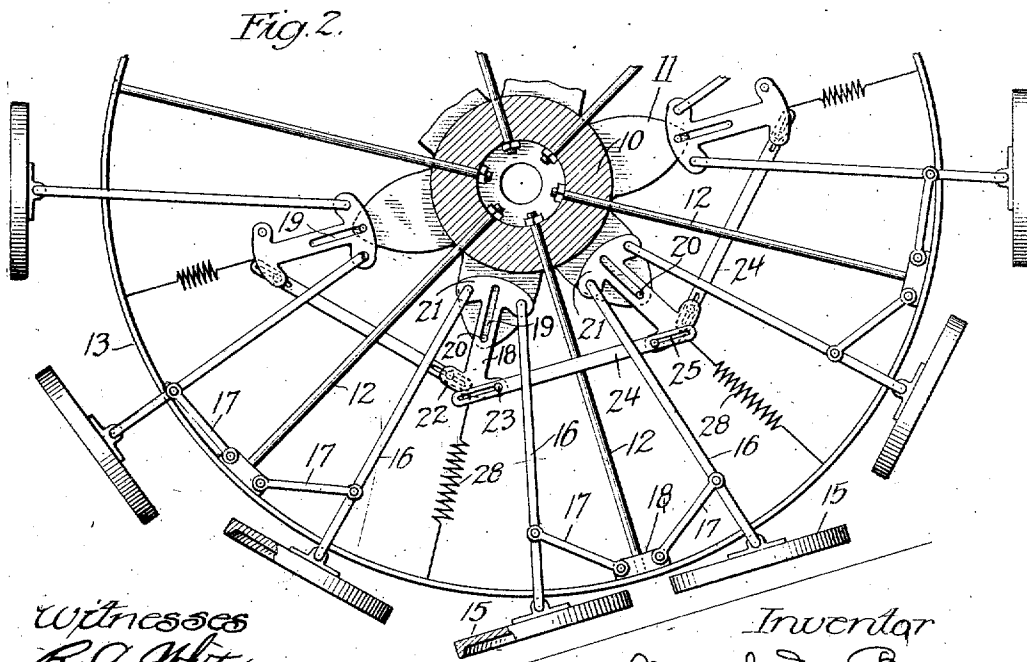
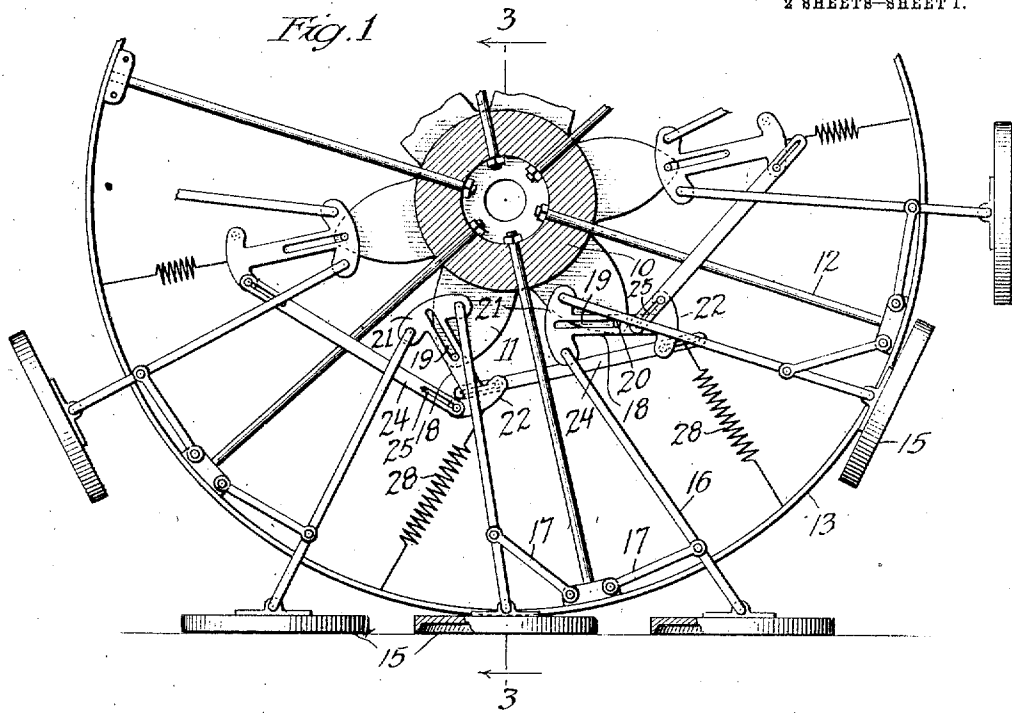


S. M. BOWER.
WALKING TRACTION WHEEL.
APPLICATION FILED SEPT. 15, 1909.

975,117.

