

No. 740,504.

PATENTED OCT. 6, 1903.

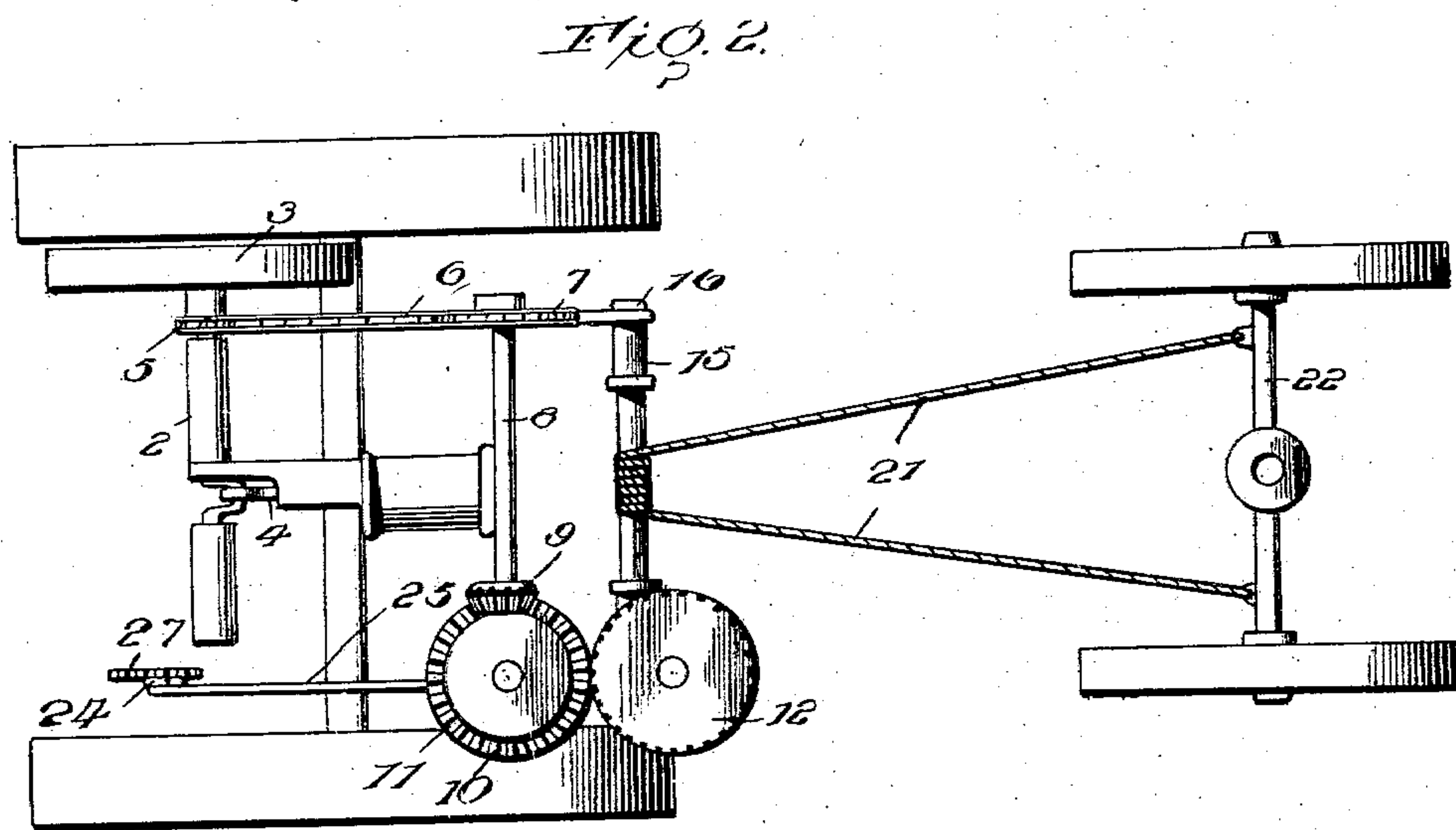
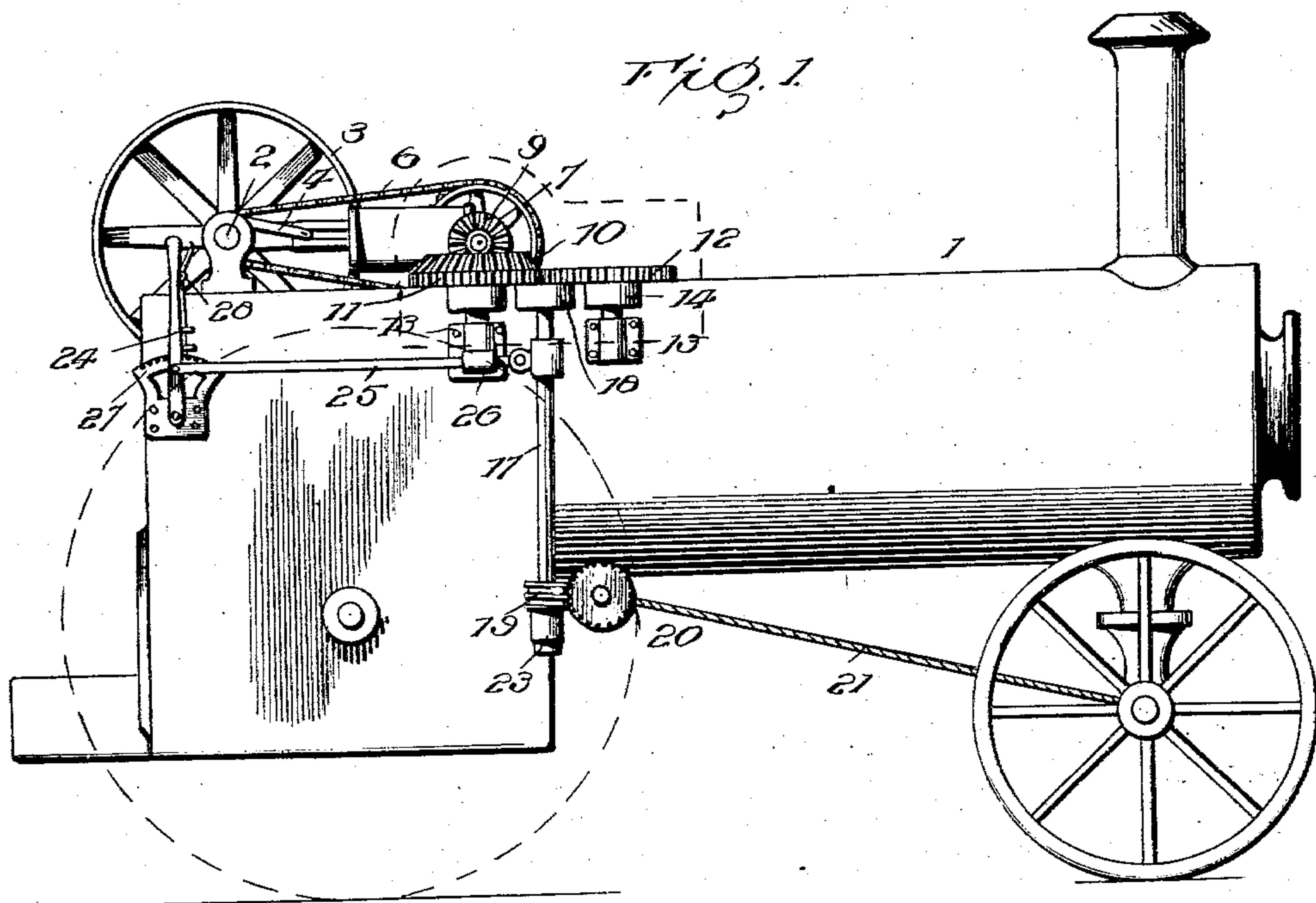
G. E. WILKINSON.

