

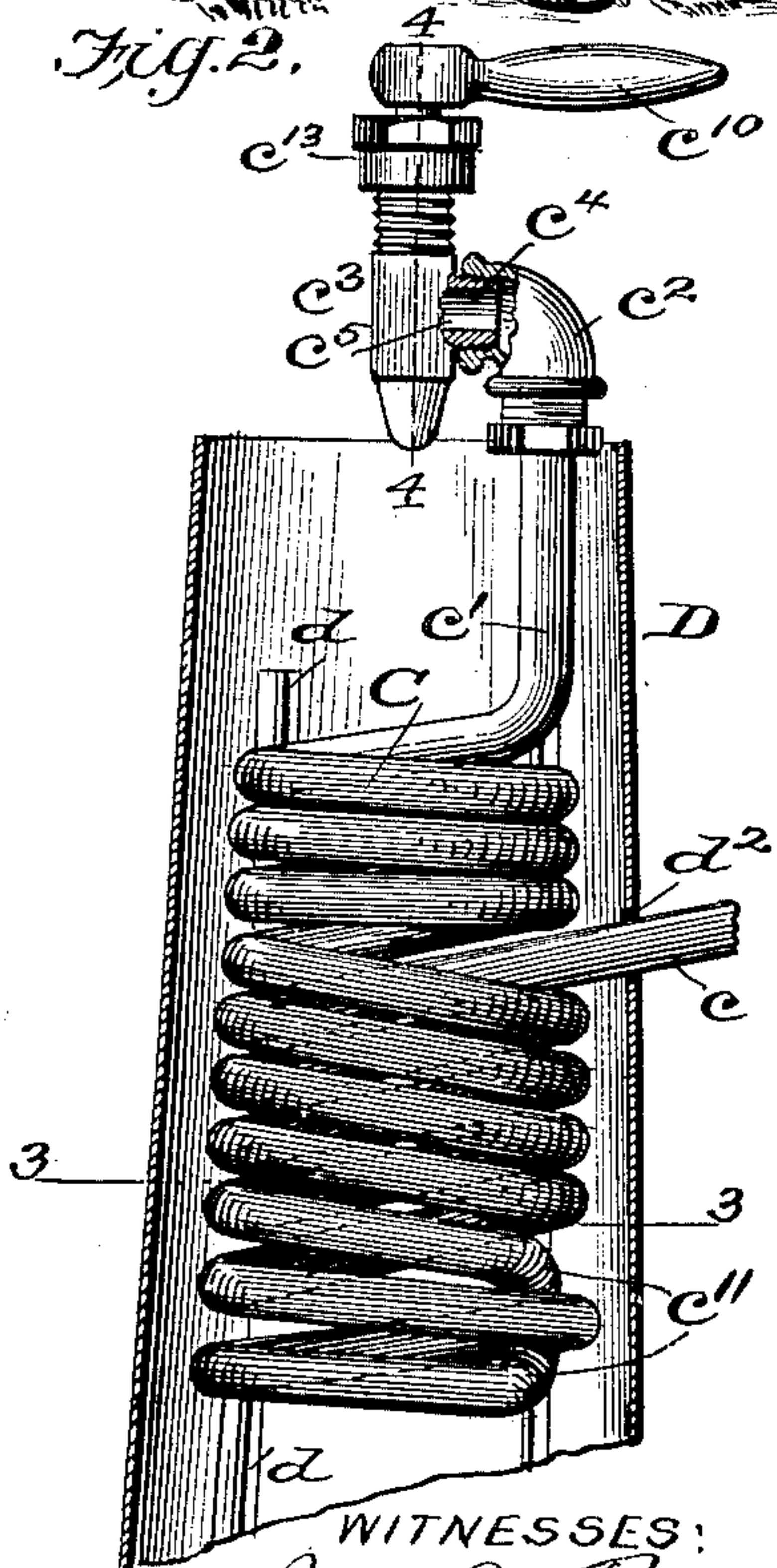
