(No Model.)

F. S. PALMATIER.

MACHINE FOR SETTING UP, CROZING, AND CHINING BARRELS.

No. 504,891. Patented Sept. 12, 1893.

Fig. 1.

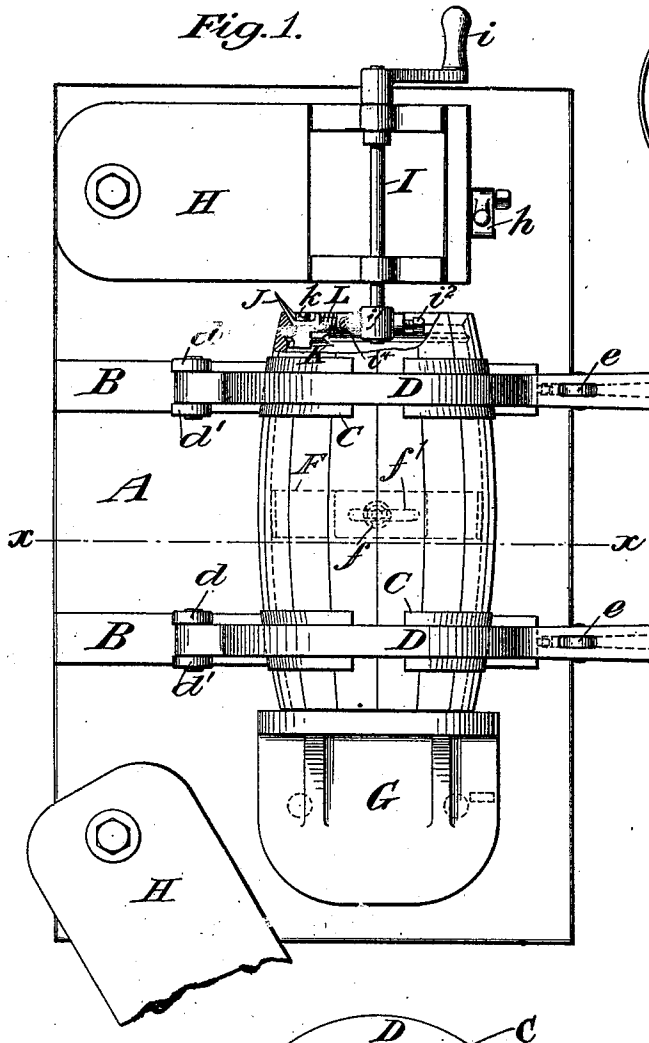


Fig. 4.

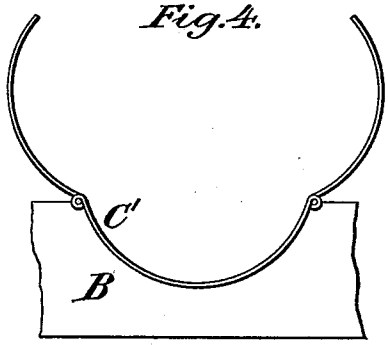


Fig. 3.

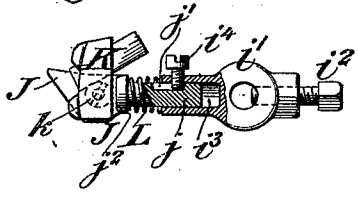
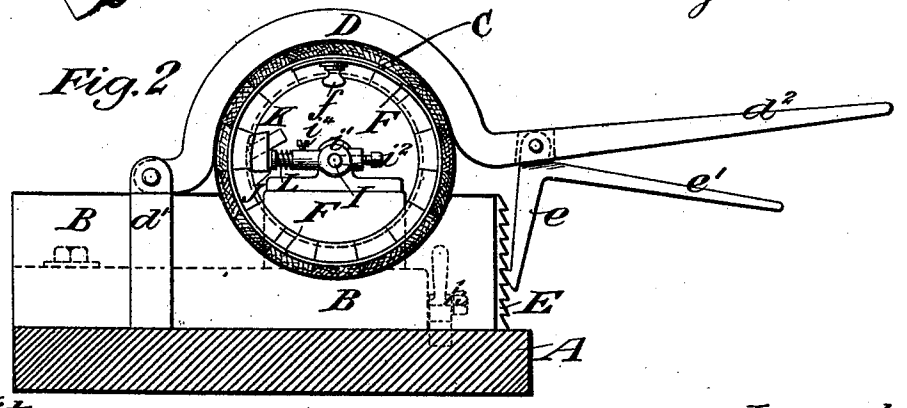


Fig. 2



Witnesses:-
W. H. Hayward
J. B. Decker.

