

C. S. HUTCHINSON.

Alcohol Still.

No. 80,740.

Patented Aug. 11, 1868.

Fig. 4.

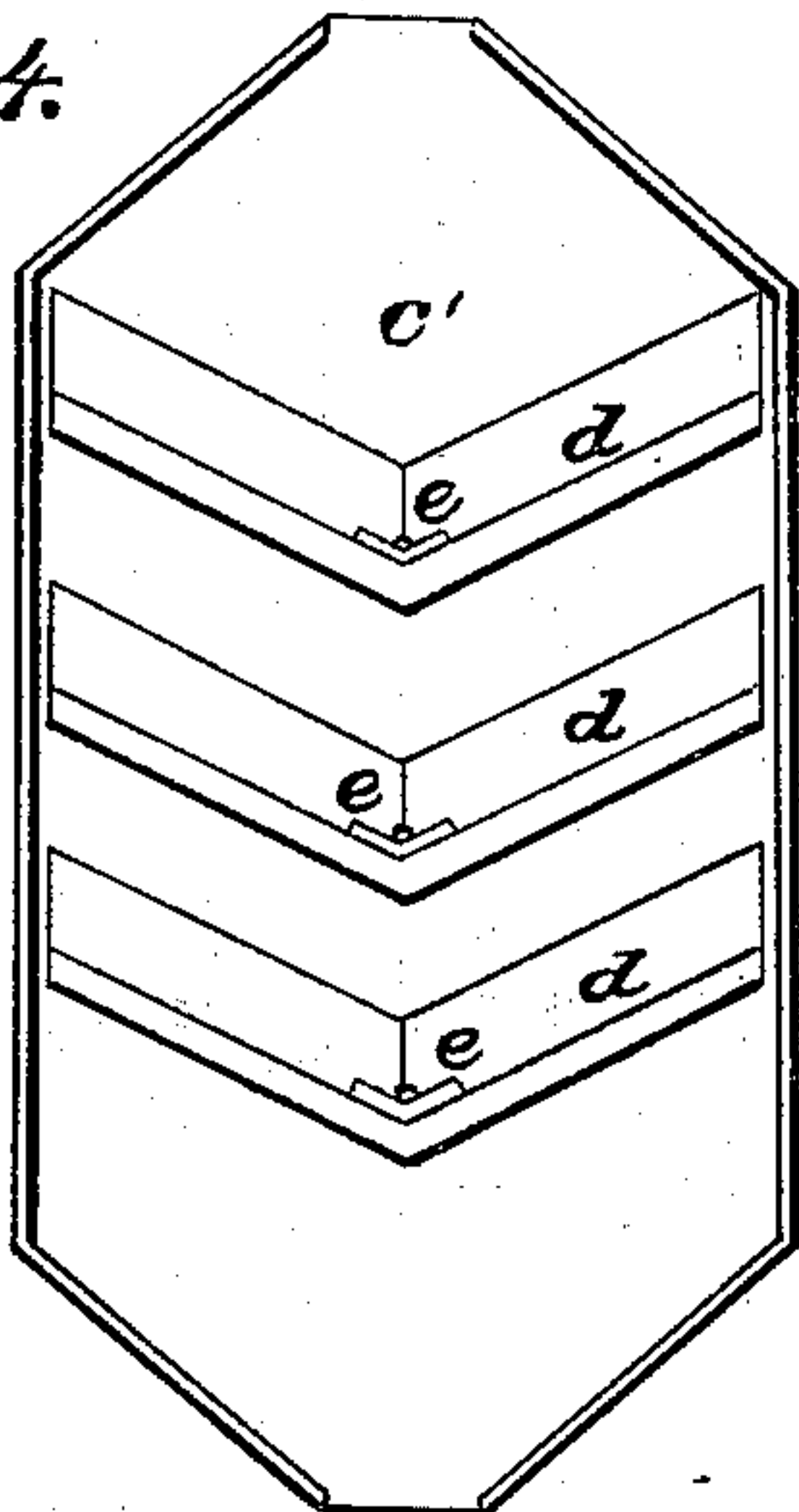


Fig. 3.

