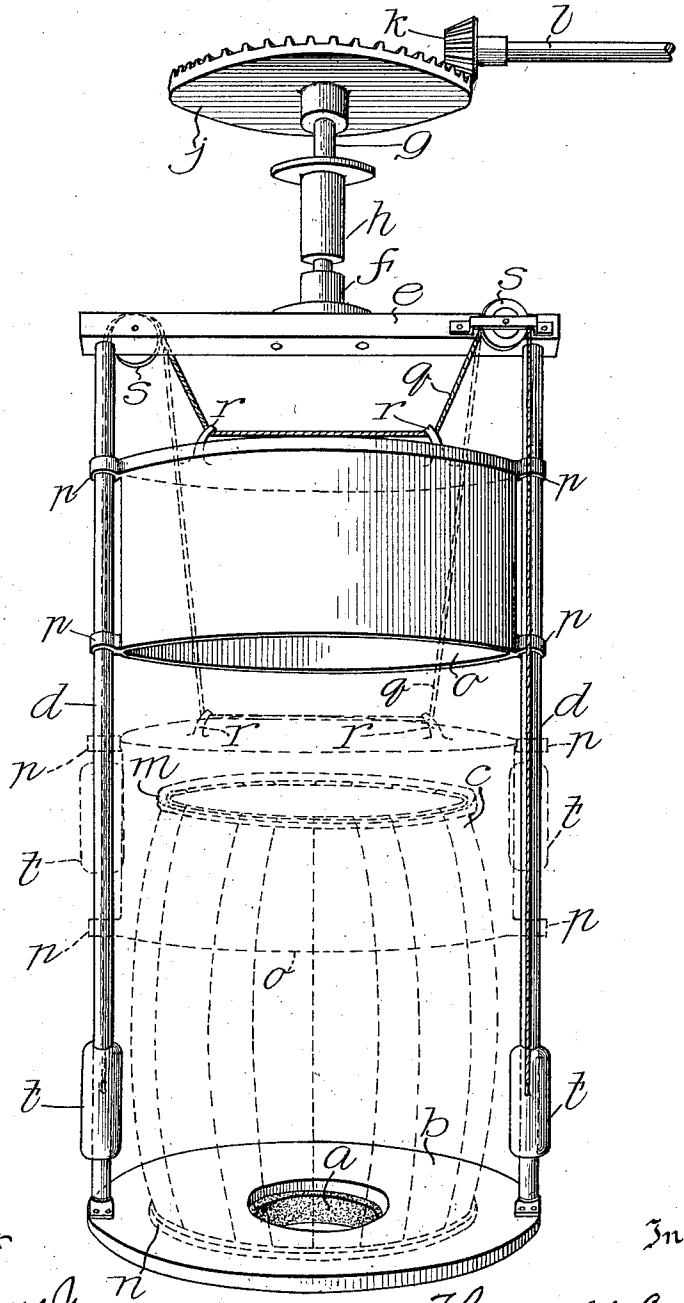
T. JOHNSON.

BARREL HEATING AND DRYING APPARATUS.

APPLICATION FILED DEC. 18, 1911.

1,031,122. Patented July 2, 1912.



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BARREL HEATING AND DRYING APPARATUS.

1,031,122. Specification of Letters Patent. Patented July 2, 1912.

Application filed December 18, 1911. Serial No. 666,588.

To all whom it may concern:

Be it known that I, THORWALD JOHNSON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Barrel Heating and Drying Apparatus, of which the following is a full, clear, and exact specification.

To those familiar with the art of making wooden barrels, it is well known that after the staves are bent and while they are held by the temporary hoops, and before the permanent hoops are applied, it is necessary to dry the barrels thoroughly so that the staves will hold their shapes, and this drying should be complete and uniform all over the barrel. Prior to my invention, it has been the practice to have a fire beneath or inside a stationary barrel, with the result that, owing to uneven burning of the fuel or irregular ascent of the heat, the barrel was not necessarily thoroughly and uniformly dried all over. This irregular heating in drying is likely to cause breakage of the staves before or while the barrel is in use, and my invention is especially adapted to prevent this breakage. To remedy this difficulty, I have devised a novel apparatus comprising a heater and a rotary support for a barrel associated therewith, so that a barrel body placed on said support may be slowly rotated to insure its being evenly dried throughout.

To illustrate my invention, I annex hereto a sheet of drawings, in which the complete apparatus is shown in a perspective view.

