

J. B. EWER.
MOTOR VEHICLE.

APPLICATION FILED FEB. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

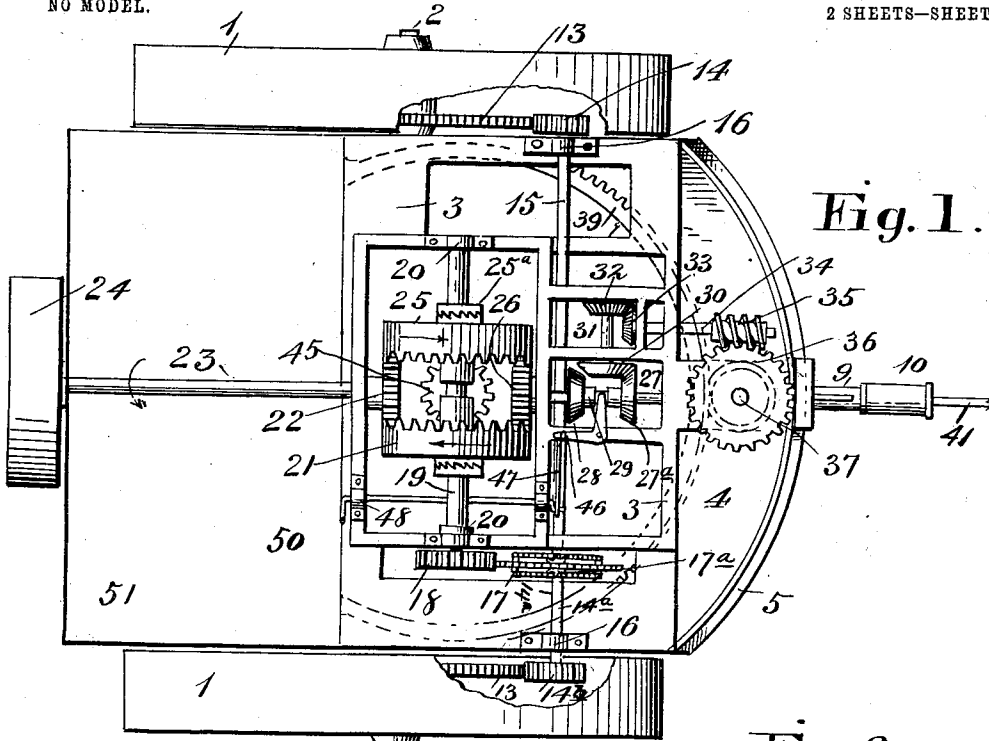


Fig. 1.

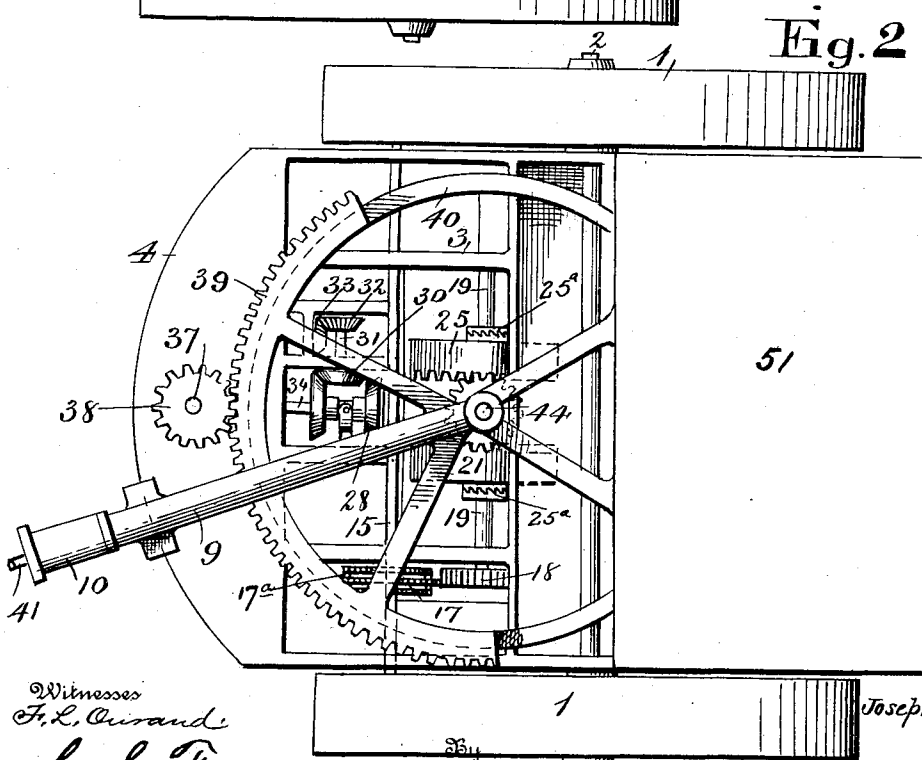


Fig. 2.

