No. 666,775. Patented Jan. 29, 1901.

G. B. NUSSBAUM.

PROPELLING MECHANISM FOR VEHICLES.

(Application filed Aug. 4, 1900.)

(No Model.)

Fig. 1.

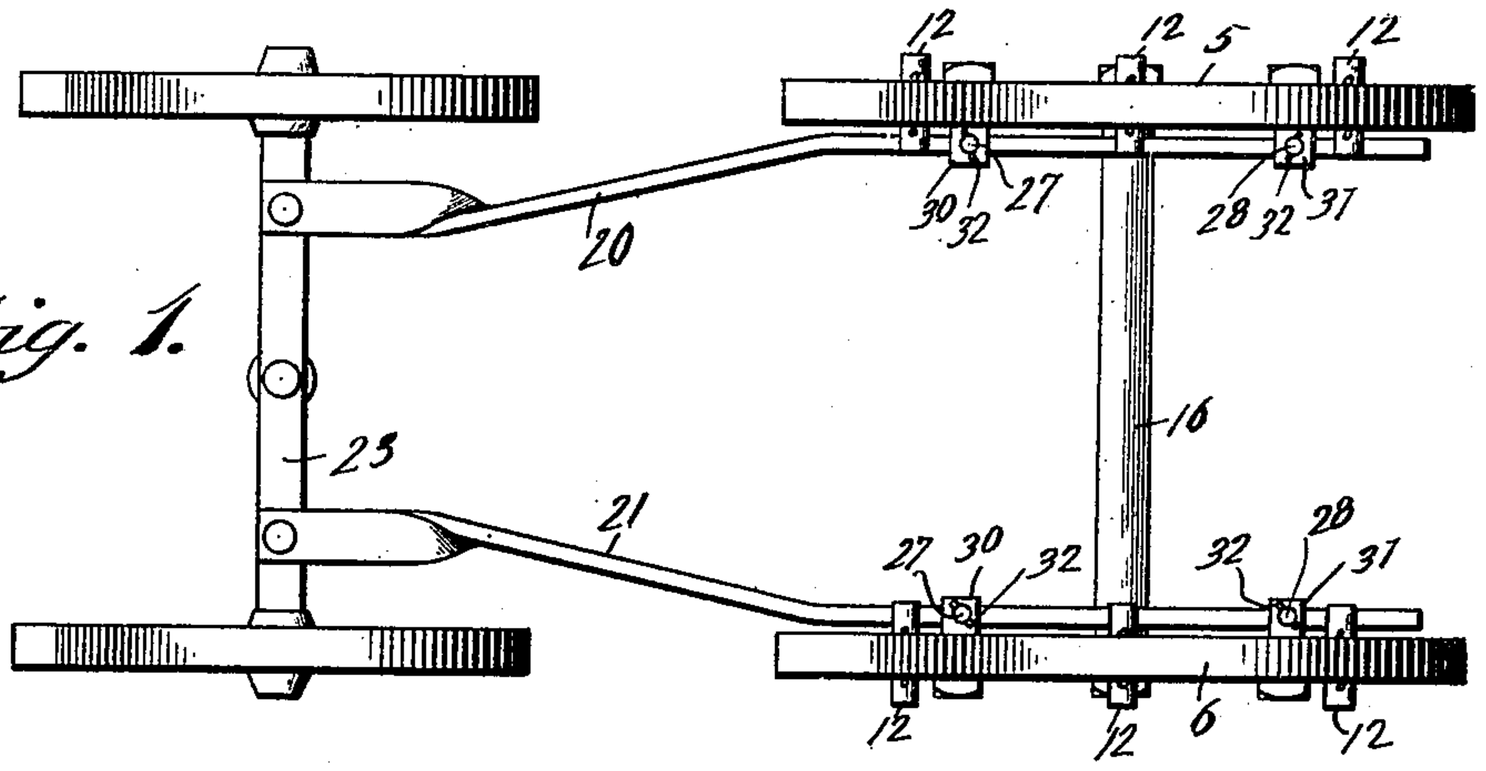


Fig. 2.

