

1,327,129.

Patented Jan. 6, 1920.

FIG. 1-

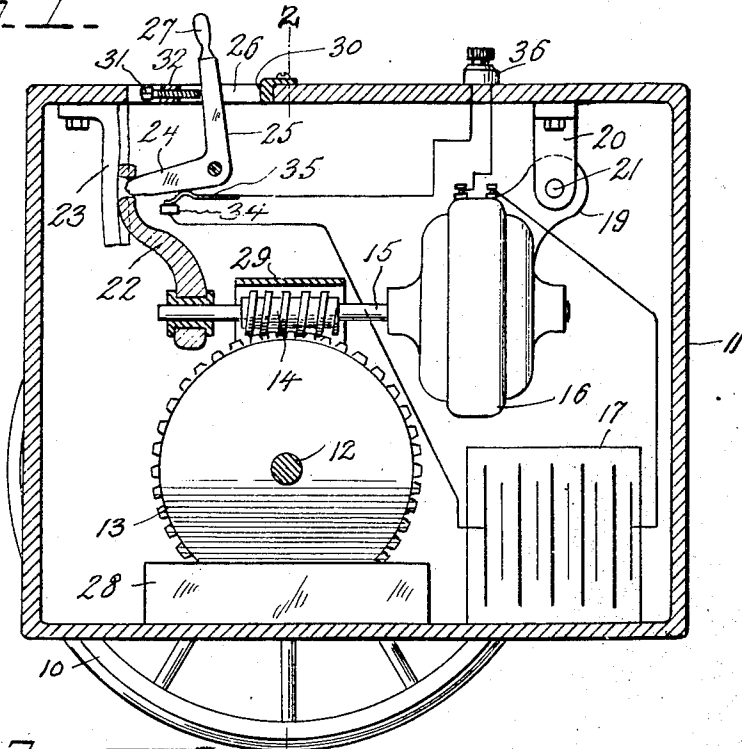
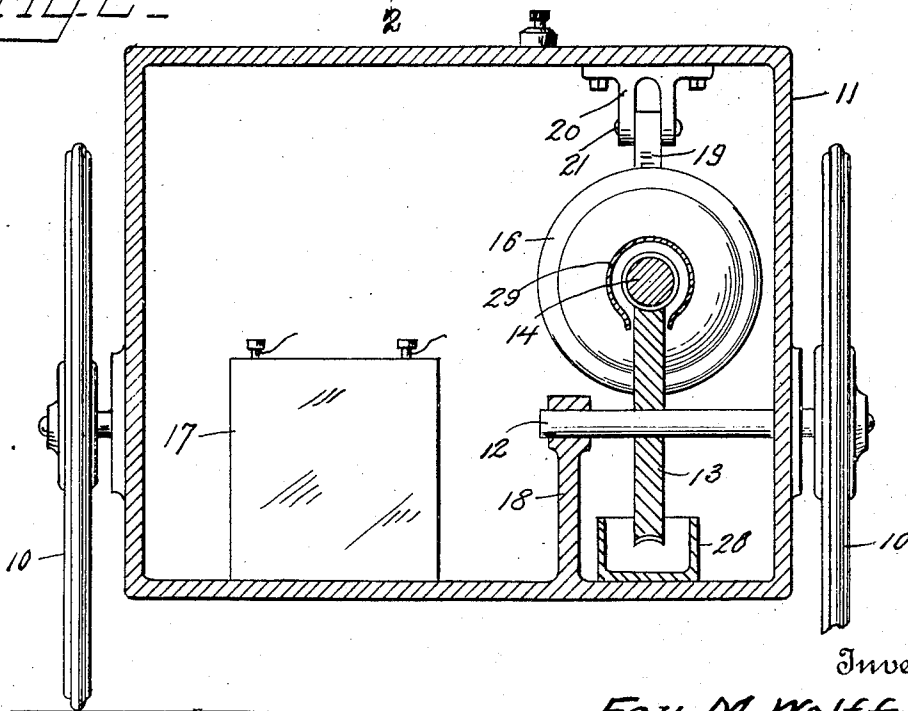


FIG. 2-



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DRIVE-GEARING.

1,327,129.

Specification of Letters Patent.

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Application filed August 23, 1913. Serial No. 251,108.

To all whom it may concern:

Be it known that I, FAY M. WOLFF, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Drive-Gearing, of which the following is a specification.

The gearing which is the subject matter of the present application for patent has been designed more particularly for use in connection with self-propelled chairs, and its object is to enable the occupant of the chair to readily control the propulsion means thereof.

The invention also has for its object to provide a driving gear and controlling means which are very simple in construction.

With the objects stated in view, the invention consists in a novel combination and arrangement of parts to be hereinafter described and claimed, and in order that the same may be better understood, reference is had to the accompanying drawing forming a part of this specification.