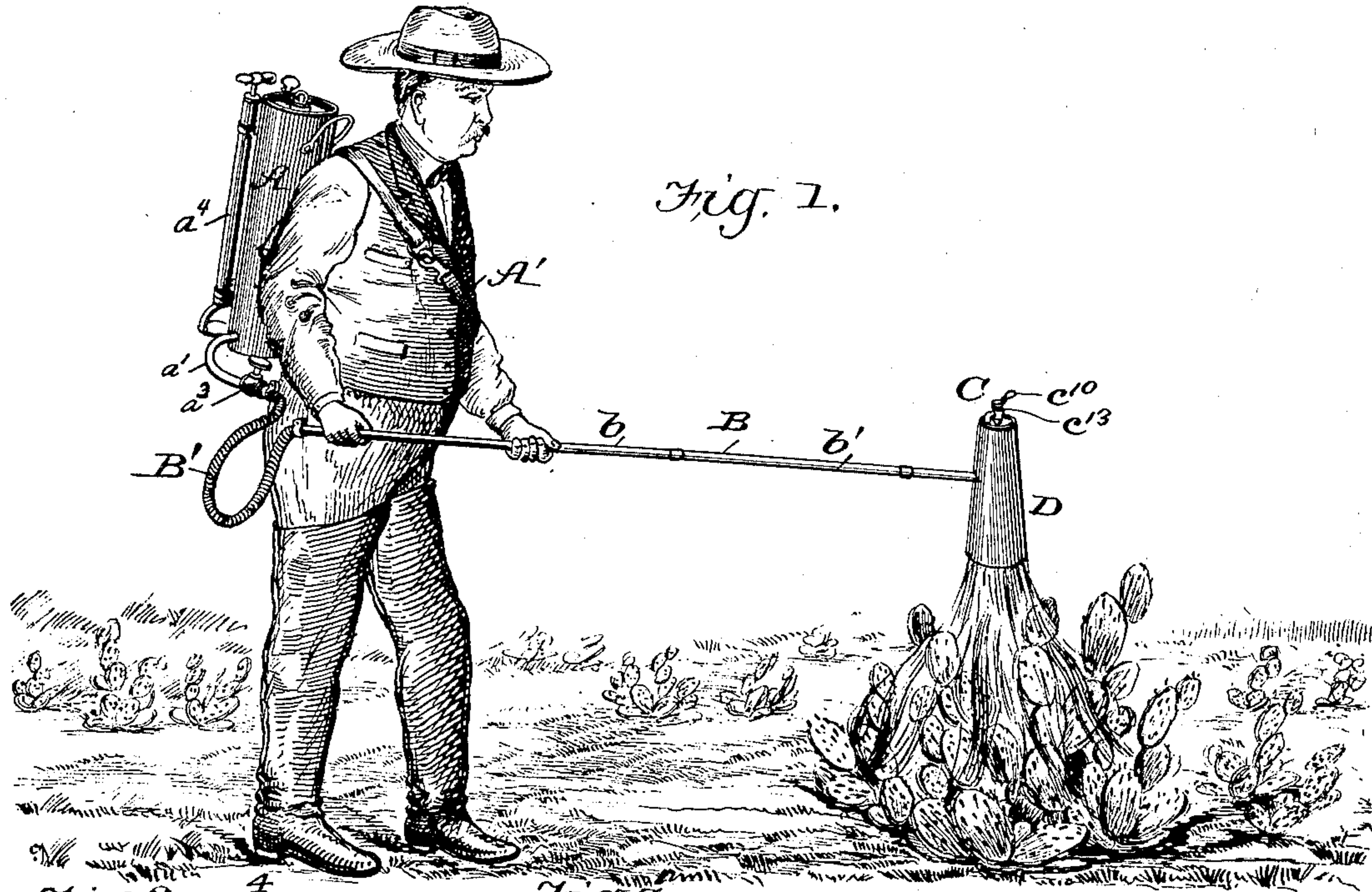
No. 657,036.