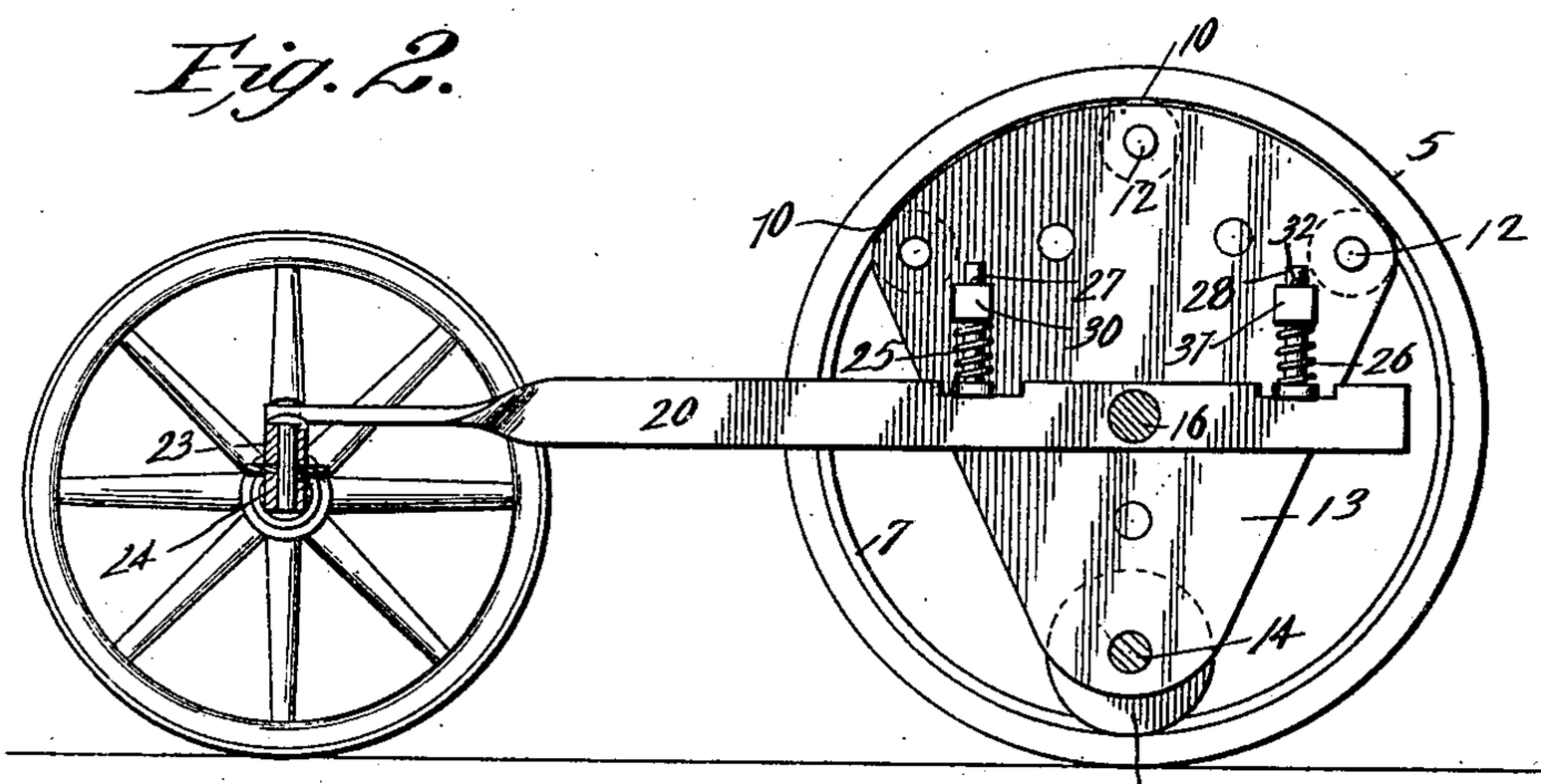
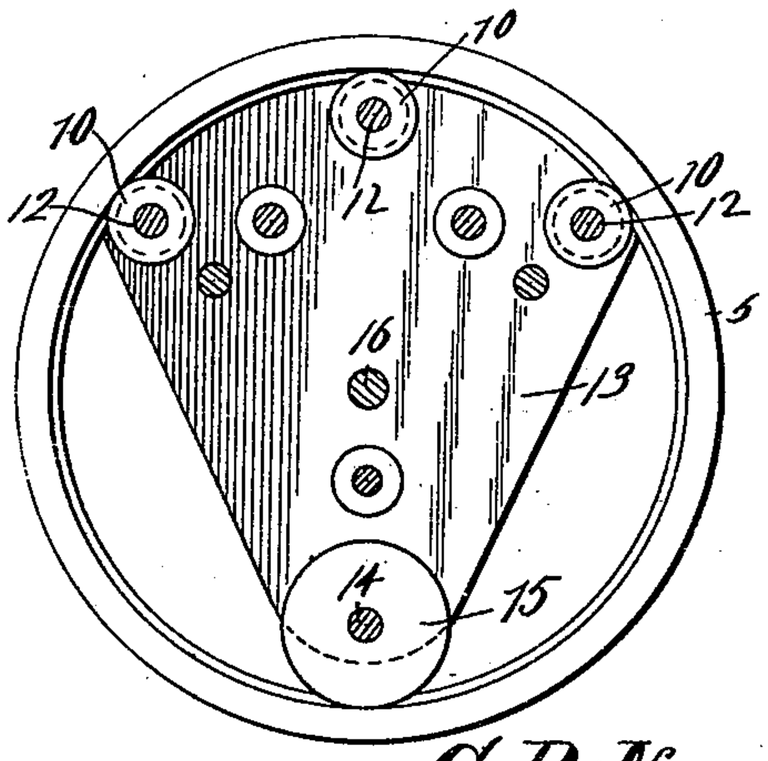


