevice the apparatus is so held that the water in the boiler will not reach the funnel, and the collar E^3 is pushed forward by the fingers of the operator. Thus the valve e^5 is opened and the boiler discharges steam through the nozzle E^2 . When hot water is to be discharged the case A must be so held that the water in the boiler will reach the lateral openings e^3 and f^2 of the valve and funnel shanks.

35 To enable the operator to discharge either hot water or steam in any direction desired, and without changing the position of the apparatus, I shall in practice provide the nozzle with a flexible or universal joint.

40 For the non-conducting collar E^3 of the nozzle may be substituted an ordinary collar and a crank-lever extending to the case A , and there operated by the fingers of the operator.

In case the above-described escape is regarded as too expensive the hollow valve E and its spring f^3 may be dispensed with, and the valve e^5 will then have its seat in the funnel F , which will also be provided with the extension e^3 , fitted into the large end of the nozzle.

Another means of simplifying my apparatus

is to have an ordinary stop-cock, K , Fig. 3, with a nozzle and a safety-valve, L . This safety-valve has a shank, l , and is seated in the flaring end m of the funnel N , screwed into the boiler. The shank l is passed through a central end opening of the shank n of the funnel, and is provided with a spring, l' , which bears against the end of the funnel and keeps the valve m' in its seat. The shank n of the funnel N is provided with lateral openings n' , to admit steam from the boiler to the valve, or to admit water through the funnel into the boiler. For the latter purpose a transverse hole, l^2 , is provided in the upper portion of the valve for the insertion of a hook to lift the valve while the boiler is being supplied with water. An eyebolt, I , is attached to the boiler for the purpose of thereby suspending the boiler, as before described.

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

1. The apparatus for destroying vermin, consisting of a boiler, B , provided with a safety-valve, stop cock or valve, and a delivery-nozzle, and also provided with a non-conducting covering or case, A , which insulates it and thereby permits it to be carried in the hands without burning the operator, said case being adapted for the withdrawal of the boiler for the purpose of "getting up" steam therein, and for the replacement of the boiler after steam is gotten up, substantially as and for the purpose described.

2. The combination, with the nozzle E^2 , of a funnel, F , by which the boiler can be supplied with water, a safety and filling valve, E , and a discharge-valve, e^5 , substantially as and for the purpose described.

3. The portable steam-boiler provided with a filling-funnel, F , valve E , discharge-valve e^5 , and nozzle E^2 , in combination with the non-conducting case, which is made in sections, whereby the boiler can be readily inclosed and readily removed, substantially as and for the purpose described.

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Witnesses:

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