W. S. ESTLE.

AIR CONVEYING MEANS.

APPLICATION FILED MAR. 8, 1915.

1,162,758.

Patented Dec. 7, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

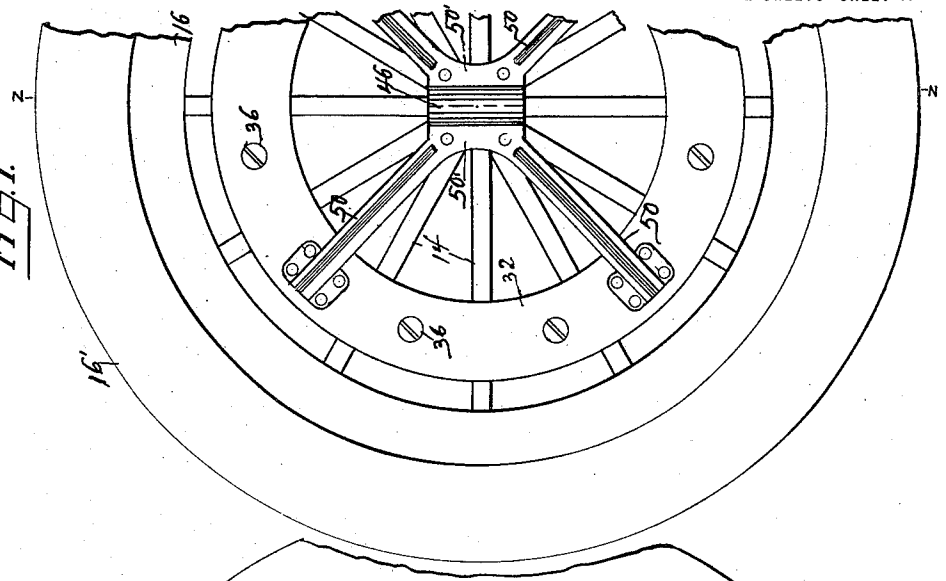


Fig. 2.

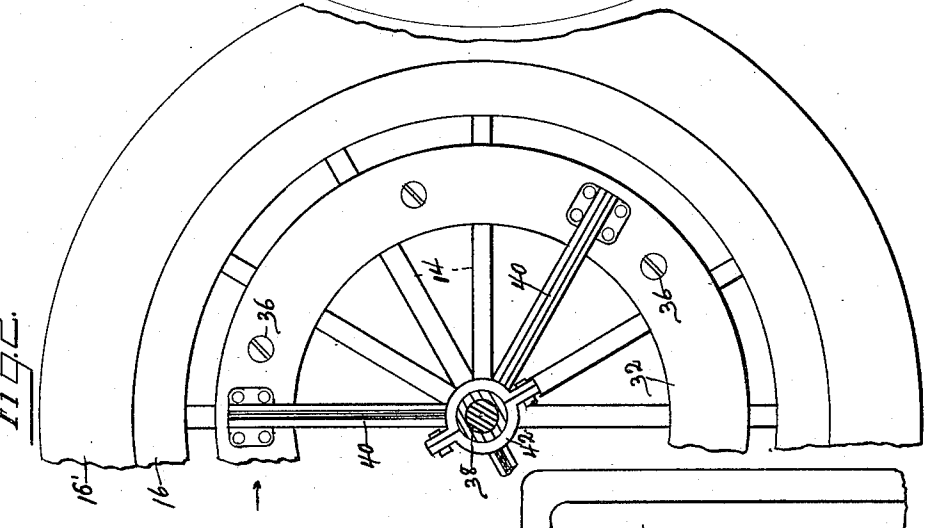
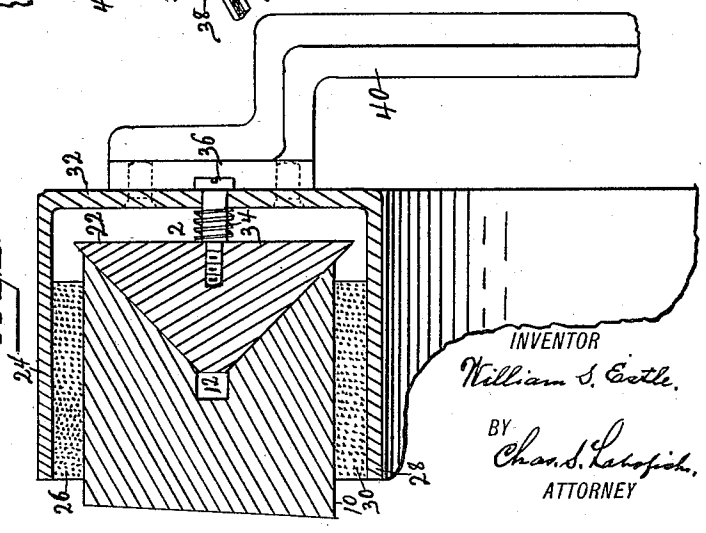


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 6.

