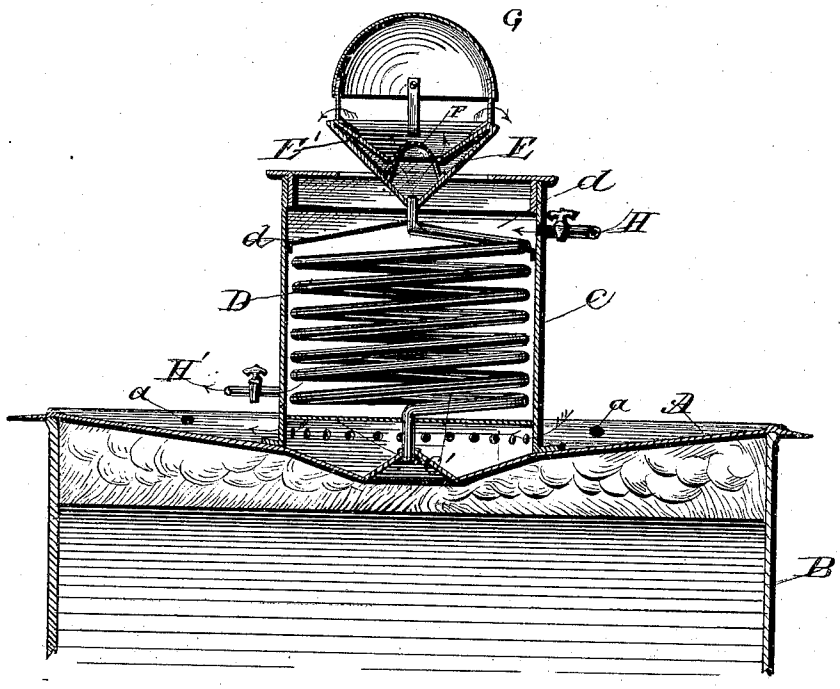
(No Model.)

D. R. HOSTETTER.

COVER FOR VARNISH KETTLES.

No. 312,854. Patented Feb. 24, 1885.



WITNESSES

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UNITED STATES PATENT OFFICE.

DAVID R. HOSTETTER, OF CLEVELAND, OHIO.

COVER FOR VARNISH-KETTLES.

SPECIFICATION forming part of Letters Patent No. 312,854, dated February 24, 1885.

Application filed February 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, DAVID R. HOSTETTER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Covers for Caldrons; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in covers for caldrons adapted more especially for the manufacture of varnish.

The object of my invention is to provide a cover that will allow the vapor to escape from the caldron and relieve the pressure therein, but that will cause the vapor to be condensed and returned to the caldron.

With these objects in view my invention consists in certain features of construction and in combination of parts, hereinafter described, and pointed out in the claims.

It is well known to those skilled in the manufacture of varnish and various other articles that valuable portions of the ingredients used are volatilized by the heat and escape in the form of vapor and are lost, while if the vapor is confined it causes a pressure that would be liable to burst the caldron. I have therefore invented a cover with a cylindrical attachment provided with a bottom, between which and the cover is an air-chamber. The cylinder is only partially closed at the top, and is provided inside with a coil of pipe in open relation with the caldron and leading to condensing mechanism above, hereinafter described. The chamber containing the coil may be filled with water, and provision is made so that a continuous stream of water may be passed through the chamber and the coil more or less submerged. As both ends of the coiled pipe are open, the vapor may freely escape from the caldron, so as to relieve the pressure therein, but will be condensed in the coil and in the apparatus above, and will return by its gravity to the caldron.

The accompanying drawing is a vertical section of my improved cover and attachments, but with the coiled pipe shown in elevation.

A represents the cover of the caldron B, in which the varnish is made. The cover is under-dishing, and has secured to it the drum or cylinder C, that is provided with the diaphragm C'. Below this diaphragm the drum is perforated, as shown, so that the air may have free circulation in the chamber between the cover A and the part C'. The cover of the drum *c* is cut away in the central portion, leaving only a rim attached to the cylinder.

D is a coil of pipe extending through the parts C' and A, but forming tight joints therewith, and is in open relation with the caldron B. The top of the coil is secured by the braces *d*, and the upper end is embraced by the funnel E, so as to form a tight joint. A second funnel, E', is provided, less concaved or dishing than the first, and the two are joined at their outer edges. The funnel E' is cut away at the center, and in the opening is secured the thin metallic inverted cup F, preferably semi-spherical, and supported by legs secured to the funnel E. The part F does not quite fill the orifice in the funnel E', leaving a small space between these parts on all sides. The part G is larger but otherwise similar to the part F, and is supported by legs attached to the funnel E'. The diameter of the part G is something less than that of the supporting-funnel E', so that any drip from the former will fall into the latter. The cover A outside of the drum may be provided with one or more holes, *a*, secured by stoppers or other means, through which by means of a funnel ingredients may be supplied to the caldron, and through which a rod may be inserted into the caldron for "stirring" the contents.

H and H' are cocks, by means of which water may be supplied to and discharged from the chamber in which the coil D is located.

In operating the device it is found that for some kinds of varnish the condensing capacity of the apparatus is sufficient without introducing water around the coil. The air-chamber between the parts A and C' keeps the chamber above in which the coil is located comparatively cool, and the free circulation of air around the coil by means of the opening in the cover keeps the coil so cool that its condensing capacity is considerable. The vapor that is not condensed in the coil strikes the cup F and is reflected between the funnels. These parts being all of thin metal and exposed to the air condenses the vapor rapidly.

If there still remains vapor that is not condensed, it escapes through the opening between the parts E′ and F, and next encounters the cup G, where it is diffused over so large a surface that the small amount of vapor that reaches this point is usually entirely condensed.

In manufacturing some kinds of varnish, when a high degree of heat is required, it is found necessary to use more or less water around the coil. The pipe D acts as a safety-valve and prevents an overpressure in the caldron, and, aided by the other parts of the apparatus, prevents all volatilization of the ingredients.

I do not limit my invention to the manufacture of varnishes, but claim it for all purposes for which it is adapted.

I do not wish to be understood as limiting myself to the construction shown, as a variety of changes could be made without departing from the spirit and purpose of my invention.

What I claim is—

1. A cover for a caldron or other vessel, provided on its upper surface with a drum, a pipe or tube passing through the cover and extending upwardly into the drum, and a condenser secured to the upper end of the tube, substantially as set forth.

2. A cover for a caldron or other vessel, provided on its upper surface with a drum, a coiled pipe located in the drum, the lower end of said pipe passing through the cover and forming a vent, water-pipes in communication with the drum, a funnel-shaped condenser connected to the upper end of the coiled pipe, and a cap located over the condenser, substantially as set forth.

3. In a cover for a caldron, a coiled pipe that is in open relation with the caldron and located in a chamber that is separated from the cover by an air-chamber, and provided with means for surrounding the coil with air or water, in combination with the funnels E and E′, and the condensing-cups F and G, substantially as set forth.

4. The combination, with a cover, of a drum secured to the cover and provided with a bottom, C′, air-openings in the body of the drum between said cover and bottom C′, and a coiled pipe connected to the cover and passing upwardly into the drum, all of the above parts arranged as described.

In testimony whereof I sign this specification, in the presence of two witnesses, this 25th day of January, 1884.

DAVID R. HOSTETTER.

Witnesses:

C. H. DORER,

ALBERT E. LYNCH.