No. 840,753. PATENTED JAN. 8, 1907.

H. COPILOVICH.

WOOD STILL RETORT.

APPLICATION FILED OCT. 13, 1906.

Fig. 1.

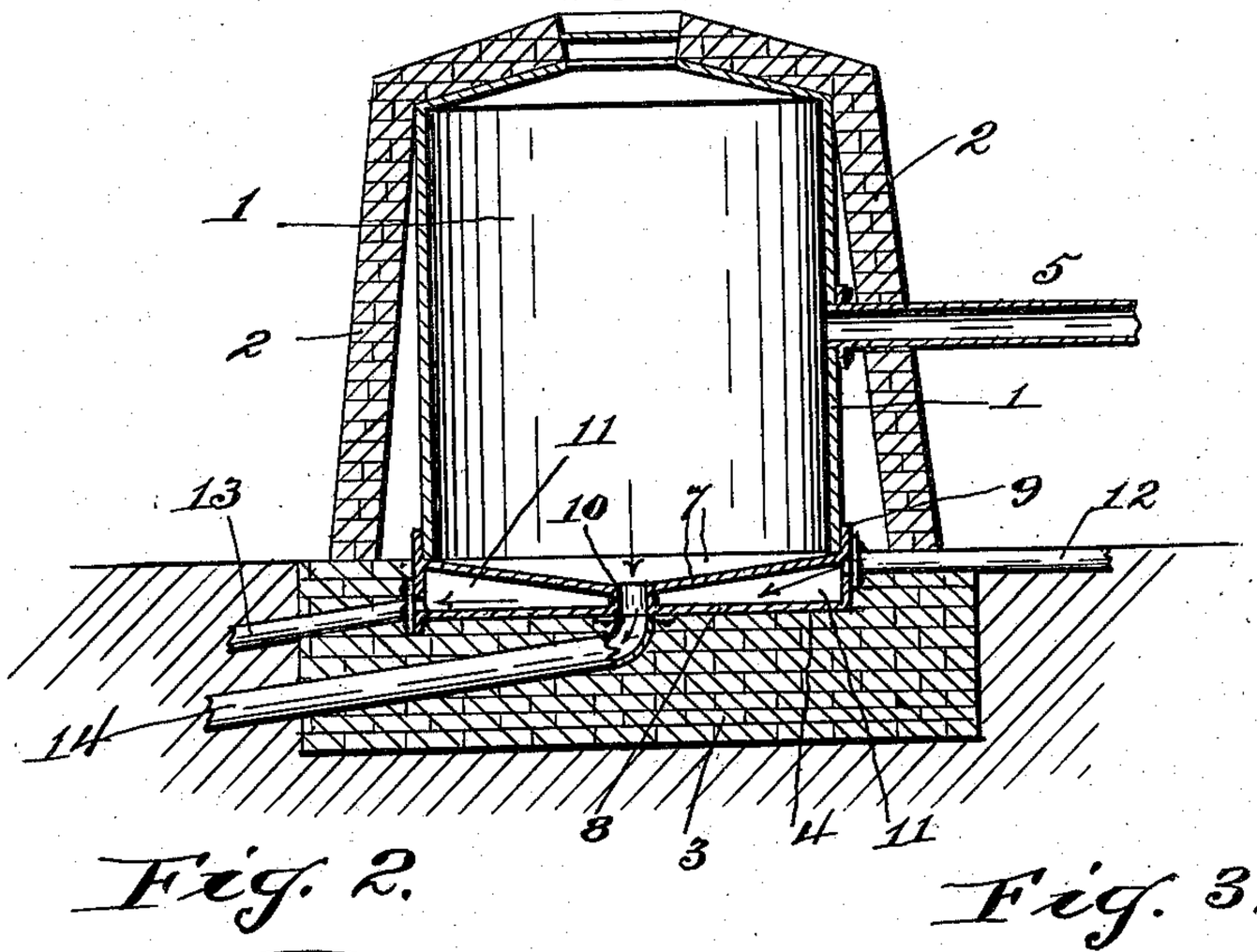
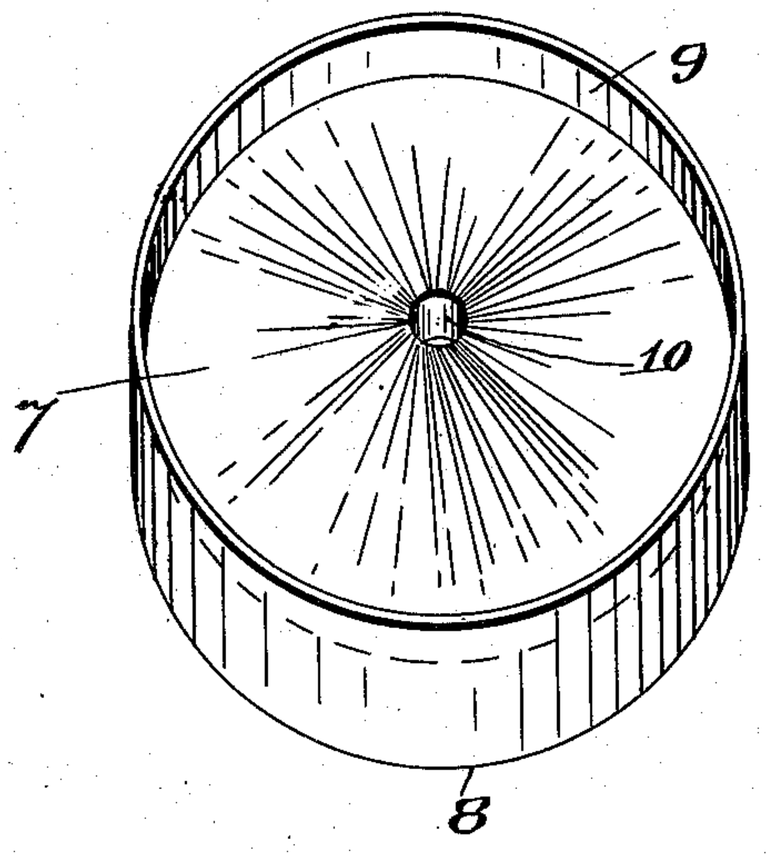


