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I. H. MELVIN.

BARREL FORMING DEVICE.

APPLICATION FILED JUNE 13, 1905.

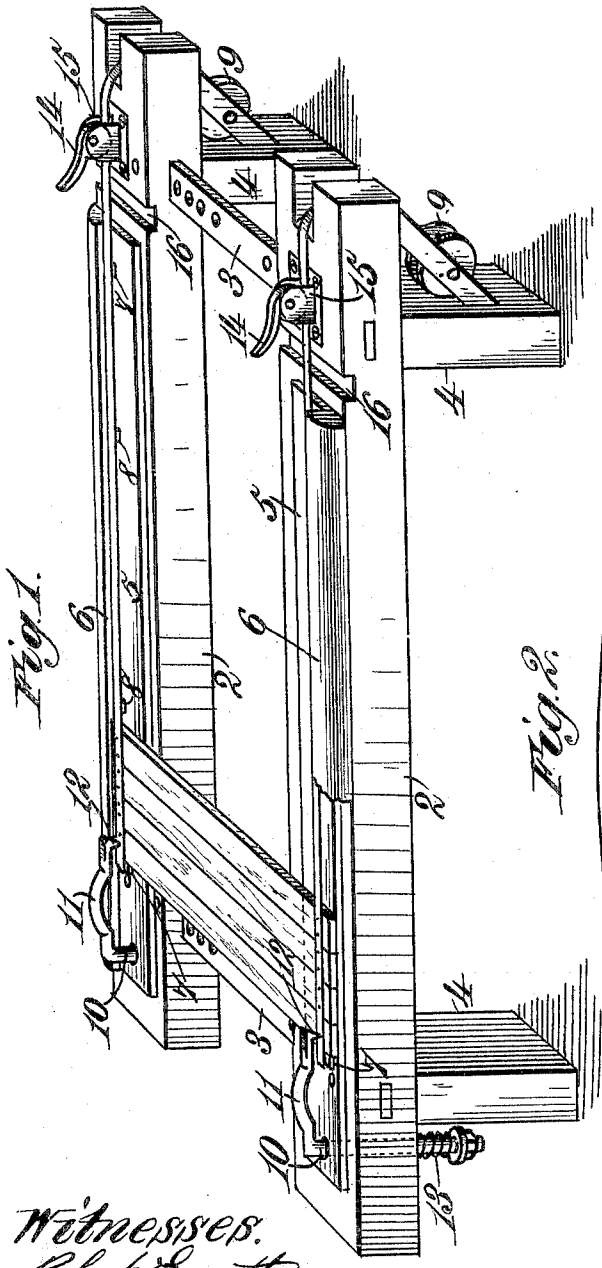


Fig. 1.

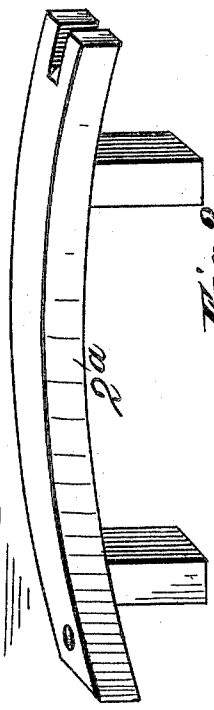


Fig. 2.

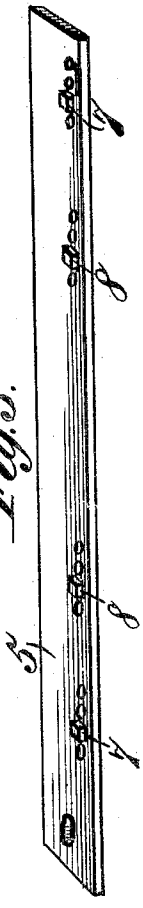


Fig. 3.

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UNITED STATES PATENT OFFICE.

IRA H. MELVIN, OF LAUREL, DELAWARE.

BARREL-FORMING DEVICE.

No. 816,872. Specification of Letters Patent. Patented April 3, 1906.

Application filed June 13, 1905. Serial No. 265,104.

To all whom it may concern:

Be it known that I, IRA H. MELVIN, a citizen of the United States, residing at Laurel, in the county of Sussex and State of Delaware, have invented new and useful Improvements in Barrel-Forming Devices, of which the following is a specification.

This invention relates to a barrel-forming device, the object of the invention being to provide an effective apparatus of this character whereby barrels, and, in fact, other similar articles, can be formed with rapidity and ease and accuracy.