Inventor:
Frank S. Palmatier
by attorneys
Brown & Seward

UNITED STATES PATENT OFFICE.

FRANK S. PALMATIER, OF LEEDS, NEW YORK.

MACHINE FOR SETTING UP, CROZING, AND CHINING BARRELS.

SPECIFICATION forming part of Letters Patent No. 504,891, dated September 12, 1893.

Application filed November 16, 1892. Serial No. 452,120. (No model.)

To all whom it may concern:

Be it known that I, FRANK S. PALMATIER, of Leeds, in the county of Greene and State of New York, have invented a new and useful Improvement in Machines for Setting Up, Crozing, and Chining Barrels, of which the following is a specification.

My invention consists of an improved machine for setting up, crozing and chining barrels, one object being to provide a machine which will be very simple in construction and operation.

A further object is to provide a machine of the above class in which the croze and chine cutters may be held firmly in position to cut, although there may be a slight unevenness in the interior periphery of the end of the barrel being operated upon.

A practical embodiment of my invention is represented in the accompanying drawings in which—

Figure 1 represents a top plan view of my machine, showing a barrel set-up and one of the croze and chine cutters swung into position to act upon one end of the barrel, the other croze and chine cutter being broken away. Fig. 2 is a transverse section of the machine on the line x, x of Fig. 1. Fig. 3 is an enlarged view of the croze and chine cutters, showing the means of holding the same to their work; and Fig. 4 is a view of a modification.

A designates the bed plate, which may be of any suitable material and of any desired shape and size. To the bed plate are secured one or more blocks B, each block having a substantially semi-cylindrical recess therein for partially embracing a barrel when it is set-up. In the present application I have shown the bed plate A having two such blocks B situated so as to partially embrace a barrel near its ends when it is set-up.

In each of the blocks B, I secure a band C which is shown in the present instance as a strip of spring metal bent into curved form, the ends of which are normally some distance apart, but which may be brought toward each other by compression so as to embrace a barrel when the same is set-up. This band, instead of being made of spring metal, may be formed in sections and hinged at the edges of the semi-cylindrical recess in the block B, as shown at C′, Fig. 4, so that its upper curved sections might be swung back to allow the barrel to be removed when completed.

As the two mechanisms shown in the drawings for compressing the staves of the barrel into shape and holding them there are the same, I will only describe one of them. A lever D is pivoted at one end to the block B in suitable standards d, d', extending from the bed plate A up along opposite sides of the block B back of the semi-cylindrical recess therein. This lever D extends forwardly and has an operating handle d^2. This lever is provided with a semi-cylindrical recess opposite the semi-cylindrical recess in the block B and the said semi-cylindrical recess is adapted to embrace the portion of the periphery of the barrel not embraced by the said recess in the block B. This lever and block combined form formers for shaping the barrel at its end.

The means which I have shown for locking the lever D when it has forced the staves into position is as follows: I secure to the face of the block B a vertical ratchet bar E having its teeth projecting downwardly and upon the lever D, I pivot a pawl e having an operating arm e', the weight of said arm being sufficient to hold the said pawl in engagement with one of the teeth upon the ratchet bar. The said pawl may be released by an upward pull upon the arm e'. F designates the hoop for supporting the staves as they are being assembled and before they are gathered together by the formers B and D and which is adjustable so as to admit barrels of different diameters being set up in the same machine.

The means for adjusting the size of the hoop and thereby the diameter of the barrel being set up is as follows: An elongated slot f' is formed in one end of the hoop F and a clamp screw f' passes through said slot f' and enters the other end of the hoop. When the clamp screw f is loosened, it allows the hoop F to collapse to the limit of the elongated slot f', thereby permitting the hoop to be withdrawn from the barrel after it is set up. In the present case I have shown only one of these hoops F as being employed, but it is obvious that more than one might be employed if it is so desired. An evener block G is removably secured to the bed plate A in such a position that its face may engage one

end of each of the staves as the barrel is being set-up so that the ends of the staves may be perfectly even when the barrel is completed.

The mechanism for crozing and chining the barrel is as follows: A suitable block H is pivoted to swing upon the bed plate A. A shaft I is mounted upon the said block H so that when the block is swung into position for the croze and chine cutters to operate the longitudinal axis of the barrel will be substantially in alignment with the shaft. The block H is locked in its forward position by a suitable catch *a*, one end of which enters a socket in the bed plate A. The shaft I is provided at its end farthest from the barrel with a crank *i* for turning it. A socket piece *i'* is locked to the other end of the shaft I by means of the set screw i^2. This socket piece *i'* is provided with a socket i^3 for the reception of the stem *j* of the chine cutter J. The blade of the chine cutter is bent so as to cut the bevel upon the interior of the ends of the barrel. The croze cutter, K is secured to the chine cutter J preferably by means of a set screw *k* whereby the croze cutter may be set at the proper angle in relation to the interior wall of the end of the barrel.

