G. J. RIBLET.

Improvement in Tire-Bending Machines.

No. 129,169. Patented July 16, 1872.

Fig. 1.

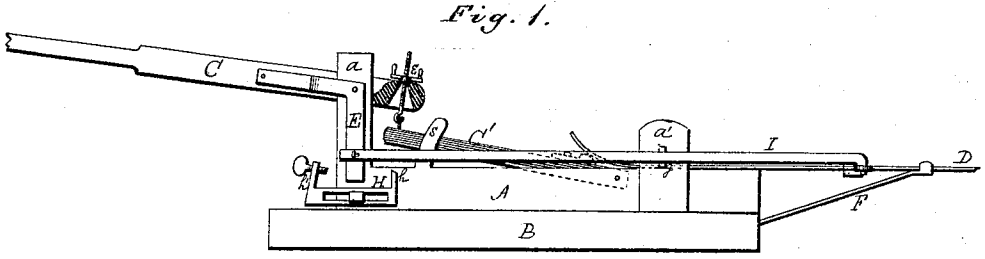


Fig. 4.

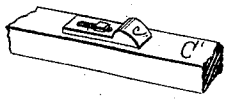


Fig. 2.

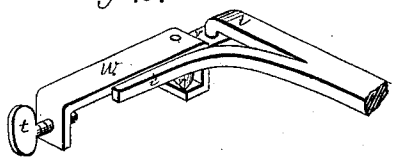


Fig. 3.

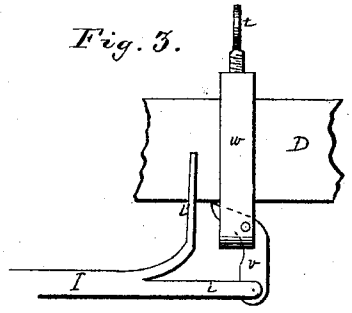
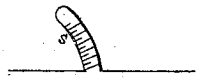


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE J. RIBLET, OF BOOTHSVILLE, WEST VIRGINIA.

IMPROVEMENT IN TIRE-BENDING MACHINES.

Specification forming part of Letters Patent No. 129,169, dated July 16, 1872.

To all whom it may concern:

Be it known that I, GEORGE J. RIBLET, of Boothsville, in the county of Marion and State of West Virginia, have invented an Improved Tire-Bending Machine; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side elevation of the whole machine; Fig. 2, a perspective view of the feeding-clamp; Fig. 3, a top view of the same; Fig. 4, a section of the lever; and Fig. 5, a side elevation of the graduated scale.

Similar letters of reference in the accompanying drawing denote the same parts.

The object of this invention is to further improve the machine patented by me May 2, 1871, No. 114,476; and to this end the invention consists, first, in an improved construction of the feeding-clamp; secondly, in an improved construction of the adjustable stop H, and its combination with other parts; thirdly, in the application of an adjustable steel block to the bending-lever, as hereinafter set forth; fourthly, in the combination of a graduated indicating-plate with the gauge and bending-lever, as hereinafter set forth.

In the drawing, A is the frame of the machine, resting upon the wooden base B. C C′ is the compound bending-lever. D is the bar to be bent to form a tire; E, the right-angled lever pivoted to the post *a;* I, the connecting-rod extending from the lever E to the feed-clamp; *a′*, the post which supports the key *g*, under which the bar D is bent; F, the guide and support for the projecting end of said bar; and H, the adjustable stop, which determines the length of stroke of the lever C C′. All these parts are constructed as heretofore, except so far as modified necessarily to adapt them to the improvements which I will now proceed to describe; and, first—

The Feed-Clamp.

This I now make in the form of a flat plate, *w*, resting upon the tire with its ends bent down over the edges of the latter. The end which is next to the rod I is also bent under, so as to support and guard a pivoted dog, Y, as shown in Figs. 2 and 3, while the opposite end is provided with a set-screw, *t*, designed to be adjusted according to the width of the tire. The rod I is divided at its near extremity, one part, *i*, being articulated to the outer end of the dog *v*, while the other, *i′*, bends parallel to the front edge of the plate *w*, as shown in Fig. 3. When the handle of the lever C C′ is depressed, the part *i* causes the dog to release the tire, while the part *i* pushes the plate *w* back to a new position, where the dog immediately seizes the tire again and draws it forward as soon as the movement of the lever is reversed. The arrangement is superior to that of the old machine in point of simplicity and cheapness. Secondly—

The Adjustable Gauge H.

