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W. FLYNN.
PROPELLING MEANS FOR VEHICLES.

APPLICATION FILED OCT. 29, 1901.

NO MODEL.

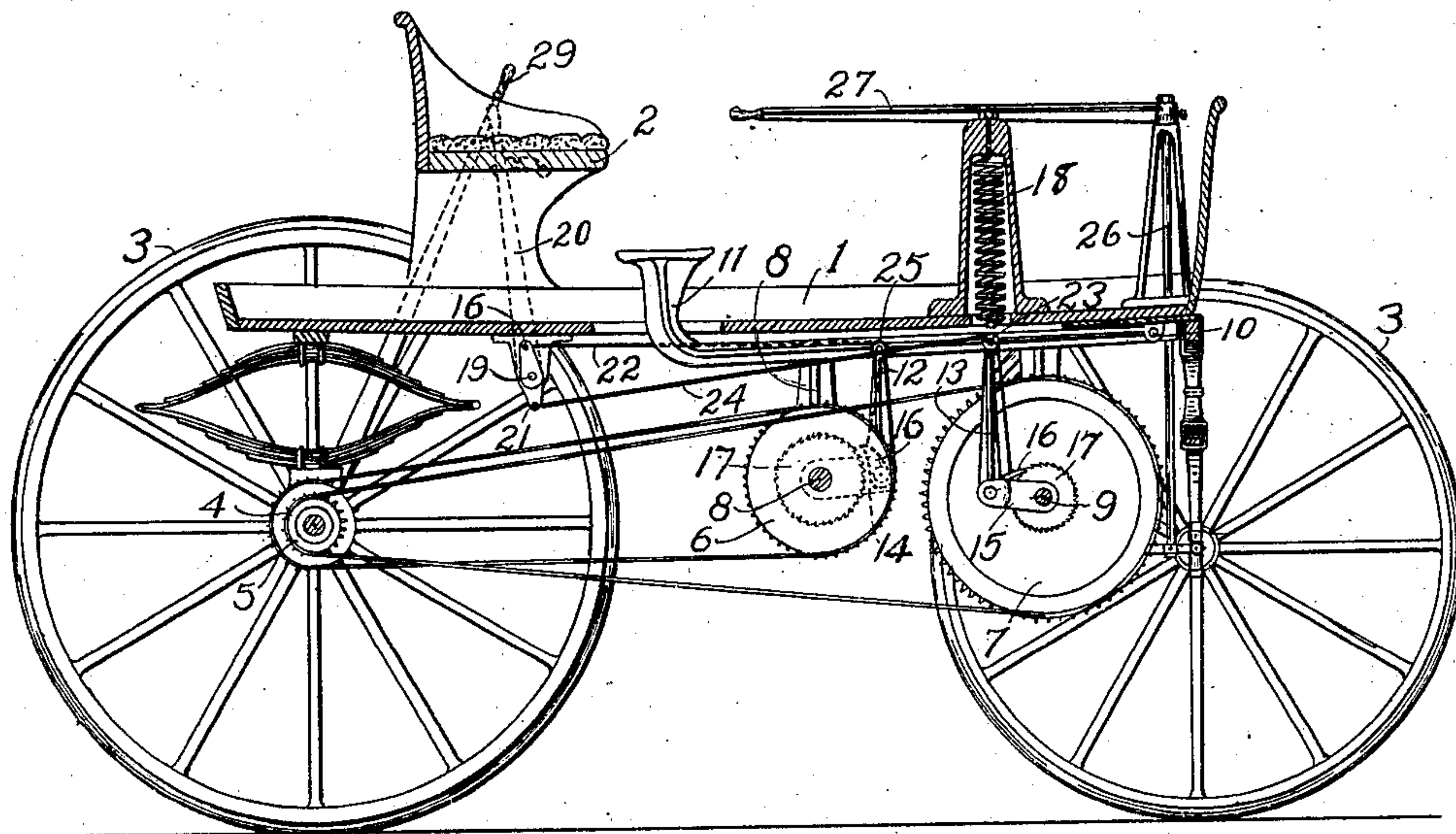


FIG. 1.