Fig. 2.

Fig. 3.



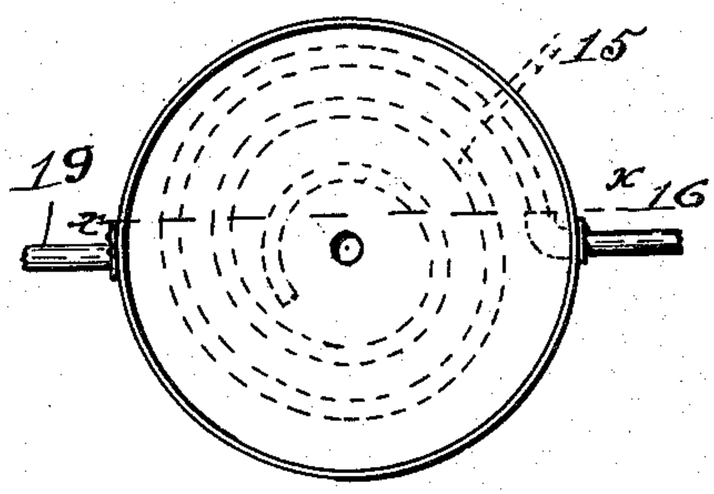
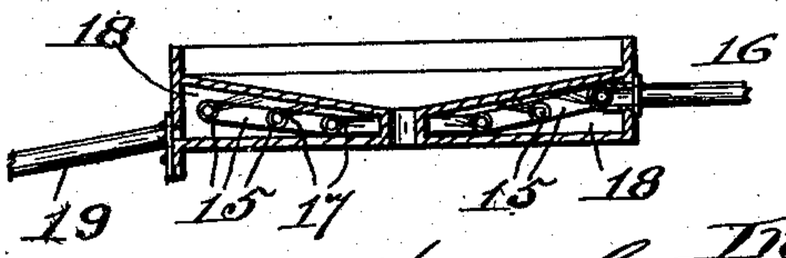


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY COPILOVICH, OF HINCKLEY, MINNESOTA.

WOOD-STILL RETORT.

No. 840,753. Specification of Letters Patent. Patented Jan. 8, 1907.

Application filed October 13, 1906. Serial No. 338,791.

To all whom it may concern:

Be it known that I, HENRY COPILOVICH, a citizen of the United States, residing at Hinckley, in the county of Pine and State of Minnesota, have invented certain new and useful Improvements in Wood-Still Retorts, of which the following is a specification.

This invention relates to wood-stills, and particularly to the class of stills for extracting turpentine and other oils, and has special reference to improvement on my Patent No. 814,901, dated March 13, 1906.