Patented Nov. 8, 1910.

2 SHEETS—SHEET 1.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 3

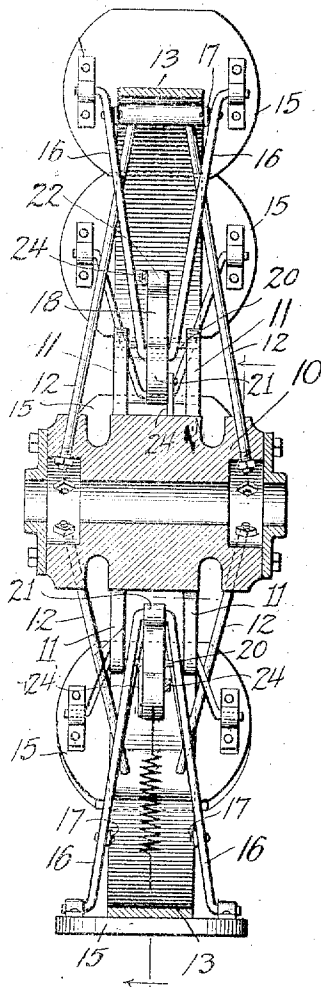


Fig. 4.

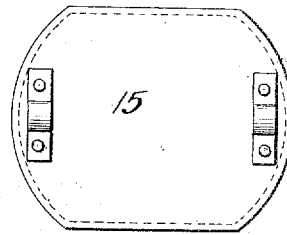
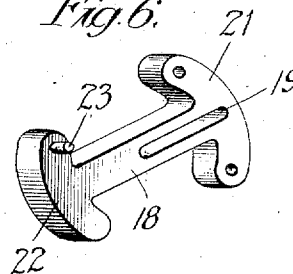


Fig. 5.



Fig. 6.



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UNITED STATES PATENT OFFICE.

SAMUEL M. BOWER, OF CHICAGO, ILLINOIS.

WALKING TRACTION-WHEEL.

975,117.

Specification of Letters Patent.

Patented Nov. 8, 1910.

Application filed September 15, 1909. Serial No. 517,925.

To all whom it may concern:

Be it known that I, SAMUEL M. BOWER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Walking Traction-Wheels, of which the following is a specification.

My invention relates to improvements in walking traction wheels and has for its general object to provide an improved traction wheel in which a large flat bearing area is presented to the ground.

One of the salient objects of my invention is to provide a walking wheel comprising a plurality of feet arranged about the periphery of the wheel interrelated for the constant presentation of two or more to the ground at all times and constructed so that only the parts connected to the feet which are under pressure work or move, all other parts remaining substantially stationary until called into play.

A further object of my invention is to provide a new and improved arrangement for interconnection with feet for operation, dispensing with gearing and operating wholly through lever connection.

In the embodiment of my invention shown, Figure 1 is a side elevation with parts in section; Fig. 2 is a similar view with parts in slightly different position and the wheel rolling on an incline; Fig. 3 is a central vertical section through the wheel; and Figs. 4, 5, and 6 are details.

In the construction shown, 10 indicates in general a hub of any desired construction having side flanges, 11, preferably of star formation for lightness and for accessibility of the supported parts. The hub is provided with a series of spokes, 12, which afford support to a rim member, 13, beyond which stand a series of feet, 15. Each foot, 15, has connected thereto, for pivotal movement on a transverse axis, two legs, 16, preferably guided in their movement with respect to the rim, as by links 17, at one end pivotally connected to the legs, and at the other end connected to a fitting, 17', on the rim. At their inner extremities the legs, 16, of adjacent feet, constituting a pair, are connected to a common rocking member, 18, which may communicate pressure from one foot to the other of the pair, forcing one foot outward as the other is forced inward

by the action of the wheel owing to the rocking of said lever.