In carrying out my invention, I employ a fire-pot *a*, or other heat-producing apparatus of any desired character, and this is preferably located in the floor of the factory, but it might be raised so as to be within the barrel. Associated with this fire-pot, and preferably surrounding the upper end thereof, is an annular support *b*, upon which the barrel to be dried rests, as indicated at *c* in dotted lines. Extending upward from the support *b* are a plurality, preferably two, of rods *d*, which are preferably connected at their upper ends by the cross-head or piece *e*, to the center of which is secured the casting *f*, in which is secured the vertical shaft *g*, in any suitable bearing *h*, which will be supported from a frame or any suitable support calculated to carry the weight of the entire apparatus. The supporting apparatus thus far described may be slowly rotated by any desired mechanism, but I preferably employ the bevel gear *j* secured on the upper end of the shaft *g* and meshing with the bevel pinion *k*, which is secured on the drive shaft *l*, which will be extended over the plurality of such heaters as are ordinarily employed in a factory of any size.

The operation of the device will be readily apparent, as the staves that go to make up the barrel, minus the heads, are held together by strong temporary hoops *m* and *n*, and in this shape the barrel is placed on the support *b* so that the heat and flames from the fire-pot *a* can ascend through the barrel. By rotating the support, all the staves will be necessarily uniformly exposed to the heat, and consequently, in time they will all be thoroughly dried.

I preferably employ, in connection with the apparatus thus far described, a sheet-metal cover *o*, which will be seen to consist of a short cylinder closed at its upper end and provided with ears *p*, through which the rods *d* pass, so that the cover is guided thereby. To support and counterbalance the cover, I pass the chain *q* through ears *r* on the top of the cover, and over pulleys *s* journaled on the cross-piece *e*, and secure the ends of the chains to annular, cylindrical counterweights *t* which are conveniently placed on the rods *d*. With the construction shown, it will be obvious that the cover *o* can be readily raised to the full-line position when the barrel is to be put in place; and during the heating and drying of the barrel, if the fire is low, the cover can be lowered, as seen in dotted lines, to confine the heat to the barrel.

While I have shown and described my invention as embodied in the form which I consider best adapted to carry out its purposes, it will be understood that it is capable of modifications, and that I do not desire to be limited in the interpretation of the following claims except as may be necessitated by the state of the prior art.

What I claim as new, and desire to secure by Letters Patent of the United States, is:

1. In a barrel heating apparatus, the combination with a supporting disk, of a shaft journaled above the disk, open connections between the shaft and the disk whereby the latter is suspended from the former so that a barrel can be placed on the latter, means for rotating the shaft, and means for supplying heat to the barrel on the disk.

2. In a barrel-heating apparatus, the combination with a rotary support comprising a supporting annulus, rods extending upward therefrom, a cross-head connecting the rods, and a shaft to the lower end of which the cross-head is secured; of mechanism for rotating the shaft; and means for supplying heat to the barrel on said support through the supporting annulus.

3. In a barrel heating apparatus, the combination with a supporting annulus, of a shaft journaled thereabove, open connections between the shaft and the annulus whereby the latter is suspended from the former so that a barrel can be placed on the latter, means for rotating the shaft, and means for supplying heat to the barrel through the annulus.

4. In a barrel-heating apparatus, the combination with a rotary support for a barrel comprising a supporting annulus, rods extending upward therefrom, a cross-head connecting the rods, and a shaft supporting the cross-head; of means for rotating the shaft, means for supplying heat to the barrel on said support, a cover for the top of the barrel to confine the heat therein, a counterweight for the cover, and a chain connecting the cover and counterweight, for the purpose described.

5. In a barrel-heating apparatus, the combination with a rotary support for a barrel comprising a supporting annulus, rods extending upward therefrom, a cross-head connecting the rods, and a shaft supporting the cross-head; of means for rotating the shaft, means for supplying heat to a barrel on said support, a cover for the top of the pass, counterweights sliding on the rods, pass, counterweights sliding on the rods, pulleys on the cross-head, and a chain connected to the counterweights and cover and passing over the pulleys, for the purpose described.

In witness whereof I have hereunto set my hand and affixed my seal this 14th day of December, A. D. 1911.

THORWALD JOHNSON. [L. S.]

Witnesses:
JOHN HOWARD MCELROY,
MILDRED ELSNER.