

CHARLES J. T. BURCEY.

Improvement in Apparatus for Distilling Turpentine, &c.

No. 115,429.

Patented May 30, 1871.

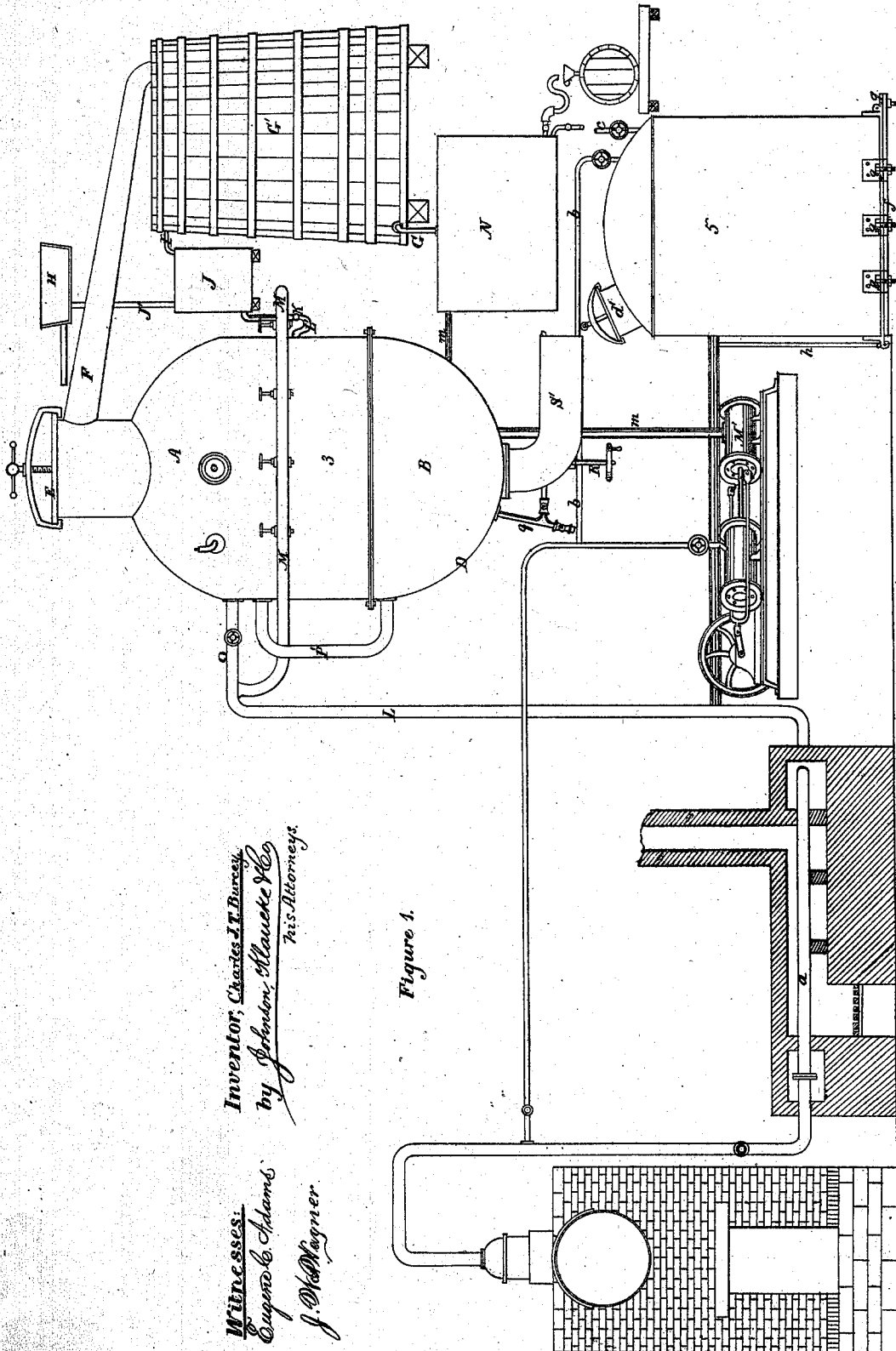


Figure 1.

Inventor, Charles J. T. Burcey,
by Johnson, Mclauche & Co.
His Attorneys.

Witnesses:
Eugene C. Adams
J. D. Wagner.