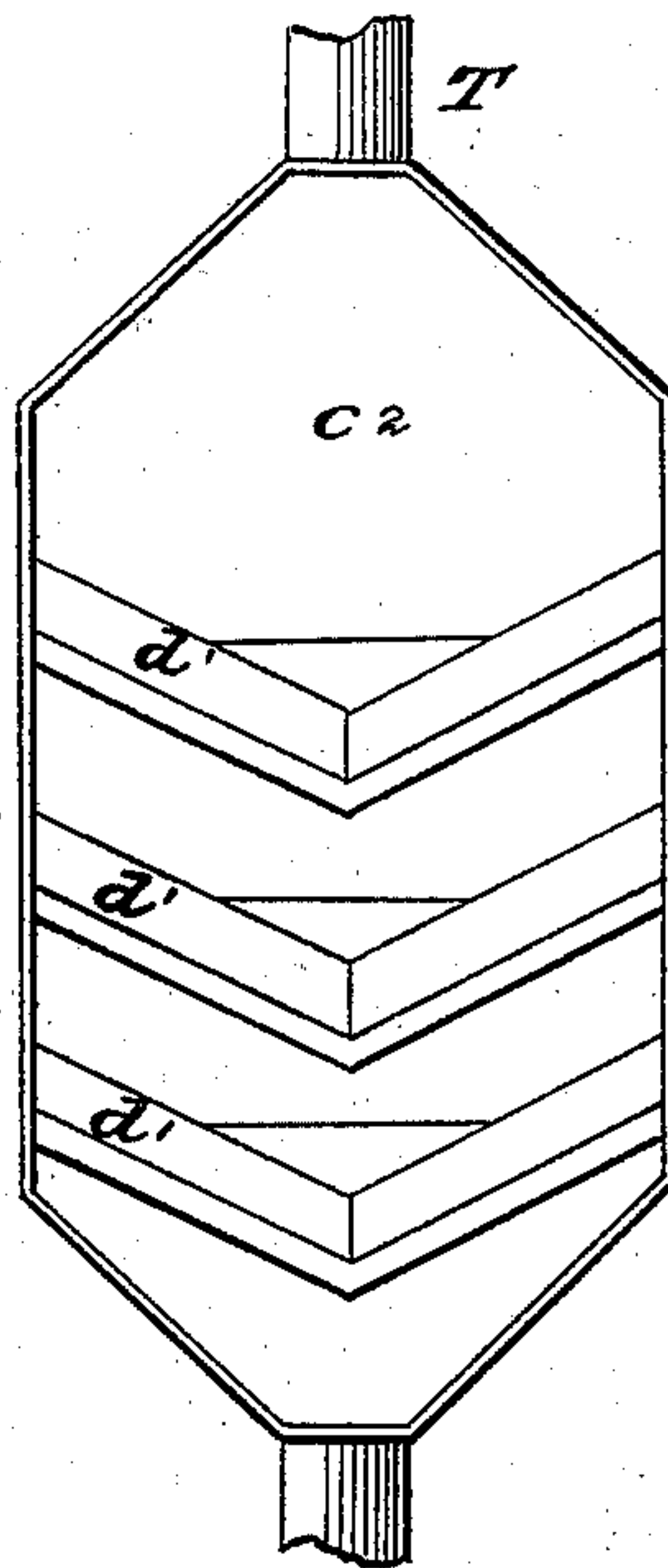


Fig. 1.