Patented Aug. 28, 1900.

L. W. SNOWDEN.
CACTUS BURNER.

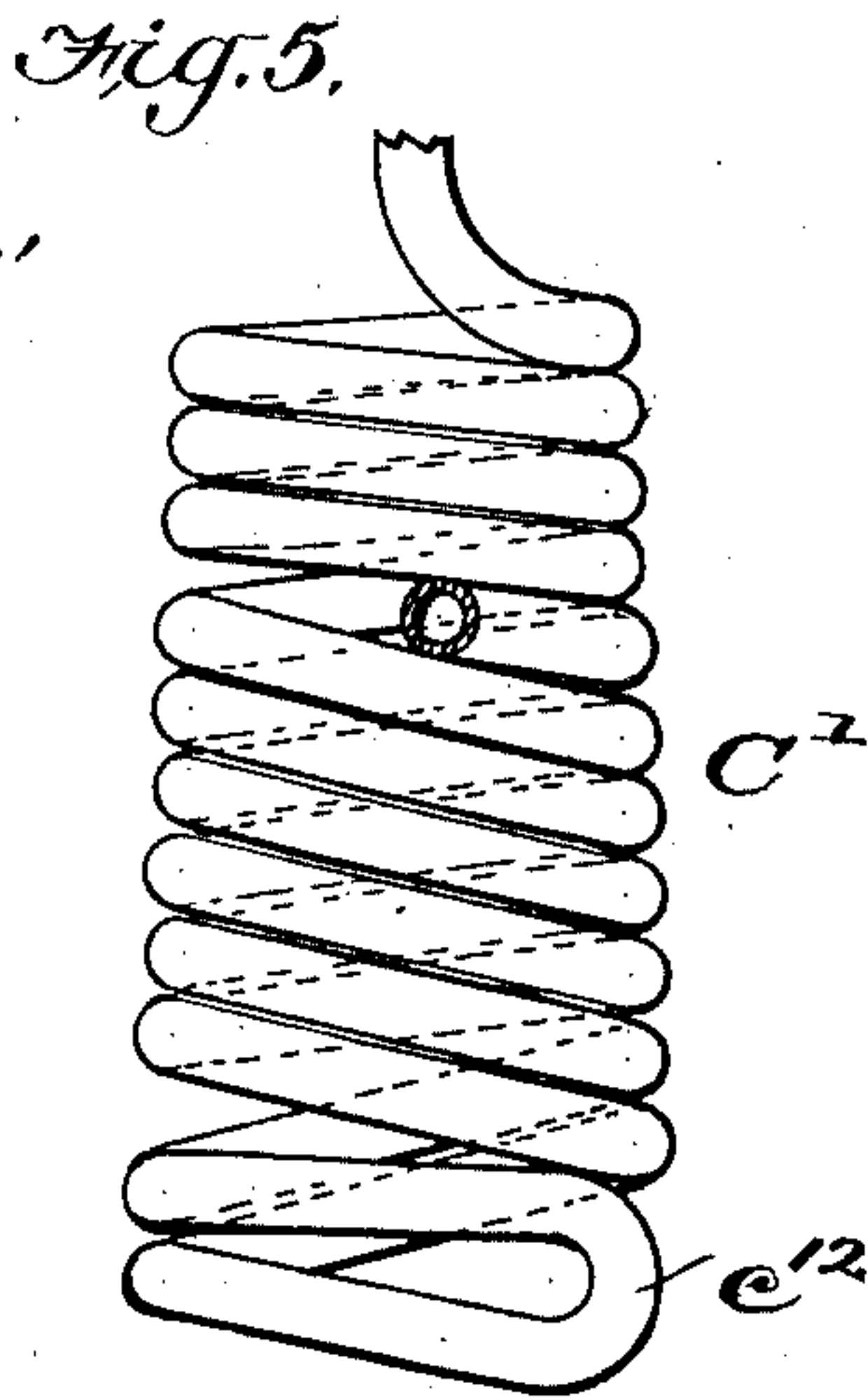
