

No. 732,025.

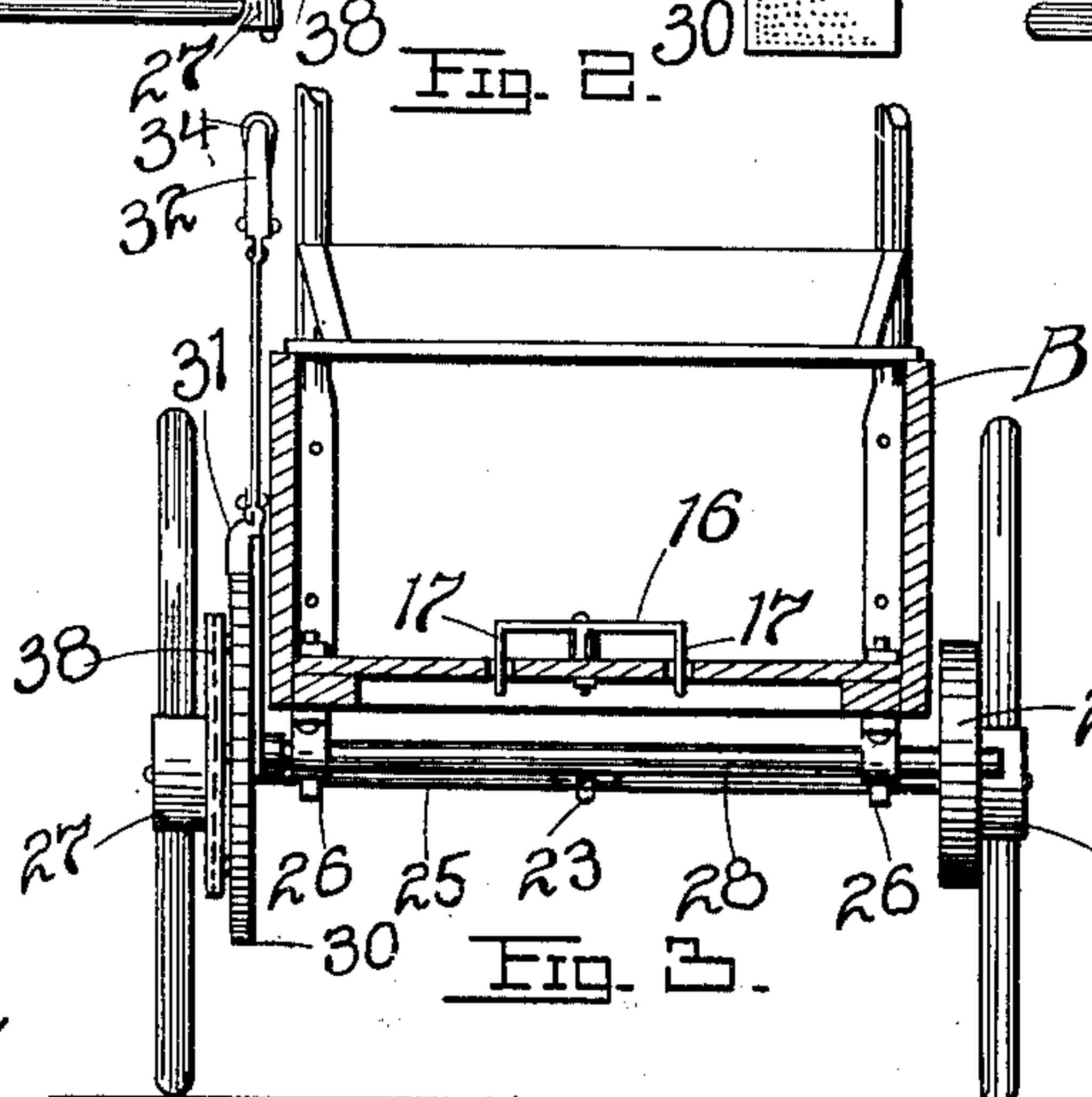
