

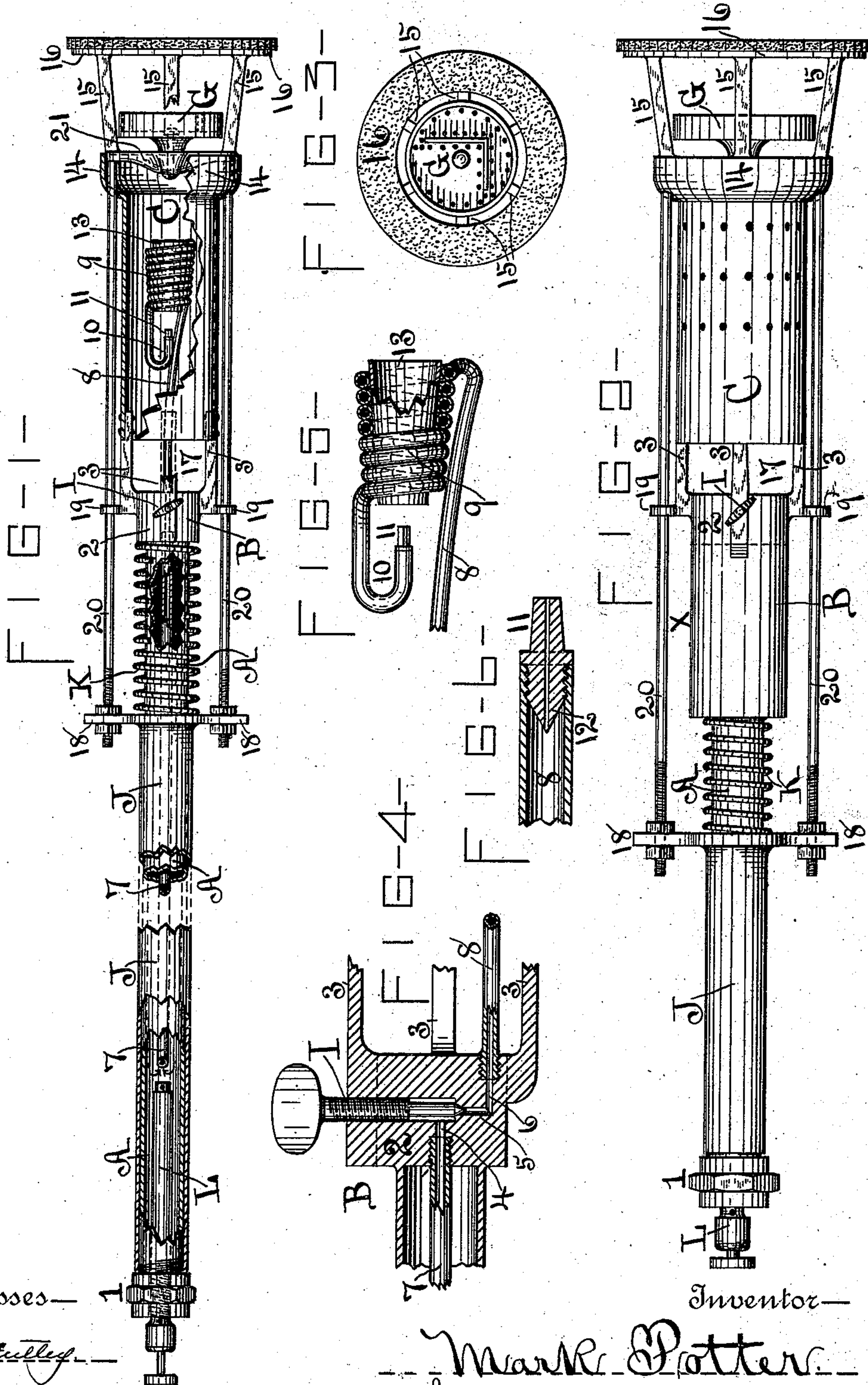
(No Model.)

M. POTTER.

CONTINUOUS HEATING BRANDING IMPLEMENT.

No. 377,575.

Patented Feb. 7, 1888.



Witnesses—

Geo B. Butler
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UNITED STATES PATENT OFFICE.

MARK POTTER, OF SYRACUSE, NEW YORK.

CONTINUOUS-HEATING BRANDING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 377,575, dated February 7, 1888.

Application filed March 8, 1887. Serial No. 230,136. (No model.)

To all whom it may concern:

Be it known that I, MARK POTTER, of Syracuse, county of Onondaga, in the State of New York, a citizen of the United States, have invented certain new and useful Improvements in Continuous-Heating Branding Implements, of which the following is a specification, reference being had to the accompanying drawings, in which—

10 Figure 1 is a sectional side elevation of my implement; Fig. 2, a side elevation of the same with enlarged reservoir and perforated hood around the vapor-burner; Fig. 3, a plan view of the branding end thereof; Fig. 4, an enlarged sectional detail of flow-regulating mechanism and pipes; Fig. 5, an enlarged detail of vaporizing coil, lining, and pipes; and Fig. 6, an enlarged detail of vapor-discharging nozzle.

20 Similar letters and figures of reference indicate corresponding parts throughout the several views.

My invention relates to that class of branding implements which are self-heating, and in which the brand is always heated to a uniform degree of temperature when in use.

30 My object is to improve the construction and operation; and my invention consists, generally, of a branding implement continuously heated by gas generated from volatile liquids stored or carried within the implement and in the several other novel features of construction and operation hereinafter described, and specifically set forth in the claims hereunto annexed.