The object of this invention is to provide in a wood-still means to prevent the burning and the discoloration of oils during process of extraction and delivery and to lengthen the life and utility of the retort-bottoms.

With these and various objects, advantages, and improved results in view the invention consists of the novel construction and arrangement of parts, and essentially in a retort-bottom the walls of which form an inclosed chamber having pipe connections to and from it for circulating a cooling medium in the bottom during the period of turpentine extraction.

I know that it has been proposed to preserve retort-bottoms by constructing them of various materials differing in character from the body of the retort, and especially by using a metallic bottom packed with concrete or other similar filling. It has also been proposed to locate a cooling-pipe under the bottom of retorts without discharging the cooling medium into a receptacle or chamber under the bottom of the retort; but while such arrangements may prevent to some extent the burning out of the bottoms they are known to retain heat, and thereby fail in the purpose of this intention.

In the accompanying drawings, forming part of this application, Figure 1 is a vertical section of a retort, showing the application of the invention. Fig. 2 is a detail perspective view of the retort-bottom. Fig. 3 is a top view of a modification. Fig. 4 is a sectional view on the line *x x*, Fig. 3.

The same reference-numerals denote the same parts in the views of the drawings.

The retort 1 is made without a bottom and is inclosed by a furnace-wall 2, supported by a suitable foundation 3, said wall and foundation being constructed preferably of masonry. The foundation has a concavity 4, in which is seated a hollow vessel forming a supporting-bottom for the retort. The retort has a turpentine-outlet 5 through the wall 2, and the latter and the retort are provided with the usual feed-opening 6.

The vessel which forms a bottom for the retort comprises a funnel-shaped top 7, a base 8, joined to the top, which has an annular flange 9 projecting therefrom, and a central neck 10, forming a discharge-opening or tar, outlet from the retort. This construction forms an annular chamber 11, in which cold water or other suitable cooling fluid is circulated. The vessel is provided with an induction-pipe 12, leading into the chamber near its top, and a discharge-pipe 13, extending from the chamber near the bottom on the opposite side of the vessel from said induction-pipe. A tar-discharge pipe 14 is coupled to the neck 10 for the outlet of tar from the retort by way of the funnel-shaped top 7 and the said neck.

It is obvious that the open bottom of the retort is held by the vessel-flange 9 and supported by the top of the vessel.

Making reference now to the modification shown in Figs. 3 and 4, the vessel is of the same shape and construction as that already described; but in order to direct the cooling fluid more especially against the under side of the top of the vessel which forms the bottom of the retort and which is the most highly-heated portion of the vessel I provide a spiral pipe-coil 15 within the vessel and leading from the water-inlet pipe 16 and terminating in a closed end near the center of the vessel. The pipe 15 is provided with apertures 17 for spraying the water in various directions and especially against the top of the vessel, from which it falls into the vessel-chamber 18, whence it is carried off by an outlet-pipe 19.

It will be understood that in this class of stills the long period of burning wood necessary for extracting oils therefrom necessarily maintains the bottom of the retort in a highly-heated condition. During said period the heavier oils fall to the bottom, where their usefulness is ordinarily destroyed by burning and discoloration and the retort-bottom often burned out; but according to this vention the retort-bottom is constantly cooled, the oils delivered therefrom without burning or discoloration, and the bottom is prevented from burning out.

I do not wish to be undesrtood as limiting

myself to any particular size or material nor to any special means of circulating a cooling fluid through the vessel, as the same may be varied in the practical application of the device without departing from the spirit of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a wood-still, the combination, with a retort, of a retort-bottom comprising an inclosed chamber having a central neck and adapted to have a cooling fluid discharged thereinto for circulation around the neck, and means for conveying said fluid into and from the chamber.

2. In a wood-still, the combination, with a retort, of a vessel having top, bottom and side walls forming an annular chamber having a central passage, a water-pipe attached to the side wall and discharging into the chamber adjacent its top, and a water-pipe attached to the side wall adjacent the bottom of the chamber, and leading from the latter.

3. In a wood-still, the combination, with a retort, of a vessel having a central neck, top, bottom and side walls, forming an inclosed cooling-chamber, an annular flange projecting from the side wall above the top wall and adapted to surround the bottom of the retort, and the pipes attached to the vessel and discharging into and from the chamber.

4. In a wood-still, the combination, with a retort, of a retort-bottom having a chamber, a spray-pipe in the chamber, the induction-pipe to which the spray-pipe is connected, and the discharge-pipe connected to the chamber.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY COPILOVICH.

Witnesses:
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