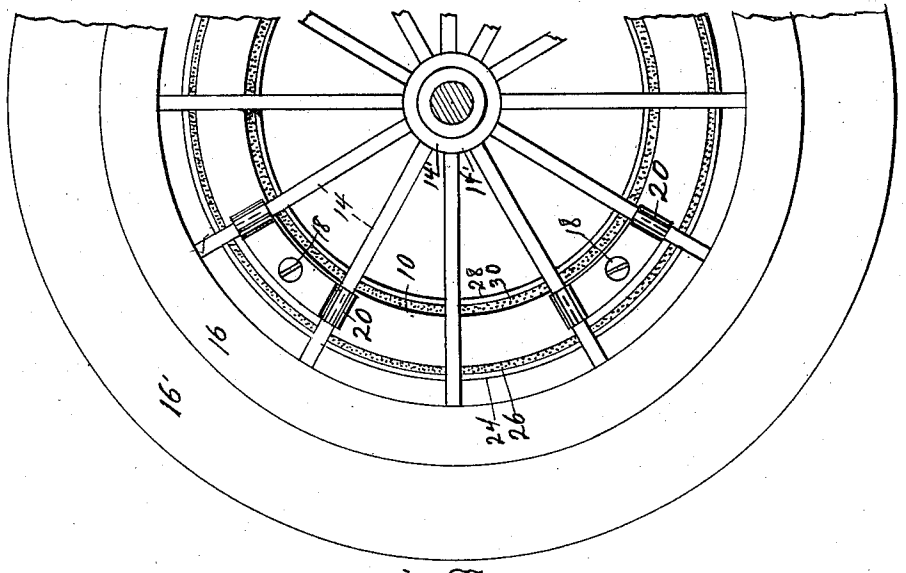


Fig. 5.

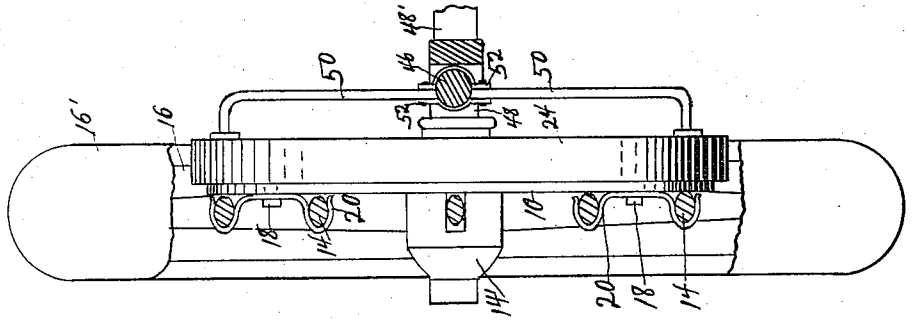
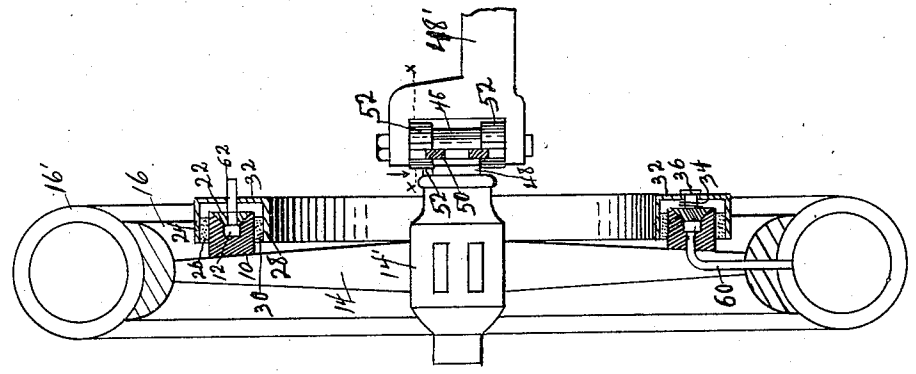


Fig. 4.



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WILLIAM S. ESTLE, OF NEW YORK, N. Y.

AIR-CONVEYING MEANS.

1,162,758. Specification of Letters Patent. Patented Dec. 7, 1915.

Application filed March 8, 1915. Serial No. 13,079.

To all whom it may concern:

Be it known that I, WILLIAM S. ESTLE, a citizen of the United States, residing at New York, in the borough of Manhattan and State of New York, have invented new and useful Improvements in Air-Conveying Means, of which the following is a specification.

My invention relates to improvements in pneumatic tire inflating means of the kind shown and described in my application Serial No. 870,739.

