





# UNITED STATES PATENT OFFICE.

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## TIRE-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 426,730, dated April 29, 1890.

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*To all whom it may concern:*

Be it known that I, WILLIAM ARCHER MAYO, residing at Paris, in the county of Lamar and State of Texas, have invented certain new and useful Improvements in Tire-Tighteners, of which the following is a specification.

My invention has for its object to provide simple and effective means whereby as the spokes of the wheel become loosened in their socket-connection with the felly they may be quickly tightened without disconnecting the spokes from the felly-sections.

My invention consists in certain novel features of construction and peculiar combination of parts, all of which will hereinafter be fully described in the annexed specification and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical section of a portion of a vehicle-wheel with my improvements applied. Fig. 2 is a horizontal section taken on the line 2 2, Fig. 1, looking in direction of the arrow. Fig. 3 is a detail perspective view of the tightening-plates, and Fig. 4 is a detail perspective view of the felly-tightening plate.

In the accompanying drawings, A indicates the hub of a vehicle-wheel, which is socketed in the usual manner to receive the tenons  $b$  of the lower ends of the spokes B, the upper ends of which are provided with the usual tenons  $b'$ , which fit the sockets  $c$  in the felly-sections C, over which fits the tire D, also of the ordinary construction.

It is obvious that when a wheel is constructed as above described (such construction being the one most common) that after a short use the wooden felly shrinks, as also the spokes, thus making the connection between the parts loose, and thereby weakening the wheel.

To form a convenient means of quickly tightening the spokes when they become loose, I provide the detachable wedge-plates E E', (shown in detail in Fig. 3,) such plates consisting each of an apertured extension  $e$  at its rear end and a forward semicircular socket portion  $e'$ . The upper face of the plate E is made to fit flush against the felly-body, while the lower face of the fingers  $e^2$  is inclined or wedge-shaped. The under face of the fingers

$e^2$  of the plate E' is straight, the upper face thereof being wedge-shaped, as shown.

The manner of adjusting my improved tightening-plates in position is as follows: When the spokes become loosened, the plate E is driven in place between the felly and the shoulder  $b^2$  of the spoke, the fingers  $e^2$  embracing the tenon  $b'$ . The plate is then secured by passing a screw F through the aperture  $e^4$  into the wooden felly. The plate E' is then forced in from the opposite side, its upper inclined portion of the fingers  $e^2$  engaging the lower inclined face of the fingers on the plate E. Such plate E' is then secured by the screw F'.

Instead of forcing the plates E E' into position by lateral pressure, it is manifest that the felly may be slightly sprung outward by suitable jacks or levers and the plates fitted in place, and the felly then allowed to spring back to their normal position. It is also obvious that when the spokes are but slightly loose but one wedge-plate need be employed.

G denotes a wedge-plate, corrugated on each face, which is forced in position between the felly-sections when their meeting edges begin to part, the corrugations serving to bite into the wood, thereby holding the plate G in place. Such plate G may, if desired, be also provided with a slot  $g$  to fit around a tenon  $g'$  when the felly-sections are formed with tenon-connections.

From the foregoing description, taken in connection with the drawings, the advantages of my improvement will readily appear. It will be seen that the same may be manufactured at a very small cost, and may be either of cast or stamped metal. It can be made of various sizes and sold on the market as a new article adapted for use upon wheels of all sizes.

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

1. As a new article of manufacture, a tire-tightener consisting of a plate provided with wedge-shaped projecting fingers and a rearwardly-apertured extension, substantially as and for the purpose described.

2. As a new article of manufacture, a tire-tightener composed of two plates E E', each provided with extended apertured lugs, and

forwardly-projecting fingers  $e^2 e^2$ , one of said plates having the upper face of its fingers straight and the lower face inclined, the other having the upper face of its fingers inclined,  
5 said plates formed with semi-socket portions on their lower faces, substantially as and for the purpose described.

3. The combination, with the spokes, the felly, and the tire, constructed as described,  
10 of the plates E E', each provided with rearwardly-extending apertured portions, forwardly-projecting fingers  $e^2 e^2$ , and semi-socketed portions  $e'$  on their lower faces, the

upper face of the plate E being straight, its lower face inclined, the upper face of the 15 plate E' inclined, and the lower face thereof straight, whereby when said plates are fitted in place they will wedge between the felly and the shoulder of the spoke, said socket portions adapted to fit over said shouldered por- 20 tion of the spokes, substantially as and for the purpose described.

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Witnesses:

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