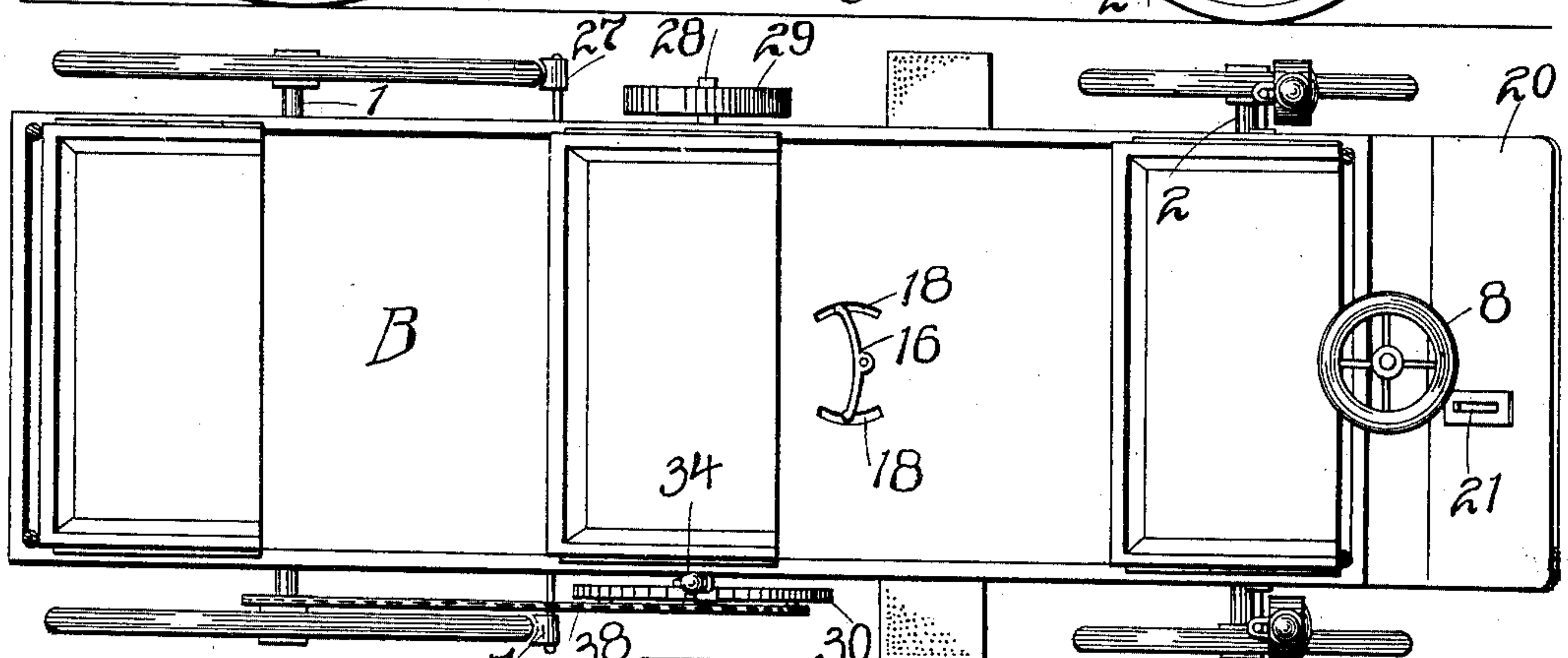