Inventor.

Witnesses
F. L. Curran
C. S. Frye

Joseph B. Ewer.

W. J. F. ...
Attorneys

J. B. EWER.
MOTOR VEHICLE.

APPLICATION FILED FEB. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 3.

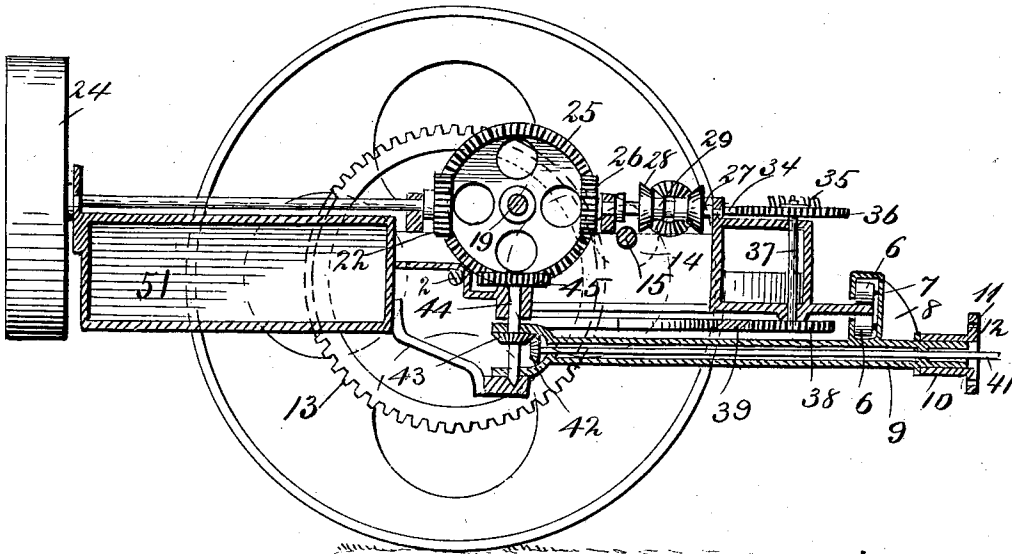


Fig. 6

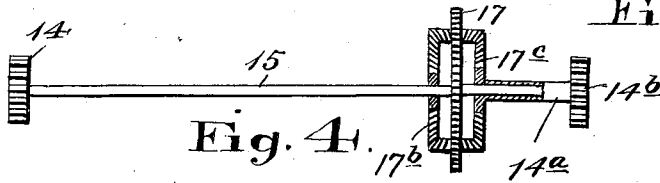


Fig. 4.

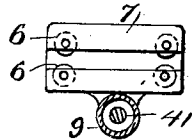


Fig. 5.

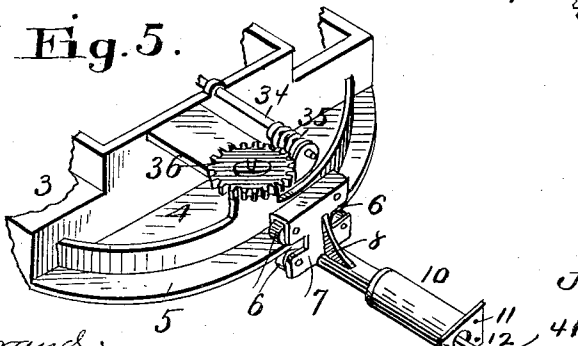


Fig. 7

Witnesses
F. L. Orvand
C. S. Frye

Inventor
Joseph B. Ewer.

W. F. Howard
 Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH B. EWER, OF CROWLEY, LOUISIANA.

MOTOR-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 732,283, dated June 30, 1903.

Application filed February 21, 1903. Serial No. 144,461. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH B. EWER, a citizen of the United States, residing a Crowley, in the parish of Acadia and State of Louisiana, have invented certain new and useful Improvements in Motors; 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.

My invention has relation to traction-motors for locomobiles; and it consists of certain novel features of combination and construction of parts, as will be hereinafter clearly set forth, and presented in the claims.

The object of my invention, among others, is to provide a motor of the character specified which will be very desirable and efficient for driving various kinds of farm machinery—as reapers, self-binders, mowers, plows—and for propelling wagons and other vehicles, my prime object being to provide a propelling power which will be placed completely under the control of the operator, whereby the machine or vehicle to which my motor is attached may be turned in the shortest possible space, a very valuable and important desideratum, especially for reapers and plows.

A further object of my invention is to provide steering mechanism whereby the power may be applied to drive the machine to the right or left, as desired.