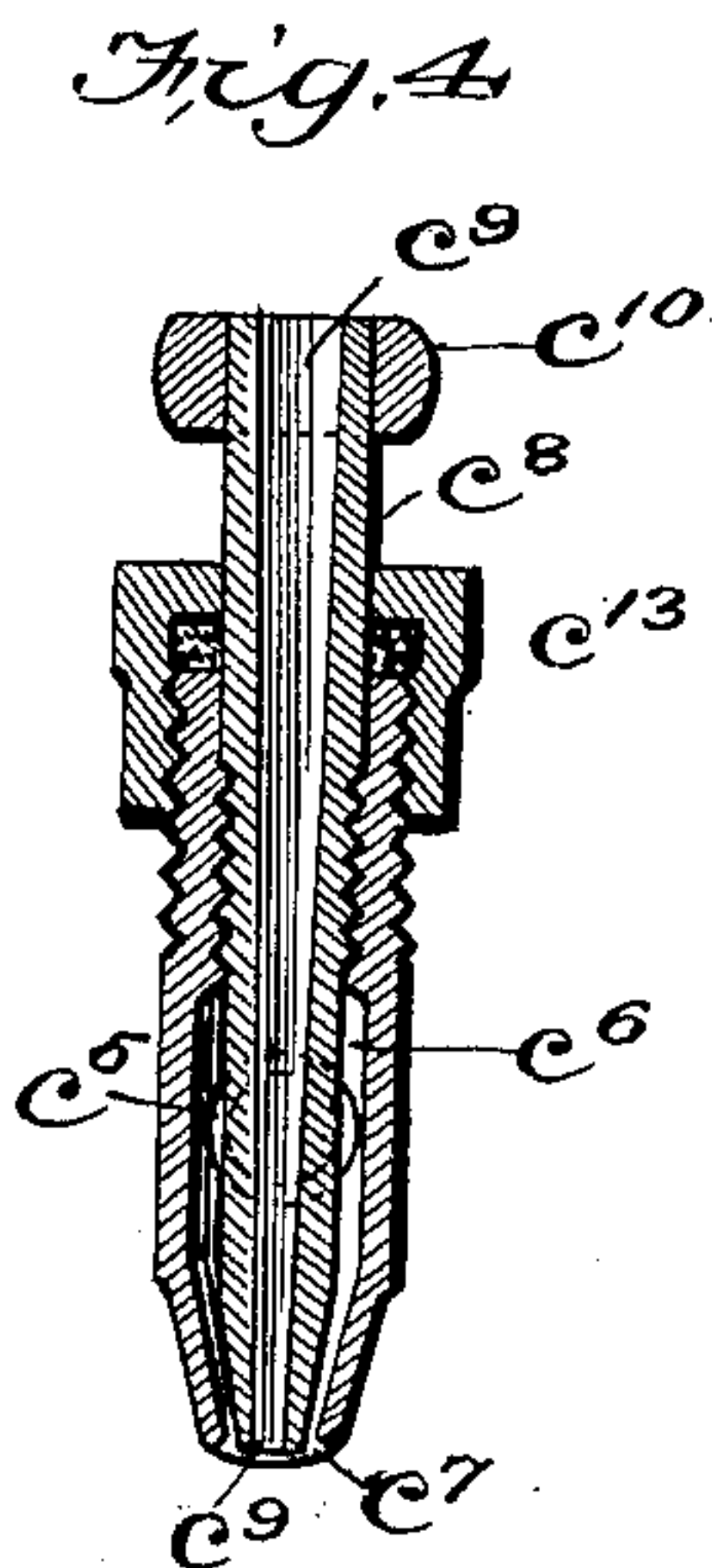
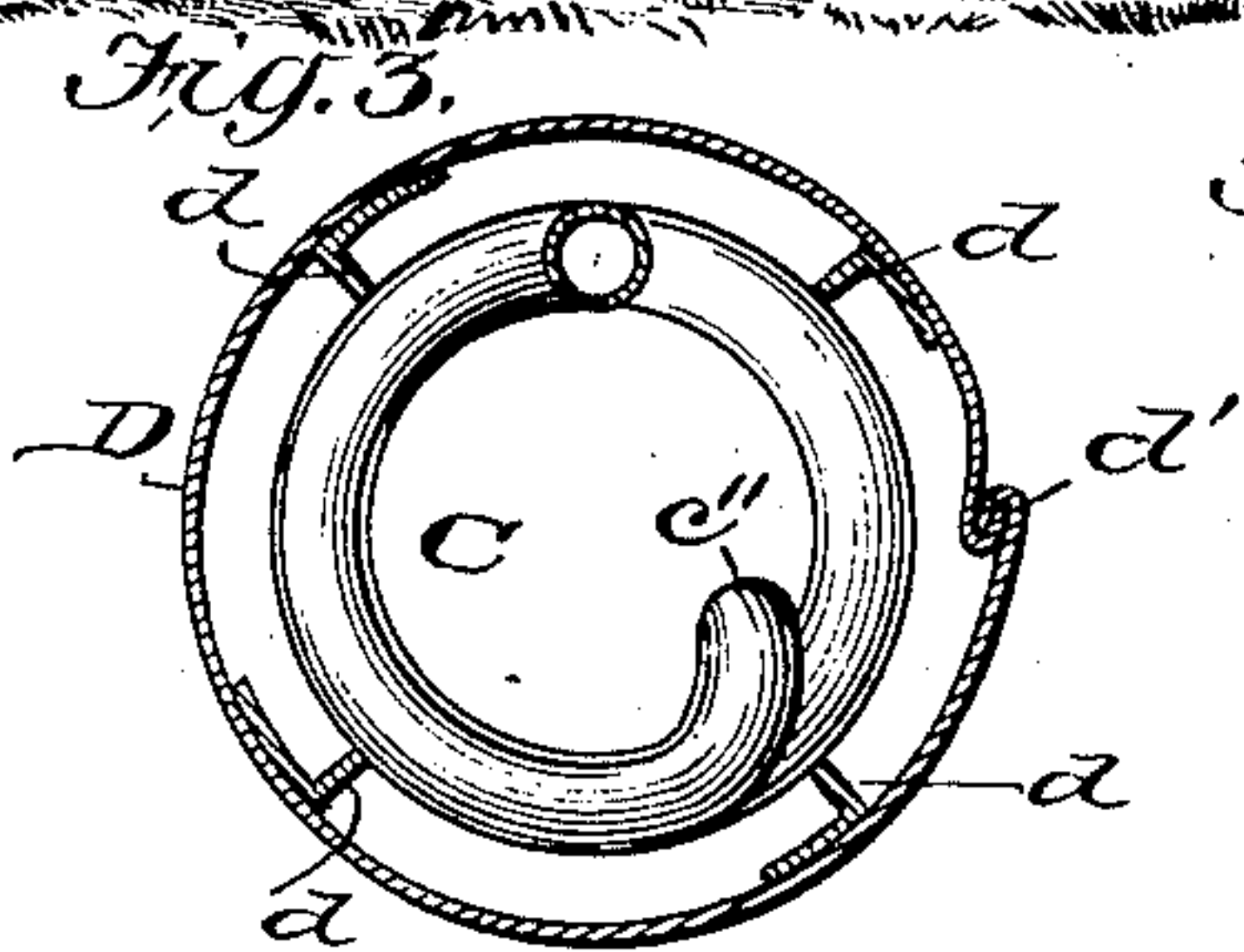
(Application filed Oct. 21, 1899.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