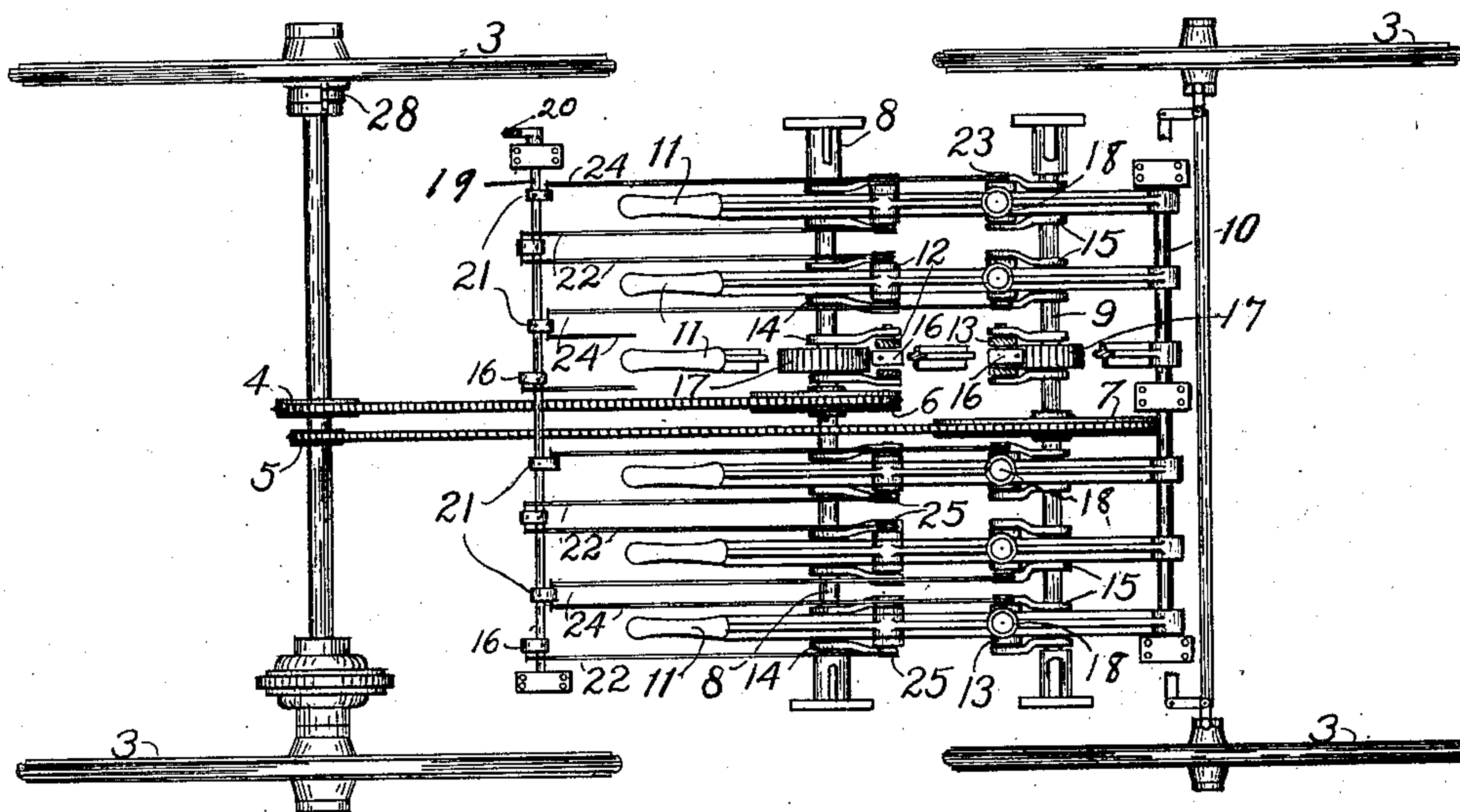


FIG. 2.

