(No Model.)

# D. P. EVANS.

## TIRE TIGHTENER.

No. 271,050. Patented Jan. 23, 1883.

Fig. 1.

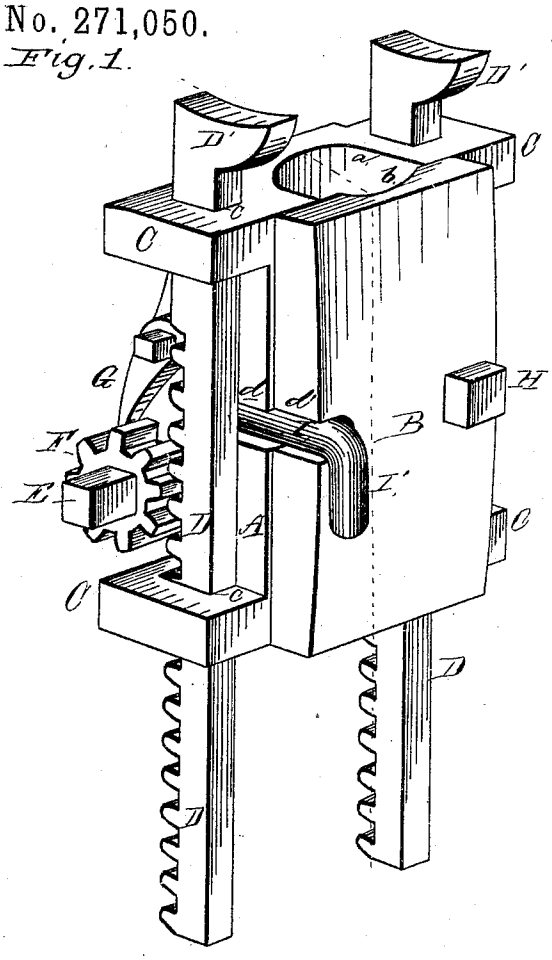



Fig. 2.

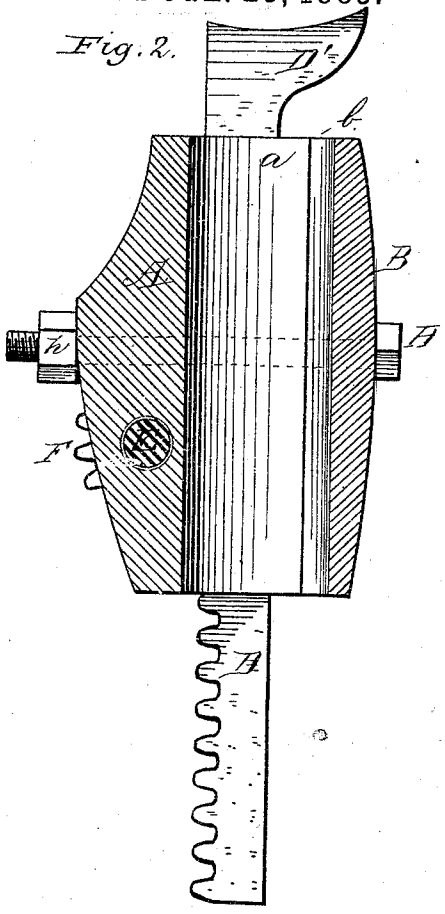
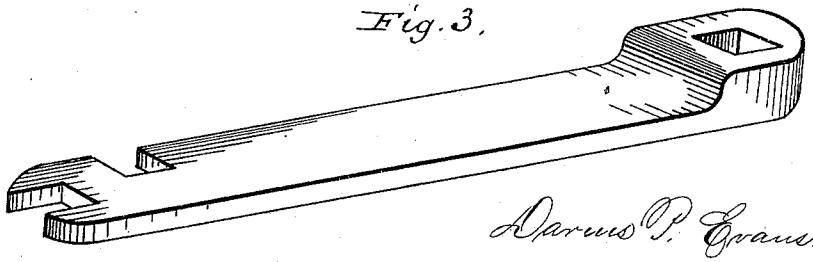



Fig. 3.



Witnesses:
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# UNITED STATES PATENT OFFICE.

DARIUS P. EVANS, OF NEVADA, MISSOURI.

## TIRE-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 271,050, dated January 23, 1883.

Application filed November 20, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, DARIUS P. EVANS, a citizen of the United States of America, residing at Nevada, in the county of Vernon and State of Missouri, have invented certain new and useful Improvements in Tire-Tighteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in tire-tighteners; and its object is to provide a tool or instrument the parts of which are secured to each other, and which will afford a ready and sufficient means for raising the felly of a wheel from the spoke-sockets; and it consists in providing the main part of the spoke-clamp with side wings, transverse shaft-bearings, and bolt-holes, whereby the operating parts are attached to the spoke-clamp.

