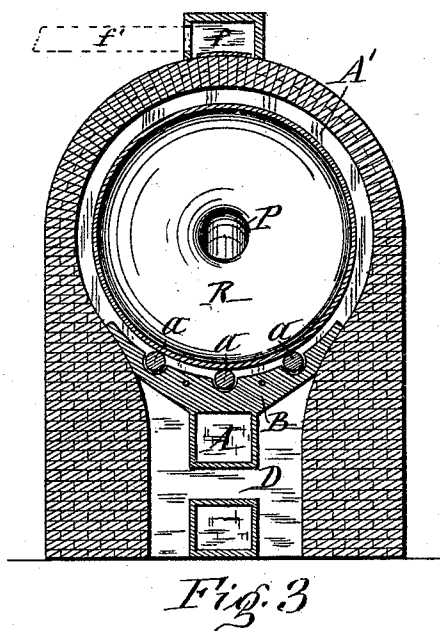
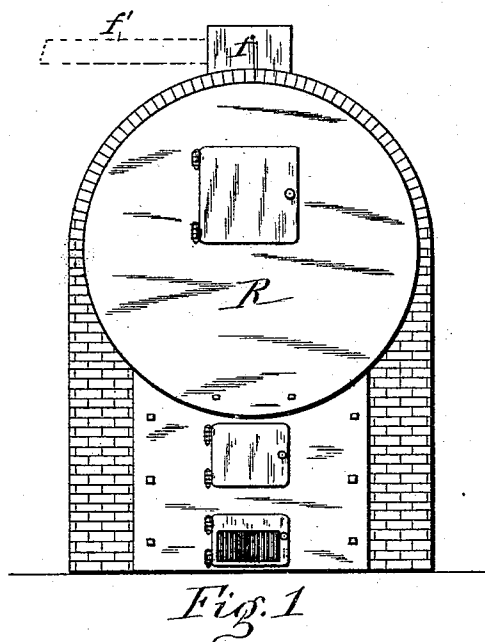
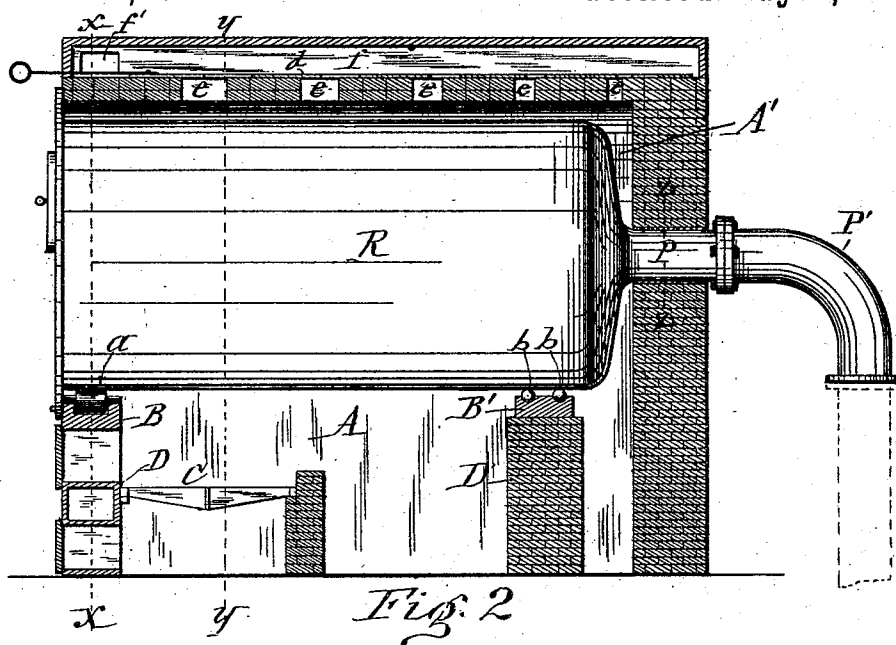


E. G. INDERLIED.

APPARATUS FOR CHARRING AND DISTILLING WOOD.

No. 496,737.

Patented May 2, 1893.



WITNESSES:

J. J. Laass
C. L. Bendixon



INVENTOR:

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By Hull, Laass & Hull
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(No Model.)

2 Sheets—Sheet 2.

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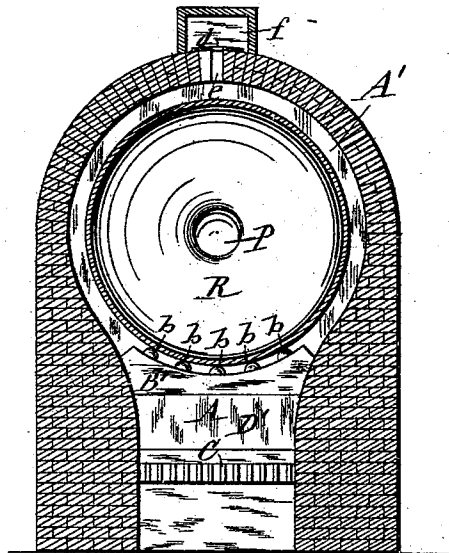


Fig. 4

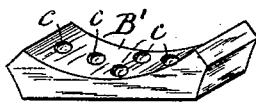


Fig. 5

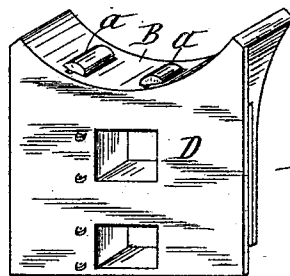


Fig. 6

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UNITED STATES PATENT OFFICE.