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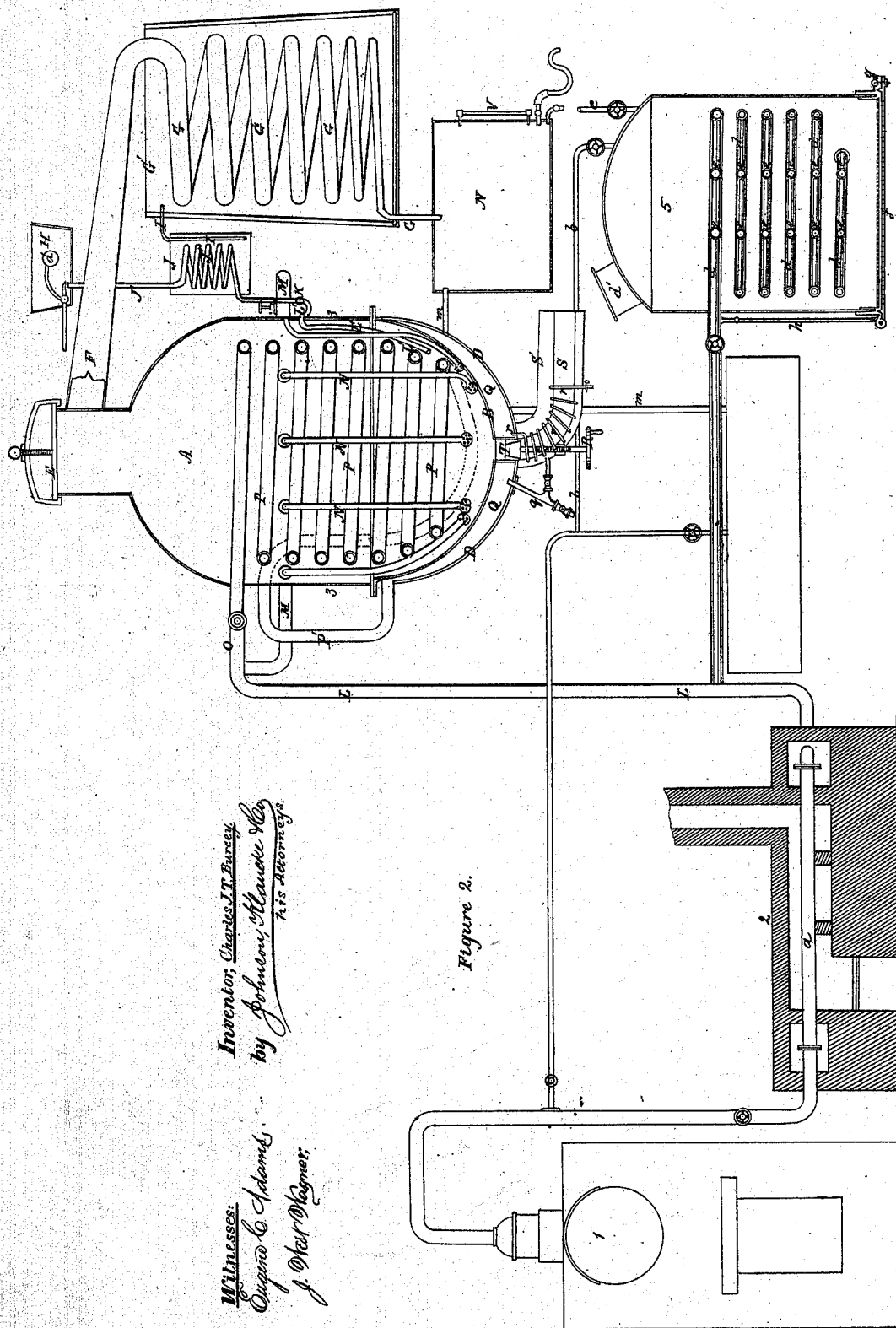


Figure 2.