This is constructed with two stops, *h h′*, with both adjustable, or one fixed and the other adjustable, as may be preferred. In the drawing, one stop, *h*, is rigidly attached to the body of the gauge, and the other, *h′*, is adjusted by means of a set-screw, which passes through and forms a part of it. The gauge thus adjustable is attached to the side plate A of the frame, by means of a slot and a clamping-screw or screws, instead of being secured to the bed-plate B as before—a change which economizes labor and material in construction, and renders the iron-work entirely independent of the wooden base, so that the base need not be carried about with the machine, but any piece of timber or plank that happens to be within reach can be at once used for the purpose. The plate or the frame may be graduated with suitable figures or marks, to indicate the proper point at which to set the fixed stop for any size of tire. Thirdly—

The Bending-Lever.

This is improved by making the projection *c* in the form represented in Fig. 4—viz., a hard-steel block connected to the bar C′ by a slotted shank and a set-screw. When the block breaks down it can then be easily upset or repaired without removing the lever; and, besides this advantage, the block itself can be adjusted toward or from the cross-plate or key *g*, to vary the curve imparted to the lever by any given stroke. Fourthly—

The Graduated Scale or Indicating-Plate.

This is represented at *s*, Figs. 1 and 5, and

consists in a projecting arm cast upon the side of the plate A, in the curved form shown in the drawing, and graduated with suitable marks or figures, which represent the diameters of the various sizes of tires used in the trade. The proper location of these figures is easily ascertained by experiment. For example, I find the point near the top of the curved arm, to which the upper edge of the bending-lever must be raised to make a three-foot tire, and mark it 3. I then find the point near the bottom of the arm, to which the lever must be raised to make a five-foot tire, and mark it 5. Half way between these points I mark 4, and, graduating the space between 3 and 4 and 4 and 5, I mark them with the fractional parts of a foot, as $3\frac{1}{2}$, $3\frac{3}{4}$, or with marks to indicate inches, as may be preferred.

In machines of this class the distance to which the handle is depressed controls the bend of the tire, while the distance to which it is raised controls the feed; but to vary the feed would result in varying the curvature of the tire, even were the handle depressed to the same point at every stroke. The great object of my present improvements has been, therefore, to enable me to control both the depressing and the raising of the handle, so as not to vary the feed while varying the bend of the metal at pleasure. This is accomplished by the means above described in the manner which I will now endeavor to illustrate. Suppose, for example, that I wish to make a four-foot tire. I depress the handle till the upper edge of the bending-lever C stands at the figure 4 on the scale *s*. I then adjust the gauge H so that the stop *h* will come in contact with the foot of the right-angled lever E, and fix it in that position. I then work the handle in such a manner that the lever E will strike both stops *h h'* at every stroke. The feed is thus invariable, and the bend is exactly that required for a four-foot tire. If I wish to change to a five-foot tire, all I have to do is to set the gauge for five feet instead of four. The feed remains the same as before, but the bend of the metal is diminished from four feet to five feet. But I can change the bend readily without moving the gauge H. To do this it is only necessary to hold the handle down, keeping the foot of the lever E in contact with the stop *h*, and then to screw down the tap *e* until it depresses the edge of the bending-lever to the figure 5. The apparatus, with the same stroke and the same feed, will now bend a tire five feet in diameter. The latter adjustment is the more convenient, and is used in making all common sizes of tires. There are sizes, however, which require the adjustment of the gauge and the adjusting device *e*. They may be used independently of each other or in combination, as described.

Should the block *c* wear away, or should it when worn out be replaced by a larger one, or should the wearing of the journals or the key, or the varying thickness of the iron to be bent, cause any slight variation of the bend, such variation can be easily compensated by adjusting the stop *h'* or making the proper allowance for the variation when setting the gauge or the screw-rod *e*. These slight variations are, however, of very little practical importance, and may be generally disregarded.

I am aware of the feeding device described in the bullet-machine patented by C. H. Remington, October 1, 1867, No. 69,481, and do not claim the same as my invention.

The width of tires being variable, it is necessary to employ some adjusting device to compensate for the variation; and I accordingly provide the set-screw *t* for that purpose, without which the device would be practically of little use, except for certain widths of tires, and which, therefore, constitutes an essential element of my invention.

Having thus described my invention, what I claim as new is—

1. The feeding device herein described, consisting of the plate *w* provided with the adjusting-screw *t* and the dog *v*, in combination with the rod or bar I provided with the two arms *i i'*, the whole constructed and operating substantially as and for the purpose herein specified.

2. In combination with the levers C C' E and adjustable stop *h*, the adjustable stop *h' h*, substantially as described, for the purpose set forth.

3. The combination of the independent adjustable block *c* with the bending-lever C C' and key *g*, substantially as described.

4. The graduated indicating-plate or arm *s*, in combination with the gauge H and the levers C C' E, substantially as described, for the purpose specified.

Witnesses: GEO. J. RIBLET.

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