

J. H. SPARKS.
WHEEL.

APPLICATION FILED JAN. 30, 1911.

Patented Dec. 31, 1912.

3 SHEETS-SHEET 1.

1,049,162.

Fig. 1.

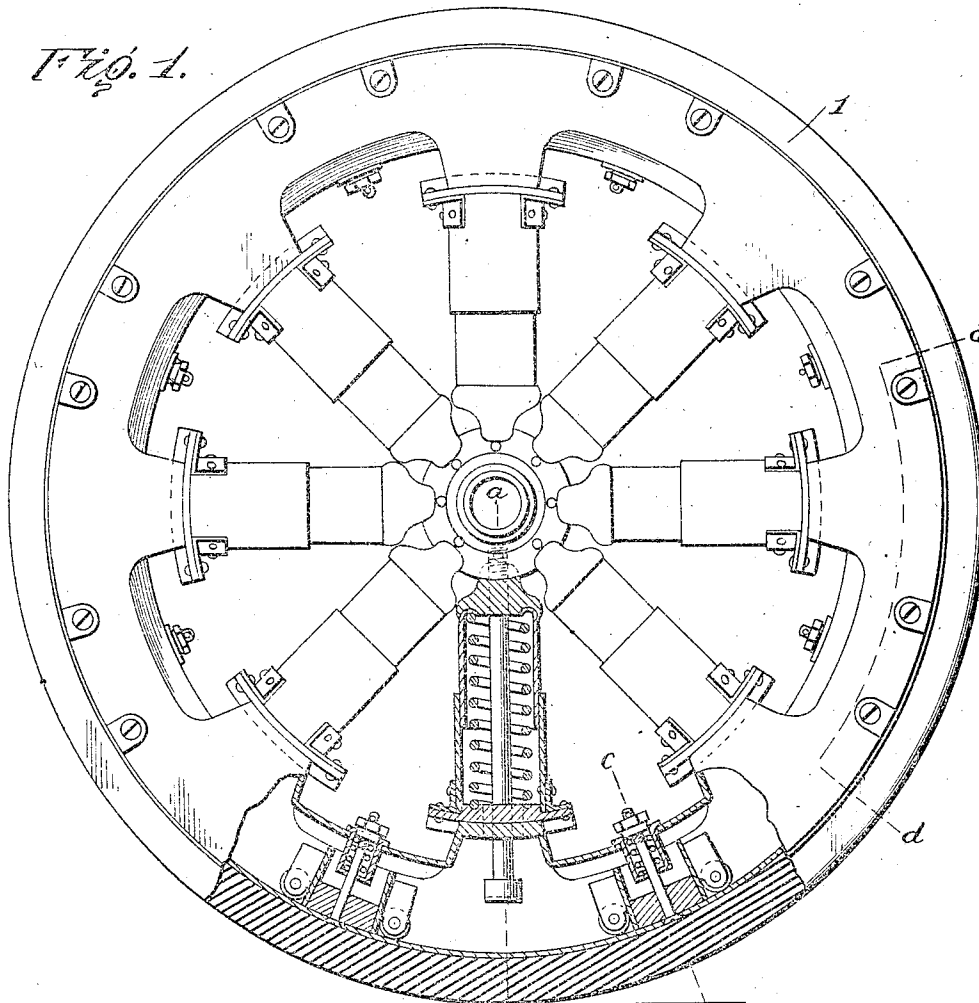
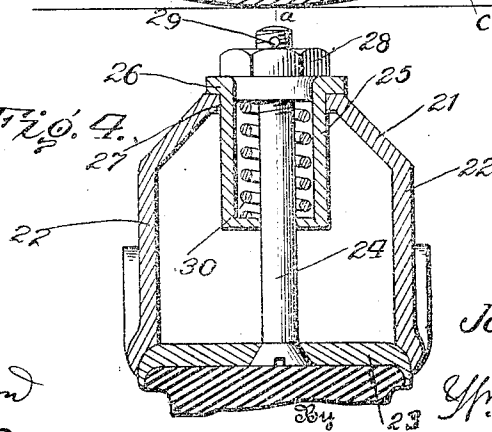


Fig. 4.



