W. F. ROWE.

TIRE-TIGHTENER.

No. 189,788. Patented April 17, 1877.

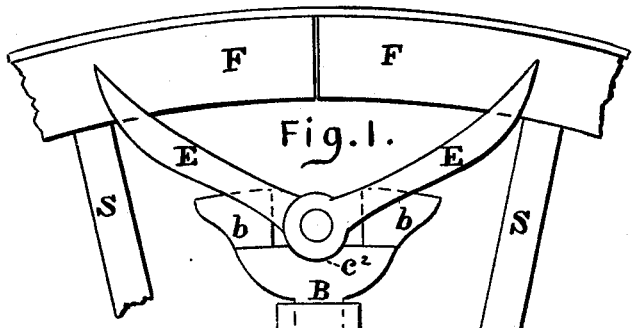

Fig. 1.

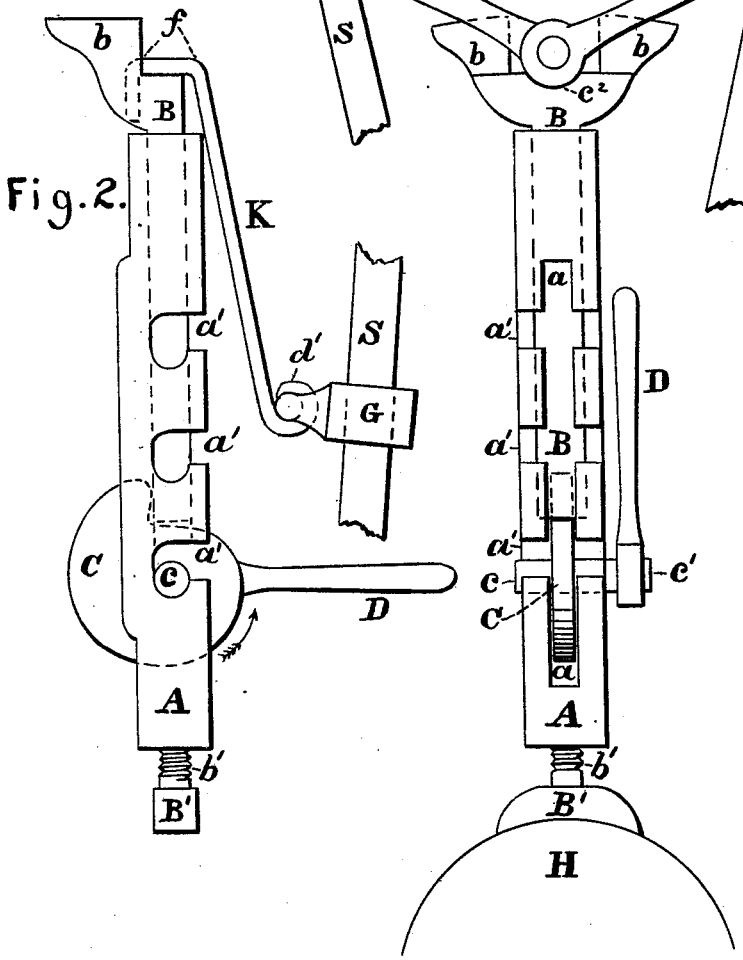

Fig. 2.

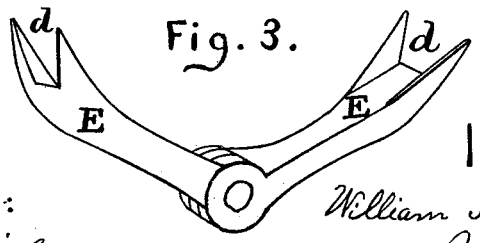

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM F. ROWE, OF LYONS, IOWA, ASSIGNOR TO EUGENE S. GIBBS, OF SAME PLACE.

IMPROVEMENT IN TIRE-TIGHTENERS.

Specification forming part of Letters Patent No. **189,788**, dated April 17, 1877; application filed March 2, 1877.

To all whom it may concern:

Be it known that I, WILLIAM FRANKLIN ROWE, of Lyons, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Tire-Tightening Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a front view. Fig. 2 is a side view. Fig. 3 is a perspective view of the jointed spreader.

My invention relates to machines for tightening tires and pulling out spokes.

The object of the invention is a machine for tightening tires by means of washers on the shoulders of the spokes, and also by spreading apart the fellies, as hereinafter more fully described.

A is a hollow standard, provided with a slot, *a*, and notches *a'*, to receive the cam and its bearing-shaft.

B is a follower, adjusted to slide up and down in the standard, and is provided with the bearing-arms *b b*.

C is a cam, provided with a fixed shaft, *c*, having an extended end, c^1, formed to hold the lever D.

I use a cam because, by experiment, it is found to be better than an eccentric. The cam requires less power to operate it, and will stand in any position under the pressure of the follower, while the eccentric requires to be held in such position, and to render the instrument more readily adjustable to any required length the cam is provided with the fixed bearing-shaft to be laterally inserted in, and removed from, the notches in the standard, instead of bolts inserted through holes in the cam and standard.

E represents a jointed spreader, having slots *d* in the ends to receive the fellies. The top of the standard is provided with a recess, c^2, forming a seat for the joint of the spreader, as shown in Fig. 1 of the drawings.

B' is a curved base, provided with an adjusting-screw, *b'*, fitting in a female screw in the lower end of the standard.

G is a clip, the proper size to readily slip over a spoke, S, and K is a rod, the lower end of which is connected to the clip by a loop or hook, *d'*, inserted through an eye in the clip, and the upper end of the rod K is bent, as shown at *f*, forming a hook to catch over the top of the standard, as seen in Fig. 2 of the drawings.

The required length of the instrument is obtained by means of the adjusting-screw *b'*, and by the adjustment of the shaft of the cam in the notches of the standard. The shaft of the cam being placed in the proper notch, the cam is adjusted with the smallest diameter bearing against the end of the follower, which is raised by turning the cam in the direction indicated by the arrow in Fig. 2 of the drawings.

To tighten a tire by means of washers on the spokes, the instrument, adjusted to the proper length, is placed in position with the base B' on the hub H, and the arms *b*, bearing against the inner part of the fellies, and by means of the lever D the cam is turned in the direction of the arrow, raising the follower and pressing the fellies outward against the tire, opening the joints between the shoulders of the spokes and the fellies for the insertion of washers.

To tighten a tire by spreading apart the fellies, the jointed spreader E is adjusted in its seat c^2 on the follower, and the length of the machine is adjusted so that the slotted ends of the spreader bear against the under part of the fellies, and against the inner sides of the two contiguous spokes S, as shown in Fig. 1 of the drawings; and by raising the follower by means of the cam and lever, as above described, the arms impinging against the fellies and spokes press in opposite directions, the two fellies opening the joint between them to be filled with the proper sized pieces of hard wood or other suitable substances.

To draw out spokes from the hub the clip G is adjusted on the spoke to be drawn, and the machine placed in position with the base B' on the hub, the upper end of the rod K is hooked over the upper end of the follower, as

shown in Fig. 2 of the drawings, and as the follower is raised the clip clamps and draws out the spoke.

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

1. In a tire-tightener, the jointed spreader E, substantially as and for the purposes described.

2. The spoke-drawing devices, consisting of the clip G and rod K, in combination with the standard A, follower B, and cam C, substantially as described.

In testimony that I claim the foregoing as my own invention I affix my signature hereto in presence of two witnesses.

WILLIAM FRANKLIN ROWE.

Witnesses:
WILLIAM W. SANBORN,
L. M. DICK.