STEERING MECHANISM FOR TRACTION ENGINES.

APPLICATION FILED APR. 24, 1903.

NO MODEL.

2 SHEETS—SHEET 1



Inventor

Witnesses

George G. Watt

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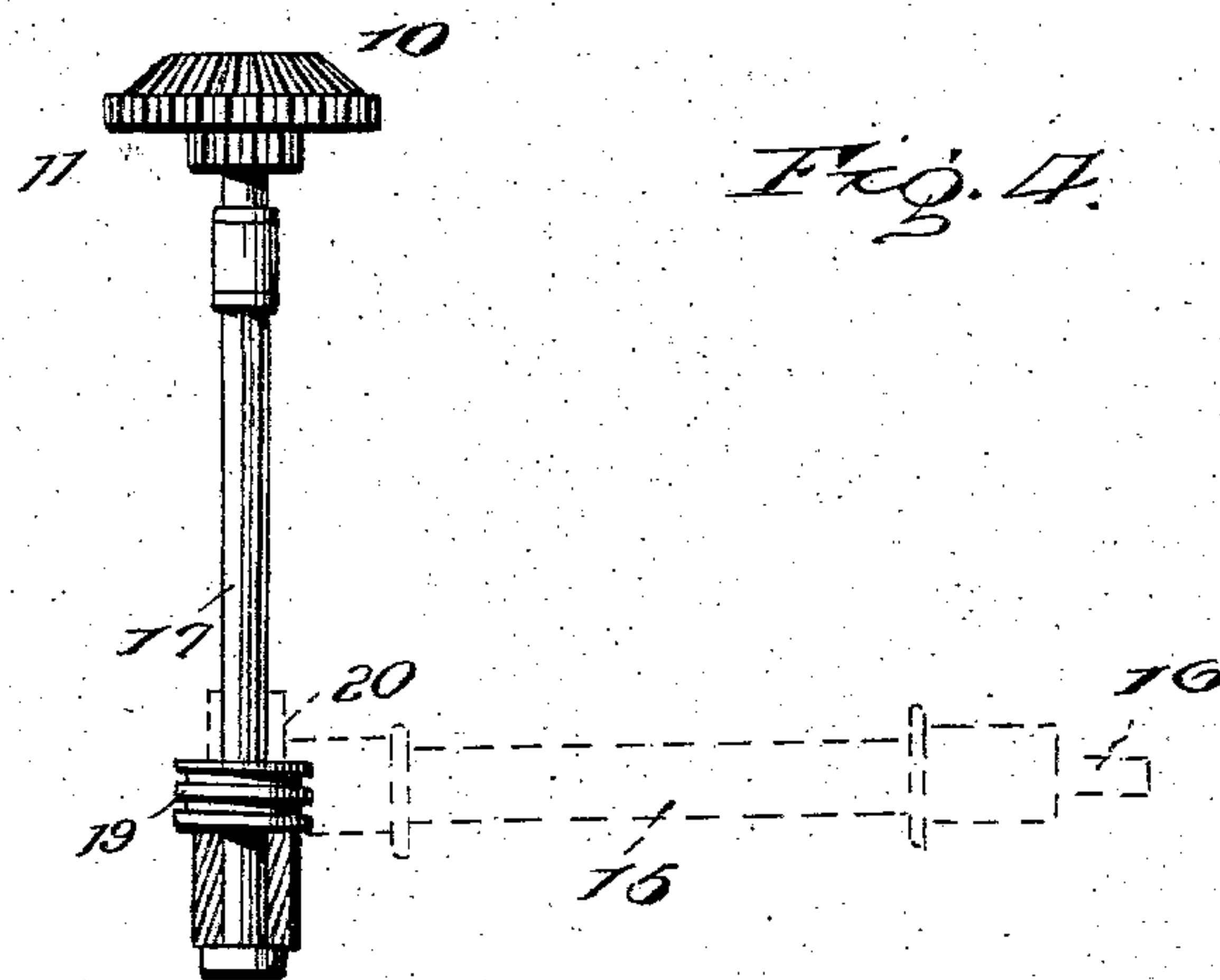
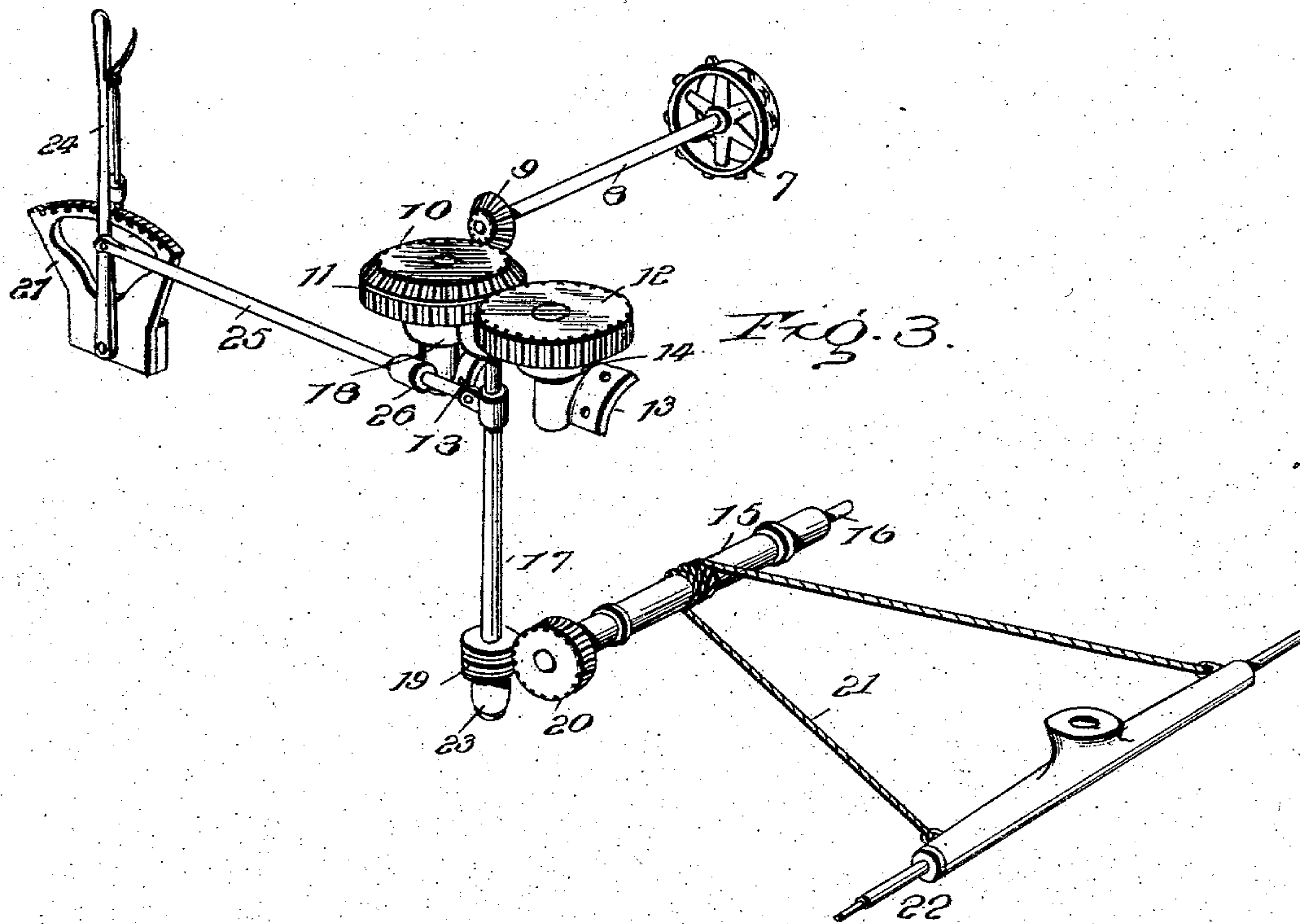
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NO MODEL.