Witnesses

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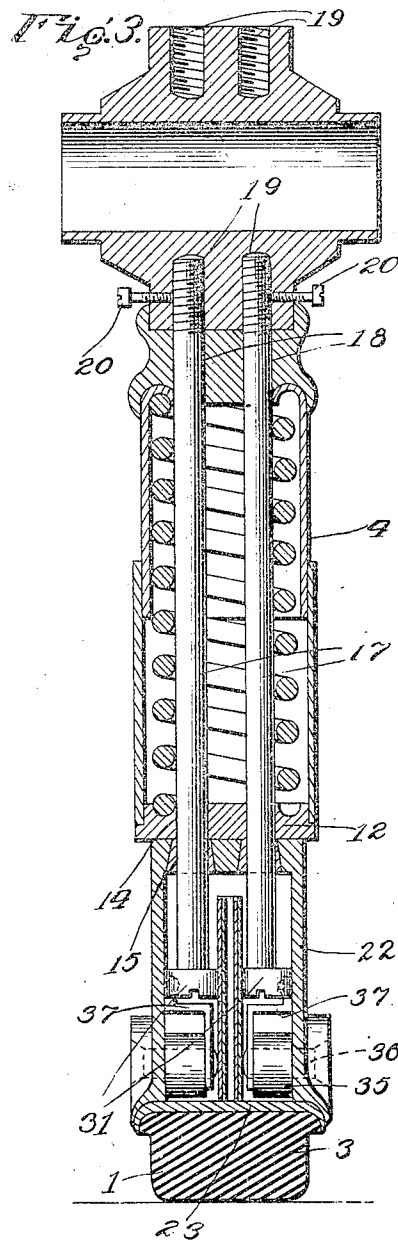
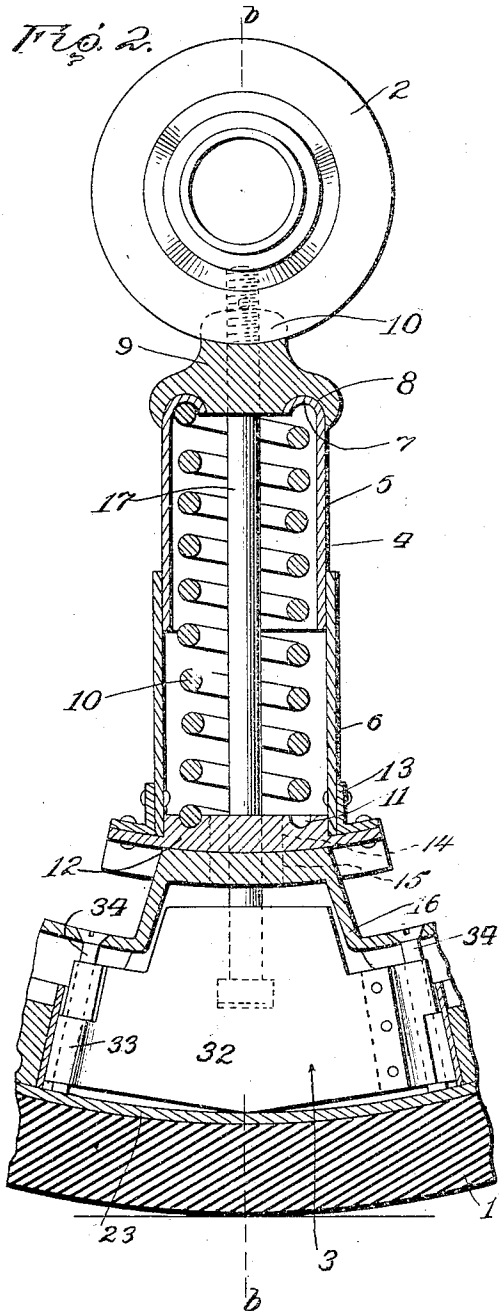
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3 SHEETS-SHEET 2.

1,049,162.



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3 SHEETS—SHEET 3.

