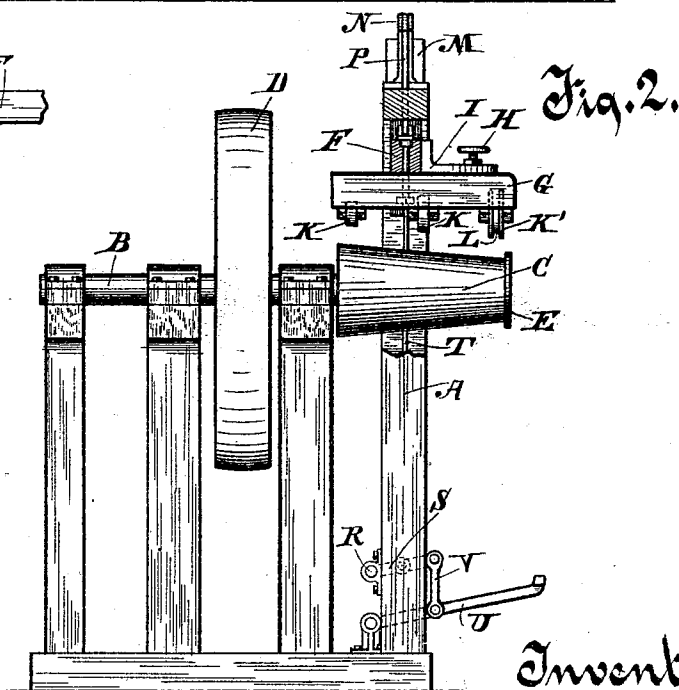
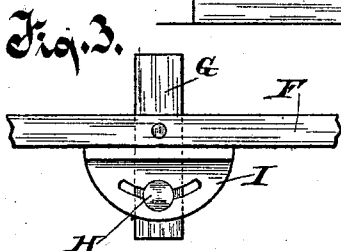
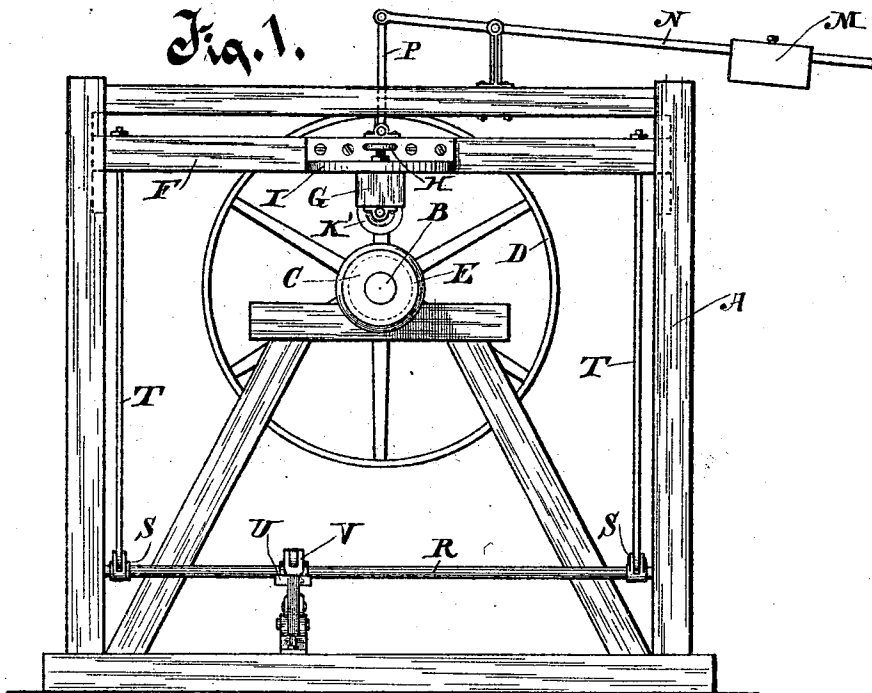


(No Model.)