The invention includes other objects and advantages which, with the foregoing, will be set forth at length in the following description, while the novelty of said invention will be included in the claims succeeding said description.

In the drawings accompanying and forming a part of this specification I illustrate a simple form of embodiment of the invention which to enable those skilled in the art to practice the same I will describe in detail.

In the drawings, Figure 1 is a perspective view of a barrel-forming device including my invention. Fig. 2 is a similar view of one of the sections of the clenching member. Fig. 3 is a similar view of a modified form hereinafter described.

Like characters refer to like parts throughout the different views.

The device involves in its make-up a bed, said bed being represented as composed of complemental side parts or beams, each designated by 2. These side members or beams 2 are adjustably connected to more advantageously render the device adjustable for making barrels of different lengths or depths.

The beams 2 composing the bed of the apparatus are connected together by cross-bars, as 3, slidable in tenon-recesses extending through the beams. The cross-bars are represented as perforated to receive pins to maintain the adjusted lateral relation of the beams. The beams are shown as provided with depending legs, as 4, to rest upon a floor to bring the bed at a convenient height for an operator.

In addition to the bed the apparatus also involves a clenching member, which also constitutes a support for the staves which are to form the barrel, the staves being in the present instance directly supported upon the said clenching member. The latter is represented as consisting of two plates, each designated by 5 and fastened in any desirable manner to the upper sides of the parallel beams 2. The plates are shown as coextensive, and their length should at least be equal to the circumference of the barrel, although in the present instance such length is shown as being greater than such circumference.

Extending along the outer edges of the two plates 5 are gages, as 6, fastened in any desirable way to the beams 2 and against the inner straight faces of which the opposite ends of the staves are placed. These gages may consist of wooden strips, and they will be of a length sufficient to receive the opposite ends of all the staves, so as to hold the latter positively in alinement while the barrel is being made up.

I provide stops against which the terminal staves that are to form the barrel can abut such stops being each denoted by 7 and being shown as pins. Each pin is adapted to removably enter one of a series of perforations extending longitudinally of the plates 5, so that the end stops, therefore, are adjustable in order to adapt the apparatus to making barrels of different diameters. In other words, two end stops 7 can be moved toward or from two other terminal end stops, or vice versa, or both pairs can be thus adjusted, so as to get a wide range of adjustment.

As will be understood from what is hereinbefore stated, the apparatus can be used not only for making barrels, but for other structures, such as baskets, the term "barrel" being used in its generic sense. I have shown a form of embodiment intended especially for making barrels of the type shown by Patent No. 779,863, of January 10, 1905. This particular form of barrel has two pairs of diametrically opposite notched staves, and to properly position the notches in the finished barrel I provide intermediate stops, each designated by 8 and also adjustable longitudinally of the plates 5. These stops 8, like the other ones, consist of pins, and they receive the notches of the notched staves in order to assure the accurate positioning of the notches in the finished barrel. I provide for adjustment of the stops 8 or gages in order to adapt the apparatus to barrels of different diameters. In any event, however, they fit in the notches of the staves where notched staves are used. In case notched staves are not used it will be a simple matter to remove the intermediate stops 8.

The material from which the hoops to en-

circle and hold the staves of the barrel together are formed is in the present instance in ribbon form and is carried upon reels, as 9, rotatably supported by brackets upon two of the legs 4 or the leg shown at the right in Fig. 1.

In forming a barrel the staves are laid upon the plates 5, with the end staves against the stops 7 and with the ends of the staves against the parallel gages 6. Should there be any notches in the staves, such as hereinbefore alluded to, the staves with the notches are so placed upon the plates that the notches will receive the intermediate stops or gages 8. When this is done, the ribbons upon the reels are unwound from the latter and are drawn across the upper side of the several staves, the leading ends of the two ribbons being held, for which purpose suitable means will be provided. I will now set forth the means illustrated for securing this result.

