

(No Model.)

2 Sheets—Sheet 1.

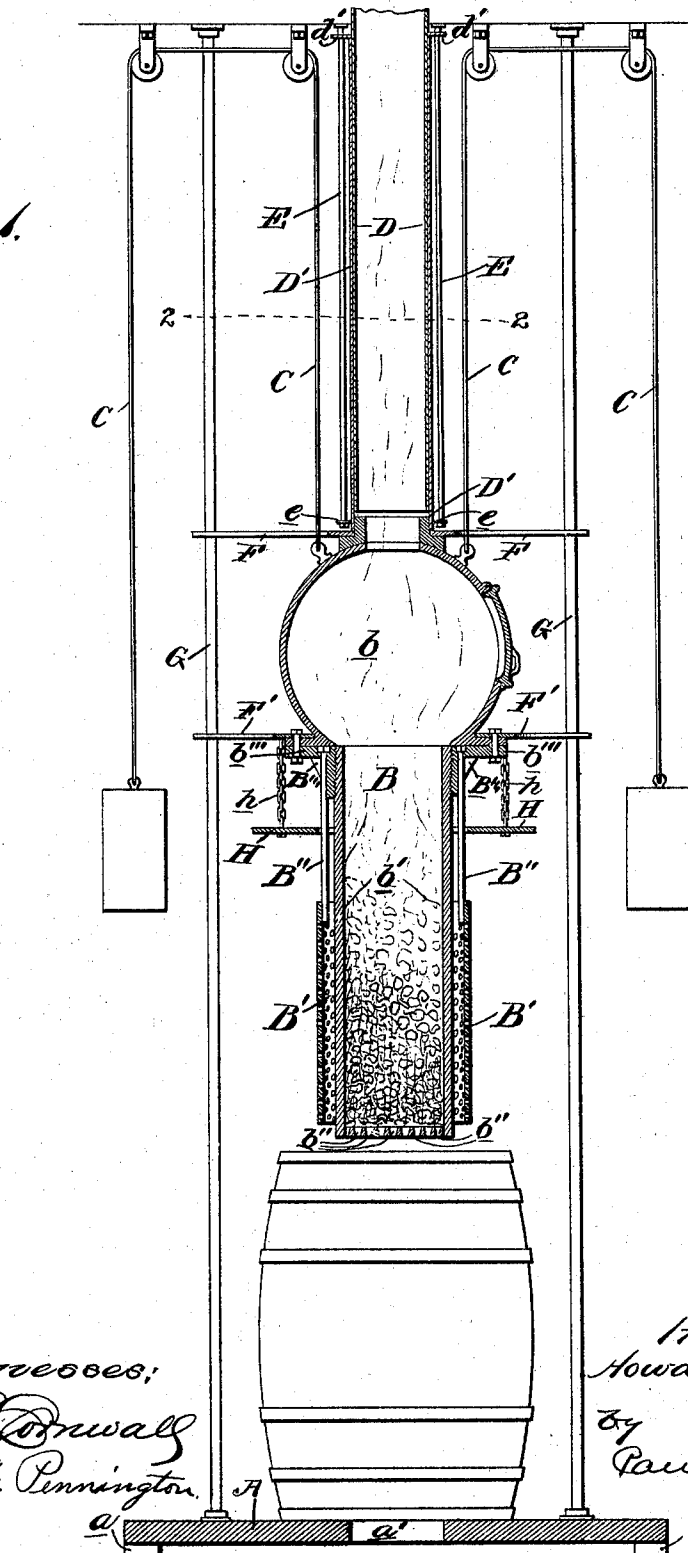
H. DUNHAM.

APPARATUS FOR HEATING AND DRYING BARRELS, CASKS, &c.

No. 584,861.

Patented June 22, 1897.

Fig. 1.



Witnesses:
J. A. Cornwall
E. A. Pennington

Inventor
Howard Dunham
by
Paul Bakewell
his atty.

H. DUNHAM.

APPARATUS FOR HEATING AND DRYING BARRELS, CASKS, &c.

No. 584,861.

Patented June 22, 1897.

Fig. 2

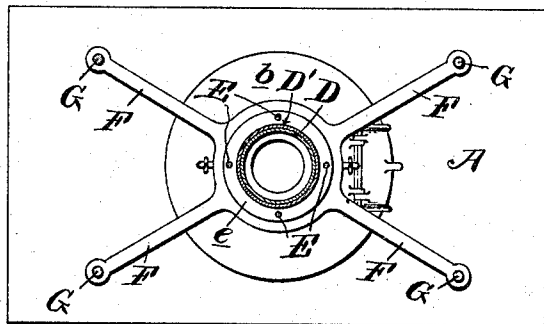


Fig. 3.