W. B. SYLVESTER.
TUB ROLLER AND SHAPER.

No. 521,739.

Patented June 19, 1894.



Witnesses.

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UNITED STATES PATENT OFFICE.

WARREN B. SYLVESTER, OF PORTLAND, INDIANA.

TUB ROLLER AND SHAPER.

SPECIFICATION forming part of Letters Patent No. 521,739, dated June 19, 1894.

Application filed February 11, 1891. Serial No. 381,089. (No model.)

To all whom it may concern:

Be it known that I, WARREN B. SYLVESTER, of Portland, in the county of Jay and State of Indiana, have invented a new and useful Improvement in Tub Rollers and Shapers, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

In the manufacture of tubs or similar articles that are constructed of a number of staves forming the sides of the article, it is necessary after the staves have been arranged in a circular form and secured temporarily together by truss hoops, to bring the staves to a continuous and uniform outer surface, and the labor of adjusting the large number of staves by hand is both tedious and expensive.

The object of my invention is to provide mechanism adapted to quickly and successfully adjust the staves of a tub or other similar article, in the process of its manufacture, so that its outer surface will be even and smooth at the joints of the staves.

In the drawings, Figure 1, is a front elevation of my complete machine. Fig. 2, is a side elevation of the same machine, parts being broken away and shown in section to exhibit interior construction. Fig. 3, is a top plan view of a fragment of the machine.

The frame A is of such size and form as to properly support the operative mechanism. A shaft B is provided with a mandrel head or shaper C, and with a fast driving pulley D. The shaper C is of such form as to best adapt it for receiving thereon and bearing against the inside of the staves of the article to be shaped whether it be a tub, a barrel, a cask, a keg, a pail or other article. The shaper is preferably tapering as shown in the drawings, or oval in longitudinal section, and is advisably provided with an annular radial flange E at its outer end. This flange is adapted to receive the bearing of the outer ends of the staves, at the upper side at least, when the tub or other article is on the shaper and prevents the tub or article from slipping off. The tub or article is put on the shaper by passing it over the flange E.

Near the shaper C, a transverse beam F is movable toward and from the shaper in ways therefor in the frame, carries thereon a cross

head G substantially parallel with the shaper C. This cross head G is pivoted medially on the beam F and is thereby adapted to be oscillated slightly to right or left as may be desired to adjust it for use with tubs or articles of different sizes or tapers. A plate I is secured rigidly to the beam F and a thumb screw H passing through an arc-shaped slot in the plate I, and turning into the cross head G is adapted to secure the cross head in position. Bearing wheels K, K and K' are journaled in the cross head G, and are adapted to bear against the outer surface of the tub, or other article, and press the staves thereof against the shaper C, as the shaper and the tub thereon revolve, so as to bring the staves to an even surface. The wheel K' is preferably formed with an annular peripheral channel L to receive therein the truss ring on the tub or other article being shaped. A weight M, adjustable on the lever N, pivoted medially on the frame and connected at its other end by a rod P to the beam F, serves as a counterpoise to the beam and its supported mechanism. This counterpoise is adapted to support the beam normally a little distance above the shaper C. A rockshaft R journaled in the frame is provided with radial arms SS which are connected to the beam F by the rods T T. A pedal U pivoted at its inner end to the frame is connected by a link V to a radial arm fixed on the rock shaft R. By pressure downwardly on the pedal U, the rock-shaft R is rotated and the beam F, connected to the rock shaft arms S by rods T, and supported yieldingly by the weight M, is carried downwardly temporarily bringing the wheels K and K' against the tub or article on the shaper C.

It will be understood that the tub or article to be shaped, being placed on the shaper C, is rotated therewith by the revolving of the shaft B, and that the wheels K and K' bearing against the outside of the tub or article while so rotated, will bring the staves held temporarily in place by the truss hoops, to an even and uniform surface. The amount of pressure applied to the staves will depend largely on the length of the levers of the pedal and the radial arms, which in the construction of a machine for any particular class of work can be made of such length as is neces-

sary to secure the pressure desired which in some instances may be very great.

