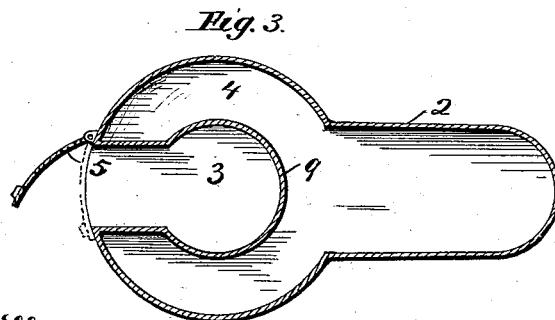
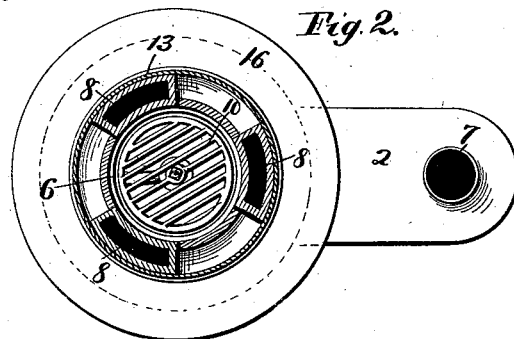
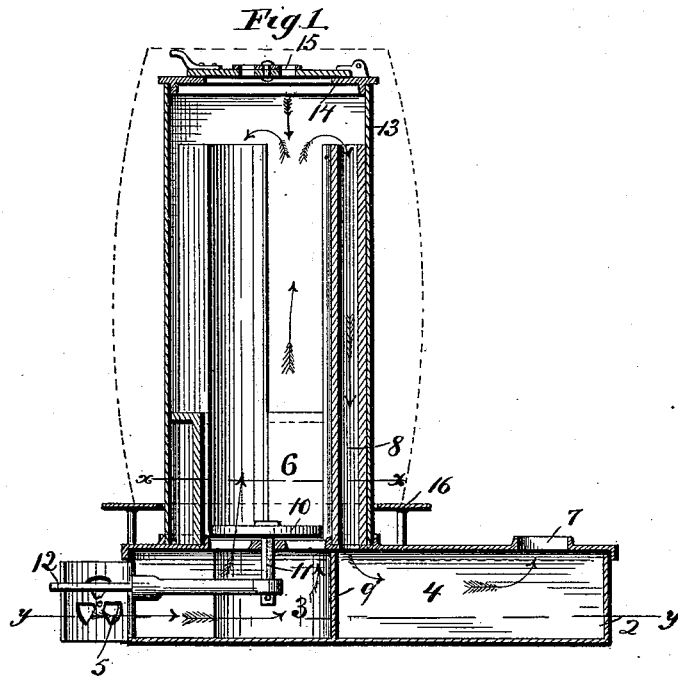


(No Model.)

L. SHERMAN.  
BARREL HEATER.

No. 423,496.

Patented Mar. 18, 1890.



Witnesses.  
*J. Jensen*  
*B. Booth*

Inventor.  
*Louis Sherman.*  
*By Paul Sherman atty.*

# UNITED STATES PATENT OFFICE.

LOUIS SHERMAN, OF MINNEAPOLIS, MINNESOTA.

## BARREL-HEATER.

SPECIFICATION forming part of Letters Patent No. 423,496, dated March 18, 1890.

Application filed June 15, 1889. Serial No. 314,429. (No model.)

*To all whom it may concern:*

Be it known that I, LOUIS SHERMAN, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain  
5 new and useful Improvements in Barrel-Heaters, of which the following is a specification.

My invention relates to devices designed for the heating and drying of staves of barrels in order to set them with the desired  
10 curvature; and it consists in a device comprising a suitable fire-pot, a cylindrical drum surrounding said fire-pot and extending upward to nearly the height of the barrel, its  
15 top being provided with draft-openings and a door or lid through which fuel can be supplied to the heater, and a series of vertical flues arranged between the fire-pot and drum  
20 extending nearly to the top of the drum and communicating through the base beneath to the smoke-flue, whereby a large amount of  
radiating-surface is provided for most efficient heating of the interior of the drum.

In the accompanying drawings, forming a  
25 part of this specification, Figure 1 is a vertical longitudinal section of my improved barrel-heater; Fig. 2, a horizontal section on line *xx* of Fig. 1, and Fig. 3 a similar section on line *yy* of Fig. 1.

30 In the drawings, 2 represents the inclosed base constructed, preferably, of cast-iron and provided with two compartments, one compartment 3 serving as the ash-pit and provided with the usual draft-openings 5 and  
35 communicating with the fire-pot 6, arranged above. The other compartment 4 partially surrounds the compartment 3, and leads from the heating-flues 8 to the smoke-pipe 7, the solid partition 9 separating the two compartments.  
40

Arranged above the openings from the ash-pit and in the bottom of the fire-pot is the grate 10, preferably supported upon the standard 11, having the arm 12, by means of which  
45 the grate is shaken or oscillated.

13 is the heating-drum, preferably of sheet metal and cylindrical in form, secured upon

the base 2 and surrounding the fire-pot, with a space between the drum and fire-pot. The drum is preferably provided with a suitable  
50 top 14, which may be opened to admit fuel, and is also provided with suitable draft-openings 15 for the purpose of assisting in the combustion of the fuel.

Arranged around the fire-pot in the space  
55 between it and the drum is the series of heating-flues 8, open at the top and communicating at the bottom with the compartment 4 of the base. These flues extend, preferably, to nearly the top of the drum, and serve  
60 as an outlet for the products of combustion from the fire in the fire-pot. The barrel, with its staves clamped in proper position, is placed around the drum, resting upon the support 16, the heat radiated from the drum thus  
65 drying the staves and fixing the proper curvature.

By using a shallow fire-pot, from which the heated gases pass directly into the drum and, rising to the top, descend again through the  
70 heating-flues, having a larger radiating-surface, a very uniform and efficient heating of the drum is secured. This is an essential and very important result. If the heating-drum is unevenly heated, there will be corresponding  
75 lack of uniformity in the heating and drying of the barrel-staves, and in some cases danger of overheating certain parts before other parts are sufficiently dry. To secure  
80 this uniformity of heating of the drum from top to bottom, it is desirable that combustion should take place at every point within it, which is accomplished by my improved construction. The inflammable gases as they  
85 rise from the fire and fill the drum are kindled to flame by means of the inflow of outer air through the upper draft-openings 15, so that the whole interior of the drum is a mass of flames.

I claim—

90 The combination, with the base 2, having the two compartments 3 and 4, the compartment 3 having suitable draft-openings and the compartment 4 communication with the

smoke-pipe, of the cylindrical heating-drum 13, secured upon said base and having the draft-opening 15, arranged in its top, the fire-pot 6, arranged above the compartment 3 and  
5 within said drum, and the heating-flues 8, arranged around said fire-pot and between it and said drum and communicating with the compartment 4, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set to my hand this 4th day of June, 1889.

LOUIS <sup>his</sup> + SHERMAN.  
mark

In presence of—  
T. D. MERWIN,  
A. C. PAUL.