No. 669,396. Patented Mar. 5, 1901.

O. L. LEACH.

TIRE.

(Application filed Dec. 6, 1900.)

(No Model.)

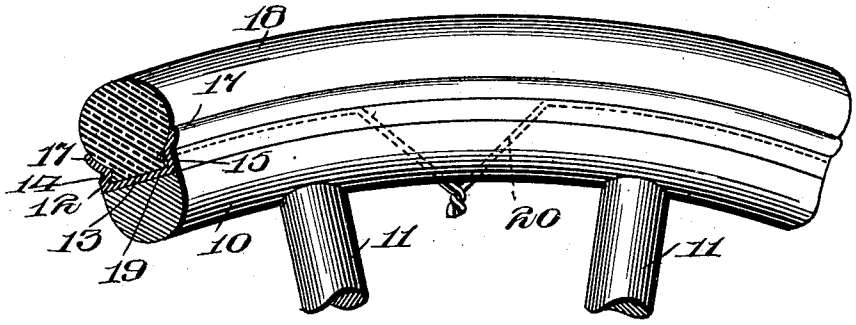


Fig. 1.

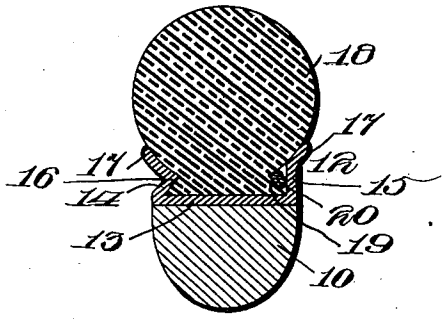


Fig. 2.

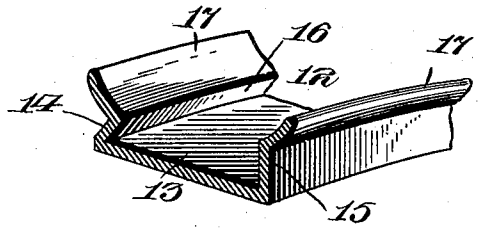


Fig. 3.

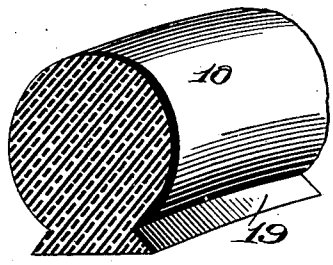


Fig. 4.

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UNITED STATES PATENT OFFICE.

ORVILLE L. LEACH, OF PROVIDENCE, RHODE ISLAND.

TIRE.

SPECIFICATION forming part of Letters Patent No. 669,396, dated March 5, 1901.

Application filed December 6, 1900. Serial No. 38,940. (No model.)

To all whom it may concern:

Be it known that I, ORVILLE L. LEACH, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Tire, of which the following is a specification.

The present invention relates to vehicle-wheel tires and to the means for securing tires of an elastic nature upon the wheel.

One object of the invention is to provide a simple article of this class that may be readily applied to an ordinary vehicle-wheel and that will be securely held in place thereon.

A further object is to construct the same so that the fastening means will not wear or chafe the tire and the additional bearing due to the necessary expansion and contraction will not be brought against said fastening means.

To the accomplishment of these several objects the invention is preferably constructed in the manner described in the following specification and shown in the accompanying drawings; but the construction thus shown and described is open to change and modification within the scope of the claims hereto appended.

In the drawings, Figure 1 is a portion of the felly of a wheel, showing the improved tire applied thereto. Fig. 2 is an enlarged cross-sectional view of the same. Fig. 3 is a detail perspective view of a portion of the fastening-ring. Fig. 4 is a similar view of the tire.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

A portion of the usual felly and spokes of an ordinary vehicle-wheel are illustrated in the drawings and are designated, respectively, 10 and 11. Upon this felly is secured the improved tire, preferably by the following means: A fastening-ring 12 is provided, which comprises a flat base-plate 13, having upstanding side rims 14 and 15. One of these rims, 14, is provided on its inner side and contiguous to its base with an annular retaining-groove 16, while the other, 15, has its main portion straight and substantially at right angles to the base 13. The upper edges of both rims 14 and 15 are provided with outwardly-flaring curved bearing-flanges 17. In the channel thus formed is fitted the elastic tire, (designated 18.)

The main body of the tire 18 is circular in cross-section and is provided upon its inner side with an annular dovetailed rib 19. This rib is arranged to fit snugly in the annular channel of the fastening-ring, with the projecting flange of one side fitting in the retaining-groove 16 of the rim 14. In order to hold the rib in said channel, a flexible binding cord or wire 20 is arranged to be secured upon the projecting flange of the rib opposite to that which fits in the groove 16. This cord or wire 20 is preferably, though not necessarily, rectangular in cross-section and has its ends secured, preferably, by passing them through the felly and twisting them together. When in position, the under side of the body portion of the tire bears directly against the flaring flanges 17. By this construction it will be observed that a tire and fastening means therefor are provided that may be readily applied to an ordinary vehicle-wheel. It will also be seen that an exceedingly simple means for fastening the tire is secured that permits of the ready removal and replacement of said tire. Further than this, however, a very important feature resides in the outwardly-flared flanges 17. As the tire bears directly upon these flanges, they will receive the necessary expansion and contraction. The rib 19 therefore remains stationary with relation to the ring 12 and locking-wire 20, so that there will be no chafing or wear, and consequently the tire will not work loose from its fastenings.

While the retaining-ring 12 has been described and shown as an adjunct to the usual felly, it may form the felly itself and have the ends of the spokes secured directly thereto.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, what

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

1. In an article of the class described, the combination with a retaining-ring having outwardly-projecting rims forming a channel, one of said rims being provided with a groove the other having a flat inner face, of a tire having an annular rib which is provided with outwardly-extending flanges, one of said flanges being adapted to engage in the groove of the rim, and a flexible binder arranged in the channel, between the outwardly-extending flange thereof and the tire, said binder bearing against the flat face of the other or free flange of said rib to hold the tire in place.

2. In an article of the class described, the combination with a retaining-ring having a channel formed by a pair of spaced rims, said rims being provided with outstanding flanges at their edges forming bearing-faces, one of said rims being provided with a groove in its inner wall, the inner wall of the opposite rim being straight, of a tire having a dovetail rib fitting in said channel, one side of said rib being adapted to engage the groove of the rim, and a flexible binder arranged within the channel and adapted to engage the opposite side of the rib beneath the bearing or outstanding flange to secure the same in the channel, said tire being arranged to bear upon the outstanding flanges of the rim.

3. In an article of the class described, the combination with a retaining-ring having outstanding spaced flanges forming a channel and provided with outwardly-flared edges forming bearing-seats, one of said flanges having its inner wall inclined to form an undercut groove in its inner wall, the other flange being provided with a flat inner face, of a tire having a dovetail rib fitting in the channel, one side of said rib corresponding to and fitting snugly in the groove of the flange and bearing against the inclined portion of the same, and a binder fitted within the channel upon the opposite side and provided with a flat face that bears against the opposite side of the dovetail rib, said binder also engaging the inner flat face of the adjacent flange, said tire being arranged to bear upon the outstanding flanges of the rim.

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

ORVILLE L. LEACH.

Witnesses:
FRANCIS HORSMAN, Jr.,
GEO. H. STAMP.