The shaper is advisably arranged horizontally as shown in the drawings, but can be placed in a vertical or oblique direction if preferred, corresponding changes being made in allied parts.

Heretofore mandrels of different forms have been required for shaping thereon tubs of varying tapers but by arranging my cross head G so that it can be adjusted to positions at an angle to the axis of the mandrel, I can shape tubs of greater or less taper on the same mandrel of medium taper and size, by simply adjusting the front end of the cross head to right or left as desired to adapt it for less or greater taper in the tub. The object of this adjustment is directly to secure a proper pressure and travel of the small wheels K and K' on the different types of tubs and thereby ulteriorly the proper shaping of the tubs. Thus when a tub of greater taper than the shaper is on the shaper and the mandrel is revolved from left to right as is usual, the front end of the cross head G should be adjusted toward the left thereby giving the wheel K' at the outer end of the head G a little lead on the staves at the smaller end of the tub, whereby that end of the tub will be firmly held to the shaper, and the movement of the tub will be so controlled thereby that it will rotate with the mandrel and substantially parallel thereto and will be properly shaped or brought to an even surface, as successfully as a tub of the same taper as the shaper is brought to even surface by the wheels in the cross head G when on such a tub the cross head is parallel with the mandrel. In a similar manner when the tub is of less taper than the shaper, the mandrel being revolved from left to right, the cross head should be reversely adjusted, that is so as to give the inner wheels K at the inner end of the cross head a little lead (of the wheel K') on the inner end of the tub so as to hold the inner end of the tub firmly to the shaper, whereby the tub will be so controlled as it revolves with the shaper that its staves will be constantly in a position substantially parallel with the mandrel as in the case before described. This adjustment of the cross head to right or left is used only when tubs are to be shaped that vary in taper from the normal and usual form of tub, for the shaping of which, the machine and especially the mandrel is adapted with the cross head in the line of its axis.

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

1. The combination with a frame, a shaft and a tapering mandrel thereon, of a beam in the frame arranged at right angles to and movable toward and from the mandrel, a cross head secured to the beam substantially parallel with the mandrel and movable with the beam toward and from the mandrel in the line of a true right angle to the axis of the mandrel, wheels axled in the cross head at a distance apart opposite to the mandrel and suitable means for moving the beam and cross head toward and from the mandrel as set forth.

2. The combination with a frame, a shaft journaled therein and a tapering mandrel thereon, of a beam movable in the frame toward and from the mandrel, a cross head on the beam arranged substantially parallel with the axis of the mandrel but pivoted to the beam and adjustable obliquely thereon, a smaller and a larger wheel axled in the cross head and located respectively opposite the larger and the smaller part of the mandrel, and suitable means for moving the beam toward and from the mandrel, as set forth.

3. The combination with a frame, of a shaft, a thereto affixed outwardly projecting long tapering shaper provided with an annular radial flange at its smaller outer end, which radial flange is adapted to prevent the accidental escape of the tub therefrom, a head located near the shaper and supported on a counterpoised movable beam arranged to be moved toward and from the mandrel in the line of a true right angle to the axis of the mandrel, and bearing wheels journaled in the head adapted to be forced against the article on the shaper inside of the radial flange, substantially as described.

4. In a tub roller having a mandrel-like revolving shaper, a beam movable toward and from the shaper, a cross head pivoted thereto and adjustable obliquely thereon, and bearing wheels journaled in the cross head and adapted to be forced toward and against the shaper, in combination with a counterpoise connected to the beam, a rockshaft journaled in the frame having radial arms connected to the movable beam and a pedal for rocking the shaft, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WARREN B. SYLVESTER.

Witnesses:

S. W. HAYNES,
GEORGE W. HULL.