It is especially desirable that only the rocking members connected with the feet in play or under pressure should work or rock, all others remaining stationary, and as a simple means of attaining such end, I provide a construction as follows: Each lever 18 is mounted for radial motion with respect to the flanges 11—11 of the rim, as well as for rocking motion, and to this end I have shown each lever 18 as provided with a longitudinal slot, 19, fitting over a pin, 20, mounted between points of the flanges. The inner end of each lever 18 is expanded into a transverse head, 21, to opposite extremities of which on opposite sides of the median line of the lever the legs 16 are pivotally connected. Said lever, when in its innermost position, extends preferably substantially an equal distance on each side of the said pivotal support 20, and the outer end of the lever is likewise expanded into an outer head 22, bearing in its extremities pins 23, proximate pins 23 of the several levers throughout the wheel being interconnected by means of links, 24, the arrangement of the heads 22 and pins 23 being preferably such that when all levers 18 stand in their radially innermost positions of movement, the pins 23 are separated by distances equal to the chords between the pivotal points 20—20, and the links 24 have slot engagement with the pins, as at 25, such that a solid body of the link equal to the aforesaid chord-length is interposed between the pins of each two adjacent rocking levers. The slots 25 afford such a play for the pins as to accommodate the action shown in Fig. 1, that is to say, such that one lever 18 may be moved radially inward over to its greatest angle to a radial line without disturbing the position of the adjacent rocking lever on the side toward which the inner end of the first said lever is moved. Obviously, however, a lever 18 swings over to one side, while in its innermost radial position, it may impart an equal degree of movement to the next adjacent member on the side toward which its outer end swings, provided that lever be also in its radially innermost position as a result of pressure upon one of its feet. The slot arrangement also provides that if one lever is at its radially innermost position and the adjacent lever is at its

radially outermost position, as shown in the extreme right of Fig. 1, tilting of the inwardly positioned lever to throw its outer end toward the adjacent outwardly positioned lever, does not affect the latter but only takes up the lost motion of the two slots 25 in the connecting-link ends. By this arrangement all the levers 18 remain at rest, save those connected with the feet which have been put under pressure. Springs 28 are provided in suitable arrangement for holding the several levers normally in their radially outermost position, and the feet are preferably constructed as shown in Fig. 4 and Fig. 5 in plate form with depending flange.

It will be observed that, as the wheel rotates, the interconnection between the rocking levers 18 insures that at least two feet will always be in contact with the ground with the lever or levers appurtenant thereto moved radially inward and in play, but that the balance of the rocking levers will be unaffected by the movements of those in play. As a result only the feet connected with the rocking levers which are in play or under movement will rock as the wheel rotates, the balance of the feet standing in the mid position to which they are thrown by the outward movement of the rocking levers.

While I have herein described in some detail a particular embodiment of my invention, it will be apparent to those skilled in the art that changes might be made in the details of construction without departure from the spirit and scope of the invention and within the scope of the appended claims.

What I claim is:

1. In a traction wheel, the combination of a hub, a plurality of rocking members thereon, feet operatively associated with said rocking members, and connections between the adjacent rocking members to effect positive movement in harmony of those feet which stand under pressure, arranged to leave idle or still the rocking members connected to feet not under pressure.

2. In a traction wheel, the combination of a hub, a plurality of rocking levers connected with said hub for radial displacement relative thereto and for rocking movement, means for normally holding said levers at their outer limits of radial movement, legs connected to said levers for movement inward or outward with the rocking of the levers, and lost motion link connections between the levers.

3. In a traction wheel, the combination of a hub, a plurality of rocking levers mounted thereon for bodily movement inwardly or outwardly and for rocking movement when in their inward position, legs connected to one end of the levers on opposite sides of the median line thereof for generally radial movement in response to rocking movement of the levers, and lost motion link connections between the ends of the levers opposite the leg connections.

4. In a traction wheel, the combination of a hub, rocking levers connected to said hub, legs connected to points at one end of each of said levers on opposite sides of the median line, feet connected to the ends of said legs, guiding means for the outer ends of said legs, and links connecting the end of each lever with the two levers next adjacent thereto throughout the series of levers.

5. In a traction wheel, the combination of a hub, pivot pins mounted on said hub, rocking levers upon said pins having radial slots therein whereby the levers may move radially upon the pins, means normally holding said levers at their outermost position, legs connected to the inner ends of said levers on opposite sides of the median lines thereof, and lost motion link connections between the outer ends of said levers throughout the series of levers.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

SAMUEL M. BOWER.

In the presence of—

W. LINN ALLEN,
MARY F. ALLEN.