LEWIS W. SNOWDEN, OF TILDEN, TEXAS.

CACTUS-BURNER.

SPECIFICATION forming part of Letters Patent No. 657,036, dated August 28, 1900.

Application filed October 21, 1899. Serial No. 734,311. (No model.)

To all whom it may concern:

Be it known that I, LEWIS W. SNOWDEN, of Tilden, in the county of McMullen and State of Texas, have invented a new and useful Improvement in Cactus-Burners, of which the following is a specification.

My invention is an improvement in cactus-burners which are used to destroy the "spines" or thorns of the cactus or prickly-pear, so as to render the same more useful as a food for cattle.

One object of the invention is a burner for this purpose which will produce an intense flame and which will thoroughly vaporize the gasoline or other volatile fuel, so that none of it is wasted.

A further object of the invention is a burner-nozzle so arranged that a regulated draft may be created therethrough to form a hollow or annular flame and which will spread the flame over the vaporizing-coil, the nozzle being further arranged so that the downdraft therethrough may be caused to blow out of the nozzle-tip any impurities or scales which are liable to collect therein.

A further object of the invention is a hood for confining the flame to the vaporizing-coil until every part of the same has been thoroughly heated; and a further object of the invention is an improved coil which allows the flame to act on the liquid fuel passing through it while the liquid is passing downward and upward through the coil, thereby causing it to be thoroughly vaporized by twice getting the benefit of the flame.

The invention consists in certain details of construction and arrangement of the parts, which I shall first describe and then particularly point out in the accompanying claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which like characters of reference indicate corresponding parts in all the views in which they occur.

Figure 1 is a perspective view of my improved cactus-burner shown in use. Fig. 2 is a detail side elevation of the vaporizing-coil and burner-nozzle and a vertical section of the hood. Fig. 3 is a horizontal section taken on the line 3 3 of Fig. 2. Fig. 4 is a detail vertical section of the nozzle, taken on the line 4 4 of Fig. 2. Fig. 5 is a side elevation of a slightly-modified form of coil.

The cactus-burner in its entirety comprises a tank A for the gasoline or other liquid fuel, having eyes to which are fastened straps A', so that it may be strapped to a person's back, as shown in Fig. 1, a tubular handle-rod B, through which the fuel is forced, and a vaporizing-coil and burner C. As shown in Fig. 1, an outlet-pipe a' extends forwardly from the lower end of the tank A in a curved direction and has a stop-cock a^3 at its forward end in easy reach for manipulation. An air-pump a^4 is secured to the side of the tank and is adapted to pump air into the tank to force the fuel out under pressure.

Attached to the forward extremity of the outlet-pipe a' is a stout rubber or other flexible tube B', which is in turn connected securely to the rear end of the tubular handle-rod B, preferably for convenience formed in two detachable sections b and b' . To the free end of the forward section b' one terminal of my improved coil C is secured by threaded engagement or other suitable means. This improved coil is formed of a suitable piece of metallic tubing doubled together at the lower end of the coil and forming when thus doubled the convolutions of the coil up to a point a short distance above the middle of the coil, when one end c of the tubing is separated from the other and is extended to form a terminal at approximately right angles to the axis of the coil, while the other end c' forms single convolutions from such point to form the remainder of the coil and is extended parallel to the axis of the coil to form the other terminal. On the upper end of the terminal c' is screwed the elbow c^2 , and a nipple c^4 on the burner-nozzle c^3 of improved construction is screwed in the other end of the elbow. The body of the nozzle has a lateral opening c^5 , leading from the nipple c^4 , and an annular passage c^6 , leading out through the tip c^7 .

Above the passage c^6 the body of the nozzle is formed with an interior thread in which works a threaded hollow needle-valve c^8 , which is tapered and whose opening c^9 extends through it from one end to the other, and a handle c^{10} is secured upon the upper end of said valve. The lower tapered end of the valve extends down into the passage c^6 any desired distance and creates a downdraft through the nozzle, which makes the flame

hollow and spreads it over the vaporizing-coil. c^{13} designates a nut on the body of the nozzle to prevent the gas from escaping.

In order to keep the flame from being blown by the wind and to confine it to the coil, I provide the hood D, which is divided or split throughout its length and has crimped edges d' , adapted to interlock when the hood is inserted over the coil, an opening d^2 being formed in the hood for the passage of the terminal c , and L-shaped or angular ribs d being secured at equal distances apart in the hood to hold the latter spaced from the coil, as seen best in Fig. 3.