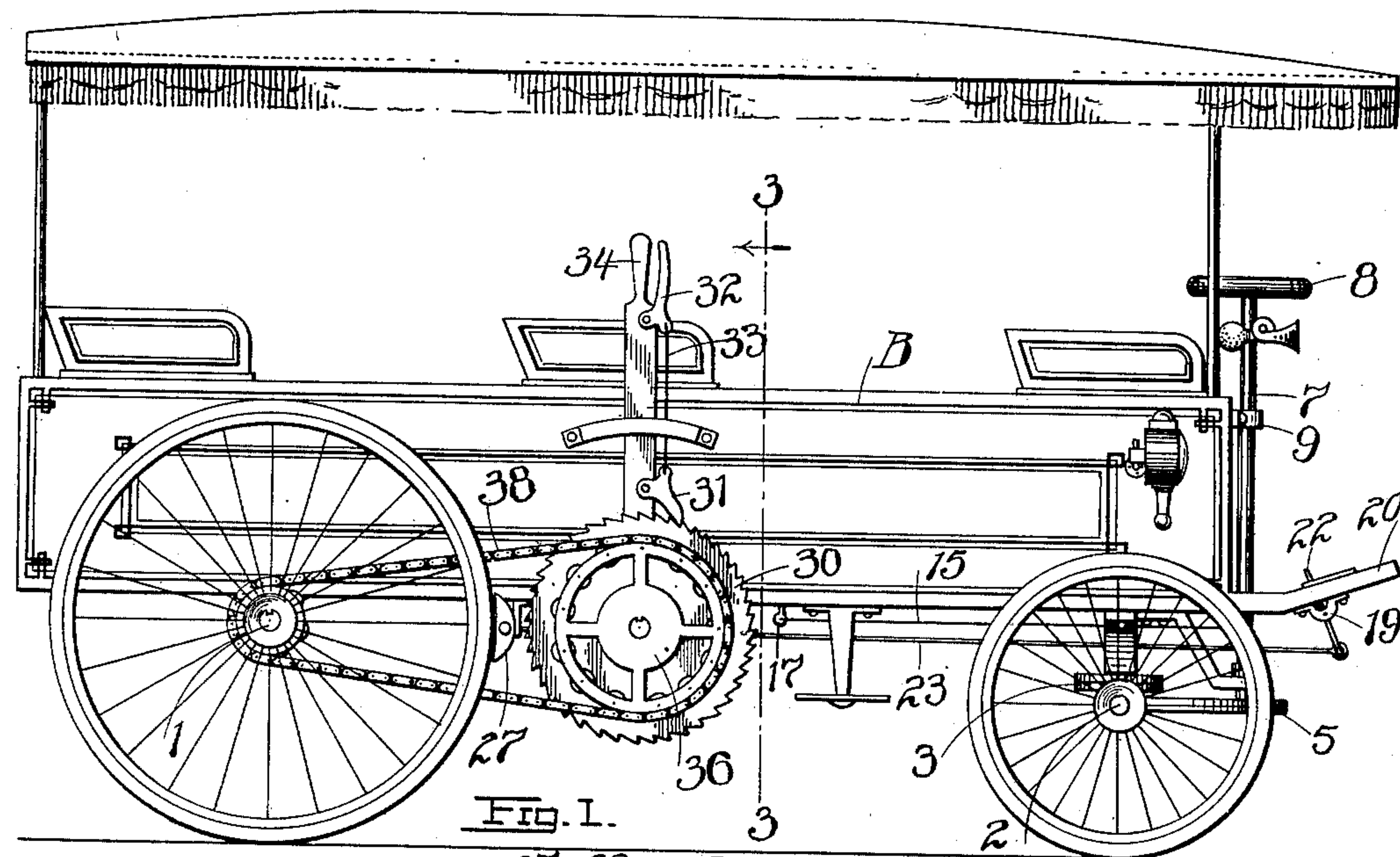
PATENTED JUNE 23, 1903.