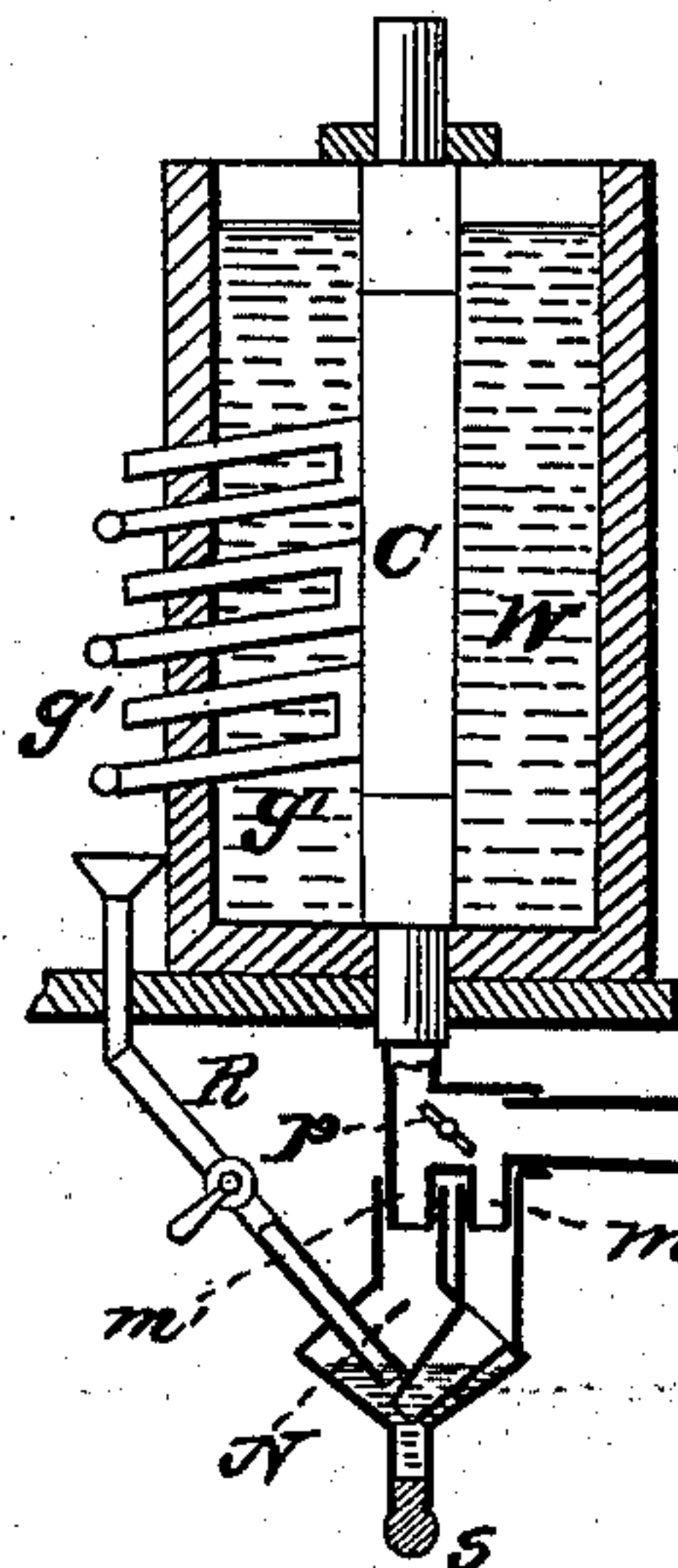
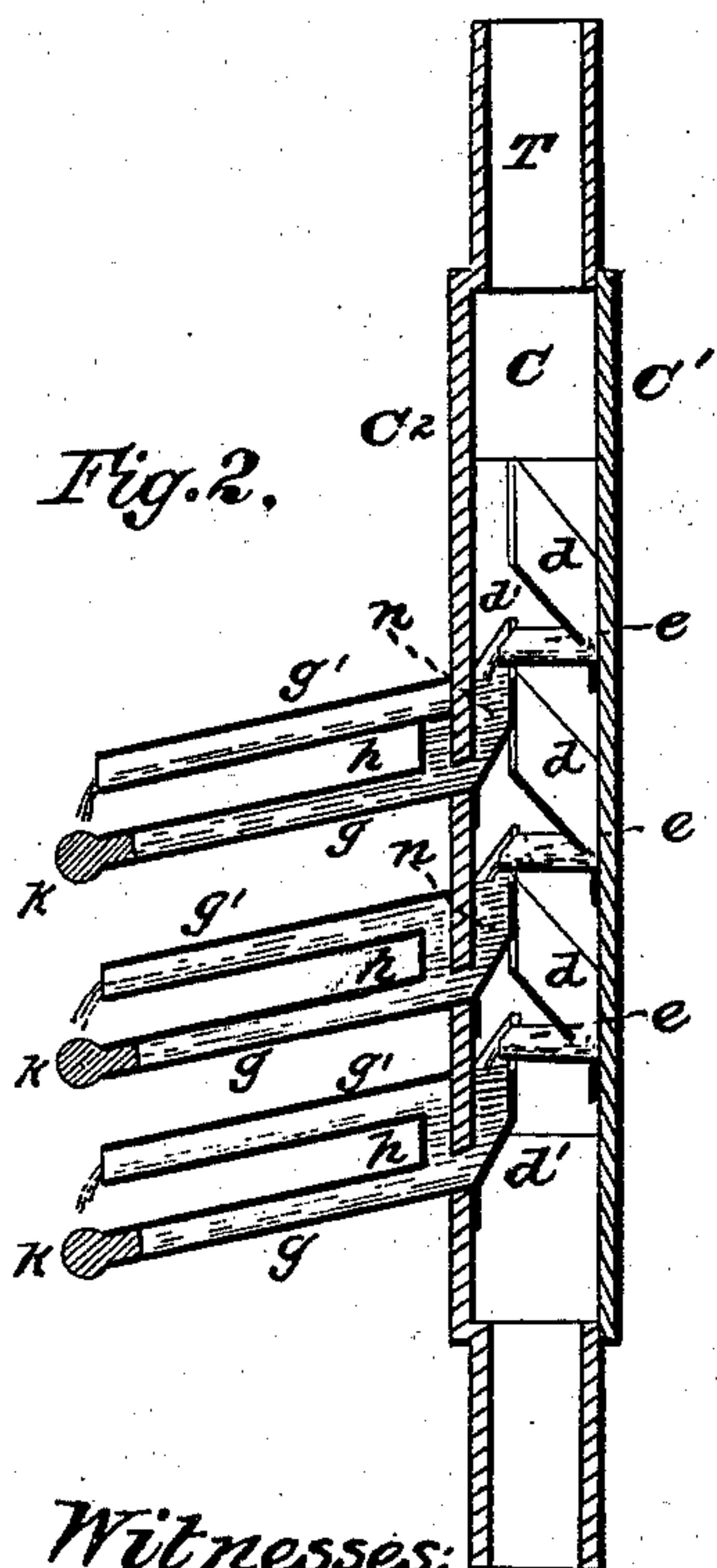


Fig. 2.



