

No. 732,548.

PATENTED JUNE 30, 1903.

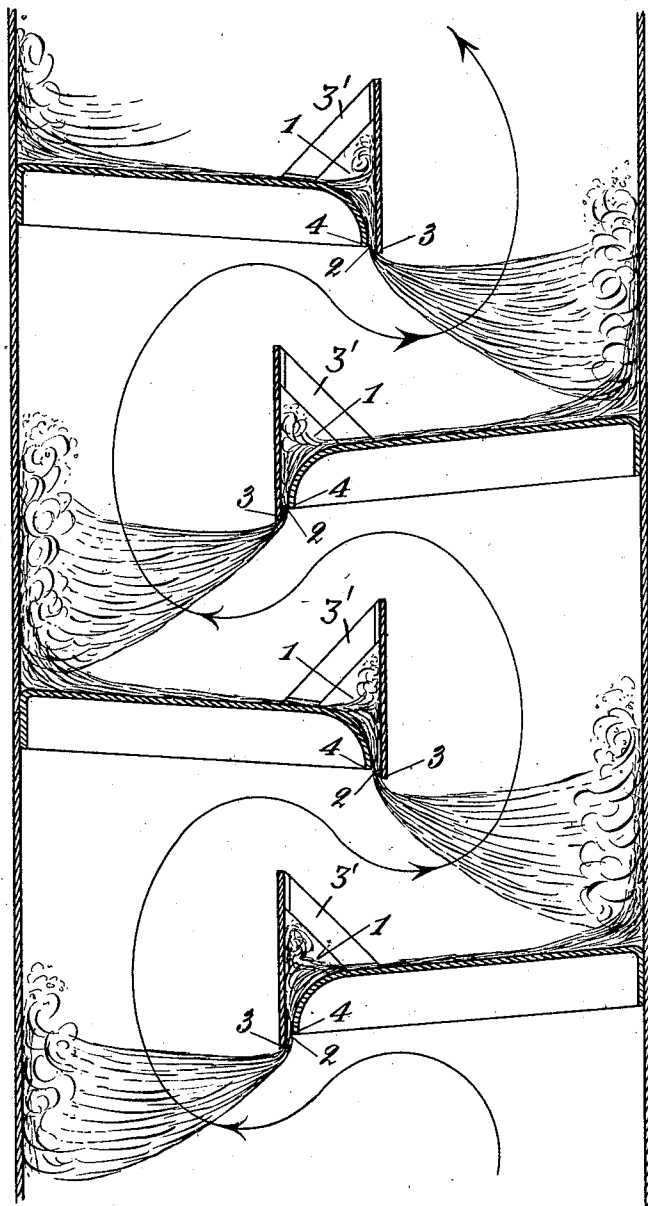
E. GUILLAUME.
COLUMN FOR COLUMN STILLS.

APPLICATION FILED NOV. 25, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1



WITNESSES

J. M. Ketchum
J. M. Downing

INVENTOR

Emile Guillaume

By *Richardson*

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3 SHEETS—SHEET 2.

Fig. 2

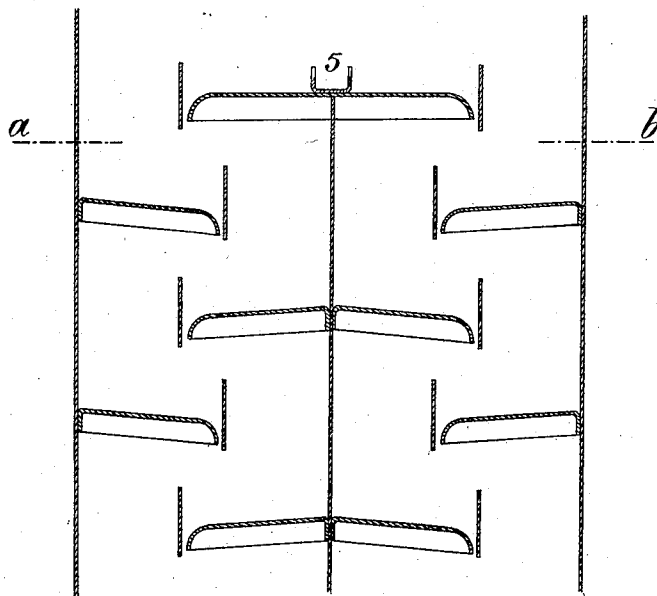
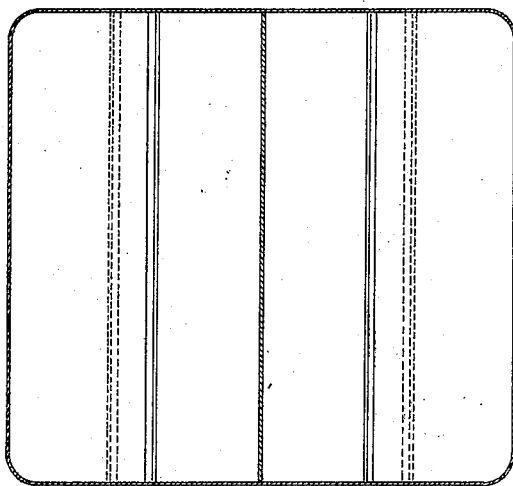