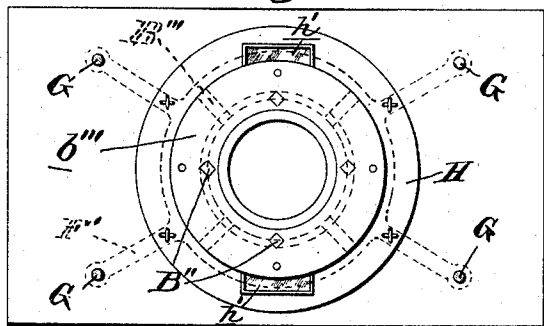


Fig. 4.

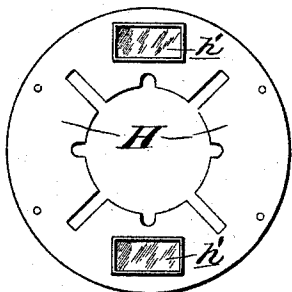
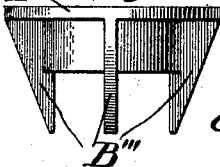


Fig. 5.



Witnesses:
F. R. Cornwall
G. A. Pennington

Inventor
Howard Dunham
by *Paul Bakewell*
his atty

UNITED STATES PATENT OFFICE.

HOWARD DUNHAM, OF KANSAS CITY, KANSAS, ASSIGNOR OF ONE-HALF TO
HORACE D. WILLIAMS, OF POPLAR BLUFF, MISSOURI.

APPARATUS FOR HEATING AND DRYING BARRELS, CASKS, &c.

SPECIFICATION forming part of Letters Patent No. 584,861, dated June 22, 1897.

Application filed November 16, 1896. Serial No. 612,211. (No model.)

To all whom it may concern:

Be it known that I, HOWARD DUNHAM, a citizen of the United States, residing at Kansas City, in the county of Wyandotte, State of Kansas, have invented a certain new and useful Improvement in Apparatus for Heating and Drying Barrels, Casks, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a vertical sectional view through my improved apparatus. Fig. 2 is a cross-sectional view on line 2 2, Fig. 1. Fig. 3 is a view looking down upon the heater, the dome being removed. Fig. 4 is a detail view of the plate or lid. Fig. 5 is a detail view of the centering device for the heater.

This invention relates to a new and useful improvement in apparatus for heating and drying barrels, casks, &c., to "set" the staves preparatory to hooping and finishing the same, and has for its object to thoroughly heat and dry the staves without scorching or charring.

The essential features of this present invention reside in the peculiar construction and arrangement of the heater, whereby the radiated heat is equalized and evenly distributed throughout the barrel or cask; in the provision of a plate or lid slidably supported on the heater, which is adapted, when the heater is lowered into the barrel, to accommodate itself to the top of the barrel and serve as a cover to prevent the escape of the contained heat, and in arranging a centering device on the upper portion of the heater, said centering device being adapted to project down through the suspended lid after said lid rests upon a barrel to center the heater relative to the barrel; and, further, the invention consists in the construction, arrangement, and combination of the several parts, all as will hereinafter be more fully described, and afterward pointed out in the claims.

In the drawings, A indicates a platform, which is slightly elevated by feet *a* and having a central opening *a'* to permit an up-draft through the barrel when placed upon the platform, as shown in Fig. 1.

B designates the heater, which is suspended by counterbalanced cords or chains C

and provided with a telescopic smoke-pipe, through which the waste products of combustion are carried off. This smoke-pipe consists of a stationary section D, passing through the ceiling, or to a suitable flue and a sliding section D', sleeved on said stationary section and secured at its lower end to the upper portion of the heater.

The upper end of the movable pipe-section D' is formed with an outturned perforated flange *d'*, through the perforations of which pass guide-rods E, depending from the ceiling and connected at their lower ends to a ring *e*, which ring *e* serves to hold the lower ends of the rods in position and also to guide the sliding pipe-section.

F and F' indicate guide-arms the inner ends of which are fastened, preferably integral, to rings which are secured to the globe or dome-section of the heater, as shown, while their outer ends slidably engage rods or posts G.

I will now describe the construction of my improved heater.

b designates the dome, and *b'* the fire-pot. This fire-pot is cylindrical, as shown, having the usual grate-bars *b''* at its lower end, while upon its upper end is threaded a ring having a flange *b'''*, which flange is secured to the flange of the dome by through-bolts, as shown. Depending from the flange *b'''* are projections B'', preferably four in number. The outer edges of these projections are inclined, as shown, and serve to center the heater in the barrel to be dried.

