(No Model.)

# M. C. DANN.

## BARREL HEATER.

No. 288,213. Patented Nov. 13, 1883.

Fig. 1

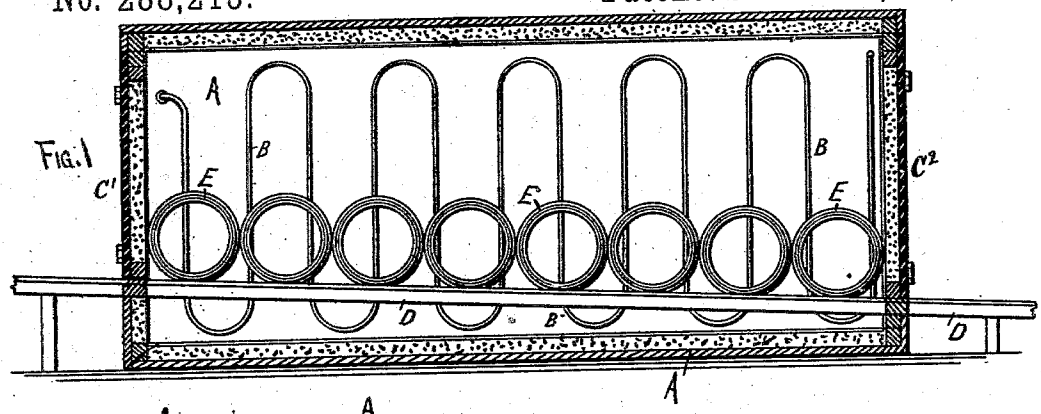



Fig. 2

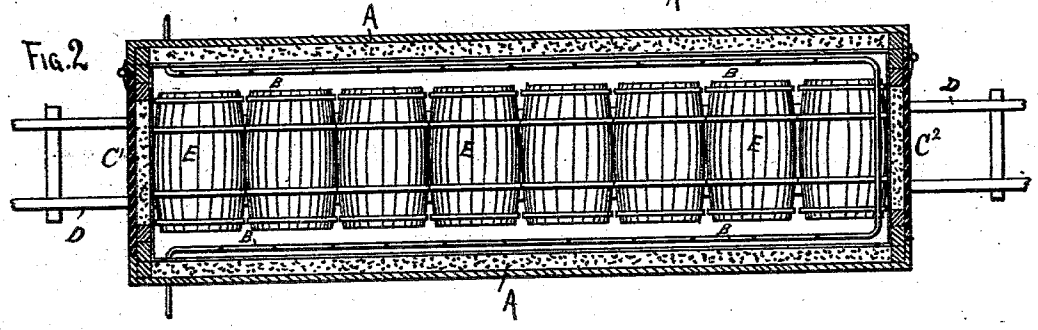



Fig. 3

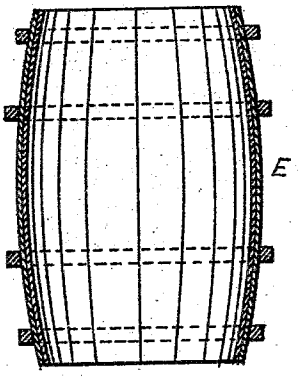
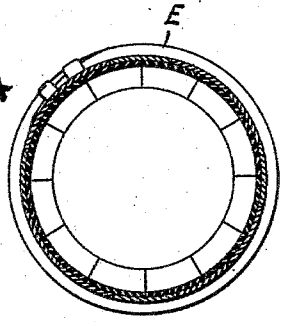



Fig. 4




WITNESSES.
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# UNITED STATES PATENT OFFICE.

MARCUS C. DANN, OF MINNEAPOLIS, MINNESOTA.

## BARREL-HEATER.

SPECIFICATION forming part of Letters Patent No. 288,213, dated November 13, 1883.

Application filed July 30, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, MARCUS COLEGATE DANN, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin, in the State of Minnesota, have invented certain new and useful Improvements in Processes of and Apparatus for Treating Double-Stave Barrels, of which the following specification is a full, clear, and exact description, reference being also had to the accompanying drawings, in which—

Figure 1 is a sectional side elevation, and Fig. 2 is a sectional plan view, of the hot-air chamber or kiln composing the apparatus. Fig. 3 is a longitudinal sectional elevation, and Fig. 4 is a cross-sectional view enlarged, of a double-stave barrel trussed, ready for the application of the heat.

In treating ordinary single-stave barrels with heat to cause the staves to retain their curved form the heat is applied only to their interiors, which for this form of barrel is sufficient; but with double-stave barrels, or those composed of an inner and an outer set of staves, the heat applied to the interior only effects the inner staves, while the outer staves will spring back to their former shape when the truss-hoops are withdrawn.

To thoroughly heat both sets of staves, and cause both sets to retain their curved form, is the object of this invention, which consists in applying the heat to the outside of the barrels, as well as to the inside, substantially in the manner hereinafter specified.

The steam-heated chamber may be formed large enough to receive a number of barrels at once, as shown in the drawings, which show the preferable manner of forming the chamber.

A represents the walls, formed of any suitable non-conducting material, to prevent waste of heat by radiation, and supplied with a system of steam or hot-air pipes, B, arranged substantially as hereinafter specified.

C' $C^2$ are doors in the ends of the chamber, and D is an inclined track, upon which the barrels E will be rolled and passed out through the ends of the chamber.

By closing the door $C^2$ and allowing barrels enough to fill the chamber to run down the track, and then closing the door C' until the barrels are sufficiently heated, and then opening the door $C^2$, the heated barrels will run out and leave the kiln ready to receive another supply through the door C'. By this means no time is lost in handling the barrels. The trussed barrels E E being without heads, and consequently open at both ends, allow the radiation of the heat and the circulation of heated air equally inside and outside thereof.

The heating-pipes B B are arranged, as shown, with alternate turns up and down along the sides of the chamber, reaching above and below the barrels, and at such distances apart between the turns that at least one turn will be opposite to the end of each barrel, thus insuring an equal heating of all the barrels at both ends, and both inside and outside. A temperature of 120° Fahrenheit is sufficient to produce the required effect upon the barrels.

Much trouble has been heretofore experienced in manufacturing double-stave barrels, by reason of the inability to cause the outer staves to retain their curved form; but by this simple process all such objections are avoided. The outer set of staves of barrels treated by the ordinary method are constantly pressing outward at their ends, thereby straining and frequently loosening or breaking the hoops, or so spreading the staves as to cause the heads to become loosened or drop out; but by my process the outer staves retain their shape equally as well as the inner ones.

The tracks may be replaced by endless chains or other means of conveying the barrels through the hot-air chamber. The hot-air chamber may be arranged so that the barrels may be received and discharged at the same end.

Having described my invention and set forth its merits, what I claim is—

1. The method of drying double-stave barrels, which consists in placing the trussed staves, before the insertion of the heads, in a close chamber and there subjecting them to heat which can freely circulate through and about them, substantially as specified.

2. An apparatus for treating double-stave barrels, composed of a close heating-chamber, A, adapted to receive the trussed barrels on suitable tracks or supports, D D, and provided with heating-pipes B B, arranged on each side, with one or more turns opposite to each end of each barrel contained therein, substantially as and for the purpose herein specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

MARCUS COLEGATE DANN.

Witnesses:
C. N. WOODWARD,
LOUIS FEESER, Sr.