(No Model.)

W. I. BUNKER.

WHEEL.

No. 477,505. Patented June 21. 1892.

Fig. 2.

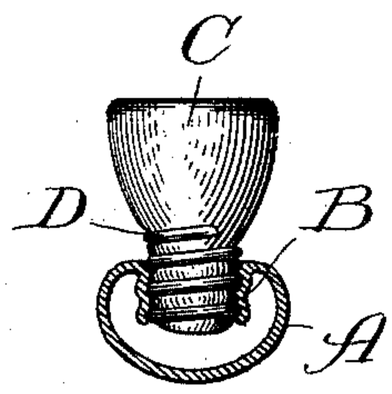


Fig. 1.

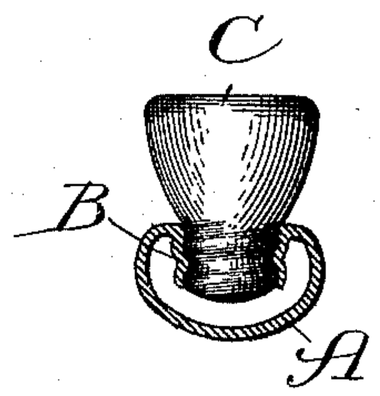


Fig. 3.

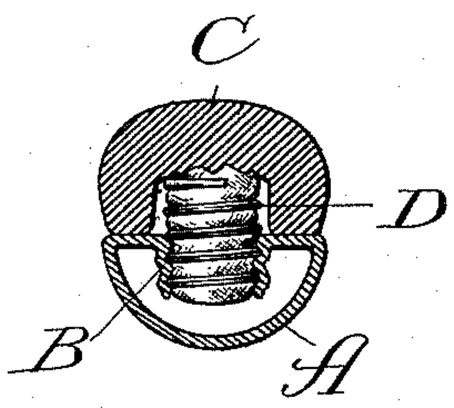


Fig. 4.

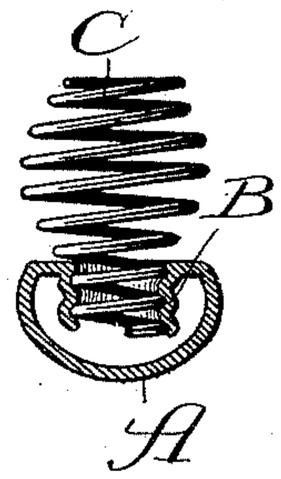
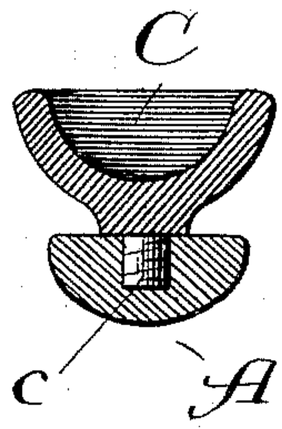


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM I. BUNKER, OF LA GRANGE, ILLINOIS.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 477,505, dated June 21, 1892.

Original application filed October 7, 1890, Serial No. 367,354. Divided and this application filed March 29, 1892. Serial No. 426,905. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM I. BUNKER, a citizen of the United States, residing at La Grange, Illinois, have invented certain new and useful Improvements in Wheels, of which the following is a specification, this application being a division of one herewith filed by me on the 7th day of October, 1890, Serial No. 367,354.

This invention relates to the wheels of bicycles, baby-carriages, and similar light vehicles; and it consists in so forming the tires as to prevent the wheels from slipping sidewise when running over obstructions, and also in so forming the bearing-surface as to distribute the weight over more than one point of contact, while providing such bearing-surface with a great degree of elasticity.

My invention furthermore consists in providing means for readily attaching the separate cushions composing the tire of my improved wheel to the rim of such wheel and removing them therefrom, and in the drawings I have illustrated several forms which my invention can take, without intending to limit myself to either one of them particularly.

My invention consists in the features, details of construction, and combinations hereinafter described and claimed.

In the drawings, Figure 1 is a cross-section of the rim of a wheel, illustrating the method of securing one of my elastic cushions thereto; and Figs. 2 to 5, inclusive, are similar views illustrating modifications.

The hub, spokes, and rim of the wheel, except as hereinafter mentioned, are made in the usual manner and require no special description. The rim A is preferably, though not necessarily, made hollow. It is provided with a series of openings with flanges so formed as to provide threaded sockets, into which the cushions are placed. These openings may be arranged at any desired distance apart and either in a direct line or in alternation, the first adjacent to one side of the rim and then adjacent the other. The cushions C, when in the form shown in Fig. 1, are made of soft rubber or other suitable material, preferably in the form shown, and are attached to the rim by screwing them into the screw-threaded opening B, the elasticity of the rubber forcing it out into the channels of the screw-thread and firmly holding it in place. In Fig. 2 the rim and cushion are made in substantially the same manner; but the latter is surrounded by a spiral spring D, adapted to screw into the socket B, the device being in other respects substantially the same, but the elasticity of the spring being added to that of the cushion. In Fig. 3 I have shown substantially the same device as that in Fig. 2, except that the cushion is so formed as to bend over and rest upon the rim around the screw-threaded opening. In Fig. 4 the cushion is made in the form of a metallic spring suitably wound and adapted to be secured to the rim by means of its coils. In Fig. 5 the rim is preferably made solid and the cup-shaped elastic cushion is provided with a screw-threaded shank *c*, adapted to screw into suitable openings in the rim. By this means I provide a simple and efficient cushion, such cushion being formed in separate parts adapted to be separately and readily inserted into and removed from the rim when it is desired to replace any one of the parts which may have become heated or worn out in use. If desired, the sockets for receiving the cushions may be arranged with external screw-threads, and similar changes may be made without departing from the spirit of my invention.

I claim—

1. In a wheel, the combination of a rim provided with a series of threaded sockets, and a series of elastic cushions screwed into such sockets, substantially as described.

2. In a wheel, the combination of a rim provided with a series of threaded sockets, a series of elastic cushions provided with spiral springs, such springs being adapted to engage with the threaded sockets, substantially as described.

3. In a wheel, the combination of a rim and a series of spiral springs secured to such rim by means of their coils, substantially as described.

4. In a wheel, the combination of a rim provided with threaded sockets, and a series of spiral springs screwed into such sockets, substantially as described.

WILLIAM I. BUNKER.

Witnesses:
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