The objects of the present invention are: First, to provide simple and efficient means for holding the air conveying annular member to the vehicle wheel so as to yield radially in order that when there is any looseness in the hub the said member will yield in the direction of the jolt; second, to provide a cover for the said annular member that is self-adjusting for wear and held rigidly to the wheel axle yet slightly yieldingly in contact with the said member; and, third, to construct and arrange the parts in a manner as to prevent ingress of dust to the contacting surfaces of the air conveying means and cause undue wear. I attain these objects by the construction and arrangement of the parts illustrated in the accompanying drawings, in which—

Figure 1 is an inside face view of a part of the front wheel of a pneumatic-tire-shod vehicle and its stub axle equipped with my air conveying means. Fig. 2 is a similar view of the rear wheel of the vehicle. Fig. 3 is an enlarged cross section of the circular air chamber containing member as it appears when looking in the direction of the arrowhead shown in Fig. 2. Fig. 4 is a section on the line *z*—*z* of Fig. 1. Fig. 5 is a side elevation of the wheel shown in Fig. 4 with a part of the main axle and a part of the T head of the stub axle in section on the line *x*—*x* of Fig. 4. Fig. 6 is an outside view of the wheel shown in Fig. 5.

Similar numerals of reference denote corresponding parts throughout the several views.

In constructing and mounting my air conveying means, a ring 10 having an annular chamber 12 in its face, the edges of which are beveled off inwardly, is held concentrically to the spokes 14 of the wheel 16 by means of resilient clips 20, preferably, spanning pairs of adjacent spokes and held to the ring so as to swivel on the screws 18, as clearly shown in Figs. 5 and 6. By this means the ring 10 is held to the wheel so as to yield slightly radially for the purpose hereinafter specified.

The orifice of the chamber 12 is fitted with an air tight lid 22 the edges of which are beveled off to fit the bevel in the ring 10, as clearly shown in Figs. 3 and 4, in order that the wearing of the contacting surfaces shall not affect the air tightness of the chamber 12. Over the thus constructed composite air chamber containing member composed of the ring 10 and the lid 22 is a three-wall casing of larger cross section.

Between the wall 24 and the outer periphery of the ring 10 is a strip of felt 26; between the wall 28 and the inner periphery of the ring 10 is a strip of felt 30, and between the wall 32 and the lid 22 are a plurality of springs 34 on studs or screws 36 fixed in the lid 22 and loose in the wall 32, as clearly shown in Figs. 3 and 4. The said strips of felt, particularly when saturated with lubricant, effectually exclude ingress of dust to the contacting surfaces of the ring 10 and lid 22, and keep the said surfaces lubricated; the circularly arranged springs 34 press the lid 22 into contact with the ring 10 evenly circularly as the surfaces wear, and the studs or screws 36 hold the lid 22 to the wall 32 non-rotatably. The said three-wall casing is held rigidly to the rear axle 38 by means of a spider 40 provided with a two part collar 42, as clearly shown in Fig. 2. On the front wheel the said three-wall casing with the lid 22 therein is held, preferably, to the T head 46 of the stub axle 48 by means of a spider composed of arms 50 clamped to the said head by means of a two part collar 52 in the manner shown in Figs. 4 and 5.

The lid 22 is provided with a nipple 62 adapted to receive the usual tubular connection of a pump or an air reservoir, and the chamber 12 communicates with the pneumatic tire 16′ by means of a suitable flexible connection 60, as clearly shown in Fig. 4.

By means of the construction described both the ring 10 and the lid 22 are held to the axle, and thus on riding over rough roads the looseness in the wheel hub is absorbed by the resiliency and swivel of the clips 20.

It is to be understood that when the struc-

ture described is to be mounted on vehicles provided with wire-spoke wheels the clips 20 may be made to span either adjacent spokes against which the ring 10 rests or the two opposite spokes. Also that slight changes and alterations in the general construction and arrangement of the parts shown and described may be made without departing from the spirit and scope of my invention.

Having described my invention, I claim—

1. An axle with a pneumatic-tire-shod wheel thereon and a two part air conveying member one part of which is held to the said axle slightly movable axially and the other is held to the said wheel slightly movable radially.

2. An axle with a pneumatic-tire-shod wheel thereon and a two part air conveying member one part of which is held to the said axle and the other to the said wheel, and a resilient connection between the part held to the wheel and the wheel.

3. An axle with a pneumatic-tire-shod wheel thereon, a member having an annular channel therein for conveying air to the said tire, and resilient clips spanning pairs of spokes of the said wheel holding the said member to the latter non-rotatably but slightly yielding radially.

4. An axle with a pneumatic-tire-shod wheel thereon, a ring having an annular chamber therein held to the said wheel concentrically, an open casing of larger cross section over the said ring held to the said axle, a spring-pressed lid for the said channel held in the said casing non-rotatably, and packing between the walls of the said casing and the peripheries of the said ring.

5. An axle with a pneumatic-tire-shod wheel thereon, a ring having a beveled off annular chamber therein held to the said wheel concentrically slightly movable radially, an open casing over the said ring held rigidly to the said axle, a correspondingly beveled off lid for the said channel held non-rotatably in the said casing, spring means adapted to press the said lid evenly in close contact with the said ring, and packing material interposed between the said casing and ring.

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