Fig. 3



WITNESSES

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3 SHEETS—SHEET 3.

Fig. 4

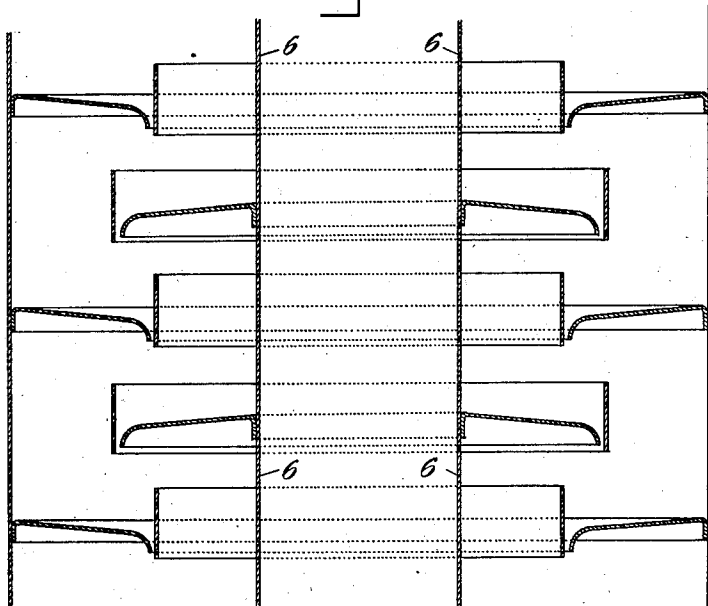
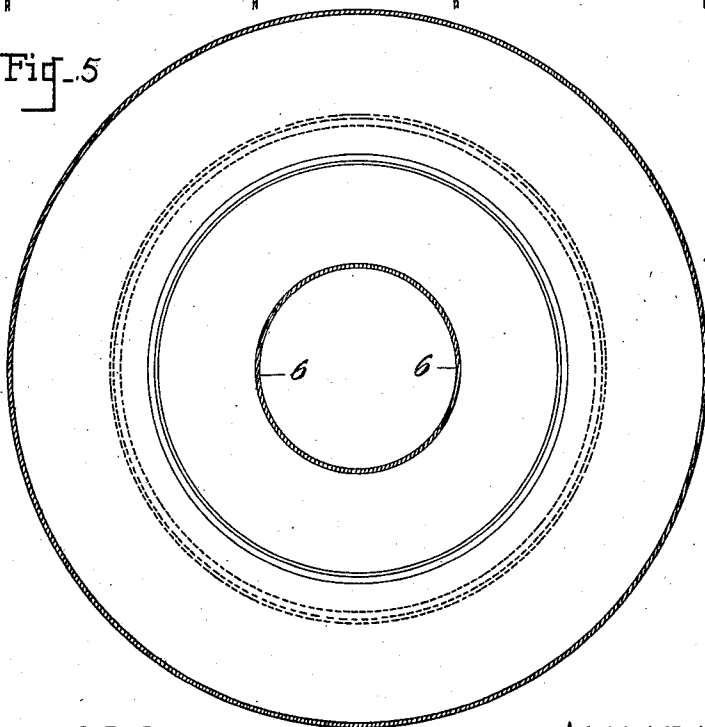


Fig. 5



WITNESSES

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UNITED STATES PATENT OFFICE.

EMILE GUILLAUME, OF PARIS, FRANCE.

COLUMN FOR COLUMN-STILLS.

SPECIFICATION forming part of Letters Patent No. 732,548, dated June 30, 1903.

Application filed November 25, 1902. Serial No. 132,806. (No model.)

