H. C. Sherman,

Making Barrels,

No. 48,843. Patented July 18, 1865.

Fig. 4.

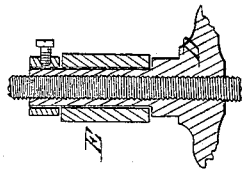


Fig. 5.

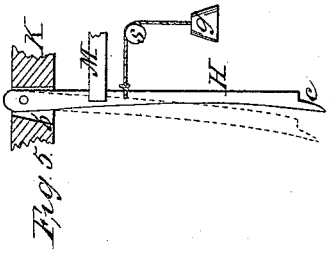


Fig. 1.

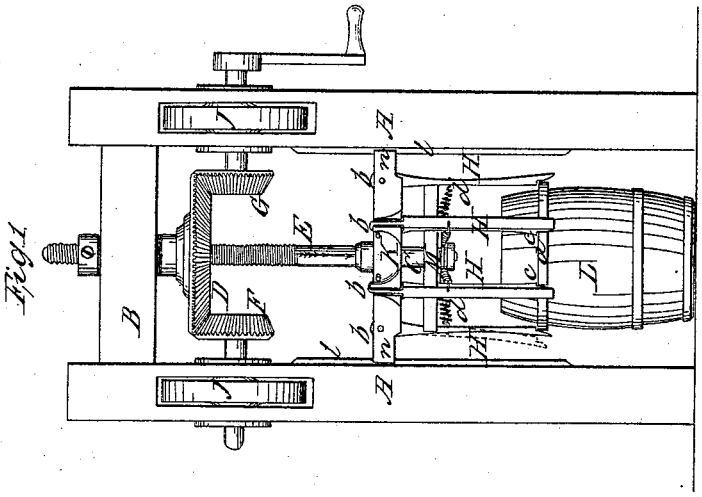


Fig. 2.

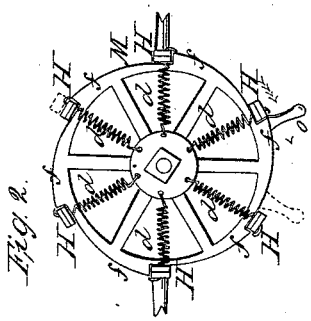
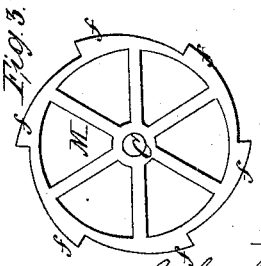


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

HIRAM C. SHERMAN, OF BUFFALO, NEW YORK.

IMPROVEMENT IN MACHINES FOR DRIVING HOOPS ON CASKS.

Specification forming part of Letters Patent No. **48,843**, dated July 18, 1865.

To all whom it may concern:

Be it known that I, H. C. SHERMAN, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Machine for Driving Hoops on Barrels, Kegs, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a front elevation of my machine represented in the act of driving a truss-hoop on a barrel. Fig. 2 is an inverted plan view of the cam-disk M for adjusting the drivers H to large or smaller sizes of barrels, showing them in section, and also representing more clearly the springs by means of which they are held in contact with the cam-disk. Fig. 3 is a plan view of the cam-disk detached. Fig. 4 is a section through the top B of the frame and through the threaded shank of the beveled-gear wheel D for running the screw E (shown in elevation) up or down, according to the direction in which the wheel is turned. Fig. 5 is a detached view of one of the drivers H, with a portion of the head K and cam-disk M, showing a modification by which a weight, *g*, passing over the roller *s*, is made to answer as the equivalent of the springs for holding the drivers in position.

Like letters designate corresponding parts in all of the figures.

As shown by the drawings, A A represent the posts or uprights of a strong wooden frame, which are connected together by the cross-beam B. In a box provided in the center of this beam hangs the beveled-gear wheel D, the hub or mandrel of which is threaded for the vertical screw-shaft E, which thus hangs in the wheel D, and is raised or lowered by the rotation thereof. Beveled pinions F G, driven by bands on the pulleys J J, give motion to the wheel D, being so arranged that by throwing one out of gear, or by slipping its band or other equivalent method, the motion of wheel D may be quickly reversed.

At the lower end of the screw-shaft a head or disk, K, is rigidly attached to it, and arranged around the periphery at regular intervals short vertical arms or drivers H H are suspended, being pivoted in slots or mortises *b b* of the head, so as to allow their lower ends to flex in or out to adapt themselves to the size of the barrel or keg to be hooped.

The lower or driving end is provided with a flange and shoulder, *c*, to fit it for engaging with the top of the iron truss-hoop *a* and press it on the barrel or keg L. These driving-arms, being thus attached to the head K, form a circle the diameter of which approximates to that of the barrel, and their lower ends are made to press closely against the same, so as not to slip over the hoop *a*, by means of spiral springs *d d*, attached radially with the center of the screw or head K, (or a weight may be hung to each driver, as represented at *g* in Fig. 5, with substantially the same result,) the effect being to hold the drivers within the smallest compass admitted by the cam-disk M, and also to serve to adjust the barrel to a position directly under and central with the screw-shaft or driving-power.

A series of small cams, *f f*, on the horizontal disk M (which is hung on a stem, C, from beneath the head K, so as to admit of its being partially revolved by the hand-lever O) acts against the inner sides of the drivers H to expand them, when turned, to the circumference of larger barrels, they flexing on their joints or hangings *b*. The action of the cams on the driving-arms is counter to the force of the springs *d d*, one contracting their area, the other expanding it.

The head K is provided with two guides, *n n*, which slide on ways *l l* on the frame A A and prevent the head and its screw-shaft E from turning, so that its motion is only vertical—up and down.

The operation is as follows: The uncompleted barrel, being prepared by placing the truss-hoop *a* on the end of the stave, is placed on the floor directly under the screw-shaft E, which has previously been run up so that the drivers H H clear the top of the staves. The downward motion is then given to the screw-shaft, which descends with the drivers, the shoulders *c c* of which engage with the top of the truss-hoop *a* and force it on the bilge by direct pressure. The attendant, with his hand on the cam-lever O, Fig. 2, regulates the expansion of the drivers to the size of the barrel and reverses the motion when the hoop is sufficiently driven.

The flexibility and freedom of the drivers insure certainty of connection with the hoop, and the construction is so simple and the power so directly applied that the machine is easily operated with a single attendant, who may be an intelligent boy, works tenfold more expeditiously than the manual operation, and produces superior barrels, from the fact that the power may be applied at once to an indefinite extent to bring the joints together tightly, whereas such a result is only attained by degrees under successive blows of the mallet by hand-labor.

The machine requires to be built with great strength, but, being simple and composed of few parts, is comparatively inexpensive.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Attaching the driving-bars H H to the direct-acting non-revolving screw-shaft E by means of the head K or its equivalent, so that said bars are suspended above and in a position to engage with the hoops on the barrel L, the whole arranged and operating substantially as and for the purposes set forth.

2. Pivoting or loosely hanging the bars H to the head K by means of the joint *b* or its equivalent, so that said bars may gravitate freely, substantially as set forth.

3. In combination with the suspended driving-bars H, the disk M, with its series of cams *f f*, and springs *d d*, or their equivalent, arranged and operating substantially as and for the purposes set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HIRAM C. SHERMAN.

Witnesses:
J. FRASER,
GEO. W. MIATT.