

(No Model.)

H. CAMPBELL.
METHOD OF MAKING BARRELS, &c.

No. 479,734.

Patented July 26, 1892.

Fig. 1.

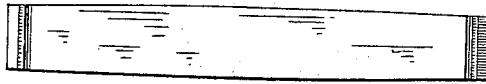
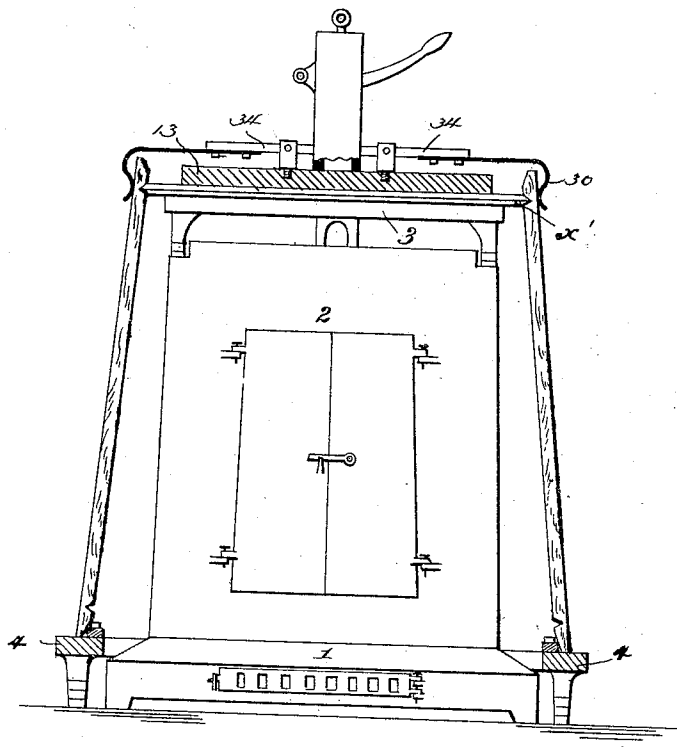


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY CAMPBELL, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE CAMPBELL BARREL MACHINE COMPANY, OF SAME PLACE.

METHOD OF MAKING BARRELS, &c.

SPECIFICATION forming part of Letters Patent No. 479,734, dated July 26, 1892.

Application filed January 28, 1892. Serial No. 419,598. (No model.)

To all whom it may concern:

Be it known that I, HENRY CAMPBELL, a citizen of the United States, residing at Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Method of Making Barrels, &c.; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My present invention relates to a method or process of making barrels, casks, kegs, tubs, &c., the object of the improvement being to simplify and shorten the manufacture of such articles, at the same time maintaining or improving the quality of the product.

According to my invention the staves are individually (or before being united in the barrel) crozed, chamfered, and otherwise completely formed at their ends. The hoops are applied permanently, the use of truss-hoops being dispensed with, the leveling operation is obviated, and a large amount of labor and time is saved.

I further improve the finish of the article and insure its external smoothness at and near the heads without a subsequent planing operation by making the crozes of variable depth, according to the thicknesses of the staves. Notwithstanding such variations in thickness, I am thus enabled to bring the exteriors of the staves flush with each other. I also perform the firing of the barrel as or while it is being set up, thus economizing much time and saving the labor of one handling.

The first step or operation consists in crozing the staves. This I may perform with the machines set forth in my application, Serial No. 409,869, filed October 26, 1891, or, in the case of what is known as tight work, with the machine described in my application, Serial No. 412,529, filed November 20, 1891. It will, however, be understood that any suitable means or machine may be employed for this purpose. The head and staves are then assembled by the aid of a suitable former—such, for instance, as that described in my application, Serial No.

410,206, filed October 29, 1891, or preferably by that set forth in my application filed February 8, 1892, Serial No. 420,773, in which the setting up and firing are performed simultaneously; but this operation is not necessarily confined to the use of these particular formers or setting-up machines.

In the accompanying drawings, Figure 1 is a face view of a barrel-stave crozed and ready for the setting-up operation. Fig. 2 is an elevation, partly in section, of that form of setting-up machine in which the firing of the staves may begin with their setting up.

In said drawings, 1 indicates a base, 2 the stove or heater from which the products of combustion pass down and out under the lower edge of the barrel by a suitable flue in a well-known manner, and 3 a support adapted to carry the barrel-head α' . This support is above and may rest on the heater.

13 is a clamp or weight adapted to hold the head in place.

34 are upwardly and downwardly movable arms, which may be pivoted on the clamp-plate, and has fingers 30, which engage the outer faces of the staves and hold them against the head, as seen in the drawings.

4 is a support for the lower edges of the staves.

The staves having been assembled around the head with their upper ends in contact therewith and with each other, the hoops are then permanently applied to this end of the barrel, no truss-hoops being employed. In practice several or a series of the combined setting-up and firing machines are employed. The operator having set up a barrel on the first machine leaves it to heat and similarly sets up a barrel on each machine of the series. As he becomes ready for the first machine an assistant removes the first barrel, which will be properly fired and ready for windlassing or for the operation of the equivalent machine, by which the ends of the staves at the other end of the barrel are forced or drawn in. As or just before this operation is performed the other head, if one is employed, is inserted in place. The head-hoop is then permanently applied to secure the last-mentioned head, and, lastly, the windlass-rope or other clamp

having been removed the other permanent hoops are put in place and the article is finished.

Having thus described my invention, what I claim is—

1. The herein-described method of making barrels and similar articles, which consists in first crozing the staves individually or when uncombined permanently in the barrel, then setting up the staves around one of the heads of the barrel and forming the latter, then applying permanently the hoops to that end of the barrel containing said head, then, the partly-finished barrel having been fired, forcing in the staves at the other end of the barrel, the other head being at the same time inserted, then applying the head-hoop to secure the last-mentioned head, and applying the remaining hoops, substantially as set forth.
2. The herein-described method of making barrels and similar articles, which consists in first crozing the staves individually or when uncombined in the barrel, then setting up the staves around one of the heads of the barrel and forming the latter and simultaneously

firing the barrel, then applying permanently the hoops to that end of the barrel containing said head, then forcing in the staves at the other end of the barrel, the other head being at the same time inserted, then applying the head-hoop to secure the last-mentioned head, and lastly applying the remaining hoops, substantially as set forth.

3. The herein-described method of making barrels and similar articles, which consists in first crozing the staves individually or when uncombined in the barrel, then consecutively setting up a series of barrels, applying to each one or more of its permanent hoops, and beginning the firing of each barrel when its setting up is begun, and then consecutively windlassing and finishing said barrels, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY CAMPBELL.

Witnesses:

H. N. LOW,
J. S. BARKER.