To all whom it may concern:

Be it known that I, EMILE GUILLAUME, a citizen of the French Republic, residing in Paris, in the Republic of France, have invented certain new and useful Improvements in Columns for Column-Stills, (for which I have obtained a patent in France, No. 320,850, bearing date May 2, 1902,) of which the following is a specification.

My invention relates to a column for a column-still, which column has inclined plates curved downward at their lower edges, each forming with a more or less vertical part a gutter open at the bottom. The said vertical part may either be an attachment to or a part of a plate or it may be a separate piece, as I will describe with reference to the accompanying drawings, in which—

Figure 1 is a cross-section through a rectangular column for a still fitted with plates according to my invention. Fig. 2 is a similar section, and Fig. 3 is a section on the line *a b* of Fig. 2 through a double column fitted with the plates, and Fig. 4 is a vertical section through a cylindrical column fitted with the plates, Fig. 5 being a plan thereof.

In Fig. 1 a curved line (marked with arrow-heads) indicates the direction of the vapor up the column, and the plates are shown attached to the sides of the column and inclined at a slight angle thereto. The front portion 4 of each plate is curved downward, and there is fixed to the sides of the column a vertical plate 3, supported by braces 3', extending at an angle from the plate 3 to the inclined plate in front of each of the inclined plates and sufficiently close thereto to form with the lower edge of the curved part 4 a narrow opening 2. As indicated, the liquid flows successively down the plates, and owing to the speed it acquires in flowing down the inclined surface of the plate it impinges against the vertical surface 3 and fills the gutter formed between the latter and the curved portion 4. It thus acquires a head sufficient to carry it through the opening 2 in the form of a continuous sheet onto the succeeding plate against the pressure created by the upward passage of the vapor. It will be obvious that the extent to which the gutter 1 becomes filled depends on the adjustment of the distance between plate 3 and the curved

portion 4. The vapor in passing through the sheets of liquid thus formed deflects them approximately in the manner shown in the drawings and passing through them to some extent pulverizes the liquid, but the drops carried forward have too much inertia to enable them to accompany the vapor when it changes its direction. It is found to some advantage to make the lower edge vertical plates 3 extend slightly below the lower edge of the curved portion 4, this favoring the formation of sheets. It is unnecessary to lay down any directions as to the proportions of the plates or their vertical distances apart, as these obviously depend upon the purpose for which the column is to be applied and the height available for construction of the column.

The description given above with reference to Fig. 1 applies also to Fig. 2, which is a double column, the liquid being equally distributed down each from the gutter 5.

The cylindrical column (shown in Figs. 4 and 5) has a central cylinder 6, which carries circular plates constructed like those already described and surrounded by vertical rings, as is obvious from the drawings. Between these plates are annular plates of the same form attached to the inner surface of the outer wall of the column. Vertical rings are arranged within the central openings of these annular plates. As in the case of the rectangular columns these cylindrical columns can be duplicated, triplicated, &c., and obviously a simple arrangement is to make them concentric.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim—

1. In a column-still, inclined plates each curved downward at its lower edge and combined with a more or less vertical plate, so arranged that its juxtaposition with the lower edge of the said inclined plate forms a gutter having a narrow opening at its bottom, substantially as described.

2. In a column-still, inclined plates each curved downward at its lower edge and combined with a more or less vertical plate, so arranged that its juxtaposition with the lower edge of the said inclined plate forms a gutter having a narrow opening at its bottom, the

lower edge of the said more or less vertical plate extending a little below the lower edge of the said inclined plate, substantially as described.

- 5 3. A column-still consisting of a vertical hollow column to the inner surface of whose walls are fixed inclined plates curved downward at their lower edges and extending into the column so that they compel the ascending
10 vapor to take a zigzag course, these inclined plates being combined with more or less vertical plates which form by their juxtaposition with the lower edge and the inclined plates a gutter having a narrow opening at its bottom,
15 substantially as described.

4. A column-still consisting of a vertical hollow column to the inner surface of whose walls are fixed inclined plates curved down-

ward at their lower edges and extending into the column so that they compel the ascending vapor to take a zigzag course, these inclined plates being combined with more or less vertical plates which form by their juxtaposition with the lower edge and the inclined plates a gutter having a narrow opening at its
20 bottom, the lower edges of the said more or less vertical plates extending a little below the lower edges of the said inclined plates, substantially as described.

In witness whereof I have hereunto set my
hand in presence of two witnesses. 30

EMILE GUILLAUME.

Witnesses:

EDWARD P. MACLEAN,
JULES FAYOLLET.