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UNITED STATES PATENT OFFICE.

GEORGE E. WILKINSON, OF NASBY, PENNSYLVANIA.

STEERING MECHANISM FOR TRACTION-ENGINES.

SPECIFICATION forming part of Letters Patent No. 740,504, dated October 6, 1903.

Application filed April 24, 1903. Serial No. 154,169. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. WILKINSON, a citizen of the United States, residing at Nasby, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Steering Mechanism for Traction-Engines, of which the following is a specification.

The object of this invention is to provide new and novel means for directing the movement of vehicles, such as traction-engines and the like, utilizing the motive power by which same is propelled for this purpose. The invention is comprised of special form and arrangement of different parts, whereby the vehicle is maintained within complete control of the operator and susceptible of change of direction by the slight exercise of the proper means on his part.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a traction-engine having the steering mechanism embodied in this invention applied thereto. Fig. 2 is a top plan view. Fig. 3 is a perspective view of the mechanism separated from the engine and showing the relative disposal of the cooperating parts. Fig. 4 shows a detail.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The traction-vehicle 1 is of any ordinary type, it being understood that the steering mechanism may be applied to any ordinary form and is provided at its rear end with the usual power-shaft 2, upon which is mounted the fly-wheel 3, and motion is transmitted to this power-shaft 2 from the pitman 4, connected directly to the piston of the engine. A cog-wheel 5 is disposed upon the end of the power-shaft opposite to that upon which is mounted the fly-wheel 3, and through the

sprocket-chain 6 motion from the power-shaft 2 is communicated to a second cog-wheel 7, mounted upon the counter-shaft 8, which is located in parallel relation to the power-shaft 2. The cog-wheel 7 is provided with a bevel-gear 9, and this bevel-gear lies in mesh with a bevel-gear 10, the latter having a vertical line of axis and provided with a spur-gear 11, which intermeshes with a spur-gear 12, disposed adjacent thereto. The gears 11 and 12 are mounted for rotation in brackets 13, secured to the sides of the engine-boiler, and each of the said gears has a friction-gear 14 projected from the end sides thereof.

