R. M. MUNROE.

MANUFACTURE OF BARRELS.

No. 190,063. Patented April 24, 1877.

Fig. 1.

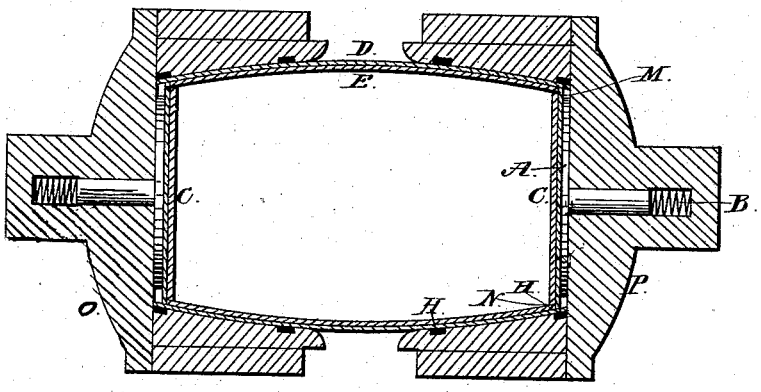
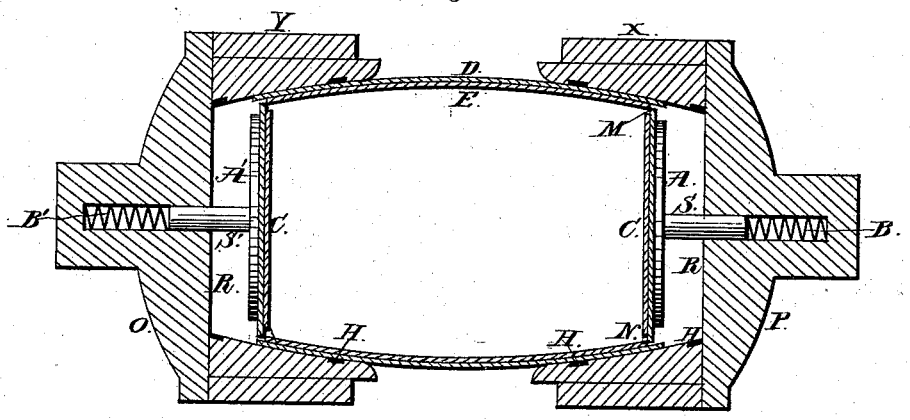


Fig. 2.



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UNITED STATES PATENT OFFICE.

RALPH M. MUNROE, OF EDGEWATER, NEW YORK.

IMPROVEMENT IN THE MANUFACTURE OF BARRELS.

Specification forming part of Letters Patent No. **190,063**, dated April 24, 1877; application filed April 11, 1876.

To all whom it may concern:

Be it known that I, RALPH M. MUNROE, of the village of Edgewater and State of New York, have invented an Improvement in the Manufacture of Barrels, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to an improvement in the process of barrel or keg manufacture, and to the apparatus connected therewith.

Barrels or packages are now often made of sheets of wood, which are first rolled cylindrically, and then compressed in a conical compressor.

The mechanical part of my invention consists in an improved head-holder in such compressing-machine.

As the ends of the keg are compressed in the conical compressor they cease to be parallel and form an acute angle one with the other, so that if a head be cut having the edge trimmed to a corresponding angle, so that its smallest diameter will be equal to the diameter of the end of the barrel, it cannot be placed in position from the outside if the barrel is completed. It must either be put in position during the formation of the barrel itself, or placed inside the barrel and held or forced into position from that direction, since its diameter is greater than the diameter of the circle at the head of the barrel when the barrel is completed.

One of the objects of my invention is to hold the head in position while the barrel is being formed, so that at the completion of the formation of the sides of the barrel the head will also be firmly in position.

The barrel represented in the drawing is a double one, composed of two laminæ or sides, and also of a double head. This barrel is made in the same way as a single barrel, excepting that the two cylindrical sections of wood are placed one within the other, and are compressed and finished together.

I will now describe my drawings. Figure 1 represents a compressing-machine in which there is a completed barrel. Fig. 2 represents a barrel partially completed in the same machine.

Similar letters of reference refer to similar parts in the two drawings.

