T. M. & A. F. STANSBURY.

Machines for Bending Tire.

No. 166,944. Patented Aug. 24, 1875.

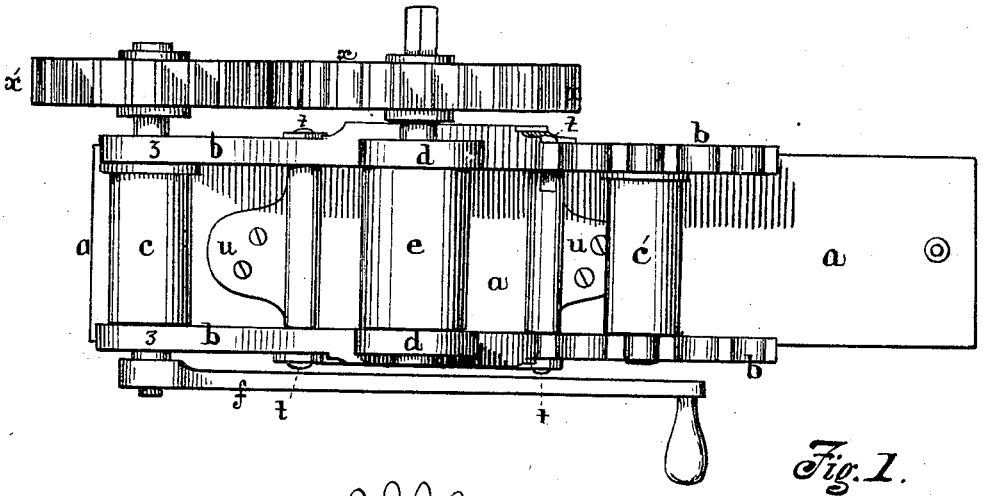

Fig. 1.

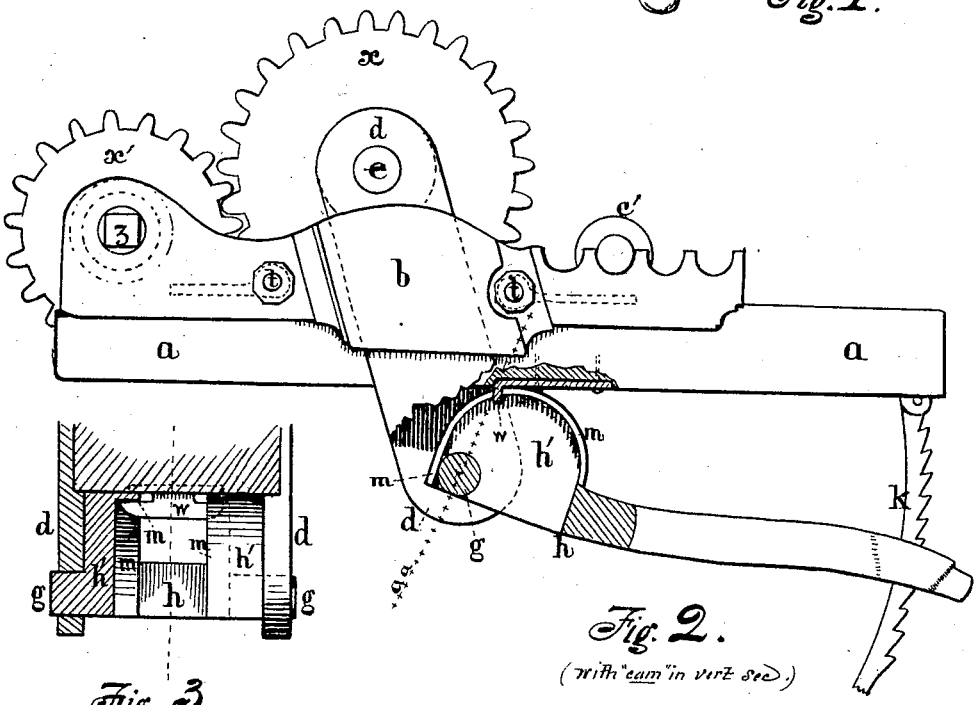

Fig. 2.

(with "cam" in vert sec.)

Fig. 3.

(nearly vert. sec. along line "a.a." fig 2.)

