

J. F. LLEWELLYN.  
CONDENSER.

No. 57,932.

Patented Sept. 11, 1866.

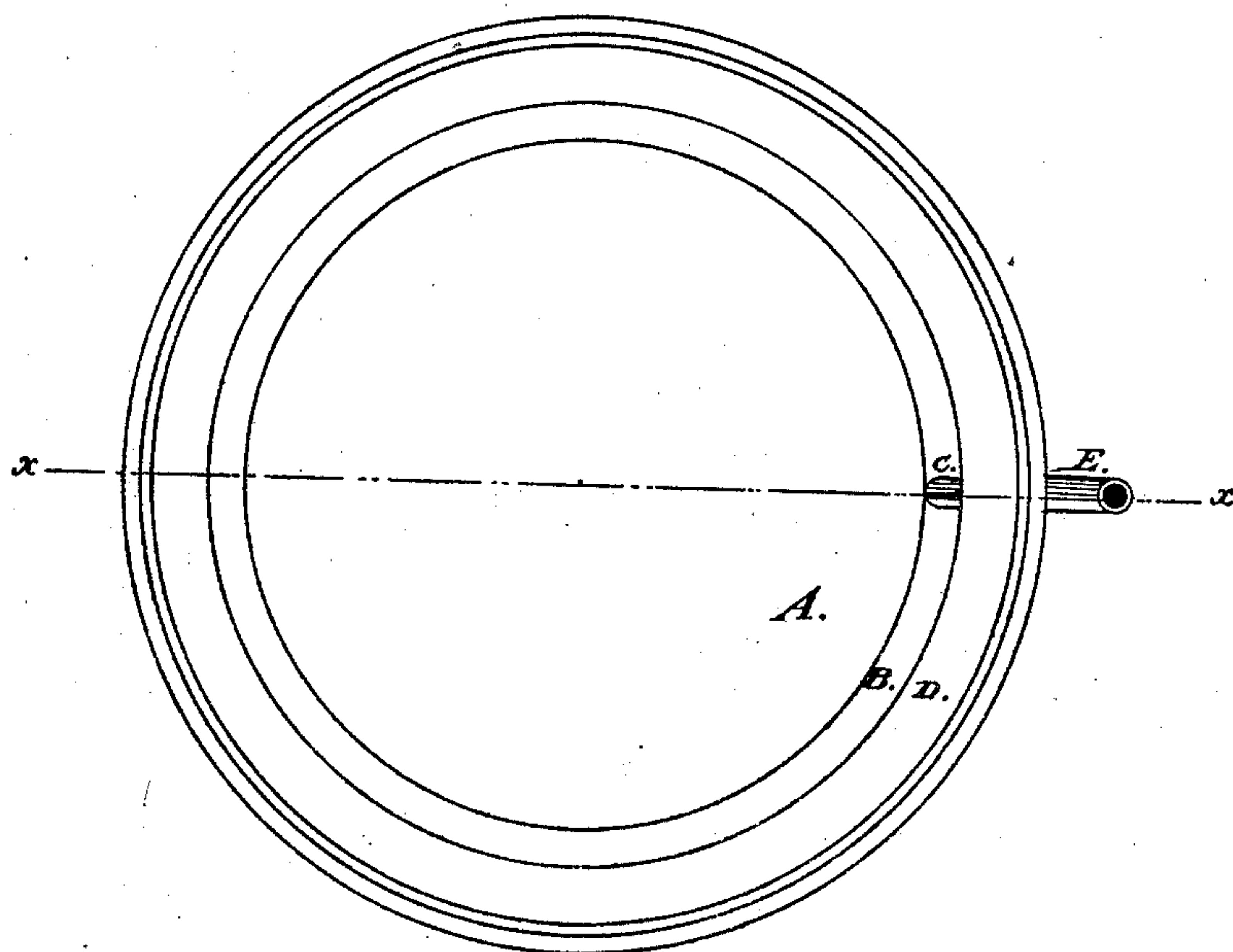
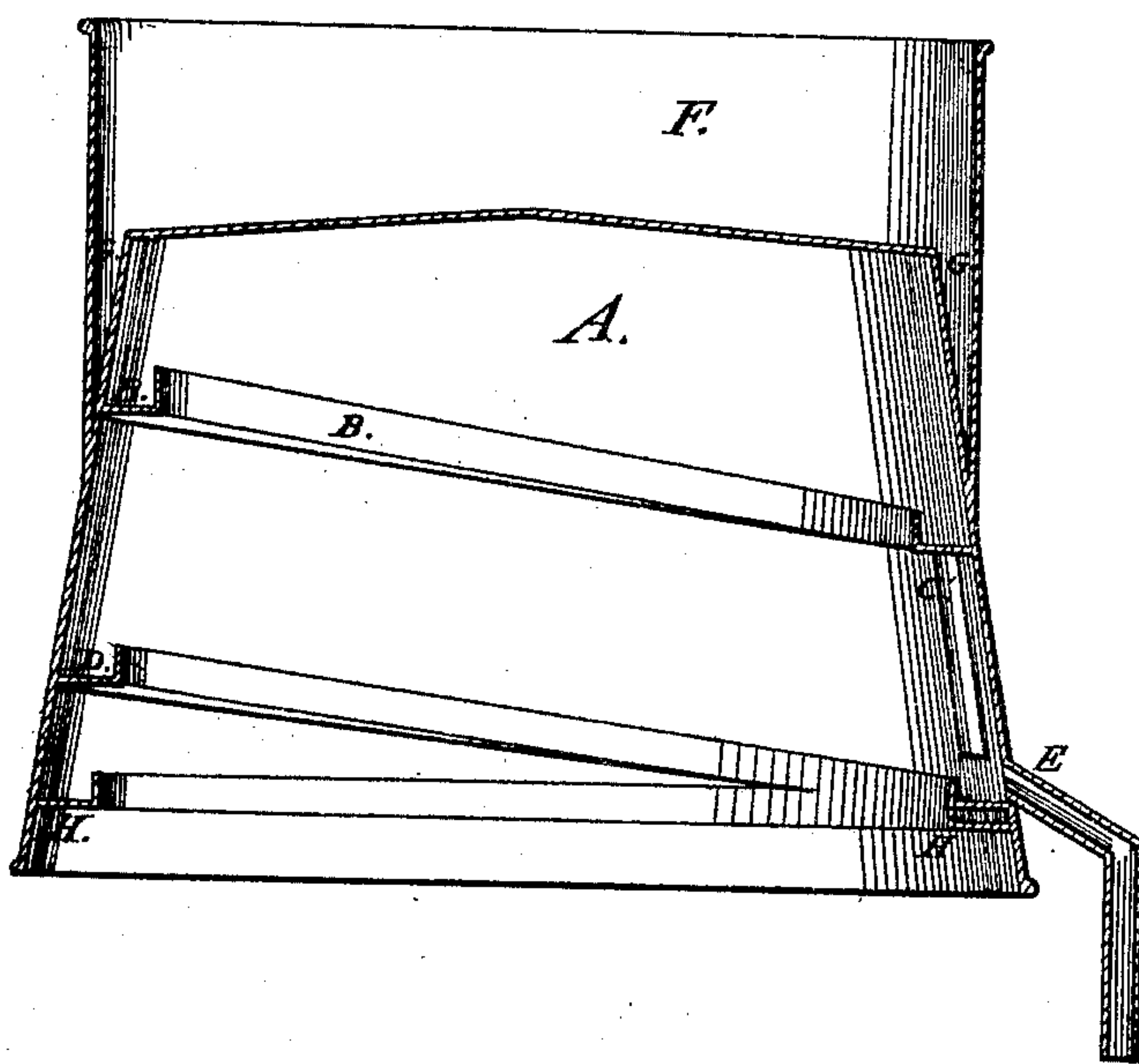


Fig. 2.