Witnesses:

Edw. Brown
Wm. L. Austin

Inventor:

C. S. Hutchinson

United States Patent Office.

CLARK S. HUTCHINSON, OF BURLINGTON, NEW JERSEY.

Letters Patent No. 80,740, dated August 4, 1868.

IMPROVED APPARATUS FOR DISTILLING SPIRITS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CLARK S. HUTCHINSON, of Burlington, in the State of New Jersey, have invented certain new Improvements in Apparatus for the Distillation of Spirits; and I do hereby declare the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the construction and arrangement of the shelves in an upright condensing-apparatus, and also in the pools connected therewith for the extraction of the fusel-oil, and also in the construction of the pipe and doubler leading from the still to the condenser, by means of which apparatus the liquors can be produced of different qualities, from high to low, and also a superior quality at one distillation.

Figure 1 is a general section through the apparatus.

Figure 2 is a cross-section through the condenser.

Figure 3 is one side of the interior of the condenser.

Figure 4 shows the other side of the condenser.

A is the still, which contains the wash to be evaporated. The spirit, as it rises from the still, passes up the pipe B, on its way to the condenser C. In the said pipe, and between it and the condenser, is the doubler, M, made with two short pipes m^1 and m^2 , descending to a receptacle, N. A valve is placed between the said pipes, to throw the vapor either up into the condenser, or down into the receptacle N. As long as the liquor which runs from the still is a fine liquor, the vapor passes direct into the condenser. When the still runs a low-wine, the spirit from the lower pipes $g g'$ is returned to the doubler, either by connecting the pipe g' with the pipe R, or by stopping up pipe g' , and allowing the overflow of the pools to return the spirits or feints to the doubler direct by the main pipe. The valve p being then closed, the hot vapor is turned down pipe m^2 , and passing through the liquid collected in N, boils it and re-evaporates it, the vapor rising up pipe m^1 to the condenser. The spirit thus collected in doubler M is thereby prevented from returning to the still. When the process is complete, the plug or cock S is opened, to draw off the liquid in the doubler.

The condenser C is made upright, with two flat sides, $c^1 c^2$, a short distance from each other, and forming a closed box, which is surrounded by water, w . To each of these sides are secured shelves, $d d^1 d^2$, slanting upwards, as shown in section, fig. 2, and coming down to a point, as shown, figs. 3 and 4. These shelves on the side c^1 are a little higher than those on the side c^2 , so that they alternately overlap each other, and catch all the spirit which may be condensed. This spirit runs through an orifice into the short spout e , and from thence into the pools n , at the bottom of the shelves d^1 , on the opposite side c^2 . At the bottom of these pools is a small opening, connecting with the pipes $g g'$, on the exterior of the condenser. The lower pipe g is on a level with the opening, and it is connected with the upper pipe, g' , by a short pipe, h .

The lower pipe, g , is stopped with a plug or tap, k . The spirit which falls upon the two upper shelves is thus collected in the upper pool, and rises in the said pool until it is high enough to overflow down the pipe g' , fit at once for immediate use.

The fusel-oil being lighter than the spirit, floats on the surface of the spirit, as shown by the red color, and is thus prevented from flowing with the spirit, which can only escape through the lower orifice, and up the short pipe h .

After the spirit is all run off, the oil can be drawn off by the cock or plug k , in the lower pipe. This makes a spirit of better flavoring, by removing the obnoxious portion of the fusel-oil. Instead of the pool being inside of the condenser, it might be outside, and the same principle adapted of drawing the spirit from the bottom of the pool. Each of the three pools shown in fig. 2 is similar, but each collects a different quality of spirit, according to its height in the condenser. The pipe T is slightly stopped with a cork, and operates as a safety-valve for the escape of vapor from the top of condenser.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The flat upright condenser C, having arranged within it the shelves $d^1 d^2$, overlapping each other, and shaped as described, with outlets for the escape of spirits of different grades, substantially as shown and described.
2. The pools n^1 , either inside or outside of the condenser C, in combination with the outlet-pipes $g g'$, arranged and operating substantially as described.
3. The doubler M, constructed as described, between the still and the condenser, having the two pipes, $m^1 m^2$, intermediate valve p , and inlet-pipe R, and operating substantially as shown and described.
4. The arrangement and combination of the condenser with its shelves $d^1 d^2$, the pool n , with its exit-pipes $g g'$ and the doubler M, connected and operating in conjunction, as described.

C. S. HUTCHINSON.

Witnesses:

EDWD. BROWN,
WM. L. AUSTIN.