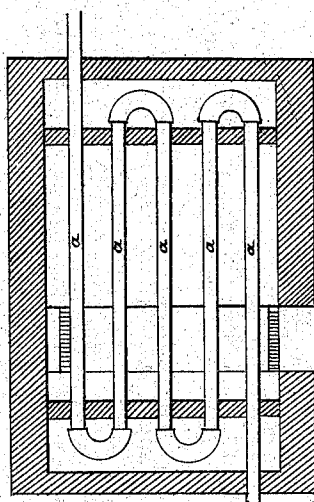
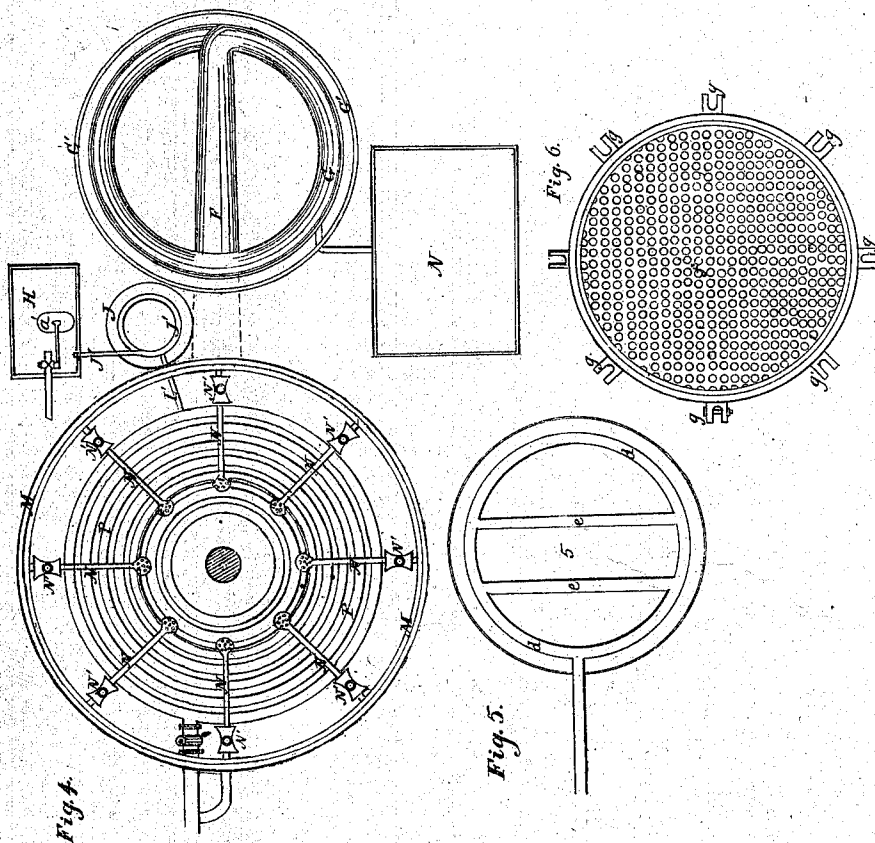
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CHARLES J. T. BURCEY.

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Witnesses:

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Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES J. T. BURCEY, OF BLACK ROCK, CONNECTICUT.

IMPROVEMENT IN APPARATUS FOR DISTILLING TURPENTINE, &c.

Specification forming part of Letters Patent No. 115,429, dated May 30, 1871.

I, CHARLES J. T. BURCEY, of Black Rock, in the county of Fairfield and State of Connecticut, have invented a new and Improved Apparatus for Distilling Turpentine, Oils, Hydrocarburets, &c., of which the following is a specification:

My invention consists in the peculiar construction and arrangement of the several parts of my apparatus, as will be hereinafter more fully described.

In the accompanying drawing, Figure 1, Sheet 1, is a side elevation of my improved apparatus; Fig. 2, Sheet 2, is a longitudinal central vertical section through the same; and Figs. 3, 4, 5, and 6, Sheet 3, are detached views of parts of the same.