J. L. McDOWELL.
STEERING GEAR FOR VEHICLES.

APPLICATION FILED DEC. 11, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES:

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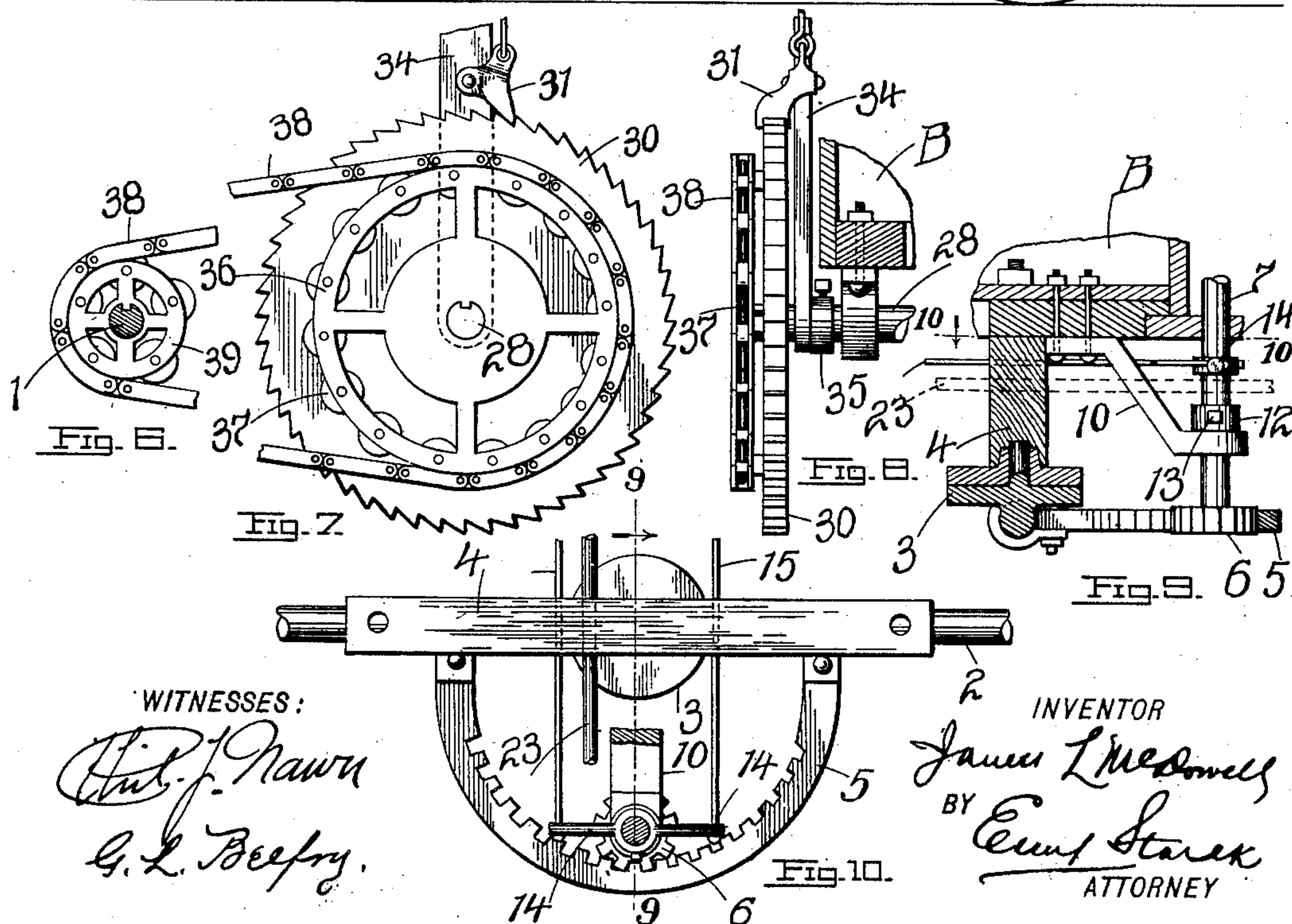
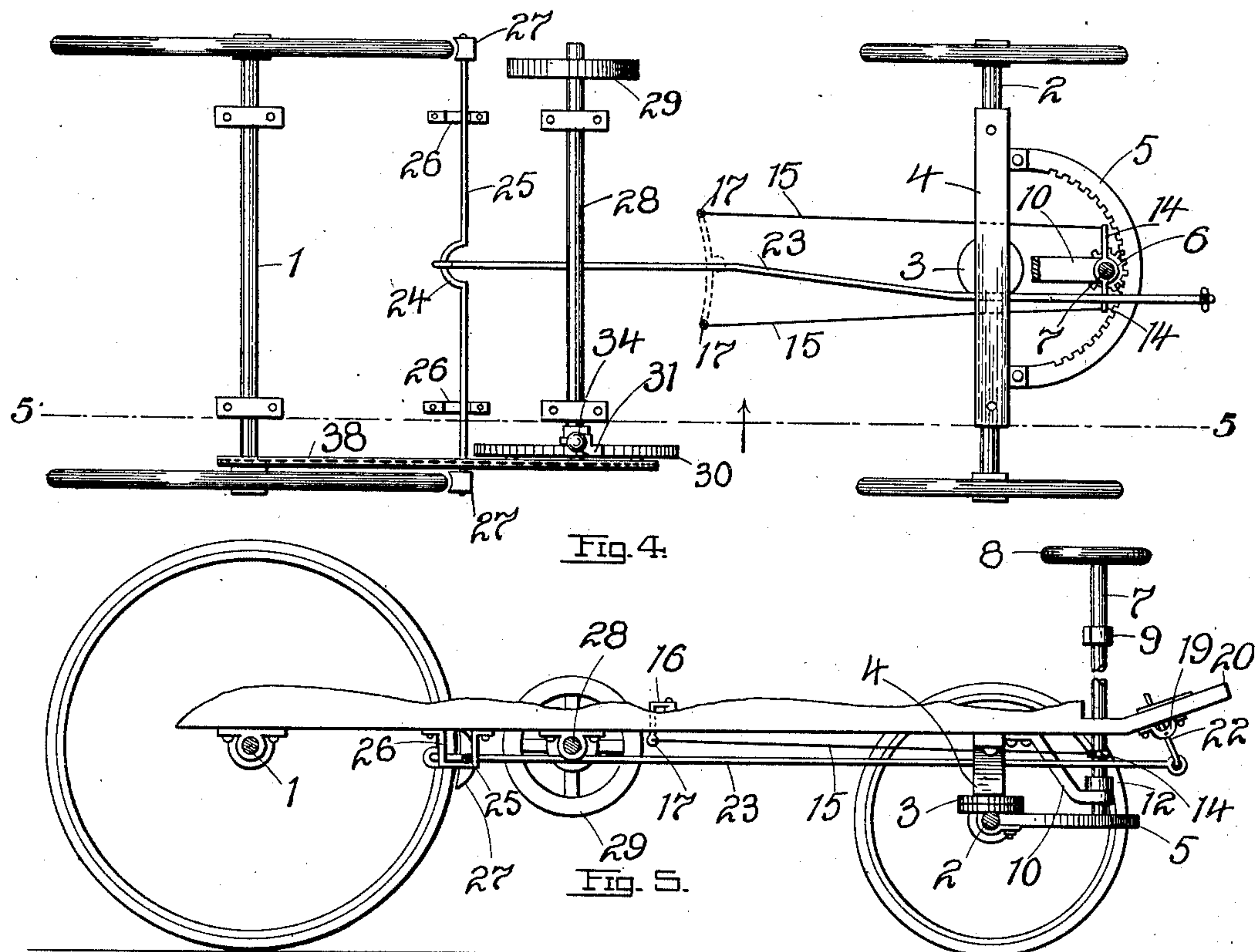
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2 SHEETS—SHEET 2.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES L. McDOWELL, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO
WILLIAM C. GORDON, OF ST. LOUIS, MISSOURI.

