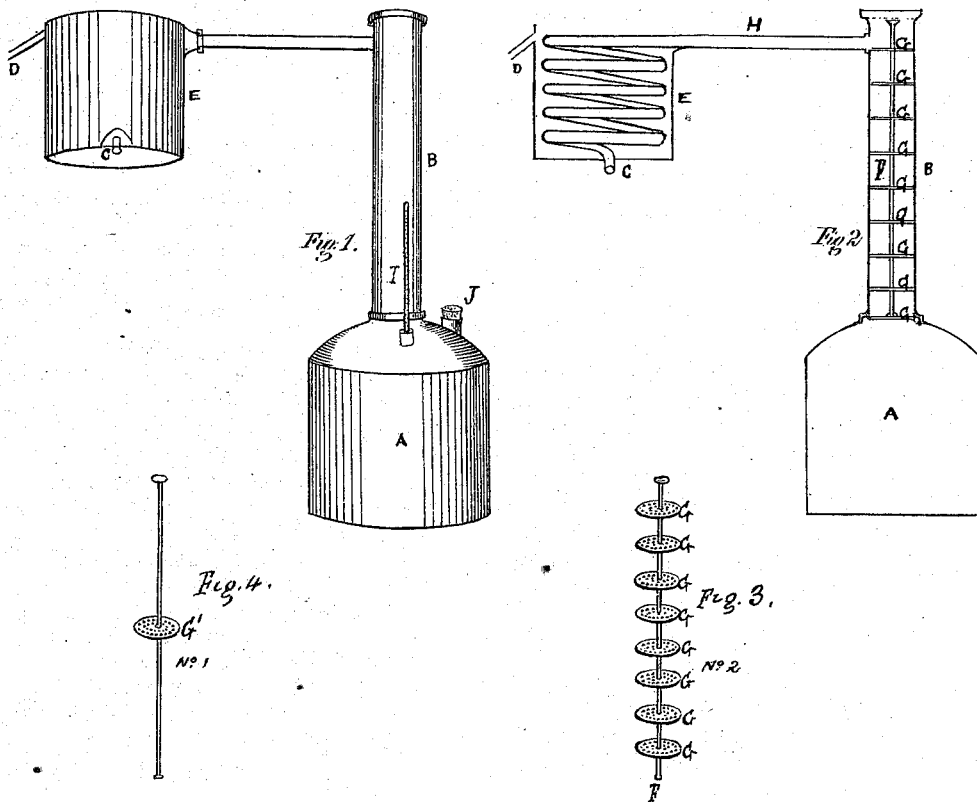


E. F. PRETISS.  
Rectifying-Still.

No. 160,951.

Patented March 16, 1875.



Witnesses  
Chas. A. Puritt.  
W. W. Dougherty.

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# UNITED STATES PATENT OFFICE.

E. FREEMAN PRENTISS, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN RECTIFYING-STILLS.

Specification forming part of Letters Patent No. 160,951, dated March 16, 1875; application filed December 30, 1874.

*To all whom it may concern:*

Be it known that I, E. FREEMAN PRENTISS, of Philadelphia, Pennsylvania, have invented an Improvement in Stills, of which the following is a specification:

The apparatus herein described is designed chiefly for druggists' uses in reclaiming alcohol from various waste decoctions and for making fluid extracts.

The invention consists of a series of perforated diaphragms attached to a spindle or rod, the whole being capable of removal from the vapor column at will.

In the drawings, Figure 1 is a side elevation of the apparatus; Fig. 2, a vertical section of the same; Fig. 3, a detached perspective view of the rod and diaphragms employed in reclaiming alcohol, and Fig. 4 a like view of the standard and a single diaphragm.

A is the boiler; B, the column; E, the condenser; C, the worm; D, an overflow-pipe for the water employed to assist condensation. F is a rod upon which are placed a series of diaphragms, say, eight or more, marked G. These diaphragms are perforated with fine holes, as shown in Figs. 3 and 4, the perforations being punched from the top downward, and being thus caused to present a jagged or grater-like surface on the under side. The rod F with its diaphragms can be lifted out or set in the column as desired, the column being provided with a removable cap.

Several diaphragms, as shown in Fig. 3, are used when the apparatus is required to reclaim alcohol or produce spirits of high percentage.

The perforated diaphragm at the bottom of the rod is shown to be fixed in place in the column. When thus constructed it forms support for the rod F, which rests upon it. When the bottom diaphragm is attached to the rod small projections from the shell of the column may be employed for the bottom diaphragm to rest on.

The rod shown in Fig. 4 is employed when extracts or flavored products are required,

solid flavoring materials or cotton saturated with volatile oils being placed in the column on top of the diaphragm G'. A removable similar diaphragm, not shown, may be placed at the top of rod F just below the level of vapor-tube H to prevent the solid substances employed from getting into the vapor tube.

I is a thermometer; J a closed feed aperture. Heat is applied to the boiler A by spirit-lamp or otherwise.

The effect of the diaphragms, when perforated in the manner described, is to atomize the vapors and deprive them of their more watery portions.

Atomizers thus constructed do not hold the heat, and produce a much better result than pumice-stone, pebbles, and other solid substances hitherto employed as atomizers.

The atomizers herein described, being removable, are easily kept clean, and they render the apparatus adaptable for reclaiming alcohol from waste decoctions for the manufacture of medicinal extracts and for the various other uses of druggists.

I prefer to make the boiler A about eight inches in diameter and five inches in height; column B, two inches in diameter and twelve inches in height; vapor-tube H, three-eighths of an inch in diameter and ten inches long to its connection with the worm; the worm and condenser of usual size proportioned to the other parts.

I do not wish to be confined to the particular number of diaphragms shown as to a limited extent; variations in the number employed do not materially change the result.

I claim—

The rod and perforated diaphragms, in combination with the boiler and column, in the manner and for the purpose substantially as set forth.

E. FREEMAN PRENTISS.

Witnesses:

THOS. A. BURTT,  
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