Other objects and advantages will be hereinafter made clearly apparent, reference being had to the accompanying drawings, which are made a part of this application, and in which—

Figure 1 shows a top plan view of my invention complete. Fig. 2 is a bottom plan view thereof. Fig. 3 is a central vertical section of Fig. 1. Fig. 4 is a detail view of the anti-friction-guide employed to carry the shaft used to connect the motor with the vehicle which it is designed to drive, the said shaft being shown in section. Fig. 5 is a detail view in perspective showing the parts illustrated in Fig. 4 in cooperative relationship with a portion of the frame of the machine. Fig. 6 is a detail view showing one of the power-communicating shafts and parts cooperating therewith. Fig. 7 is a detail view, in side elevation, of one of the power-communi-

cating wheels carried by the power-communicating shaft illustrated in Fig. 6.

For convenience in readily referring in the description to the various details of my invention and cooperating accessories numerals will be employed, the same numeral referring to a similar part throughout the several views.

In carrying out my invention I provide suitable carrying or traction wheels 1, which are rigidly secured to the axle 2, upon which the rectangular frame-section 3 is mounted, the said frame 3 having the front platform 4, which is so formed that its edge will be provided with the radial flange 5, which latter is adapted as a trackway for the anti-friction-wheels 6, carried by the head section or frame 7. The frame 7 is rigidly secured, as by means of the rib 8 or other preferred means, to the connecting-rod 9, which latter is tubular in form and is provided at its outer end with the swivel-head 10, having the flanges 11, whereby said head may be readily bolted to the reaper or other machinery, as by passing the bolt through the aperture 12, as clearly shown in Fig. 3. The frame-section 3 is also designed to carry the various parts of the driving mechanism, which derives its power from the traction-wheels 1, inasmuch as said traction-wheels are each provided, preferably, upon their inner sides with the gears 13, rigidly secured to the axle or to said wheels and placed in mesh with the gears 14. The gear 14 is rigidly secured to one end of the shaft 15, which latter is disposed in proper bearings 16 and extends entirely across the frame of the machine, as clearly shown in Fig. 1. The opposite end of the shaft 15 is received by the sleeve 14^a, and the gear 14^b is secured rigidly to said sleeve, and since the gears 14 and 14^b are in mesh with the gears 13 it is obvious that the carrying-wheels 1 may move at a relatively different speed, as will be necessary when the machine is turned or being guided to the right or left. The gear 17 is provided, as is common, with a central hub, which is disposed loose upon the shaft 15. The gear 17 is also provided with a plurality of beveled gears 17^a, properly mounted, whereby they will freely rotate in either direction. The gears 17^a are designed to mesh with the gears 17^b and 17^c. The gear 17^b is keyed rigidly

to the shaft 15, while the gear 17^c is secured rigidly to the inner end of the sleeve 14^a, and it is therefore obvious that the gears 14 and 14^b will have a relatively different movement, as above explained and as will be necessary when the machine is guided to the right or to the left.

The gear 18 is keyed rigidly to the shaft 19. The shaft 19 is provided with the bearings 20, and on said shaft I loosely mount the gear 21, which has inwardly-directed teeth and is disposed in mesh with the gear 22, keyed rigidly to the shaft 23, which extends rearwardly and carries the balance or power wheel 24. I also loosely dispose upon the shaft 19 the gear 25, which is also in mesh with the gear 22. The gears 21 and 25 are also both in mesh with the gear 26, which is rigidly keyed to the shaft 27, which finds bearings in a continuous part of the frame and has mounted thereon the beveled friction-wheels 27^a and 28, which are both secured rigidly to the collar 29.

The gears 21 and 25 being both loose upon the shaft 19, it becomes necessary to provide suitable clutch mechanism, as indicated by the numeral 25^a, whereby either of said gears may at will be thrown into rigid connection and caused to rotate with said shaft.

Referring to Fig. 1, it will be observed that the engine-shaft 23 is turning in a direction to drive the balance-wheel in the direction indicated by the arrow, then the top of gear 25 will be traveling to the right, or in the direction indicated by the arrow, while the gear 21 will be traveling to the left, as shown by the direction in which the arrow is pointing. The clutch mechanism for the gears 21 and 25 should be located on the outside of said wheel and so formed that a pull upon a suitable lever will throw the clutch in contact with either of the wheels, as desired, and thereby drive the shaft 19 in the desired direction. It therefore follows that the movement of the lever in the opposite direction will drive the shaft 19 similarly. It is further obvious that a single lever may be so connected with both clutches that they will be simultaneously actuated so as to bring one or the other of said wheels into engagement with their clutch mechanism, causing the machine to move either backward or forward, or said gears 21 and 25 may be thrown entirely out of engagement with their clutch mechanism, leaving the machine stationary, although the engine may continue to operate and drive the shaft 23, while the gears 21 and 25, the shaft 41, and friction-wheels 27^a and 28 are therefore also revolving at full speed.