My invention also consists in providing the clamp, which is a U-shaped opening, which embraces the spoke, with the transverse shaft, which is provided with pinions, which engage with the jack-pins or presser-feet; also, in providing side clamps with a ratchet, which engages with one of the pinion-wheels on the transverse shaft.

My invention also consists in providing the recessed portion of the clamp with a pivoted plate, and with a recessed or slotted side and an L-shaped bolt, whereby one of the parts of the clamp can be turned so as to admit the spoke and clamp the instrument firmly upon the spoke.

My invention further consists in a construction and combination of the parts, as will be hereinafter more fully set forth, and pointed out in the claims.

In the annexed drawings, which illustrate my invention, Figure 1 is a perspective view. Fig. 2 is a vertical longitudinal section; and Fig. 3 is a perspective view of the wrench, which is provided with sockets of different sizes for adjusting the nuts on the clamping-bolts and operating the shaft which carries the pinion.

A represents a casting, which is provided on its sides with outwardly-extending wings C C, which are provided with rectangular openings *c*, which openings are adjacent to the ends of its vertical sides, and, as shown, these wings are for the reception of sliding jack-pins or presser-feet. This casting A is also provided with an enlarged rear portion, through which passes the shaft E, having pinions F, which mesh into the rack-bars of the jack-pins, which jack-pins D are raised or lowered when the shaft which carries the pinion is turned. This casting A, immediately above one of the pinions, is provided with a pawl, G, which engages with one of the pinions on the shaft and holds the rack-bar D in position. This casting is also provided with transverse horizontal openings, which are at right angles with the shaft E, and are located above the same. Through these openings pass the bolts I and H, which secure the two plates A and B to each other. One of the securing-bolts, I, which I term the "lock-bolt," is bent so that its end will be at right angles to the body of the same, as shown at I′. The side of the casting A is cut away, as shown at *d*, so as to allow this end, when turned outwardly, to pass down beneath the surface of the face-plate B. The adjacent bolt, H, is of ordinary construction, and simply passes through the two parts. These bolts I and H serve to hold the face-plate B on the casting A, which face-plate is provided with a groove, *b*, on its inner side, which presses against the spoke when the tightener is attached to the spoke of a wheel, whereon it is clamped by the aforesaid bolts. One side of this plate B is grooved or cut away, as shown at *d′*, for the reception of the bolt I, so as to allow the same, when turned, to pass beneath this plate.

This invention is adapted to be secured to the spoke of a wheel when it is desirable to tighten the spokes or tires, and to apply the same the bolts are first loosened, the bolt I being turned so that its end I′ will project outwardly, so that it can be slipped beneath the plate B, which plate is then turned upon the bolt H. Thus the U-shaped groove in the casting A is opened, and the same may be passed over the spoke, upon which it is secured, the plate B being first turned back into position and the bolt I pressed through the openings *d* and *d′* and

turned so that its bent portion I′ will embrace or overlap the same. The bolts are then tightened, which will draw the parts of the clamp together and hold the implement securely on the spoke. The felly and tire are then raised from the spoke-socket by turning the pinion-shaft E with a suitable implement, the pinion-wheels F engaging with the rack-bars of the jack-pins D and raising the same, so as to allow packing to be placed under the shoulders of the spokes or between the joints of the fellies. After the jack-pins are raised sufficiently, the pawl G will prevent the pinions turning and hold the jack-pins in place.

I am aware that tire or spoke fasteners have heretofore been made which attain the same results as my invention; but they consist of numerous parts which are not connected permanently with each other, and are therefore liable to be displaced and lost.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a spoke or tire tightener, the casting A, having side wings, C C, transverse shaft-bearings, and bolt-holes, in combination with the jack-pins D, having rack-bars, pinion-shaft E, face-plate B, and bolts H and I, substantially as shown and described.

2. In combination with the casting A, having U-shaped opening, a transverse shaft having side pinions, rack-bars D, and face-plate B, substantially as described.

3. The casting A, having U-shaped opening *a*, in combination with the face-plate B, attached thereto by bolts, and jack-pins D, with operating means, substantially as shown.

4. The casting A, provided with side wings, C, having openings *c*, U-shaped recesses *a*, transverse shaft E, with pinion F, pawl G, and recess *d*, in combination with the plate B, pivotally attached thereto by bolt H, and provided with recess *d′* and bent bolt I, the parts being organized and arranged substantially as described, and for the purpose set forth.

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

DARIUS P. EVANS.

Witnesses:
JOHN T. BIRDSEYE,
J. B. COUZINS.