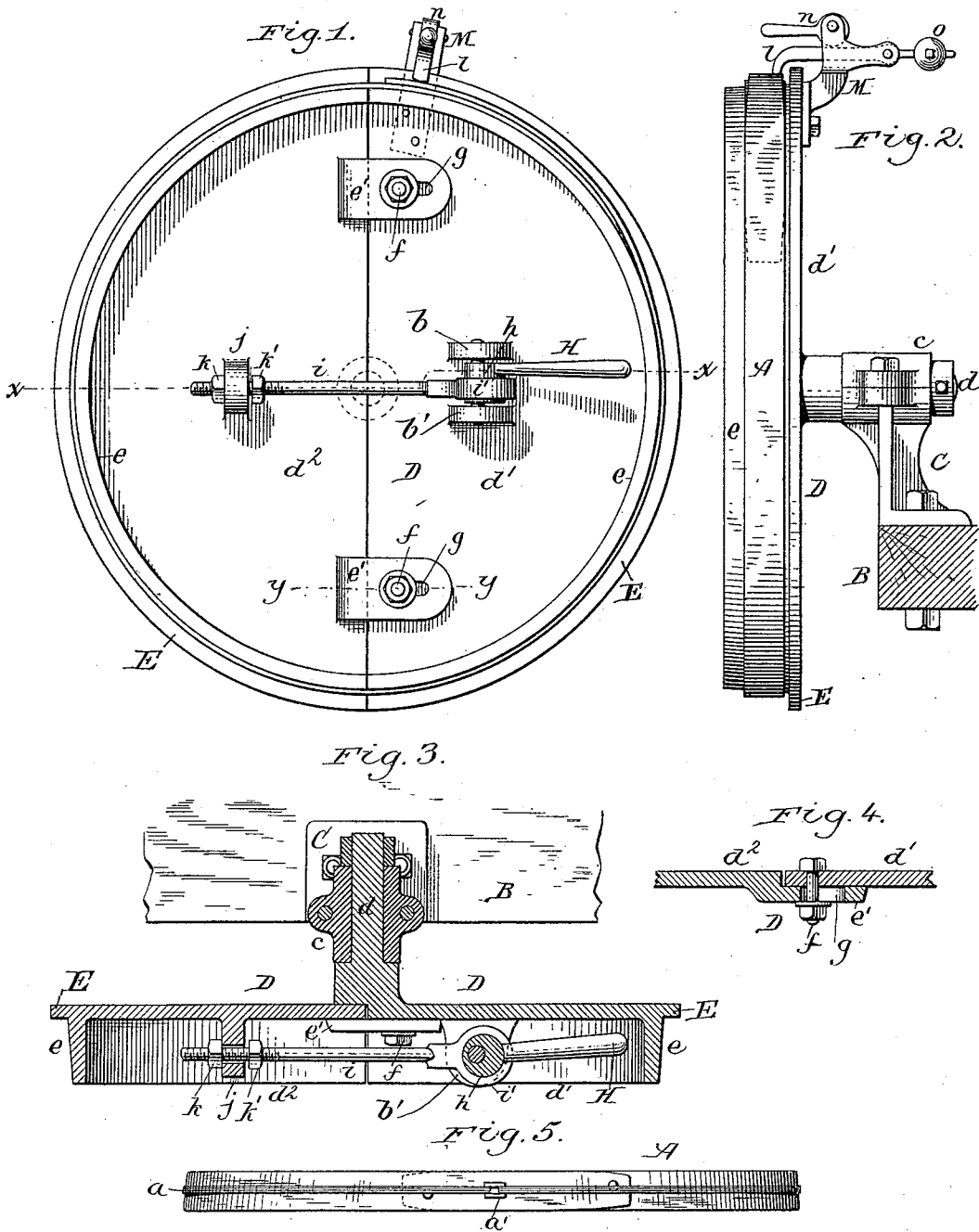


(No Model.)

G. T. CHESTER.
MACHINE FOR FORMING BARREL HOOPS.

No. 467,154.

Patented Jan. 19, 1892.



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Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE T. CHESTER, OF LOCKPORT, NEW YORK.

MACHINE FOR FORMING BARREL-HOOPS.

SPECIFICATION forming part of Letters Patent No. 467,154, dated January 19, 1892.

Application filed October 14, 1889. Serial No. 326,935. (No model.)

To all whom it may concern:

Be it known that I, GEORGE T. CHESTER, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented a new and useful Improvement in Machines for Forming Barrel-Hoops, of which the following is a specification.

This invention relates to a machine for applying metallic reinforcing-bands to wooden barrel-hoops.

In applying a flat metallic band to a wooden hoop it is necessary to first unite the ends of the band, then place the wooden hoop, with its ends disconnected, into the band, and then expand the hoop, so as to firmly clamp the band upon the hoop.

The object of my invention is to provide a simple machine whereby the operation of expanding the wooden hoop within the metallic band is facilitated.

In the accompanying drawings, Figure 1 is a front elevation of my improved machine. Fig. 2 is a side elevation thereof. Fig. 3 is a horizontal section on line *x x*, Fig. 1. Fig. 4 is a fragmentary horizontal section in line *y y*, Fig. 1, showing the manner of connecting the sections of the expanding-disk. Fig. 5 is an elevation of a wooden hoop having a flat metallic reinforcing-band.

Like letters of reference refer to like parts in the several figures.

A, Fig. 5, represents the wooden hoop, having its ends overlapping each other, and *a* is the flat metallic band encircling the wooden hoop and having its ends united by a connecting-plate *a'* or other suitable fastening.