As shown in Fig. 2, the metal tubing forming the coil C is spaced apart at the bend c^{11} , and another turn of the tubing is placed in the bend, so as to provide against the contingency of the said bend c^{11} from dropping down when the coil is very hot, while in the coil C' (shown in Fig. 5) the bend c^{12} is left on the outside, as shown.

In practical operation the air above the liquid fuel in the tank A is compressed, so that the fuel will be forced under pressure through the handle-rod B and vaporized in the coil C, the vapor burning at the nozzle c^3 and the flame being directed by manipulating the handle-rod.

It should be observed that by forming the nozzle independent of the coil and detachably connecting them they may be separated at any time for the purposes of repair or the like, that by establishing a downdraft through the nozzle the flame will be directed to the coil, that by forming the coil double for a portion of its length, as described, the fuel will get the benefit of the flame both going down the coil and returning up through the coil, and that by bringing the terminal c out of the coil just above the middle thereof the weight of the coil below the terminal is compensated for by the weight of the coil above the terminal together with the nozzle, so that the handle-rod can be easily turned about its longitudinal axis, thereby rendering the manipulation of the device easy. It should also be noted that if any impurities collect in the tip of the nozzle they may be easily blown out by screwing the valve c^8 away from the tip of the nozzle, when the draft will blow the impurities out of the tip, thus doing away with the necessity of removing the nozzle to clean it.

It is to be understood that the needle-valve c^8 while primarily intended to provide a draft and to regulate the size of the annular flame also completely shuts off the flame when screwed down tightly in the nozzle.

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

1. In a cactus-burner, a vaporizing-coil formed of a doubled piece of tubing, one end of said tubing extending from the coil approximately at right angles to the axis thereof, and

the other end being coiled above the first-named end, the tubing being spaced apart at its bend at the lower end of the coil and receiving another bend of the tubing therebetween, as and for the purpose set forth.

2. In a cactus-burner, a vaporizing-coil formed of a doubled piece of tubing, one end of said tubing extending from the coil approximately at right angles to the axis thereof, and the other end being coiled above the first-named end with its terminal extending parallel with the axis of the coil, as set forth.

3. In a cactus-burner, a vaporizing-coil consisting of tubing formed with double convolutions for a portion of its length and one terminal extending from the upper end of the double convolutions, the other end of the tubing being coiled singly above the double convolutions and forming the other terminal, as set forth.

4. In a cactus-burner, a vaporizing-coil having double convolutions for a portion of its length and a terminal extending out from the coil at upper termination of said convolutions, the other terminal forming the remainder of the coil and extending upwardly, and a burner-nozzle secured on the latter terminal, as set forth.

5. In a cactus-burner, a vaporizing-coil whose one terminal extends out from a convolution near the middle of the coil and whose other terminal extends upwardly above the coil, a burner-nozzle on said latter terminal, and a split hood open at both top and bottom and having an aperture in its side near its middle in which the first-named terminal is adapted to be inserted, said tube being formed with interlocking edges, and L-shaped longitudinally-extending ribs secured in the head and adapted to space the latter from the coil, as set forth.

6. In a cactus-burner, the combination with a tank and a delivery-tube connected therewith and forming a handle-rod, of a vaporizing-coil formed of a doubled piece of tubing one end of said tubing extending out from the coil at right angles to the longitudinal axis thereof and being coupled to the handle-rod, the other end of said tubing being coiled above the first-named end and extended upwardly parallel with the longitudinal axis of the coil, a burner-nozzle having a lateral nipple secured by an elbow to the upwardly-extending end of the coil, and having its outlet pointing toward the coil, and a hollow needle-valve screwing in said nozzle and having a handle at its upper end, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEWIS W. SNOWDEN.

Witnesses:

F. S. STITT,

SOLON C. KEMON.