Witnesses.
Clarence Thurlow
James Madison

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by E. Thurlow his atty in fact
Alexander F. Stansbury
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UNITED STATES PATENT OFFICE.

THOMAS M. STANSBURY AND ALEXANDER F. STANSBURY, OF CANTON, ILL.

IMPROVEMENT IN MACHINES FOR BENDING TIRES.

Specification forming part of Letters Patent No. **166,944**, dated August 24, 1875; application filed May 19, 1875.

To all whom it may concern:

Be it known that we, THOMAS M. STANSBURY and ALEXANDER F. STANSBURY, of Canton, in the county of Fulton and in the State of Illinois, have invented an Improvement on the Tire-Bender patented to us by the United States on 25th of August, 1868, No. 81,550; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a plan view; Fig. 2, a side elevation.

Our improvement consists in gearing the upper roller of the frame just mentioned to one of the lower rollers, for the purpose of obtaining a proper traction upon the bar to be bent, and so obviating the slipping of the rollers upon the same when wet or greasy. Said tire-bender, on which this invention is an improvement, consisted in securing a journal-plate on either side of a bench, on which plates, at adjustable distances from each other, friction-rollers are placed. Between the bench and either plate is a vertical sliding post or frame, carrying a roller at top turned by a crank. Connecting the lower ends of these posts is a bolt, on which turns an eccentric or cam lever, whose face works on the lower surface of the bench, its free end being engageable with a toothed segmental bar attached to the bench, the operation of the whole being as follows:

The handle of the lever being down, and the shorter axis of the eccentric between the bolt and the bearing-plate, a spring held up the upper roller to its hightest point, which spring is now abolished. The iron bar or tire is now inserted under the upper roller, and resting, at either side, upon the friction-rollers, the upper roller is drawn down by the cam, the crank of said upper roller turned, and the bar is converted into a circle.

In the drawings, *a* represents the bench; *b b*, the side plates, secured together on either side of said bench by bolts *t t*. *c c'* are friction-rollers, one being made adjustable in either of the open journals on the edges of the plates. The other roller, in our improved machine, we now place in a fixed journal, *z*, and provide it with a pinion, *x'*, or toothed wheel, gearing with a similar one, *x*, upon the same end of the upper roller *e*. The crank *f* is fitted to the end of either axle of said geared rollers *e c*, as may be desired. *d d* represent the sliding frame, carrying said upper roller *e* in journals inclined at the lower end toward the under side of the roller *c'*, for the joint purposes of bringing the roller *e* obliquely down upon the tire, and also that the line of motion of said frame may best accommodate that of the cam. *g* represents a bolt, which connects the lower ends of said posts, at the same time being the fulcrum of the cam-lever *h*. *k* represents the segmental ratchet-bar, with which the cam-lever is detained at desired points during the bending of the tire or other iron bar. The side plates *b b* are fastened to the bench by transverse bolts *t t*, connecting them just above the upper surface of said bench, and passing at once through the plates, and through horizontal plates or castings *u u*, screwed or bolted to said upper surface of said bench.

We employ, in place of the spring before mentioned, a rim, *m m*, on each of the interior semicircular edges of the cam-head, so as to confine the motion of the cam to the under surface of the bench by means of a T-headed guide, W, projecting from the latter beneath each of said rims *m m*. (See vertical section, Fig. 3.)

The operation of our tire-bender, now, is as follows: The bar to be curved is placed between the rollers *e* and *c c'*, and the uppermost roller *e* drawn down upon the bar by the operation of the cam-lever *h* to the proper point, where it is detained by the ratchet *k*. The crank *f* is then turned, and the bar is drawn along and bent by the joint traction of the engaged rollers *e c* upon it and beneath it, the advantage over the former plan being that the tire and rollers, however wet or greasy, cannot slide upon each other, and more power is brought to bear in drawing said bar along. The cam slides in the T-guide W.

What we claim as our invention is—

The combination of the roller *c*, gears *x'* and *x*, roller *e*, and sliding frame *d* inclined, from the perpendicular toward said roller *c*, substantially as and for the purposes set forth.

In testimony that we claim the foregoing improvement on tire-bender, we have hereunto set our hands this 7th day of May, A. D. 1875.

THOMAS M. STANSBURY.
ALEXANDER F. STANSBURY.

Witnesses:
M. HEATON,
JAS. BLAIN.