If the longitudinal axis of the barrel should not exactly coincide with the shaft I, the croze and chine cutters will be held to their work by the following means, viz: The stem *j* of the chine cutter is allowed a limited sliding movement within the socket i^3 by means of an elongated recess *j'* in the stem of the chine cutter and the guide screw i^4 in the socket piece extending into the elongated recess *j'*. A spring L encircles a portion of the stem *j* outside the socket i^3 and presses against a shoulder j^2 upon the chine cutter tending to force the chine and croze cutters to the limit of their outward movement and hence advances them to their work, whether the path of the cutters be concentric with the cutter supporting shaft or not. If it is desired to have the chine and croze cutters rigid in respect to the socket piece *i'* upon the shaft I, the guide screw i^4 may be forced tightly against the stem *j*. The socket piece, and thereby the croze and chine cutters, may be adjusted upon the shaft I to any desired position toward and away from the barrel.

When it is desired to operate upon the end of the barrel that abuts against the evener block G, the block may be removed and the pivoted block H, having the croze and chine cutting mechanism thereon, is swung into position and locked.

The operation of my machine is as follows:—The levers D are swung back and the evener block G is placed in its position. The staves are then laid across the two blocks B within the semi-cylindrical recesses and their corresponding ends abutting against the face of the evener block G. When a few of the staves have been placed in its position the adjustable hoop F is placed transversely upon them and at their widest portion. The rest of the staves are then set-up, being held from collapsing by their contact with the hoop F and the bands C. When a sufficient number of staves are set-up, the levers D are swung over and, as the handles d^2 are depressed, the recesses engage the ends of the bands C and gradually draw them toward each other thereby gathering the staves into position to form a barrel. The levers are locked in their depressed positions by the engagement of the pawls *e* with their ratchet bars E. After the levers are secured, the evener block G is removed from the bed plate A and the croze and chine cutting mechanism at each end of the barrel (one only of which is shown in the accompanying drawings) are swung into position and each of the shafts I is rotated by means of the crank *i* and the croze and chine are cut in the ends of the barrel. Suitable hoops may be placed around the barrel and one of the barrel heads placed in position, as is usual. The adjustable hoop F is then released from its engagement with the barrel by unscrewing the clamp screw *f* and allowing the hoop to collapse. The levers D are then unlocked and thrown back and the ends of the band C may either spring back or be swung back so that the barrel may be removed.

It is evident that slight changes might be resorted to in the construction and arrangement of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the construction herein set forth, but

What I claim is—

1. In a machine for setting-up, crozing and chining barrels, a bed plate, a block thereon having a semi-cylindrical recess therein, a band—the ends of which are normally some distance apart—secured within the recess and a lever pivoted to the block, the said lever having a semi-cylindrical recess engaging the ends of the band and drawing them together as the lever is depressed for the purpose of gathering the staves of a barrel together, substantially as set forth.

2. In a machine for setting up, crozing and chining barrels, a bed plate, a block thereon having a semi-cylindrical recess therein, a band—the ends of which are normally some distance apart—secured within the recess, a lever pivoted to the block said lever having a semi-cylindrical recess engaging the ends of the band for drawing them together and thereby gathering the staves together as the lever is depressed, and an adjustable hoop within the barrel for holding the staves loosely assembled before the lever is depressed, substantially as set forth.

3. In a machine for setting up, crozing and chining barrels, a bed plate, blocks thereon having semi-cylindrical recesses therein, bands secured within the recesses in the blocks and having their ends normally some distance apart, levers pivoted to the blocks

said levers having semi-cylindrical recesses engaging the ends of the bands for drawing them together as the levers are depressed, a block pivoted to the bed plate in position to swing the croze and chine cutting mechanism into engagement with the end of the barrel after the levers have been depressed and the staves assembled, a shaft mounted to rotate in said block, a socket piece adjustable longitudinally upon the shaft, croze and chine cutters having a limited sliding movement in the socket piece toward and away from the interior of the barrel, a spring tending to hold the croze and chine cutters at the limit of their outward movement, and means for operating the croze and chine cutters, substantially as set forth.

FRANK S. PALMATIER.

Witnesses:
W. S. HAVILAND,
CHARLES A. WARDLE.