WITNESSES

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PROPELLING MEANS FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 747,959, dated December 29, 1903.

Application filed October 29, 1901. Serial No. 80,463. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FLYNN, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Propelling Means for Vehicles; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in propelling means for vehicles; and its object is to provide one with mechanism which can be conveniently operated with slight exertion on the part of the occupant of the vehicle to store the power and expel it automatically.

To this end the invention consists of a series of operating-levers pivotally supported upon the vehicle-body and connected to the driving-gears by a pawl-and-ratchet mechanism, the said pawl-and-ratchet mechanism being engaged with the driving-gears by means of springs, which expel the power stored by the depression of the levers, and thus propel the vehicle.

For a full understanding of the merits and advantages of my invention reference is to be had to the following description and the accompanying drawings.

In the drawings, Figure 1 is a longitudinal section of the vehicle embodying all the features of my invention. Fig. 2 is a top plan view of the vehicle with the body removed.

Like numerals of reference indicate corresponding parts throughout both views.

1 designates the body of the vehicle, which may be of any approved construction, and having the seat 2.

3 designates the traction-wheels, mounted upon axles, the rear axle being provided with two sprocket-gears 4 and 5, which are connected by sprocket-gearing to the driving-sprockets 6 and 7, mounted on suitable transverse shafts 8 and 9.

Near the forward end of the body and beneath the same is mounted a transverse rock-shaft 10, on which is secured a series of op-

erating-levers 11, which extend beneath the vehicle-body and project upwardly through an opening therein to a convenient position for the foot of the operator. Depending from the levers 11 and pivoted thereto are a series of short arms 12 and longer arms 13, which are joined to the shafts 8 and 9 by link connections 14 and 15. The lower ends of the depending arms 12 and 13 are bifurcated and in the bifurcation is pivotally mounted a spring-pressed pawl 16, which engages with the ratchets 17, which are splined to the shafts 8 and 9, and the driving-gears 6 and 7 being also splined upon the transverse shafts the former will be revolved when the pawl engages the ratchet.

The dashboard of the vehicle is made tubular to contain a series of helical springs 18, which are secured at one end to the top of the dashboard and at the other end to the levers 11 and serve to exert an upward pressure upon the levers to draw them and the arms 12 and 13 and link connections 14 and 15 upwardly. It will be observed that if one or all of the levers 11 are depressed by the foot of the operator the springs 17 will be extended and the arms 13, with their link connections 15, will be depressed and the pawl allowed to slide around the ratchet. When the operator releases his foot from the lever, the springs will draw the levers upward and likewise the arms, and the pawl being engaged by the ratchet will revolve the latter and the driving-gear, to which it is splined. The driving-gear being connected with the rear sprocket-gear will revolve the same, and therefore propel the vehicle. The driving-gear 6, with its ratchets, is designed to turn in the opposite direction to that of the driving-gear 7 to reverse the operating mechanism or back the vehicle.

Only one of the pawls 16 is in engagement with its ratchet at one time, and I have devised a novel mechanism with which to control this engagement, as will be hereinafter described. Beneath the body of the vehicle is mounted a transverse rock-shaft 19, having attached at one end a lever 20, which projects up from the side of the vehicle and in convenient position to be grasped by the operator. Upon the transverse shaft are rig-

idly connected short arms 21. To one end of these arms is attached a flexible connection 22, which extends horizontally beneath the body of the vehicle-body over the pulleys 23 and is connected at its other end with the pawl 16. To the other end of the short arms 21 is attached another flexible connection 24, which extends along the vehicle-body over the pulleys 25 and is connected at its other end to the pawls 16 of the reversing-gear.