The collar 29 is so mounted on the shaft 27 that it may move freely longitudinally upon the shaft, but which rotates therewith, so that either of the friction-wheels 27^a or 28, as desired, may be brought into mesh with the beveled wheel 30, keyed to the shaft 31 and having suitable bearings in the frame, as clearly shown in Fig. 1. The shaft 31 also has rigidly

secured to its opposite end the beveled gear 32, always in mesh with the gear 33, keyed to the shaft 34, the outer end of said shaft being provided with the worm 35. The worm 35 is disposed in mesh with the horizontally-disposed gear 36, mounted upon the vertically-disposed shaft 37. The lower end of the shaft 37 has rigidly secured thereto the gear 38, which is disposed in mesh with the rack-bar or toothed plate 39, carried by the under side of the machine, as shown in Fig. 2, and it is by said means that the machine is guided.

By reference to Fig. 2 it will be understood that the radial plate 39 is rigidly secured to the connecting-shaft 9, and in order that the plate 39 will always be held in place I provide the trackway 40 for said plate, the upper edge of the plate being so formed as to partly encircle or receive said trackway and permit the same to move freely thereon in either direction, said trackway 40 being rigidly secured to the under side of the frame of the machine. The shaft 9 is hollow and is designed to provide a housing for the driving-shaft 41, which extends inward through the shaft 9, and is provided upon its inner end with a beveled gear 42, designed to mesh with the gear 43, rigidly secured to the vertically-disposed shaft 44, provided with suitable bearings in a contiguous part of the frame and having rigidly secured to its upper end the gear 45, whereby said shaft is rotated, inasmuch as the gear 45 is disposed in mesh with the lower side of the gears 21 and 25.

In order that the collar or tubular section 29, to which the friction-wheels 27^a and 28 are attached, may be placed under the complete control of the operator, I provide the bell-crank 46, which has a bifurcated inner end adapted to partly encircle the section 29, while the opposite end of the bell-crank is pivotally connected with the rock-shaft 47, provided with suitable bearings 48, by means of the link-section 49.

The rock-shaft 47 is provided at one end with the controlling-lever 50, whereby said shaft may be easily turned so as to readily induce a reciprocation of the section 29 upon its shaft 27 and incidentally bring either of the wheels 27^a or 28 into mesh with the wheel 30, as desired, and thereby apply the power to the steering mechanism so as to drive the motor to the right or left, as may be necessary.

I also locate upon the frame of the machine, preferably upon the rear end thereof, the water or oil tank 51, and upon said tank or at any other preferred point I locate the motor proper, consisting of a steam or gasoline engine or the like or an electric motor, as preferred, said motor being properly connected in any desired way with the shaft 23, as will be readily understood.

It will be obvious that the power-wheel 24 will aid very materially in carrying the machine over dead-centers and especially difficult situations, inasmuch as the impetus thereof will be applied to the gears 21 and 25

and communicated to the gears 26 and 45, thereby not only the steering mechanism will be actuated, but the shaft 41 will also be driven.

5 The object in providing the shaft 41 is to make it possible to convey the desired amount of power from the motor to the work of driving any part of the reaper or other machine to which the motor is connected.

10 By a proper control of the engine or motor proper it is obvious that the complete motor or driving apparatus may be moved in either direction, as preferred.

15 While I have described the preferred combination and construction of parts deemed necessary in materializing my invention, I desire to comprehend all substitutes and equivalents that may be considered as falling fairly within the scope of my invention.

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

25 In a motor of the character specified, the combination with a suitable frame having carrying-wheels; actuating-gears 13 rigidly secured to the carrying-axle and to said

wheels; a power-transmitting shaft 15 upon one end of which is rigidly secured the gear 14; while upon the other end is secured a sleeve carrying the gear 14^b; gears 17^b and 17^c 30 secured, respectively, to the shaft 15 and the sleeve 14; a driving-gear 17; having a plurality of auxiliary gears 17^a disposed normally in mesh with the gears 17^b and 17^c; a power-conveying shaft 19; having a gear 18 disposed 35 in mesh with the gear 17, the shaft 19 also having loosely mounted thereon the gears 21 and 25; means to apply power to both of said wheels whereby they will be freely turned in either direction and a tubular connecting- 40 shaft 9 having a swiveled head and a power-conveying rod 41 disposed within said shaft and means to operatively connect the rod by suitable gearing with the driving-gears 21 and 25, as and for the purpose set forth. 45

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

JOSEPH B. EWER.

Witnesses:

SHELBY TAYLOR,
EUGENE FREMAN.