To equalize the heat of the fire-pot, which is most intense at the lower portion thereof, I support concentrically about the fire-pot a perforated baffle cylinder or sleeve B' of larger diameter than the fire-pot, so as to form an air-space therebetween. This baffle-sleeve is depended from the flange *b'''* by rods B'', the heads of the rods being countersunk in said flange and locked therebetween and the dome-section.

The more intense heat from the lower portion of the heater, which would otherwise scorch or char that portion of the barrel in proximity thereto before the other portion of the barrel would have been properly heated and dried, is retarded by the perforated baffle,

and, owing to the air-space and an updraft, part of said heat is driven upward and commingled with the heat radiating from the upper portion of the heater. Thus it will be seen that the heat is practically distributed evenly throughout the interior of the barrel.

H indicates an annular plate which is supported from the upper portion of the heater by flexible cords or chains *h*. This plate H is adapted to rest upon the top of the barrel when the heater is lowered thereinto and close the opening to confine the heat within the barrel.

h' indicates peep-holes covered with mica, through which the operator may see the condition of the barrel during the heating and drying period.

The operation of my invention is as follows: The barrel is formed over a suitable form, the staves having been steamed, as is usual, to facilitate their being bent to proper shape. The form is then removed and the barrel placed upon the platform A over the opening *a*, it being of course understood that the barrel is not "headed" at either end. The heater is now lowered into the barrel, the plate H covering the barrel to retain the heat within, so that full benefit may be derived from the radiated heat. After the barrel has become sufficiently dry and the staves set the heater is raised from the barrel, the barrel removed, and another placed in position and the operation repeated.

By my improved construction a simple, compact, and efficient apparatus is produced and one which is convenient and easy to manipulate. Its advantages over the style of apparatus wherein the barrel has to be elevated up to the heater are obvious.

My special construction of heater is far superior to those heretofore employed, as practical usage has demonstrated that a barrel may be thoroughly dried without scorching or charring the wood, which was not the case heretofore, because the more intense heat from the lower portion of the heater would invariably scorch the wood at the lower part of the barrel before the upper part had been properly dried.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my apparatus can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In an apparatus for heating and drying barrels, the combination with a counterbalanced heater, adapted to be moved into, or out of, the barrel to be heated, of a plate or lid flexibly suspended from the upper part of

the heater and a centering device arranged on the upper part of the heater which projects through the lid when the heater is lowered and centers the heater relative to barrels of different sizes, the lid accommodating itself to barrels of different heights to retain the heat in the barrel being heated, substantially as described.

2. In an apparatus for heating and drying barrels, the combination with a heater which is adapted to be moved into, or out of, the barrel to be heated, and a plate or lid, suspended from said heater by flexible cords or chains, which plate or lid is adapted to accommodate itself to barrels of varying heights; substantially as described.

3. In an apparatus for heating and drying barrels, the combination with a counterbalanced heater, adapted to be lowered into the barrel to be heated or dried, means on the heater for centering the heater relative to the barrel, and a plate or lid carried by the heater and adapted to seal the barrel when the heater is lowered thereinto; substantially as described.

4. In a barrel-heater, the combination with the fire-pot, of a baffle-cylinder surrounding the lower portion of said fire-pot, and spaced therefrom, whereby, the radiation of heat is equalized throughout the exterior of the heater; substantially as described.

5. In a barrel-heater, the combination with a cylindrical fire-pot, of an open-ended perforated cylinder surrounding the lower portion of said fire-pot, for promoting a circulation of the heated air; substantially as described.

6. In a barrel-heater, the combination with a cylindrical fire-pot, of a perforated cylinder, of larger diameter than the fire-pot, arranged around the lower portion of the fire-pot, and rods secured to a flange on the upper portion of the fire-pot, for suspending said perforated cylinder, whereby, a space is left between the perforated cylinder and fire-pot, and at the ends of the perforated cylinder; substantially as described.

7. In an apparatus for heating and drying barrels, the combination with a heater which is adapted to be moved into, or out of, the barrel to be heated, a plate or lid, suspended from said heater by flexible cords or chains, which plate or lid is adapted to accommodate itself to barrels of varying heights, and one or more peep-holes in said plate or lid; substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 23d day of October, 1896.

HOWARD DUNHAM.

Witnesses:

JOHN D. HINES,
C. E. RENNER.