STEERING-GEAR FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 732,025, dated June 23, 1903.

Application filed December 11, 1902. Serial No. 134,822. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. McDOWELL, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Steering-Gear for Vehicles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to steering-gear for vehicles; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claim.

In the drawings, Figure 1 is a side elevation of a wagon having my invention applied thereto. Fig. 2 is a top plan of the wagon-body. Fig. 3 is a transverse vertical section on line 3 3 of Fig. 1. Fig. 4 is a plan of the gear mechanism detached. Fig. 5 is a longitudinal section on line 5 5 of Fig. 4. Fig. 6 is an elevation of the sprocket-wheel mounted on the rear axle. Fig. 7 is a side elevation of the driving ratchet-disk and sprocket-wheel. Fig. 8 is an edge view of Fig. 7. Fig. 9 is a middle vertical sectional detail on line 9 9 of Fig. 10 of the bolster and fifth-wheel and bracket supporting the steering-staff, and Fig. 10 is a horizontal section on line 10 10 of Fig. 9.

The object of my invention is to construct a steering-gear for vehicles which will be simple, cheap, under perfect control of the operator, one readily attached to the wagon-body, and one possessing further and other advantages better apparent from a detailed description of the invention, which is as follows.

Referring to the drawings, B represents a wagon-body of any approved pattern, 1 the rear axle, and 2 the front axle, the latter being capable of an oscillating motion about the fifth-wheel 3, located at the bottom of the bolster 4. Secured to the axle 2 and disposed symmetrically about the fifth-wheel is an inner toothed segment 5, with which is adapted to engage the pinion 6, located at the lower end of the steering-staff 7, the latter being provided at its upper end with a hand-wheel 8 and guided in bearings 9 and 10, respectively. The bearing 10 is in the nature of a

bracket projecting from the wagon-body in front of the bolster, the staff 7 being provided with a sliding collar 12, whose position may be properly adjusted to bring the staff 55 to the proper elevation for effecting the engagement between the pinion 6 and segment 5. When once adjusted, the collar is clamped tightly to the staff by the bolt 13. It is apparent that by turning the staff 7 about its 60 axis the vehicle may be properly steered. Should it be desirable to steer the vehicle from the center of the wagon-body, I provide the staff with diametrically-disposed arms 14 14, to the free ends of which are secured the 65 ends of suitable connecting-rods 15 15, the opposite ends of the latter being coupled to the ends of an oscillating bar 16, pivoted above the floor of the wagon-body and having depending arms 17 passing through 70 curved slots 18 in the floor to effect the connection referred to with rods 15 15, so that a person mounted on the center seat in the carriage by simply oscillating the bar 16 with his feet can impart an oscillating movement 75 to the staff and steer the vehicle accordingly.

Pivoted to a bracket 19 at the bottom of the footboard 20 and passing through a slot 21 of the same is a lever 22, to the lower end of which is pivotally connected one end of a link 80 23, the rear end of the latter being coupled to the loop 24 of a brake-shaft 25, mounted and movable in brackets or bearings 26, the opposite ends of the shaft carrying brake-shoes 27, which upon the tilting of the lever 22 in 85 proper direction will force the shaft 25 rearwardly and forcibly apply the shoes against the tires of the rear wheels.

Interposed between the front and rear axles and disposed parallel thereto is the drive- 90 shaft 28, whose one end carries a fly or balance wheel 29 and whose opposite end is provided with a ratchet-disk 30, with the teeth of which engages a pawl 31, controlled when necessary by a bell-crank 32 and link 33, carried by the oscillating lever 34, the lower end 95 of the latter loosely embracing the shaft 28 and being held in position thereon by the collar 35 and being adapted with a forward swing to impart rotation to the ratchet-disk and to 100 cause the pawl 31 to engage a subsequent tooth of the series with each backward stroke

of the lever. Once rotation is imparted to the shaft 28 the momentum imparted thereto is continued by the fly-wheel 29, making the propelling of the vehicle comparatively easy.

5 Forming a part of the disk 30 is a sprocket-wheel 36, provided with rotatable peripheral disks 37, performing the function of teeth, the latter engaging a sprocket-chain 38, which passes over a similarly-formed but smaller
10 sprocket-wheel 39 at the adjacent end of the rear axle, so that as rotation is imparted to the drive-shaft a corresponding rotation is communicated to the rear axle and the vehicle is propelled.

15 The driving mechanism is not claimed herein, though the same is described to bring out its relation to the steering-gear forming the subject of the present application.

It will be observed that the several parts
20 requiring manipulation are within easy reach of the operator, and the vehicle is thus under perfect control of the operator.

It is apparent, of course, that I may depart from the details here shown without in any

wise affecting the nature or spirit of my invention. 25

Having described my invention, what I claim is—

In a vehicle, a wagon-body, an oscillating front axle therefor, a toothed segment secured 30 to the axle, a steering-staff, a pinion at the lower end of the staff engaging the segment, a bracket for said staff, an adjustable or movable collar on said staff mounted above and resting on said bracket, arms carried by the 35 staff, a horizontally-oscillating bar pivoted to the floor of the wagon-body, arms depending from said bar, connecting-rods coupling said depending arms with the arms of the staff below the wagon-body, the parts operating substantially as and for the purpose set forth. 40

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

JAMES L. McDOWELL.

Witnesses:

EMIL STAREK,
WILLIAM C. GORDON.