The preferred embodiment of the invention has been illustrated, but it will be understood that various changes and modifications may be made without a departure from the spirit and scope of the invention as claimed hereinafter.

In the drawing, Figure 1 is an elevation of the gearing with parts in section, and other parts shown diagrammatically, and Fig. 2 is a section on the line 2-2 of Fig. 1.

Referring specifically to the drawing, 10 denotes the wheels of a self-propelled chair such as disclosed in my Patent No. 1,259,064, dated March 12, 1918. The drive gearing and the motor are inclosed in a housing 11 suitably supported by the axles of the wheels 10. One of these axles is a drive axle, the same being denoted by the reference character 12. This axle extends into the housing 11, and is provided with a worm wheel 13 which is in mesh with a worm 14 on the shaft 15 of an electric motor 16 obtaining current from a storage battery 17 located in the housing 11. The inner end of the drive axle 12 is supported by a suitable bearing stand 18.

The motor 16 is pivotally supported from the top of the housing 11, the motor base having a lug 19 which is connected to a bracket member 20 by a pivot bolt 21, said bracket member being secured to the top of the housing.

By pivotally supporting the motor 16, it may be swung bodily to mesh and unmesh the worm 14.

The following means are provided for swinging the motor 16 for the purpose stated:

The outer end of the motor shaft 15 is journaled in a bearing carried by a slide 22 supported by a guide bracket 23 carried by the top of the housing 11. This slide is engaged by one of the arms 24 of a bell-crank lever having its other arm 25 extending through a slot 26 in the top of the housing, and fashioned into a hand grip 27. It will therefore be seen that when the lever end 27 is swung over to the right in Fig. 1, the slide 22 is elevated to take the worm 14 out of mesh with the worm wheel 13, and when the lever end is moved in the opposite direction, the slide lowers and again brings the worm into mesh with the worm wheel.

The worm wheel runs in a trough 28 containing a lubricant, and the worm 14 is partly surrounded by a shield 29 to catch any oil splashing off the same. This oil shield is shown in section in Figs. 1 and 2.

In the slot 26 is a fixed stop 30 for limiting the swing of the lever end 27 in a direction to unmesh the worm 14, and on the other side of the lever arm is an adjustable stop to limit its movement in a direction to mesh the worm. The purpose of the adjustable stop is to allow the worm to gear deeper into the worm wheel after it wears from use. This adjustable stop may be a screw 31 threaded through a nut 32 seating in the slot 26.

The bell-crank lever is also employed for controlling the energizing circuit of the motor 16, said lever controlling an auxiliary switch composed of a fixed contact 34 and a movable contact 35 in the path of the lever arm 24, so that when the lever is swung to place the worm 14 in mesh, the contact 35 is engaged with the contact 34 to close the motor circuit. These two contacts are interposed in one side of the motor circuit, and said circuit therefore remains broken until the contacts come together, even though the main switch 36 is closed.

The object of the auxiliary switch is to prevent starting of the motor 16 if the worm 14 is not properly in mesh with the worm wheel 13, since, if the lever arm 24 is not advanced far enough to fully mesh the worm, the circuit remains broken at the con-

tacts 34 and 35. The main switch 36 may be of any desired construction, and located at any convenient place. It is shown diagrammatically at 36. After the circuit has been
5 closed at the contacts 34 and 35, the closing of the switch 36 will start the motor; or, the switch 36 may be closed first. In either case, the motor will not start until the worm properly meshes, and the circuit is closed at
10 the contacts 34 and 35. It will be understood that the motor circuit is also broken when the lever is operated to unmesh the worm 14.

The chair can be easily controlled by the
15 occupant thereof, and as the mechanism is simple there are no parts liable to get out of order.

I claim:

1. The combination of a pair of gear mem-
20 bers, a housing inclosing said members, a motor pivotally mounted in the housing and carrying one of the gear members and driving the same, said member being movable
25 bodily with the motor, a guide in the housing, a slide engageable with the guide and supporting the aforesaid gear member, a

lever operatively connected to the slide for swinging the motor to bring said member into and out of mesh with the other gear member, the wall of the housing having a
30 slot in which one end of the lever works and from which it projects, and an adjustable stop in the slot in the path of said end of the lever for regulating the movement thereof in a direction to mesh the gear member. 35

2. The combination of a pair of gear members, a supporting frame, a motor pivoted to said frame and carrying one of said members and driving the same, said member being movable bodily with the motor, a lever
40 for swinging the motor to bring the last-mentioned gear member into and out of mesh with the other gear member, said lever being pivoted to the frame, and the latter having a slot in which one end of the lever works,
45 and an adjustable stop in the slot in the path of the lever for regulating the movement thereof in a direction to mesh the gear member.

In testimony whereof I affix my signature. 50

FAY M. WOLFF.