In the drawing, 1 represents a steam-boiler and 2 a superheater, the steam-pipe *a* being led forward and backward in the same, as shown in Fig. 3, Sheet 3. A still, 3, is composed of two parts, A B, the lower part being inclosed in a jacket, D, leaving a steam-space, Q, between it and the bottom of D. The superheated steam passes through pipe L and O into a coil, P, within the still 3, and finally passes out through a pipe, P', and is conducted to the steam-space Q, where it heats the bottom of the lower part B of the still, and is allowed to escape either through pipe *q* or through the steam-space between the discharge-pipe S and its outer jacket S'. Another escape for the superheated steam is the serpentine coil of pipe *r*, which winds around the discharge-pipe S, and, heating it, prevents the matter from discharging through the latter to coagulate it. Steam also enters the interior of the still 3 through the annular exterior pipe M, from which extend eight or any other suitable number of pipes, N, into the still, each provided on the outside with a stop-cock, N'. On the inside of the still the pipes pass downwardly outside or inside of coil P, being slightly bent so that their rosette ends, which are provided with a number of perforations, converge toward the center at the bottom of the still. A valve, T, operated by means of a screw-rod, R, opens or closes the bottom of the still, and through it the refuse of the still can be drawn out. The dome of the still is closed by a cap, E, from just below which the pipe F extends, entering into the

worm-tube G, in the shape of a worm, passing out at the bottom and ending in the top of a vacuum-chamber, N, which latter also communicates with an air-pump, M', through the chamber Q by means of a pipe, *m*, and is provided at the opposite end with a discharge-pipe closed by a suitable cock. V is a glass tube on the front of vacuum-chamber N, communicating with the same near its top and bottom, and which indicates the amount of fluid in the chamber. H is a reservoir used in the distillation of oil from pine wood. The liquid turpentine in its crude state produced from the wood is conducted to this reservoir, from which it flows through a coil, J', within a vessel, J, into the still, as shown in Fig. 2. A floating bulb-valve, *a'*, regulates the flow from the reservoir H into the coil J', while a stop-cock, K, in the part L' of coil J', in combination with bulb-valve *a'*, may be made to so regulate the flow of the crude turpentine that only sufficient enters the still through pipe L' to equalize the amount of distilled vapors which passes out through pipe F. The worm-vessel J is situated a little lower than the top of worm-tub G', and a bent pipe, I, connects the interior of tub G' with the interior of vessel J in such a manner that the vessel J will be automatically filled and kept full of hot water from tub G', thus heating coil J' and the turpentine, &c., flowing through. 5 is a filter, provided near its top with an opening, *d'*, which is situated just below the opening of discharge-pipe S. In this filter a coil of pipe, *d*, is suitably arranged, which connects with the steam-pipe L, and is supplied through the same, cross-pipes E connecting the several bends of the coil. The filter is also provided with a hinged bottom, *f*, consisting of two iron disks about two inches apart from each other and connected to each other by a series of short pipes set in both plates, through which the filtered matter escapes. On the upper disk rests a perforated sheet-iron disk, over which is stretched a piece of coarse linen, forming a tight joint on the inside of the filter. A steam-pipe, *h*, admits steam between the two disks of the bottom *f*, which latter is provided with a suitable number of ears or lugs, *g*, which correspond with a like number of similar lugs on the outside of the lower edge of the filter,

and which are held together, when in operation, by means of bolts and nuts. *b* is a pipe for the admission of steam into the filter, and *c* is a steam-escape pipe. *o*, in the upper part A of the still 3, is a man-hole, the cover of which is provided with a circular piece of thick glass, to allow the operator to look into the still to enable him to regulate the admission of steam through pipes N. There may be as many of these man-holes applied as may be deemed necessary or advisable. The pipes N admit the steam in many fine streams, with great force, thoroughly permeating the mass to be distilled, and continually agitating it, and at the same time heat the entire mass, aided at the bottom by the steam-space Q.

When the residue is withdrawn through pipe S the steam-coil *r* and steam in the space around it prevent the matter flowing out from coagulating.

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

1. The pipes N, provided with perforated heads, and arranged within the still, substantially in the manner described.

2. In combination with the pipes N, the outer encircling-pipe M, provided with stop-cocks for pipes N, substantially as described.

3. In distilling apparatus, the reservoir H, worm-vessel J, coil J', and pipe L', arranged and combined to operate substantially as described.

4. In combination with the next above, the bulb-valve *a'* in reservoir H, and stop-cock K in pipe L', to equalize the influx of matter to be distilled with the efflux of matter distilled, substantially as described.

5. In combination with worm-vessel J and worm-tub G', the pipe I, when arranged to operate substantially as described.

6. The serpentine pipe *r* around the discharge-pipe *s*, substantially as and for the purpose set forth.

7. In combination with a distilling apparatus, a filter, 5, constructed and arranged substantially as herein described.

CHARLES J. T. BURCEY.

Witnesses:

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