J. T. HALL.

Tire-Tightener.

No. 162,232. Patented April 20, 1875.

Fig. 1.

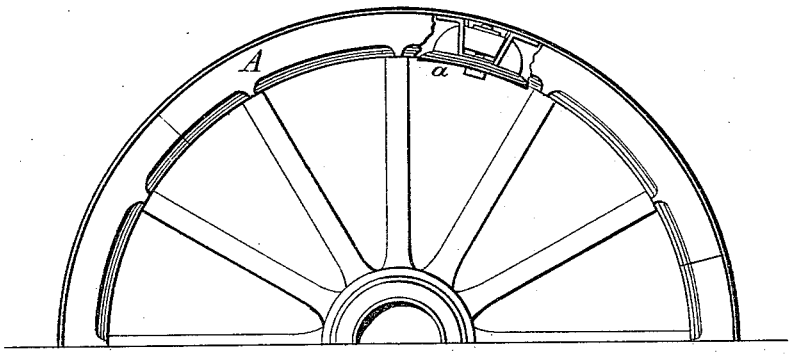


Fig. 2.

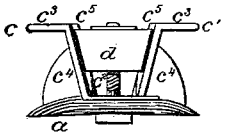


Fig. 3.

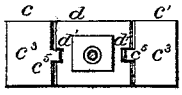


Fig. 4.

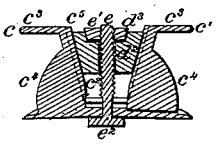


Fig. 5.

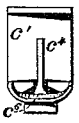


Fig. 6.

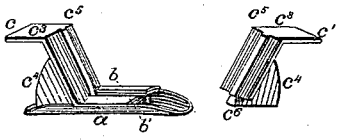
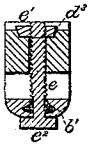


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN T. HALL, OF MORRISONVILLE, ILLINOIS.

IMPROVEMENT IN TIRE-TIGHTENERS.

Specification forming part of Letters Patent No. **162,232**, dated April 20, 1875; application filed January 26, 1875.

To all whom it may concern:

Be it known that I, JOHN T. HALL, of Morrisonville, in the county of Christian and State of Illinois, have invented certain new and useful Improvements in Tire Fasteners or Tighteners; 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 pertains 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:

The object of my invention is to provide a convenient and simple device for tightening tires on carriage-wheels. It consists in a slotted cap placed over the inner edge of the rim of the wheel, to which are attached two arms—one fixed, the other movable—extending upward between the impinging ends of any two fellies, (the latter having been cut away sufficiently to admit their insertion,) and forming a wedge-shaped cavity tapering toward the hub, and provided on their inner faces with guide-tongues extending on the central line from the inner to the outer end; in a conical or triangular slot in the cap for the reception of and in which slides a conical or triangular shaped foot or projection attached to the movable arm; and in a wedge-shaped block placed in the cavity made by the arms, and which is perforated to permit the passage of the regulating bolt, and recessed to receive and hold the nut on end of said bolt, and slotted or grooved so as to slide up and down on the tongues on the arms.

In the drawings, Figure 1 is a portion of the rim of a wheel with my device attached, and Figs. 2 to 7, inclusive, show the device in its details.

A is a portion of the rim of a wheel with my device inserted. *a* is the cap. It is neatly fitted to the inner edge of the rim. In constructing it for use, I make two wings extending upward over the sides of the fellies to the tire, so as to make a neat casing completely inclosing the operating parts of the device, but these wings are not shown, as they do not form an essential feature of my invention. It is made oval or half-round, so that I can attach the two horizontal plates or flanges *b* to the upturned edges and form the slot b' along its central line, said slot being triangular or cone-shaped, having its base on the plate *a*. c c^1 are the upwardly-extending arms. The first is fixed rigidly to the plate *a*, the second is movable. They are placed near the center of the plate, so as to leave a portion of the latter to extend along on the inner edge of the fellies. A portion of the ends of the contiguous fellies is cut away to form a suitable space for their insertion. They extend upward to the outer edge of the rim, and diverge and form the wedge-shaped cavity c^2, and have the flanges c^3 extending along on the outer edge of the rim A. They are supported by the braces c^4, which are let into the end of the fellies and prevent any lateral movement of the device, and are provided with the tongues c^5, extending from their lower to their upper end, and serve to give a vertical movement to the wedge-block hereinafter described. The movable arm c^1 is provided with the triangular foot or projection c^6, constructed so as to fit snugly and slide in the slot b', and preserve the proper inclination of the arms. The foot c^6 and slot b' permit the forcing apart of the arms in the act of tightening the tire, and preserve the fellies in proper line, and thus keep the rim in proper shape. *d* is the wedge-block. It fits snugly in the cavity c^2. It is provided with the vertical slots or grooves d^1, which receive the tongues c^5. It is perforated with the mortise d^2, through which is passed the regulating-bolt, and it is recessed on its top, as shown at d^3, to receive the nut on the end of the bolt. *e* is the bolt, e^2 its head, and e^1 the nut. The head of the bolt bears on the plate *a*. The shaft passes through a suitable hole in the plate, and through the slot b' and the mortise d^2 in the block *d*. The nut *e* fits within the recess d^3, flush with the top of the block *d*. The recess prevents the nut from turning when the bolt is turned, and permits the block to be first placed against the tire. Instead of having the braces c^4 at the center of the back of the arms and letting them into the ends of the fellies, as shown, I prefer to construct to each arm two side braces or flanges, which extend back along and embrace the ends of the fellies.

The device being inserted between the fel-

lies, and it is desired to tighten the tire, a wrench is placed on the head e^2 of the bolt, and, turning the latter to the right, the block d will be drawn down, the arms c c^1 are forced apart, and the rim thereby enlarged and the tire tightened. By a reverse motion the block will be forced upward and the tire loosened.

It will be seen that the arrangement and combined action of the plate a, flanges c^3, braces c^4 or side flanges, as explained, block d, and the bolt and nut, will hold firmly and rigidly in place the entire device, so that it cannot be knocked or jolted out should the tire be removed.

It will be seen that all the operating parts of my device, bolt-head e^2, and the plate a, are entirely incased and protected from injury by the side wings hereinbefore described, but not shown in the drawings.

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

The tire-tightener composed of the plate a, provided with the horizontal inwardly-projecting plates b, the fixed arm c, and the adjustable arm c^1, having the triangular foot or projection c^6 and flanges c^3 and wedge d, having recess d^3, all combined to operate as and for the purpose set forth.

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

JOHN T. HALL.

Witnesses:

LEROY MARTIN,

J. B. THOMPSON.