E. W. BURNER.

SPRING WHEEL.

APPLICATION FILED MAY 22, 1911.

1,020,260.

Patented Mar. 12, 1912.

Fig. 1.

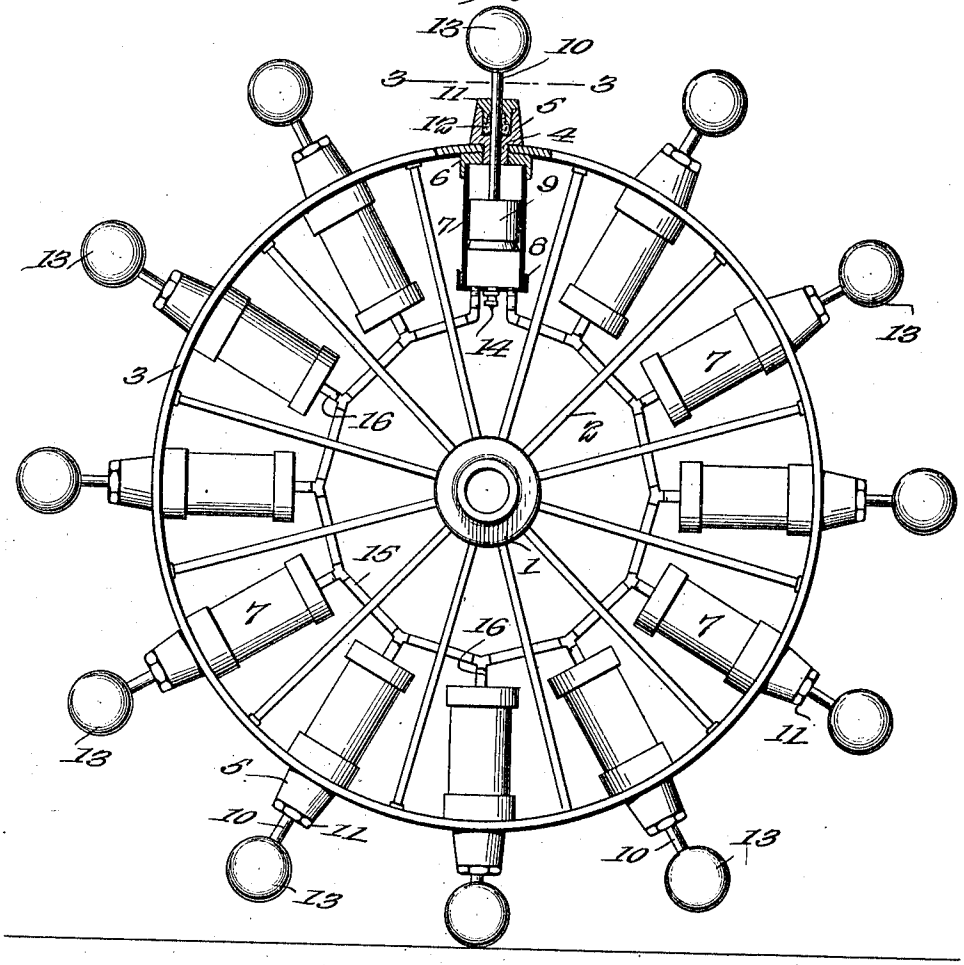


Fig. 2.

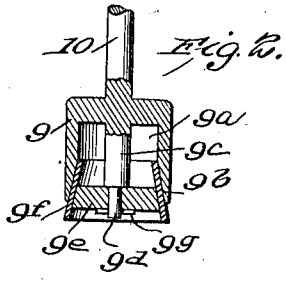
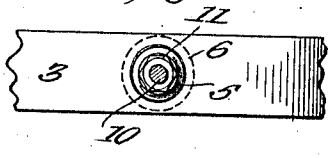


Fig. 3.



WITNESSES

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SPRING-WHEEL.

1,020,260. Specification of Letters Patent. Patented Mar. 12, 1912.