It will be seen that when the shaft 19 is rocked by the lever 20 the short arms will likewise be rocked and either one of the pawls 16 allowed to engage with its ratchet, since the flexible connections 22 or 24 of one or the other is released. 26 indicates the steering-head, which is controlled by the steering-lever 27 and is connected with the front wheels of the vehicle by any suitable approved construction.

Upon the hub of one of the rear wheels is provided a band-brake 28, which is operated by a lever 29, extending upwardly within convenient reach of the operator, as shown in Fig. 1. It will be apparent from the construction described that the depression of a single lever will operate the driving-gears and that the depression of all the levers will likewise expand the springs 17 and cause the pawl to assume its lowermost position, whereupon when it is retracted by the action of the springs it will cause the driving-gears to be revolved and propel the vehicle.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with a vehicle, of a propelling mechanism therefor, comprising a transverse rock-shaft, a series of operating-levers connected thereto and terminating in operative position within the vehicle, a pair of short arms 12 and long arms 13 depending from each lever, links 14 and 15 connected respectively to the arms 12 and 13, a spring-actuated detent connected to said links, a shaft mounted to the rear of the rock-shaft, a large gear carried by said shaft, said shaft being connected to the long arms of the levers so as to be revolved as the levers are moved up and down, another shaft 8 to the rear of the second-mentioned shaft, to which the short arms of the levers are connected, a smaller gear-wheel connected therewith, a small ratchet mounted upon the shaft carrying the large gear-wheels, and a larger ratchet mounted upon the shaft carrying the smaller gear-wheels adapted to be engaged by the detents of the links to operate the respective shafts carrying the gear-wheels, chains connecting the two gear-wheels to the rear axle of the vehicle, and mechanism connected to the shafts carrying the gears so that the ve-

hicle is moved forward by the large gear and reversed by the small gear.

2. In combination with a vehicle, of a propelling mechanism therefor, comprising two shafts, a single gear mounted on each shaft the forward gear being of larger diameter than the other, chains connecting each of said gears to the rear axle of the vehicle, the large gear being adapted to give the axle a forward movement and the other a reverse movement, a series of foot-levers having their forward ends pivotally mounted below the vehicle-body, a pair of arms carried by each of said levers, links connected to said levers to each shaft respectively, detents carried by each link, ratchets rigidly connected to said shafts and in operative engagement with said detents, a rock-shaft 19 journaled below the body of the vehicle to the rear of the first-mentioned shafts, rods connected to the detents of each and also to the rock-shaft and a lever for rocking the shaft to move the detent into connection with the ratchet of one of the shafts at a time so as to give the vehicle a forward or reverse movement.

3. In combination with a vehicle of a propelling mechanism therefor, comprising two shafts 8, and 9, a single gear mounted upon each of said shafts, a separate chain connecting each of said gears with the rear axle of the vehicle, one of said chains being adapted to give the vehicle a forward while the other gives the vehicle a reverse movement, a rock-shaft 10 journaled in the forward portion of the vehicle below the body thereof, a series of foot-levers having their forward ends connected to said rock-shaft and their rear ends projecting upward into the vehicle, a series of arms pivotally connected to the levers intermediate of their length and depending downward, a series of links pivotally connected to the lower ends of said arms and rotatably connected to the shafts, a detent carried by each link, ratchet-wheels connected to the first-mentioned shafts and adapted to be operated upon by the detent, a shaft 19 pivoted below the body of the vehicle to the rear of the other shafts, means for rocking said shafts, crank-arms connected to said shaft, and rods connected to said crank-arms and to said detents of the links, whereby when the shaft 19 is operated the detents are adapted to be operated to cause the foot-levers to operate either one of the first-mentioned shafts so that the vehicle is propelled forward or reversed.

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

WILLIAM FLYNN.

Witnesses:

THOS. P. SHIEL,
RICHARD WOODS.