E. T. DANIELS.

TRACTOR.

APPLICATION FILED NOV. 20, 1918.

1,302,638.

Patented May 6, 1919.

2 SHEETS—SHEET 1.

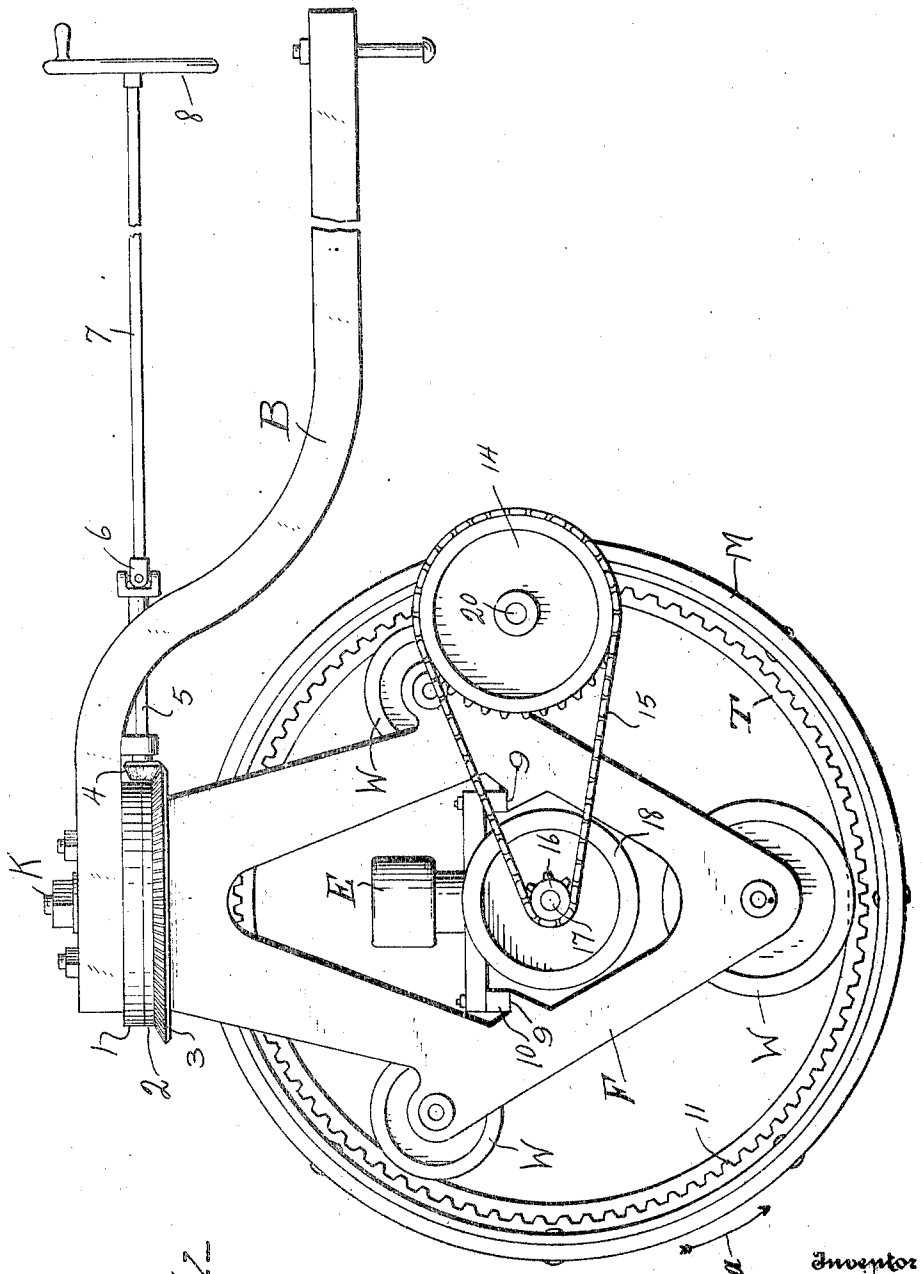


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

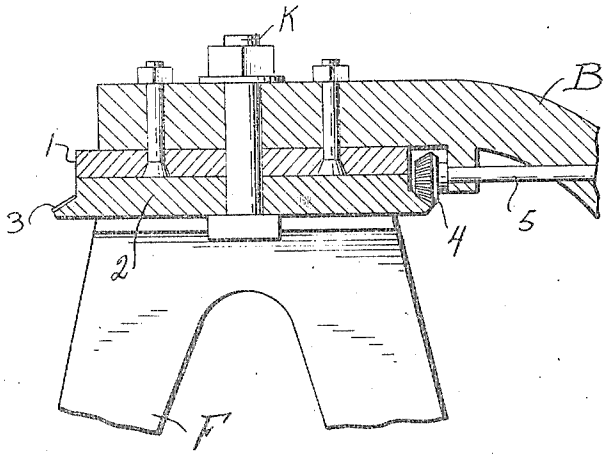


Fig. 3.

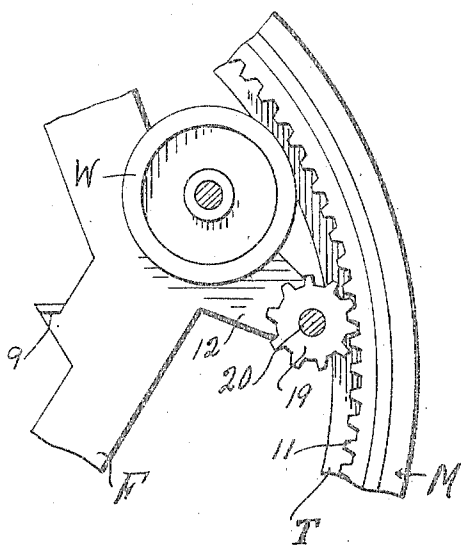
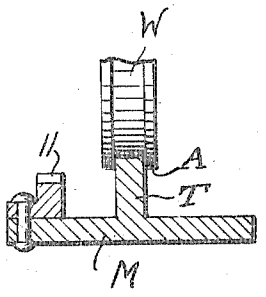


Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD T. DANIELS, OF TOWNSEND, DELAWARE, ASSIGNOR OF ONE-HALF TO ERNEST WELDON, OF TOWNSEND, DELAWARE.

TRACTOR.

1,302,638. Specification of Letters Patent. Patented May 6, 1919.

Application filed November 20, 1918. Serial No. 263,298.

To all whom it may concern:

Be it known that I, EDWARD T. DANIELS, a citizen of the United States, residing at Townsend, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Tractors, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to tractors, and has relation more particularly to a device of this general character of a one wheel type, and it is an object of the invention to provide a device of this general character having novel and improved means whereby the tractor may be employed for controlling the direction of its travel.

A further object of the invention is to provide a novel and improved device of this general character wherein the driving wheel or member is supported for turning movement about a vertical axis so that the direction of travel of the device may be reversed without the necessity of reversing the direction of rotation of the driving wheel.

An additional object of the invention is to provide a novel and improved device of this general character which is adapted to be coupled with a vehicle or the like to be transported without the necessity of changing or reconstructing the vehicle.

Furthermore, it is an object of the invention to provide a novel and improved device of this general character comprising an annular driving member held by a supporting structure and wherein a motor for operating the annular driving member is carried by the supporting structure and positioned at substantially the axial center of the annular member.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved tractor whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view in side elevation illustrating a tractor constructed in accordance with an embodiment of my invention;

Fig. 2 is an enlarged fragmentary view partly in vertical section and partly in elevation illustrating the mounting whereby the ground-engaging wheel is capable of swinging movement about a vertical axis;

Fig. 3 is an enlarged fragmentary view partly in side elevation and partly in section illustrating certain details of construction as herein included; and

Fig. 4 is a fragmentary view partly in transverse section and partly in elevation illustrating the coaction of a supporting wheel and the track carried by the ground-engaging wheel.

As disclosed in the accompanying drawings, B denotes a beam or elongated member of desired configuration and the inner end portion of said beam or member B is adapted to be coupled to a vehicle or the like to be transported.

Bolted or otherwise secured to the under face of the beam or member B at its outer end is a circular plate 1 and disposed through said plate 1 at its axial center and the beam or member B is a king bolt K, and which king bolt K also coacts in a conventional manner with a circular plate 2 underlying the plate 1 and substantially in contact therewith.