Application filed May 22, 1911. Serial No. 628,677.

To all whom it may concern:

Be it known that I, ELISHA W. BURNER, a citizen of the United States, and a resident of Luray, in the county of Page and State of Virginia, have invented a new and Improved Spring-Wheel, of which the following is a full, clear, and exact description.

My invention relates to improvements in spring wheels, and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide a device which can be used in lieu of the ordinary wheel with a pneumatic tire, but which will absorb shocks in the same manner that a pneumatic tire does.

A further object of my invention is to provide a device which can be manufactured much more cheaply than the wheel and tire in ordinary use and which may consist entirely of metal.

A further object of my invention is to provide a wheel of a simple nature whose parts are strong and durable.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claim.

My invention is illustrated in the accompanying drawings forming part of this application, in which similar reference characters indicate like parts in the several views, and in which,

Figure 1 is a side view showing one embodiment of my invention certain parts being broken away; Fig. 2 is a detailed sectional view showing the construction of a plunger; Fig. 3 is a section along the line 3—3 of Fig. 1.

Referring now particularly to Fig. 1 I have shown therein a hub 1 having radiating spokes 2 secured thereto. These spokes terminate at a rim 3 which, as shown in the drawings, is a circular metal band. The rim is perforated at intervals to permit the entrance of the reduced portion 4 of a plug 5. A cap 6 has a central opening which is threaded to screw on to the reduced portion 4 on the opposite side of the rim from the body portion 5. The cap 6 forms the outer end of a cylinder 7, the opposite end being formed of a cap 8. A plunger or piston 9 is disposed within the cylinder 7 and is provided with a stem or rod 10 which extends through the plug 5 and through a smaller plug 11 which is screwed into the plug 5. As will be seen from Fig. 1, both the plug 5 and the plug 11 are recessed to permit the introduction of a lubricant such as graphite 12. A tread member 13 is secured to the end of the stem 10.

A series of pistons and plungers with a tread member at the end of the plunger stem is secured at equi-distant spaces around the rim. One of the cylinders is provided with an inlet valve 14 and all of the cylinders are connected together by means of the pipes 15 a T 16 being provided for each cylinder.

The plunger 9 of each cylinder is formed in the manner shown in Fig. 2. The body portion of the plunger is recessed as shown at 9^a, the outer edge of this recess being tapered as shown at 9^b. Within the recess is a central post 9^c having a reduced portion 9^d arranged to pass through a cylindrical member 9^e whose edges are beveled to conform with the conical shape of a leather gasket 9^f, a cotter pin 9^g being provided to hold the member 9^e in position.

From the foregoing description of the various parts of the device the operation thereof may be readily understood.

In Fig. 1 I have shown the tread members 13 as being balls. The lowermost ball rests on the ground and as the wheel is turned the adjacent balls come into contact with the ground successively. Air is pumped into the cylinder through the valve 14 and fills all of the other cylinders, thereby forcing the plungers outwardly. The cap is then put on the valve and the wheel is ready for use. As the tread members are brought successively into contact with the ground, the plungers are pushed into the cylinders against the air pressure. The construction of the resilient gasket 9^f holds the latter tight against the cylinder walls. There is thus a cushion effect similar to that in a pneumatic tire as the wheel revolves. The graphite 12 is forced into close contact with the stem 10 lubricating it, and at the same time acting as a stuffing gland to prevent the entrance of dirt.

I claim:—

In a spring wheel, a hub, spokes therefor, a rim provided with perforations, a plug having a reduced portion adapted to enter said perforation, each plug having a recess for the reception of lubricating material, a

screw plug for compressing the lubricating material, a cap arranged to be screwed to the reduced portion of said recessed plug on the opposite side of the rim, said cap forming one end of a cylinder, a plunger within said cylinder, the stem of the plunger being arranged to pass through both of said plugs, a tread member secured to the outer end of the plunger, and a series of pipes establishing communication between the inner ends of all of the cylinders.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELISHA W. BURNER.

Witnesses:
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