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# UNITED STATES PATENT OFFICE.

J. FRED. LLEWELLYN, OF LOUISVILLE, KENTUCKY.

## IMPROVED CONDENSER.

Specification forming part of Letters Patent No. 57,932, dated September 11, 1866.

*To all whom it may concern:*

Be it known that I, J. FRED. LLEWELLYN, of Louisville, Jefferson county, State of Kentucky, have invented a new and useful Improvement in Condensers for Druggists and others; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an under-side view of an apparatus made according to my invention. Fig. 2 is a vertical section taken in the plane indicated by the letters *x* of Fig. 1.

Similar letters of reference indicate like parts.

The object of this invention is to provide a condensing apparatus for the use of druggists and others in evaporating alcohol from extracts, tinctures, or other alcoholic preparations, or from waste or dirty alcohol.

It consists, in general terms, in a deep vessel, whose sides are provided with one or more inclined gutters, the gutters being provided with outlets at the place of their lowest depression. This vessel is inverted over an evaporating-pan or over the liquid to be evaporated, and upon it, when inverted, is formed a refrigerating-chamber, open or closed, as desired, into which ice or any other refrigerating substance is placed, so as to cool the upper surface of the condenser.

In the example here given of my invention, A designates the condenser. Its top is solid, and its lower side is open. Its form is circular; but it tapers toward its top, so as to resemble a truncated cone. Its shape may, however, be varied to suit the convenience or judgment of the operator.

The upper part of the condenser is inclosed by an open cylinder, whose lower edge is soldered or otherwise secured water-tight to the sides of the condenser a little distance below its top—say, about one-third of its whole height—its upper edge rising about the same distance above, and so forming a refrigerating or ice chamber, F, on the top of the condenser.

Since the sides of the condenser are conical and the inclosing body is cylindrical, it follows that a continuous space, G, will be left between

them about the upper part of the sides of the condenser.

The condenser here shown has two parallel inclined gutters within it against its sides, to wit, an upper one, B, and a lower one, D, both inclined in the same direction. The upper one, B, is about opposite the bottom of the refrigerating-space G, and its lowest side communicates with a pipe, which terminates just above the lower gutter, D.

The gutter D is emptied by a pipe, E, which passes through the sides of the condenser at the lowest point of said gutter, and conducts the products of condensation to any vessel or receiver which may be provided.

Within the mouth of the condenser, at a suitable height above its edge, I provide a ledge or gutter, H, which is parallel with such edge, and on which the condenser may be supported by fitting or resting on the edge or rim of an evaporating or other pan or vessel, which contains the mixture or preparation from which alcohol or other volatile liquid is to be separated by evaporation.

The condenser is used in the following manner: The condenser having been placed over an evaporating-pan containing any alcoholic preparation, ice and salt or other refrigerating mixture is put into the vessel F. As the ice melts, the cold water runs down into the narrow surrounding space G, thereby cooling the upper part of the sides of the condenser, as well as the top, and causing a rapid condensation of the alcoholic vapors which rise within the condenser, the condensed liquid running down the sides thereof into the troughs B D, that which falls into the trough B running toward the mouth of pipe C, and thence into trough D, whence it escapes from the condenser into pipe E. As the water in the space G rises in temperature it becomes displaced by the cold water from the melting ice, and consequently the sides of the condenser and its top are kept cool, the water which has become comparatively warm rising toward the top of vessel F, whence it may be drawn off by a pipe.

It will be observed that this construction prevents the return of alcohol to the evaporating-pan, and needs no watching while in operation.



This apparatus will be found very useful in connection with evaporating-pans where alcohol is being slowly evaporated, as in making fluid extracts, concentrating tinctures, or rectifying waste or dirty alcohol.

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

A condensing apparatus for use by druggists

and others in separating alcohol and other volatile liquids, constructed and operated substantially as above set forth.

J. FRED. LLEWELLYN.

Witnesses:

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