Beneath the boiler of the vehicle is preferably disposed the steering-drum 15, said drum being rigidly mounted upon the shaft 16, to which power is transmitted from the gear 12 by means of a drive-shaft 17. The drive-shaft 17 is vertically positioned at one side of the boiler and is provided at its upper end with a friction-pulley 18 and at its lower end with a worm 19. The worm 19 meshes with a spur-gear 20 upon one end of the steering-shaft 16 and is adapted to communicate a rotary movement to the steering-shaft 16 when it is desired to direct the vehicle in a course different from that which is being pursued. The drum 15 has wound about it a rope or cable 21, the ends of which are connected to the respective end portions of the front axle 22 of the vehicle, and rotary movement of the said drum will of course through the rope or cable 21 move the axle 22 and the ground-wheels thereon in the desired manner. The drive-shaft 17, which carries the friction-pulley 18, is mounted for rotary movement in a bracket 23, being also adapted for a certain amount of reciprocal movement therein to permit of throwing of the friction-gears 14 upon the gears 12. The gears 12 are, of course, as will be readily seen, driven in reverse directions, so that manipulation of the friction-pulley to place the same in engagement with the friction-gears 14 will cause a reverse motion of the drive-shaft 17, and like motion will be communicated to the shaft 16, so that the rotation of the drum will necessarily cause a corresponding movement of the front axle 22. For actuation of the drive-shaft 17 to cause engagement of the friction-pulley 18 with either of the gears 14 or to so position the

said shaft that the pulley 18 will not be in engagement with either of these gears a lever 24 is pivoted to the body of the vehicle and a connecting-rod 25 connects the said lever with the shaft 17. The connecting-rod 25 moves in a guide 26, which is projected from one of the brackets 13, within which the bevel-gear 11 is rotatably mounted. A toothed segment 27 and a latch means 28 enable the operator to fix the position of the lever so as to throw the pulley 18 into engagement with either of the gears 14 or to maintain same in a position intermediate the said gears 14 and not receive motion, therefore, from either of them. The gears 10 and 12 are positively driven in reverse directions through the means of the cog-wheel 7, and when the pulley 18 of the drive-shaft engages the friction-gears 14 of the gear 11 the drive-shaft will be rotated in one direction, and likewise the drum 15, those turning the axle 22 in the desired manner. The axle 22 is turned in the opposite direction by manipulation of the lever 24 to throw the pulley 18 in engagement with the gear 12 in an obvious manner. When the lever 24 is locked in a position so that the pulley 18 is neither in engagement with the friction-gears 14 of the gear 11 or the gear 12, the shaft 17 is not in motion, and consequently the drive-shaft 16 is stationary, so that the axle 22 is maintained in a fixed position.

In order to prevent mud, dust, or other foreign material from lodging in the mechanism, it is desirable that a housing, such as 29, be utilized, which extends over the gearing and affords an effective shield. The housing is pivoted to the brackets 13 in any suitable manner and may be readily swung outward, so as to permit access to the mechanism when desired.

The invention is of simple construction and the inventor will not be confined to the

exact form of parts illustrated, but may modify the exact form of same and the special arrangement in accordance with the spirit of the invention and the scope of the claim hereto appended.

Having thus described the invention, what is claimed as new is—

In steering mechanism for traction-engines, and in combination, a power-shaft, a counter-shaft paralleling said power-shaft and means for communicating motion from the power-shaft to the counter-shaft, a bevel-gear disposed upon the end of the counter-shaft, vertical paralleling shafts mounted in fixed bearings adjacent the bevel-gear upon the counter-shaft, intermeshing spur-gears disposed upon the upper ends of the said paralleling shafts for rotation in reverse directions, one of said spur-gears being provided with bevel-gearing upon its upper side meshing with the bevel-gear upon the counter-shaft whereby motion is transmitted to the said gear, friction-gears projected from the under sides of the spur-gears, a steering-shaft paralleling the power and counter shafts and connected to the axle of the vehicle, means for operating said steering-shaft consisting of a drive-shaft vertically disposed in a movable bearing, a friction-gear carried upon the upper end of the drive-shaft and adapted to engage either of the friction-gears upon the under sides of the spur-gear or to lie out of engagement therewith, means for operating the aforesaid drive-shaft, and means for communicating motion from the drive-shaft to the steering-shafts respectively.

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

GEORGE E. WILKINSON. [L. S.]

Witnesses:

F. W. GOODWIN,
J. D. MYERS.