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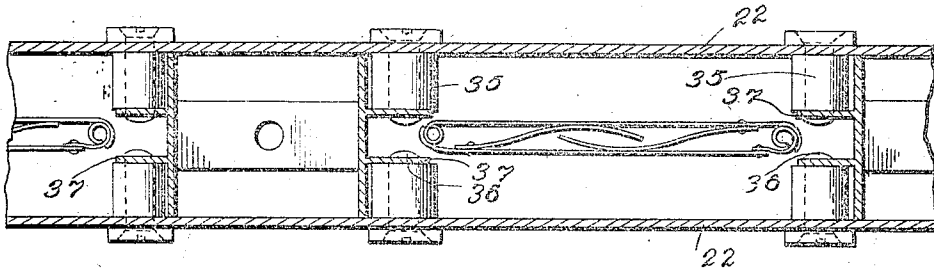


Fig. 5.

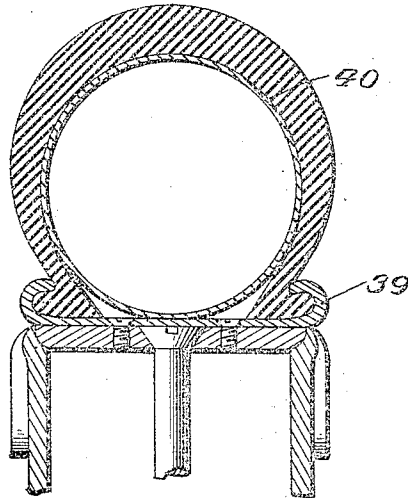


Fig. 6.

Fig. 7.

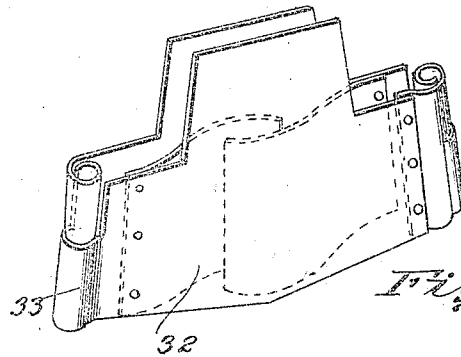
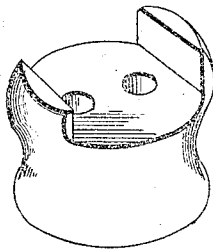


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN H. SPARKS, OF CAMDEN, NEW JERSEY.

WHEEL.

1,049,162.

Specification of Letters Patent.

Patented Dec. 31, 1912.

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To all whom it may concern:

Be it known that I, JOHN H. SPARKS, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in wheels, and more particularly to that class in which the use of the customary pneumatic tires is eliminated.

Another object of this invention is to improve and simplify devices of this character, rendering them comparatively simple and inexpensive to manufacture, reliable and efficient in use, and readily operated.

With the above and other objects in view, this invention resides in the novel features of construction, formations, combinations and arrangements of parts to be hereinafter more particularly described, claimed and illustrated in the accompanying drawing, in which—

Figure 1 is a side elevation of my improved wheel, partly in section; Fig. 2 is a sectional view, taken on the line *a—*a** of Fig. 1; Fig. 3 is a sectional view taken on the line *b—*b** of Fig. 2; Fig. 4 is a sectional view taken on the line *c—*c** of Fig. 1; Fig. 5 is a sectional view taken on the line *d—*d** of Fig. 1; Fig. 6 is a sectional view illustrating my device with the pneumatic tire applied thereto; Fig. 7 is a perspective view of the spoke supporting head, and Fig. 8 is a perspective view of one of the spoke engaging springs removed.

Referring to the drawings by characters of reference, the numeral 1 designates generally my improved wheel, consisting of a hub 2, rim 3, and radially extending connecting spokes 4. The spokes 4 consist of pairs of telescoping members 5 and 6, the former of which are provided with inwardly crimped ends 7, adapted to engage correspondingly shaped seats or recesses 8, formed in spoke-supporting heads 9, provided upon their upper ends, with flanges 10 adapted to engage either side of the hub 2.

Coil springs 10 are located within the tubular telescoping sections 5 and 6, and are adapted to engage the crimped end 7 at one end thereof and a seat 11 located in a block

12, secured by metal strips 13 to the before mentioned telescoping sections 6.

Each of the blocks 12 is provided with a longitudinal tongue or flange which fits slidably into a corresponding slot in the top of each of the respective spoke supporting members 16, see Figs. 1, 2, and 3, said members 16 being secured in position as hereinafter explained.