Shanks, as 10, extend through perforations formed in what are shown as the "left" ends of the beams 2 and through registering perforations in the plates 5, said shanks having overhanging heads 11, terminating in pendent barbs, as 12. Surrounding the shanks 10, below the beams, are coiled springs 13, bearing against the beams and against collars on the lower ends of the shanks, which collars may consist of washers held in place by nuts. The springs exert a constant downward thrust upon the shanks, and therefore a like action with respect to the barbs 12. The shanks are freely rotative, however, so that the heads thereof can be swung out of the way in order to bring the extreme forward ends of the ribbons that are to form the hoops over the terminal staves. When the ribbons are properly positioned, the heads 11 will be swung in to bring the barbs over the forward ends of the two ribbons, after which said heads are given blows to force the barbs through the ribbons or straps to hold the latter at said forward ends. I provide means for holding the ribbons between the reels and the barbs 12, so that there will be no possibility of their buckling or moving in any direction while the nails are being driven therethrough and through the staves under the same. The means shown for this purpose consist of the cams or working portions of cam-levers 14, fulcrumed between upwardly-extending ears or lugs of the plates 15, fastened to the upper side of the beams 2 outward beyond the right ends of the plates 5. When the ribbons are unwound from the reels 9, they are passed through the lugs on the plates 15 and under the cams of the said levers 14, the latter being then in their inoperative positions to permit the result named. When the leading ends of the two ribbons are fastened, the cam-levers are manipulated to cause the cam portions to bind the ribbons solidly against said plates 15. With the ribbons positively held at different points in their lengths the nailing of the ribbons to the staves can be proceeded with. As the ribbons and staves are nailed together, the nails strike the metallic plates 5 after they have passed through the parts, and are thereby clenched.

Between the cam-levers 14 and the adjacent ends of the two plates 5 I form in the upper sides of the beams 2 slots, as 16, in which a cutting instrument or one part thereof can be thrust. The cutting instrument may be shears, and one leg thereof can be entered into each slot, so as to cut through the ribbons, and thereby form hoops, the latter of course being attached to the row of staves. When the ribbons are cut through, the shanks 10 will be elevated to carry the points, barbs, or prongs 12 out of the hoops and staves, so that the banded structure can be lifted from off the plates 5. It will be seen that the slots 16 are separated from the right ends of the plates 5, which provides for the leaving of projecting portions of the hoops or portions which project from the terminal stave. These projecting portions are used as laps when the barrel is shaped up to cylindrical form. When it becomes necessary to draw forward additional lengths of ribbons, from which other hoops can be subsequently formed, the cam-levers 14 will be manipulated to release the ribbons.

I do not restrict myself to the construction hereinbefore described, for certain variations may be adopted. For example, the beams 2 might be in arcuate form. As a matter of fact I have shown one of the beams as so constructed, the same being designated by 2^a.

I deem it necessary to state that the plates 5 have holes to receive the barbs 12 after they are driven through the hooping material and stave.

Having thus described my invention, what I claim is—

1. In a barrel-forming machine, the combination of a nail-clenching member adapted to support staves from which the barrel is to be formed, and means associated with the nail-clenching member for positively holding hooping material while being nailed to the stave.

2. In a barrel-forming machine, the combination of two beams, plates fastened to the upper side of said beams, constituting nail-clenching means and serving to support the staves from which the barrel is to be formed, and gage members fastened to said beams and against which the ends of the staves are to be placed to hold them in line.

3. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, and independent devices for positively holding the hooping material at different points in its length.

4. In a barrel-forming machine, the com-

bination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, means against which the ends of the staves abut to hold them in line, and end stops to be engaged by the terminal staves.

5. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, means against which the ends of the staves abut to hold them in line, and adjustable end stops to be engaged by the terminal staves.

6. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, and end stops to be engaged by the terminal staves.

7. In a barrel-forming machine, the combination of a nail-clenching member adapted to support the staves from which the barrel is to be formed, end stops against which the terminal staves are to be placed, and stops between the end stops to coöperate with intermediate staves.

8. In a barrel-forming machine, the combination of a bed, slotted to receive a cutting implement, means for clenching nails and to support the staves from which the barrel is to be formed, and means for positively holding the hooping material, and located at opposite sides of the slotted portion of the bed.

9. In a barrel-forming machine, the combination of a bed having nail-clenching means, said means being adapted to support the staves from which the barrel is to be formed, means for supporting reels of ribbons, and means for positively holding the advanced portions of the ribbons against movement.

10. In a barrel-forming machine, the combination of nail-clenching means adapted to support the staves from which the barrel is to be formed, cam-levers for holding the material from which the hooping is made, plates having ears between which the levers are fulcrumed and between which the hoop-forming material is led, and means for holding the extreme forward ends of the hooping material.

11. In a barrel-forming machine, the combination of nail-clenching means adapted to support the staves from which the barrel is to be formed, barbed members to penetrate the hooping material, extending across the staves, and cam-levers, the cams of which also hold the hooping material at longitudinally-remote points from said barbed members.

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

IRA H. MELVIN.

Witnesses:
M. B. HEARN
L. L. OTWELL.