

L. V. ROGERS.
FRACTIONATING COLUMN.
APPLICATION FILED JULY 7, 1919.

1,363,485.

Patented Dec. 28, 1920.

Fig. 1

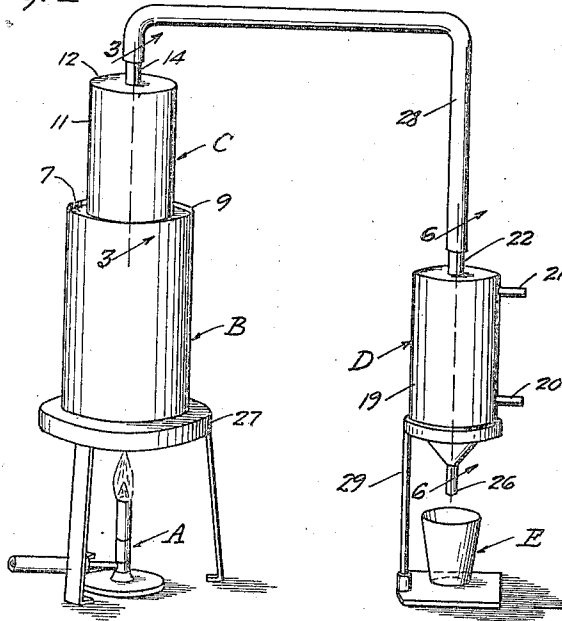


Fig. 2

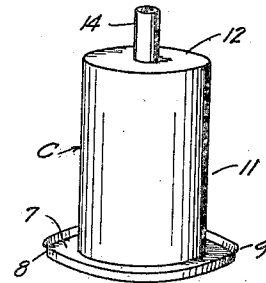


Fig. 3

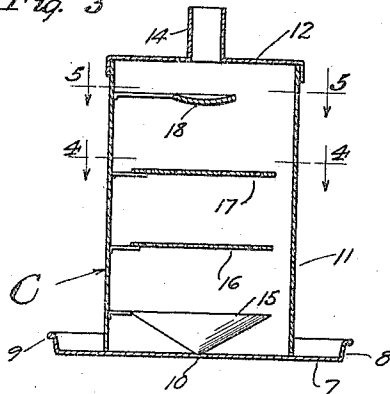


Fig. 4

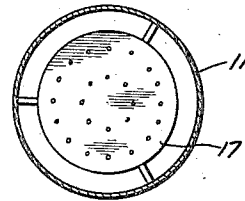


Fig. 5

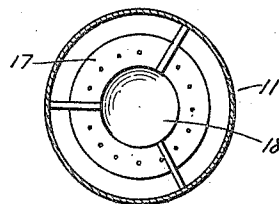
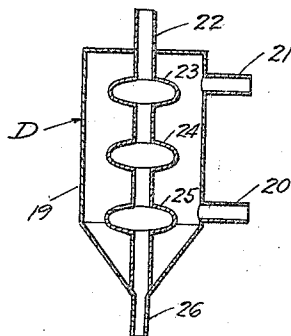


Fig. 6



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FRACTIONATING-COLUMN.

1,363,485.

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To all whom it may concern:

Be it known that I, LEON VERNE ROGERS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Fractionating-Columns, of which the following is a specification.

This invention relates to improvements in apparatus for separating from substances the volatile parts thereof; and the principal object thereof is to provide a cheap, efficient, and easily manipulated apparatus of the kind specified and for the purpose intended, which speedily vaporizes the volatile matter and condenses the vapors without any liability of burning or scorching during the process and without any loss of vapor in its passage through the condenser. Another object of this invention is to provide a small compact portable apparatus, easily assembled and disassembled.

These objects will be more fully understood, as will also other objects and corresponding accomplishments of my invention from the following detailed description of a preferred embodiment thereof. For the purpose of this description, reference is had to the accompanying drawing, in which:

Figure 1 is a perspective view of the boiling chamber, separator and condenser; Fig. 2 is a perspective view of the device; Fig. 3 is a median section of the device on an enlarged scale; Fig. 4 is a section taken on the line 4—4 of Fig. 3; Fig. 5 is a section taken on the line 5—5 of Fig. 3; and Fig. 6 is a median section through the condenser.

Referring more particularly to Fig. 1, A is a burner of any suitable type for supplying heat to a boiling chamber B. Mounted on the boiling chamber is a column C, and communicating with the column is a condenser D, which discharges into a receptacle.

The boiling chamber B is a cylindrical can of the type usually provided with a slip-on cover. The boiling chamber and other parts of the apparatus are preferably made of aluminum.

The column C has a base 7 projecting laterally from the bottom thereof and provided with a flange 8, which will snugly fit within the opening in the top of the boiling chamber. The flange 8 is provided with a lip 9, which will engage the top edge of

the boiling chamber. An opening 10 is formed at the center of the base 7. Mounted upon the base is a cylindrical wall 11, and mounted thereover is a cover 12 having an outlet tube 14 at the center thereof. Mounted within the column adjacent the lower end thereof is a conical baffle 15 having its apex end closed and disposed in registration with the opening 10. This baffle is for the purpose of directing the vapor entering the column toward the outer wall thereof. Supported above the deflector 15 is a perforated disk 16. Disposed above disk 16 is a similar disk 17. These disks constitute baffles. Disposed above disk 17 and beneath the outlet 14 is a dished imperforate baffle 18, the convex side being toward the bottom.

The condenser comprises a jacket 19 having a water inlet 20 and a discharge outlet 21. An inlet 22 for the vapors to be condensed communicates with bells 23, 24 and 25, a discharge 26 being provided adjacent the bottom. Condensing water will enter the jacket through tube 20, circulate about the bells and be discharged through tube 21.

The boiling chamber is suitably supported upon a stand 27 of any convenient construction over a burner A. However, heat may be supplied to the boiling chamber by any other convenient means. Outlet 14 of the column is connected to inlet 22 of the condenser by means of piping 28. The condenser is supported by a stand 29 so as to discharge the condensed vapors into the receptacle. The material to be treated is placed in the boiling chamber and heat applied thereto. Cold water is circulated through the water jacket of the condenser D. The vapors rise in the boiling chamber and pass through the opening 10, being deflected by the baffle 15 toward the side of the column. The larger solid particles which pass upward with the vapor will be caught by the baffle 15. Baffles 16 and 17 catch other solid particles and also condense liquids. Baffle 18 prevents any of the solid particles from passing up through the piping 28 to the condenser.

What I claim is:

1. A fractionating column having an inlet at the bottom with an inverted conical baffle disposed over said inlet and a series of perforated baffle disks disposed transverse to the travel of vapor therethrough,

said column having a base for detachably mounting it on a boiling chamber.

2. A fractionating column having a slip-on base for disposal in the opening of a
5 boiling chamber, said column having an inlet at the bottom with an inverted conical baffle closed at the bottom end disposed over

said inlet, and perforated baffle disks disposed therein in series above said conical baffle.

In witness that I claim the foregoing I have hereunto subscribed my name this 2nd day of July, 1919.

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LEON VERNE ROGERS.