Fig. 3.



Witnesses
C. H. Walker
Geo. H. Chandlee

G. B. Nussbaum, Inventor
by C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE B. NUSSBAUM, OF LOCK SEVENTEEN, OHIO, ASSIGNOR TO GEORGE G. FACKLER, OF NEW PHILADELPHIA, OHIO.

PROPELLING MECHANISM FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 666,775, dated January 29, 1901.

Application filed August 4, 1900. Serial No. 25,935. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. NUSSBAUM, a citizen of the United States, residing at Lock Seventeen, in the county of Tuscarawas and State of Ohio, have invented a new and useful Propelling Mechanism for Vehicles, of which the following is a specification.

This invention relates to propelling mechanisms for vehicles in general, and more particularly for road-vehicles, one object of the invention being to provide a construction wherein a large traction-wheel may be used and in which the driving-wheel will not have direct contact with the ground, a further object being to so construct and arrange the parts that there will be a cushion action between the drivers and the traction-wheels to reduce sudden strains on the parts.

Further advantages and objects of the invention will be evident from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a top plan view of a running-gear embodying the present invention. Fig. 2 is a longitudinal section of the running-gear. Fig. 3 is a section taken through one of the traction-wheels and the parts carried thereby, said section being at right angles to the axis of the wheel.

Referring now to the drawings, 5 and 6 represent two traction-wheels which consist merely of two wheel-rims, of metal or other suitable material or combination of materials, and upon the inner face of each of these rims is formed a bead or rib 7, which extends throughout the periphery of the rim and equidistant from the side edges thereof, the rim at the sides of the rib forming parallel tracks and the bead forming a guide-flange of a plurality of wheels 10 and 11. The wheels 10 engage the rims at the upper sides thereof and are mounted upon short shafts 12, which are fixed in parallel plates 13, said plates being separated by interspaces of such width to freely receive the wheels or rollers. The plates 13 for each of the traction-wheels are substantially triangular, with curvilinear bases which fit the curvature of the rims. One of the rollers 10 is disposed at each end of the base of a pair of triangular plates and a third roller is disposed midway of the ends of the base, and their peripheries are grooved to receive the rib or flange 7 of the adjacent rim. The plates 13 thus form carriers for the wheels. The carriers are disposed with the bases of the triangles uppermost, and at the lower ends of the carriers are disposed bearings in which are mounted the ends of a drive-shaft 14, and between the plates of each carrier and fixed upon the drive-shaft is a drive-wheel 15, which also engages the inner face of the adjacent rim and has a peripheral groove to receive the rib or flange 7.