B represents a bed or table upon which my improved machine is mounted, and C is a standard secured to said table and provided at its upper end with a bearing *c*.

D represents an expanding-disk arranged to rotate vertically in front of the standard C and provided centrally on its rear side with a horizontal spindle or pivot *d*, which is arranged in the bearing of the standard. The expanding-disk D is divided centrally into sections *d'* *d''* and is provided on its front side with a projecting annular hoop-supporting ring *e*, each section of the disk carrying one-half of said ring. The hoop-supporting ring is arranged a short distance within the

periphery of the disk, so that a projecting flange E is formed outside of the ring by the rim of the disk, whereby the hoop is prevented from slipping rearwardly off the supporting-ring. This supporting-ring is preferably tapered, as shown in the drawings, Figs. 2 and 3, so as to impart a corresponding bevel to the inner face of the hoop in expanding it. The section *d'* of the expanding-disk is formed in one piece with or secured to the pivot *d*, so as to be held against movement transversely to the axis of the disk, while the section *d''* is movably attached to the stationary section *d'* and capable of moving toward and from the same. The movable section is attached to the stationary section by means of ears *e'*, formed on the movable section and overlapping the stationary section, and horizontal bolts *f*, secured to the stationary section and passing through slots *g*, formed in the ears *e'*, as clearly represented in Figs. 1 and 4. The slotted ears slide upon the bolts *f* in moving the expanding-section *d''* toward and from the stationary section and properly guide the expanding-section in its movements.

H represents a hand-lever pivoted between two lugs *b b'*, formed on the front side of the stationary disk-section *d'* and provided at its inner end with an eccentric *h*.

i is a connecting-rod provided at one end with a strap *i'*, which embraces the eccentric of the hand-lever H and attached at its opposite end to a projecting lug *j*, formed on the front side of the movable section *d''*. The end of the connecting-rod attached to the movable section is screw-threaded and passes loosely through an opening in the lug *j*, the rod being held in the lug by two adjusting-nuts *k k'*, applied to the threaded portion of the rod on opposite sides of the lug, as clearly represented in Figs. 1 and 3. Upon swinging the hand-lever in either direction the movable section is moved toward and from the stationary section and the disk is expanded or contracted. By adjusting the nuts *k k'* upon the connecting-rod *i* the effective length of the rod may be increased or reduced and the range of movement of the movable section be regulated accordingly. By thus making the connecting-rod adjustable on the movable section the machine may be employed for expanding hoops of varying size.

7 represents a holding-finger arranged opposite the periphery of the expanding-disk D, and whereby the overlapping disconnected ends of the wooden hoops are temporarily
 5 held together while the flat metallic band is being placed over the hoop. This holding-finger is pivoted in a bracket M, secured to the rear side of the stationary disk-section d' near the periphery of the disk, and is pressed
 10 upon the overlapping ends of the hoop by a clamping-cam n , pivoted to the bracket M above the finger and bearing upon the latter.

o represents a weight attached to the holding-finger in rear of its pivot, and whereby
 15 the front end of the finger is lifted and released from the hoop upon releasing the clamping-cam.

In applying the flat metallic band to the wooden hoop the latter is first placed upon
 20 the annular supporting-ring of the expanding-disk, and its disconnected overlapping ends are temporarily held together by the holding-finger l . The flat band, with its ends united, is then placed over the hoop and the
 25 holding-finger released from the ends of the hoop. The movable expanding-section d^2 is now moved away from the stationary section d' by means of the eccentric lever, whereby the wooden hoop is expanded against the inner surface of the metallic band and the latter tightly clamped upon the hoop. After
 30 the hoop has been expanded to the proper degree a small nail or staple is preferably driven through the overlapping ends of the hoop and the expanding disk is again contracted and
 35 the hoop removed.

While but one of the sections of the expanding disk is capable of movement transversely to the axis of the disk the entire disk
 40 is free to revolve on its pivot, enabling the same to be turned into the most convenient position for the attendant.

With the aid of my improved machine the operation of expanding the hoop is rendered

easy and convenient and the band is securely
 45 fastened to the hoop.

I claim as my invention—

1. In a machine for expanding wooden hoops into metallic reinforcing-bands, the combination, with a rotating disk-section d' ,
 50 having the shaft d projecting from its rear side and revolving within a bearing on the upper end of a standard, of the adjustable disk-section d^2 , forming in conjunction with the section d' a complete circular disk, said
 55 section d' having the lugs b b' , the eccentric lever journaled in said lugs, the connecting-rod i , having the adjusting-nuts k k' , and the lug j on the section d^2 , receiving the screw-threaded portion of said connecting-rod, and
 60 the ears e' on the said section d^2 , having the bolts f , engaging the slots g in the section d' , as and for the object stated.

2. In a machine for expanding wooden hoops into metallic reinforcing-bands, two
 65 disk-sections movably jointed together by ears on one section and screw-bolts passing through said ears and slots in the other disk-section and rendered adjustable by an eccentric, and a connecting-rod having adjusting-
 70 nuts, as described, each of said sections having a tapering segmental portion of a projecting ring e and the flange E , as and for the object specified.

3. The combination, with the divided expanding-disk provided with an annular hoop-supporting flange, of a weighted holding-finger pivoted to the disk opposite the hoop-supporting flange, and a clamping-cam whereby
 75 the holding-finger is pressed against the hoop, substantially as set forth.

Witness my hand this 5th day of October,
 1889.

GEORGE T. CHESTER.

Witnesses:

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 FRED. C. GEYER.