The blocks 12 and the spoke supporting members 16 are provided with elongated slots 14 and 15 respectively, said slots being normally in alinement when the wheel is not absorbing jar. The hereinafter mentioned rods 17 extend through these slots and will act as stops for the movement of said blocks 12 in case of severe shock, as is evident.

From the foregoing, it will be obvious that in absorbing shock the blocks 12 of the two spokes approximately parallel to the ground may slide downward on the spoke supporting members 16, being kept in correct position by the tongue and slot engagement above described. Likewise and for the same purpose, the rod 17 will travel downward in the slots 14 and 15 in accordance with the hub 2, thus allowing the lower vertical spoke to slightly telescope, thus absorbing the shock. This vertical spoke will be helped in such absorption by all the spokes below and including the two spokes parallel with the ground, above mentioned, for they will move in unison with said two spokes and in so moving will reduce the distance between their rim and hub ends, thus slightly telescoping and compressing their respective springs.

The spoke-supporting members 16 are securely retained in their proper positions upon the rim 3 by means of flanges 21, which engage the upper edges of vertically disposed flanges 22 which compose the opposite sides of the rim 3. These flanges are normally retained upon the outer or tire-supporting ring 23 by means of radially extending studs or pins 24, which engage sockets 25, provided at their upper ends with flanges 26, which engage the upper edges of apertures 27 formed in the retaining flanges 21, through which the sockets 25 are extended. Suitable nuts 28 engage the threaded ends of the pins 29, and are retained against displacement by cotter pins 29'.

Springs 30 are located in the sockets 25 and engage the nuts 28 for the purpose of

forcing them upward when the cotter pins are removed and the same are unscrewed.

The lower ends of the rods 17 are provided with enlarged heads 31, which are frictionally engaged by springs 32, mounted, as indicated at 33, upon bolts or rivets 34, which extend from the flanges 26 through the tire supporting ring 23. This tire-supporting ring 23 is loosely secured to the side flanges 22 of the rim 3, as clearly illustrated in the drawings, and in order to take strain off the same is engaged by rollers 35 mounted upon pins 36 supported by the opposite sides of the said side flanges and by brackets 37, also secured to the side flanges and extending over the rollers and upon the opposite sides thereof.

A suitable tire 38, of solid material, is secured to the tire-supporting ring 23, but in case it is desired to use a resilient tire in connection with this device, a ring 39 is bolted, or otherwise secured, to the ring 23, and is provided with outwardly curled edges adapted to engage beads formed upon the opposite sides of the outer tube of a pneumatic tire 40.

From the foregoing disclosure, taken in connection with the accompanying drawing, it will be manifest that a wheel of the character described is provided for which will fulfil all of the necessary requirements of such a device.

Having thus fully described this invention, what I claim as new and desire to secure by Letters Patent is:

1. In a spring wheel, a hub and a rim, in combination with spoke supporting elements secured to said rim, telescopic spokes fixedly secured at one end to said hub and provided at their outer ends with blocks slidably engaging said spoke supporting

elements, said blocks and spoke supporting elements being provided with slots in alignment in a normal position, reinforcing rods secured to said hub extending inside of said spokes and passing through said slots, and a helical spring located in each spoke and bearing on the opposite internal ends thereof for the purpose set forth.

2. In a spring wheel, a hub and hollow rim, in combination with spoke supporting elements secured thereto, telescopic spokes connected to said hub slidably engaging said spoke supporting elements respectively, helical springs located in said spokes and bearing against the internal ends thereof, cushioning means located in said hollow rim, and reinforcing rods secured to said hub, and extending lengthwise through said spokes and through elongated slots respectively in the tops of said spoke supporting elements, said rods engaging said cushioning means, substantially as and for the purpose set forth.

3. In a spring wheel, a hub and hollow rim, in combination with telescopic spokes fixedly secured to said hub at their inner ends and slidably engaging said rim at their outer ends, helical springs located in said spokes, reinforcing rods secured at their inner ends to said hub, and passing through elongated slots in the top of said hollow rim, and springs located in said hollow rim and frictionally engaging said rods to absorb shock.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN H. SPARKS.

Witnesses:

DAN. J. WOODS,
MARCUS K. MINES.