UNITED STATES PATENT OFFICE.

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CUSHION-TIRED WHEEL.

1,236,412.


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To all whom it may concern:

Be it known that I, Edward F. Dreman, a citizen of the United States, residing at Cleveland, in the County of Cuyahoga and State of Ohio, have invented a new and useful Cushion-Tired Wheel, of which the following is a specification.

The device forming the subject matter of this application is a resilient wheel, and one object of the invention is to provide a wheel of this kind in which spokes may be dispensed with, the wheel being of unusually solid and strong construction, so as to withstand the severe usage to which devices of this type are subjected.

Another object of the invention is to provide novel means for supporting the rim-carrying ring yieldingly for movement in a vertical plane.

Another object of the invention is to provide novel means for guiding the rim-carrying ring in its vertical movement.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes that in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 shows in side elevation, a wheel constructed in accordance with the present invention, parts being broken away; and

Fig. 2 is a transverse section taken approximately on the line 2–2 of Fig. 1.

In the accompanying drawing, the numeral 1 indicates an axle receiving a hub comprising tubular members 2 which abut at their inner ends adjacent the median plane of the wheel, as indicated at 3. The hubs 2 may be keyed as shown at 4 to the axle 1, although this detail is not insisted upon, the key 4 being omitted or used, depending upon whether the wheel is to run freely on the axle 1 or to be driven thereby. The hubs 2, which preferably are made of metal, are supplied with integral side plates 5 having thickened radial lugs 5a. Integral reinforcing ribs 6, projecting outwardly from the side plates 5, connect the side plates 5 with the hubs 2 and strengthen the structure.

Mounted between the side plates 5 is a resilient disk 7 which embraces the inner ends of the hubs 2 closely, and fills the space between the side plates. The disk 7 preferably is fashioned from rubber. Securing elements 8 pass through the lugs 5a of the side plates 5 and through the disk 7 near to the hubs 2, the side plates and the disk thus being bound securely together. One of the side plates 5 is supplied with a finger 9 which projects beyond the periphery of the side plate. The resilient disk 7 is supplied with peripheral teeth 10. A ring 11 which ordinarily is made of metal, surrounds the resilient disk 7 closely and is slidable between the side plates 5, the ring 11 having teeth 12 on its inner edge which, interlocking with the teeth 10 of the resilient disk 7, tend to prevent a creeping of the ring 11 circumferentially of the wheel. The ring 11 may have cavities as shown at 20, if desired, for the sake of lightness. The ring 11 carries a rim 14 of any desired construction, supporting a tire 15 which may be made as desired. Annular guide plates 16 are mounted on the opposite faces of the ring 11 and abut at their outer edges against the rim 14. The guide plates 16 are held to the ring 11 by means of securing elements 17. The guide plates 16 slide on the outer faces of the side plates 5 and prevent dirt from getting into the interior of the wheel, the guide plates 16 being provided with recesses 18 in which the outer edges of the side plates 5 are adapted to move. One of the guide plates 16 is provided with outstanding lugs 19, located on opposite sides of the finger 9 which constitutes a part of one of the side plates 5. Should the teeth 10–12 strip, wear out, or lose otherwise their interlocking engagement, then the finger 9, cooperating with one of the lugs 19, will prevent the ring 11 from creeping circumferentially of the wheel. Should the teeth 10 and 12 retain their hold upon each other, the resilient disk 7 yielding circumferentially, then the finger 9 will cooperate with one of the lugs 19 as above specified and for the purpose set forth.

In practical operation, the ring 11 carrying the rim 14 reciprocates vertically, the resilient disk 7 yielding sufficiently to give the desired result. The wheel forming the subject matter of this application will be
found to possess great strength, and to afford the necessary resiliency in an exceedingly simple structure.

Having thus described the invention, what is claimed is:

In a device of the class described, a hub; side plates carried by the hub; a rim-ring slidable between the side plates toward and away from the hub; a resilient disk held between the side plates and extended inwardly to the hub, the disk and the rim-ring having interlocking teeth whereby the disk will constitute a means for cushioning the circumferential movement of the rim-ring; and spaced elements carried by the rim-ring and one side plate, said spaced elements coacting to prevent a creeping of the rim-ring and a stripping of the teeth of the disk, after the disk has yielded circumferentially to a predetermined extent and has cushioned the circumferential movement of the rim-ring.

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

EDWARD F. DREMAN.

Witnesses:

HUBERT DUNDEALD,

JULIUS E. BUSCHMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."