Beginning now with Fig. 2, let us suppose the two cylinders of wood, D and E, one within the other, to have been placed in position while the forming and compressing parts of the machine O and P were farther apart, so that the ends of the barrel-cylinder would rest in a part of the compressing-die which has a greater diameter than the end of the barrel. As the compressors approach each other, the sides are contracted and the barrel shape given to the cylinder. In order that the head shall be in such a position that the contracting ends of the barrel shall meet and catch it, but yet shall be able to continue their movement into the compressors and close firmly upon it, I place in the compressing or forming parts of this machine two head-carriers, A and A′. Upon these head-carriers are placed the heads C, attached thereto by glue, or some other way.

These head-carriers are not firmly fastened to the moving compressors, but are carried by shafts S and S′, controlled by springs B and B′. This movable head-holder performs thee functions. In the first place, it holds the head in such a position that it is grasped by the incoming barrel-sides. Then, after the head has been seized by the sides, the head-holder yields to the forward motion of the barrel or of the machine, and thus it forces the inner barrel to assume a central position with reference to the outer barrel. I limit my mechanical invention to the improvement in head-holders just described.

Now, let us suppose the machine to be operated and the compressors to approach, the sides of the barrel, as they are compressed in the die, move one over the other, in order to assume their compressed condition, as shown in Fig. 1. In order that they may accomplish this readily, and may easily take the required shape, I heat or steam them thoroughly, and place between them some oil or lubricating substance, or glue, which has the same effect—namely, to allow the pieces of wood to move freely one over the other.

Now the position of the head C, held upon the holder A, and the sides of the barrel, is such that, as the sides or ends of the barrel approach one another, the inner barrel E will pass inside the countersunk outer head M, so that the two corners will catch or bear against one

another, as shown at M. As the compressors approach one another the head can pass no farther into the barrel, being held at the corners M and N. The action of the spring now begins, and the head being held firmly in position against the ends of the inner keg, or the barrel E, the machine continues to compress the sides until they embrace and hold firmly in their dovetailed recess the heads of the barrel.

Hoops H H H, &c., are placed in recesses in the compressors, as shown in the drawings. When the compressors have completed their movement, the head-carriers A A′ bring up against the sides R of the compressors at both ends. The result of this is, that the inner barrel is now moved one way or the other, so as to register and coincide with the outer barrel, being pressed in equally from both ends by the carriers A and A′, which are of equal width. At the same time the heads, being firmly in, are embraced by the contraction of the barrel, so that they can neither be moved in nor out. One half, usually the upper half, of both compressors is made movable, as at *x* and *y*, so that on completion of the barrel this half, being thrown upward on its hinge, leaves the hoops behind. The barrel is then removed from the machine, having the hoops in position. In other words, the barrel is taken from this machine complete in all respects.

The amount of lubricating material used in forming these kegs is accurately determined by experiment, so as to be sufficient to fill all interstices and cracks in the barrel, and to allow the passage, one over the other, of the moving parts. It is evidently very important that the countersunk heads should be put in position and firmly fastened by one movement of the compressor, by apparatus outside of the barrel itself.

In the manufacture of barrels which are to contain petroleum I use a glue which is insoluble in it, and thus make a tight package.

I do not in this patent claim the manufactured article—that is to say, a barrel or keg having the character and features described; for such article of manufacture I have an application for Letters Patent now pending; but

What I do claim, and desire to secure by Letters Patent, is—

1. The process hereinbefore described of forming a double barrel, consisting of the introduction of a proper amount of lubricating substance between the two cylinders which form the barrels, and then compressing them, while at the same time the head is placed in position, so that a complete barrel is formed in one operation.

2. In combination with barrel-making machines such as described, the movable head-holder, constructed for operation substantially as shown and described.

3. The combination, in a barrel-machine, of the following elements, viz: a movable head-holder, a compressing mechanism, and a spring, all arranged for operation substantially as herein shown and set forth.

4. The combination of a barrel-making machine, such as herein described, with two plate head-holders, which are equal in thickness to the chines of the barrel, so that the inner barrel is forced to take a central position with reference to the outer barrel, substantially as shown and described.

RALPH M. MUNROE.

Witnesses:
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