35 It is constructed as follows:

A is a tubular reservoir for the volatile liquid used—such as gasoline, benzine, &c.—and also forming a part of the handle of the implement. This is provided at its outer end 40 with a head, 1, through which I make a screw-threaded hole. The forward end of this tube is secured to the frame B, consisting of a body, 2, and arms 3. Through this body I drill the holes 4 5 6, meeting each other angularly, as 45 shown, and through the side of the body I insert the screw I, provided with a tapered point, which enters the hole 5 adjacent to the point where the holes 4 and 5 meet, and when screwed up this screw operates as a cut-off.

50 Into the hole 4 I insert my liquid-tube 7, and the tube 8, inserted into the hole 6, is a

continuation thereof beyond the valve-screw I. The front end of this tube is bent into a conical inverted coil, 9, and beyond the coil is bent to substantially the goose-neck 10, this extremity of the tube pointing toward the center of the coil. Into this end of this tube I insert the nozzle 11, consisting of a screw-threaded plug provided with a conical inner point, 12, and having a pin-hole aperture longitudinally 60 through it from the apex of the point 12. Within this aforementioned coil I place a cylindrical lining, 13, as shown, said cylinder acting as a jet compressor and conductor, as it compresses the flame and facilitates the heating of the liquid within the coil. 65

Upon the arms 3 I secure the tubular hood C, forming a hot-air chamber around the coil, &c., and having upon its outer end a tubular head, 14, to which I connect the arms 15, which 70 carry the pad-ring 16, provided with a facing of non-conducting material. The use of arms 3 leaves an opening or air-space, 17, which operates to prevent the heating of the reservoir and also to admit air to the jet and flame to 75 supply it with oxygen.

J is a sleeve fitting freely over the reservoir-tube A, and provided with a head upon its outer end having side studs, 18 18, opposite each other. The body 2 is also provided with 80 studs 19 19. These studs 18 19 are perforated to receive the rods 20, the inner ends of which are screw-threaded and provided with double or lock nuts, as shown. Their outer ends are secured to the cross-bar 21, upon which I centrally mount the brand G, consisting of a disk 85 of metal having upon its outer face any desired branding mark or emblem. This brand I perforate, substantially as shown, by lines of perforations alongside of or adjacent to the lines 90 of the symbol used as a mark—as, for illustration, the symbol or branding mark shown in the drawings represents an "O" with an "L" inclosed within it.

K is a spring placed around the reservoir-tube 95 and between the head of the sleeve J and the body 2.

L is an air-pump screwed or otherwise tightly and removably inserted into the head upon the inner end of the reservoir-tube A. 100

My device is operated as follows: Holding the implement vertically in my hand, handle

upward, I remove the air-pump L and fill the tubular reservoir nearly full of liquid, or sufficiently to cover the free end of the feed-tube 7, (the screw-valve I then cutting off the pipes 5 or ducts 4 5 until the reservoir is nearly filled;) and thus leaving an air-chamber above the liquid. I now replace the pump, and then by a few strokes thereof sufficient air is compressed or condensed to force the liquid through the feed-tube 7, ducts 4, 5, and 6, and pipe 8, and thence into the coil whenever the screw-valve I is opened, and it is immaterial what position the implement may be in while being used, (whether horizontal, vertical, or inclining,) as the air-pressure and flow of liquid remain just the same as the relative positions of the air and liquid change positions in the reservoir from changed or varying positions of the implement. I then ignite the liquid, and the flame rapidly heats the coil to the temperature at which all of the liquid is converted into gas in the coil and only vapor escapes through the nozzle. This vapor combining with the oxygen in the air and both burning together produces an intense heat, and the brand is rapidly and uniformly heated, the greatest heat being obtained adjacent to the perforations therein. Then when the brand is hot enough I place the pad against the object to be branded, slide the sleeve J forward, carrying with it the rods 20 and the brand G, the face of the brand coming forward beyond the face of the pad and burning its imprint to the depth desired, such depth being regulated by the adjustment of rods 20 forward or back by means of the nuts thereon, and the face of the pad being always cool an animal is not frightened when touched by it preliminary to being branded. The flow of liquid, and consequently the volume of vapor generated, is regulated by opening or closing the screw-valve I. From time to time, as needed, the air-pressure is kept up or renewed by operating the pump L.

It will be observed that the nozzle 11, being provided with a conical inner end, all of the sediment left after or during vaporization and

carried forward lodges upon the sides of the cone and in the cavity around the cone, and thus clogging of the vapor discharge is prevented.

In Fig. 2 I shorten up the handle by enlarging the reservoir at *x*, and also show the hood C perforated in order to admit the air into the mixing-chamber more directly. It will also be observed that the cylindrical lining 13 constitutes the chamber in which the vapor mixes with the atmospheric oxygen.

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

1. In a branding implement, the combination of a vaporizing-coil and a cylinder inclosed within the coil, and a vapor-burner opening into the cylinder, substantially as described.

2. In a branding implement, a tubular hood, a vaporizing-coil inclosed within the hood, and an air-chamber between the hood and coil, in combination, substantially as described.

3. In a branding implement, the combination of a cylinder inclosed within the vaporizing-coil and a hood inclosing the cylinder and coil, substantially as described.

4. In a branding implement, a feed-tube passing longitudinally through the liquid-reservoir, in combination with a cylindrical reservoir, and an air-pump inserted longitudinally through the handle and in line with the feed-tube into the air-chamber above the liquid, substantially as described.

5. In a branding implement, an air-pump entering the handle or reservoir longitudinally and a feed-tube passing longitudinally through said cylindrical reservoir or handle and substantially up to the air-pump in the handle of the implement, in combination, substantially as described.

In witness whereof I have hereunto set my hand this 24th day of February, 1887.

MARK POTTER.

In presence of—

GEORGE B. WARNER,
WM. E. RAYMOND.