The plate 2 serves in the nature of a fifth wheel and the peripheral portion thereof is defined by a continuous bevel rack 3 having in mesh therewith a pinion 4. The pinion 4 is carried by the forward end portion of a shaft 5 rotatably supported by the beam or member B and extending longitudinally thereof. Coupled with the inner end portion of the shaft 5 through the medium of a universal joint 6 of any desired type is

an end portion of a steering rod 7 of desired length, and the outer end portion of said rod 7 is provided with a steering wheel 8. The rod 7 is of a length to position the wheel 8 in close proximity to the operator seated upon the vehicle or the like with which my improved tractor coacts, and it will be at once self-evident that upon requisite rotation of the rod 7 through the medium of the wheel 8, the plate 2 may be caused to rotate about the king bolt K in the desired direction.

Depending from the plate 2 are the spaced forks F of doubled construction and between which travel the driving member or wheel M. Each of the forks F is substantially diamond shape in form with its major axis vertically disposed, and said fork F substantially midway its length is provided with a pair of transversely alined and inwardly directed lugs or shoulders 9 which coact with the hangers 10 carried by the engine E.

The engine E is preferably of an internal combustion type and it is positioned substantially at the axial center of the member or wheel M when my improved device is assembled.

Rotatably supported between the forks F at the lower portions thereof and between the side portions of the forks substantially midway their lengths are the wheels W having their peripheries double flanged as at A and which wheels contact with the annular track T secured to the inner face of the member or wheel M and disposed circumferentially therearound. By this means it will be at once noted that the member or wheel M is supported by the forks F and is capable of rotary movement about a fixed axis with a minimum of frictional resistance.

Also secured to the inner wheel or face of the annular member or wheel M to one side of the track 10 is an annular toothed rack 11 disposed circumferentially of the member or wheel M and in mesh with said rack 11 is a gear 19 fixed to a shaft 20 rotatably supported by the rearwardly directed arms 12 carried by the inner vertical marginal portions of the forks F substantially midway the length thereof.

Also fixed to an end portion of the shaft 20 and to one side of the member or wheel M is a sprocket wheel 14 around which is disposed a chain 15. The chain 15 is also directed around a smaller sprocket 16 fixed to the driving shaft 17 of the engine E. The driving shaft 17 has also affixed thereto the balance wheel 18 whereby the driving power of the engine E is materially facilitated.

Upon operation of the engine E the member or wheel M will be caused to rotate in the direction indicated by the arrow *a* and the direction of travel of the tractor and the coacting vehicle or the like may be readily controlled by imparting requisite rotation to the rod 7, and should it be desired to reverse the direction of travel of the tractor and its coacting vehicle or the like, it is only necessary to impart a one-half turn to the plate 2. By this means the necessity of a reverse gearing is eliminated, and which results in material economy in the cost of production.

I have purposely omitted herein any means for controlling the operation of the engine E, as such features form no part of my present invention and may be as desired.

From the foregoing description, it is thought to be obvious that a tractor constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof, and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention except as hereinafter claimed.

I claim:

1. A device of the character described comprising a support, forks depending therefrom, each of said forks having their central portion cut away, and provided with oppositely disposed and inwardly directed lugs, a motor supported by the lugs of the forks and operatively engaged with the annular ground-engaging member.

2. A device of the character described comprising a support, forks depending therefrom, an annular ground-engaging member extending between the forks, each of said forks being substantially diamond-shape in form with its major axis vertically disposed, wheels rotatably supported between the forks at the lower portions thereof and substantially midway their lengths, the inner face of the annular member being provided with a circumferentially disposed trackway with which said wheels engage, and a motor carried by the forks for rotating the annular member.

3. A device of the character described comprising a support, forks depending therefrom, an annular ground-engaging member extending between the forks, each of said forks being substantially diamond-shape in form with its major axis vertically disposed, wheels rotatably supported be-

tween the forks at the lower portions thereof and substantially midway their lengths, said wheels contacting with the inner face of the annular member whereby said member is held in operative position, rearwardly directed arms carried by the inner vertical marginal portions of the forks substantially midway their lengths, a gear supported between said arms and in driving connection with the annular member, and a motor supported by the forks for driving the gear.

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

EDWARD T. DANIELS.

Witnesses:

THOMAS E. NAYLOR,

HORACE H. VANHORN.