EDWARD C. INDERLIED, OF ROCK RIFT, NEW YORK.

APPARATUS FOR CHARRING AND DISTILLING WOOD.

SPECIFICATION forming part of Letters Patent No. 496,737, dated May 2, 1893.

Application filed July 1, 1892. Serial No. 438,643. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. INDERLIED, of Rock Rift, in the county of Delaware, in the State of New York, have invented new and useful Improvements in Apparatus for Charring and Distilling Wood, &c., of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of apparatus employed for charring wood and at the same time collecting therefrom the vapor emitted in the process of charring for the purpose of manufacturing wood alcohol, pyroligneous acid, tar &c.

The object of my invention is to obtain better control of the operation of the retort and render the same more efficient in its operation, and also more durable and more convenient for the repairs or renewal of the same. And to that end the invention consists in the improved construction and combination of parts as hereinafter described and specifically set forth in the claim.

In the annexed drawings Figure 1 is an end elevation of a retort and its furnace embodying my improvements. Fig. 2 is a vertical longitudinal section through the center of the same. Figs. 3 and 4 are vertical transverse sections respectively, on lines *x, x*, and *y, y*, in Fig. 2. Figs. 5 and 6 are detached perspective views of the anti-friction bearings of the retort, and Fig. 7 is a transverse section on line *z, z*, in Fig. 2.

Similar letters of reference indicate corresponding parts.

R—represents the retort for the reception of the wood to be charred and distilled. Said retort consists of, a stout cylindrical metal shell disposed axially horizontal or approximately horizontal and terminating at the rear end with the discharge-pipe —P— through which the gases or vapors pass from the retort to the usual condenser which latter may be of any ordinary and well known construction not necessary to be here shown.

A—denotes the furnace in which to generate the heat required for the aforesaid treatment of the wood contained in the retort.

In order to obtain perfect control of the operation of the retort I provide the same individually with a furnace, so that the heat from

said furnace can affect only the single retort, and to increase the efficiency of the retort I form the furnace —A— with the extension —A'— which completely incloses the top portion and rear end of the retort as shown in Fig. 2 of the drawings.

In order to distribute the heat more effectually the top of the arch of the extension —A'— is provided with ports —e—e— arranged at intervals over the length of the arch, and preferably graduated in size, the smallest being in the rear portion of the arch. By means of a damper —d— over the said ports the exit of the products of combustion from the furnace —A— can be regulated. Over the ports —e—e— is a flue —f— built upon the arch and extending lengthwise thereof and connecting at one end, preferably at the front, with another flue —f'— which leads to the chimney. Inasmuch as the treatment of the wood in the retort is a dry distillation said retort is liable to be injured by the impingement of the fire from the furnace.

To facilitate the repairs or renewal of the retort when required and also permit the same to freely expand and contract without injury to the surrounding structure I mount the retort on anti friction seats or bearings. This I preferably accomplish by means of the cast iron wall or bench —D— under the front end of the retort, and the bench —D'— in the rear portion of the furnace. The front bench —D— is formed with a saddle —B— in the top of which are journaled rollers —a—a— disposed axially parallel with the retort. Upon the rear bench —D'— I place the metallic saddle —B'— which is provided with annular sockets —c—c—c— in its top, in which sockets I place loosely the balls —b—b—b—, and upon the said rollers and balls I mount the retort —R. The rollers —a—a— placed on the front saddle —B— axially parallel with the retort tend to prevent the front portion of the latter from moving longitudinally when subjected to expansion or contraction and thus obviate disturbances of said portion of the retort. At the same time said rollers allow the retort to freely expand circumferentially and also to be turned on its axis when desired. The balls —b—b—b— on the rear bench allow the retort to freely expand in all directions and also to be turned as aforesaid.

The capability of turning the retort is a great advantage in that it permits it to be placed with different portions of its circumference directly over the grate —C— where the heat is most intense, and bring any weakened portion of the retort to the top where it is partly protected from the intense heat and is readily accessible for repairs when required. To allow the retort to be turned as aforesaid the bolts by which it is fastened to the front bench —D— are to be removed, and the exit pipe —P— is to be disconnected from its extensions —P'.

What I claim is—

15 The single retort—R—in combination with the furnace —A— central under said retort and having its front wall provided with the rollers —a— disposed axially parallel with the

retort and supporting the front end of the retort, the bridge wall —D'— under the rear end portion of the retort, saddle —B'— mounted on said bridge-wall, and balls —b—b— interposed between said saddle and retort to support the latter, said balls allowing the rear end of the retort to be moved longitudinally by expansion of the retort, while the front end thereof is retained in position by the frictional hold of the rollers on said portion of the retort, as set forth.

In testimony whereof I have hereunto signed my name this 23d day of June, 1892.

EDWARD C. INDERLIED. [L. S.]

Witnesses:

J. CURTIS MARTIN,
H. F. INDERLIED.