As intimated in the foregoing, there are shown in the present instance two traction-wheels, a common drive-shaft being provided for them both, and the carriers of the two traction-wheels are connected by a rigidly-attached shaft or brace-bar 16, which holds the carriers against displacement with respect to each other, both laterally and rotatably.

The drive-shaft may be rotated in any suitable and well-known manner, and when thus rotated the drive-wheels are caused to travel over the inner peripheries of the rims of the traction-wheels. In order that this action of the drive-wheels may cause the traction-wheels to rotate instead of rotating the carriers, reaches 20 and 21 are provided which have bearings in which is journaled the axle or shaft 16, these reaches projecting forwardly from between the traction-wheels and being connected with a bolster 23, which is pivotally connected with the axle 24 of the front wheels.

The reaches 20 and 21 project rearwardly from the axle 16 and their upper faces are recessed to receive the lower ends of helical springs 25 and 26, disposed one at each side of the axle, and through which springs are passed rods 27 and 28, having heads at their lower ends which directly receive the lower ends of the springs and which heads rest against the bottoms of the recesses. The upper ends of the rods 27 and 28 are slidably engaged with perforations formed through blocks 30 and 31 upon the inner faces of the carriers and are held from downwardly displacement therefrom by means of cross-pins 31 and 32, which engage transverse perfora-

tions in the rods above the blocks. The helical springs rest with their upper ends against these blocks, so that the carriers are held yieldably against complete rotation, and the action of the driving-wheels against the traction-wheels serves to rotate the traction-wheels.

It will be observed that as power is applied to the drive-wheel 15 and the latter is moved forward on the rim or traction-wheel 5 the reach is elevated, such movement being resisted by the springs 25 and 26 and also by the weight supported by the vehicle, and hence this weight, with the tension of the springs, serves to add to the forward impulse of the drive-rim when by the forward relative movement of the drive-wheel it has reached a point in advance of the directly-supported portion of the rim.

It will of course be understood that in practice modifications of the construction shown may be made and that any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

1. A driving mechanism comprising a traction-wheel, a carrier, a drive-wheel mounted in the carrier and operatively engaged with the traction-wheel, a reach pivoted concentric with the carrier, means for holding the carrier yieldably against rotation with respect to the reach, and a wheeled support for the reach.

2. A driving mechanism comprising a traction-wheel, a carrier disposed within the inclosure of the traction-wheel, idlers upon the carrier and engaging the traction-wheel to hold the carrier in proper relation thereto, a drive-wheel upon the carrier and operatively engaged with the traction-wheel, a reach pivoted to the carrier, means for holding the carrier yieldably against pivotal movement with respect to the reach, and a wheeled support for the reach beyond the traction-wheel.

3. A driving mechanism comprising traction-wheels, a carrier disposed within each traction-wheel and having idlers engaging the wheels to hold the carriers in proper position with respect thereto, drive-wheels mounted upon the carriers and operatively engaging the traction-wheels, an axle rigidly connecting the carriers, reaches pivotally mounted on the axle, wheeled supports for the reaches beyond the traction-wheels, projections on the carriers, headed rods slidably engaged with the projections and having heads disposed against the reaches at opposite sides of the axle, and helical springs encircling the rods and disposed with their ends against the projections and the heads of the rods, respectively, to hold the carriers yieldably against rotation.

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

GEORGE B. NUSSBAUM.

Witnesses:

W. A. WAGNER,

A. H. ELLIOTT.