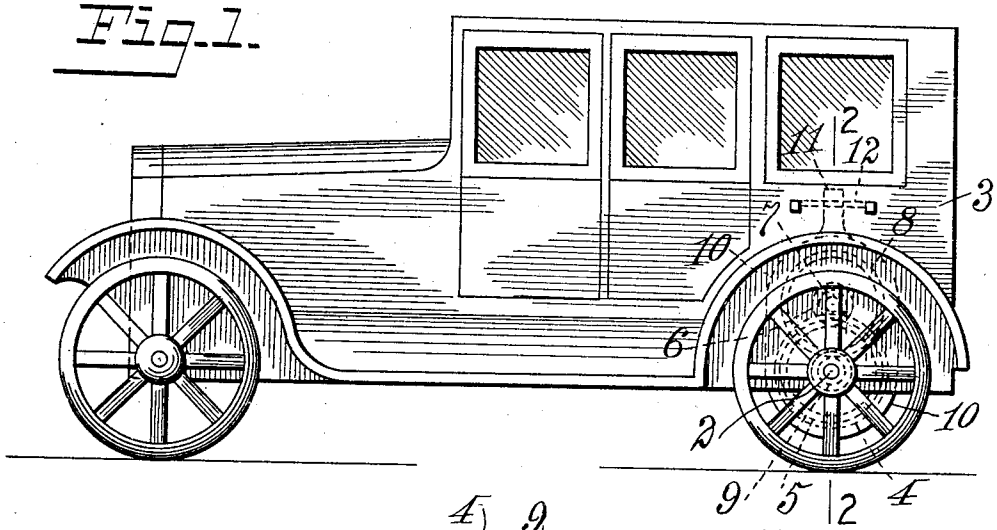
C. F. BLACK.
WHEELED TOY.
APPLICATION FILED JAN. 31, 1921.

1,395,470.

Patented Nov. 1, 1921.

Fig. 1.



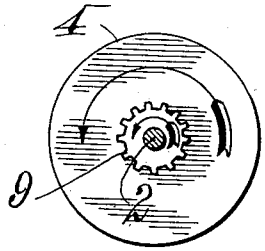


Fig. 5.

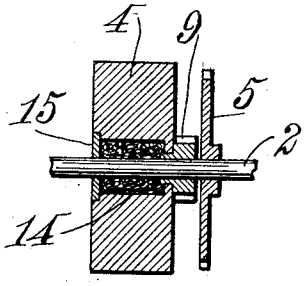


Fig. 4.

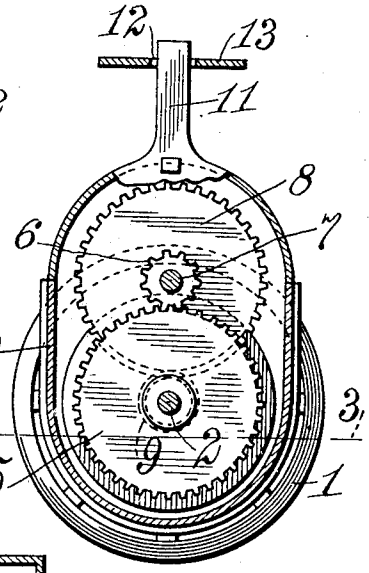
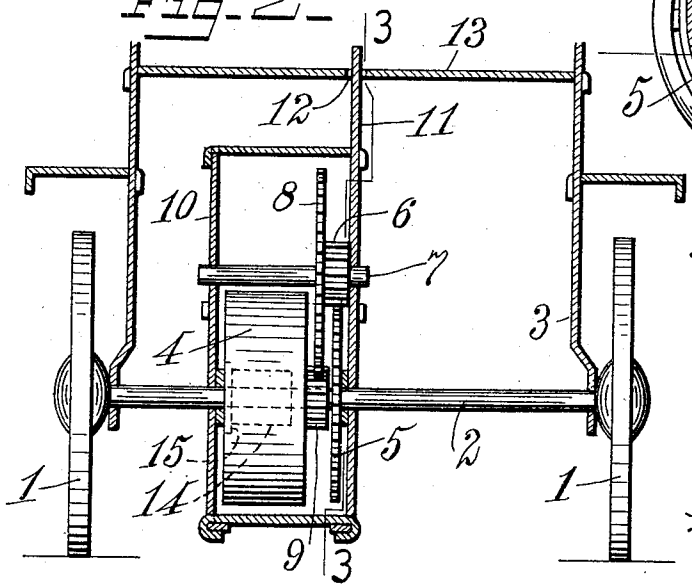


Fig. 3.

Fig. 2.



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WHEELED TOY.

1,395,470. Specification of Letters Patent. Patented Nov. 1, 1921.

Application filed January 31, 1921. Serial No. 441,253.

To all whom it may concern:

Be it known that I, CHARLES F. BLACK, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Wheeled Toys, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to toys and the like and more particularly to a power mechanism for an inertia wheel driven toy.

One object of the invention is to provide a simple, inexpensive, power mechanism which will develop and transmit to the driving shaft a relatively large amount of power.

A further object of the invention is to produce a mechanism which will be very compact and of a strong, durable character.

Other objects of the invention may appear as the device is described in detail.

In the accompanying drawings Figure 1 is a side elevation of a toy embodying my invention; Fig. 2 is a section taken on the line 2—2 of Fig. 1; Fig. 3 is a section taken on the line 3—3 of Fig. 2; Fig. 4 is a section taken centrally through the inertia wheel and the gearing which is mounted on the axle; and Fig. 5 is a section taken transversely of the axles showing the inertia wheel and its pinion in elevation.

In these drawings I have illustrated one embodiment of my invention and have shown the same as applied to a toy automobile, but it will be understood that the invention may be embodied in devices of various kinds which are capable of being driven by an inertia wheel.

In the toy here shown the rear ground wheels 1 constitute the driving wheels for the vehicle and these ground wheels are mounted upon a driving shaft, or axle, 2, which is journaled in the side members 3 of the body of the vehicle, which body in the present instance, constitutes the main frame. Rotatably mounted upon the axle 2 is an inertia wheel 4 and means are provided for imparting initial movement to the inertia wheel and for then transmitting this movement to the driving shaft, or axle, to cause the latter to rotate in the same direction that the inertia wheel is rotating. In the type of toy here shown it is customary to impart initial movement to the inertia wheel by exerting downward pressure on the toy and moving the same over the floor, or other supporting surface, and in the present construction I have utilized a train of multiplying gearing for thus imparting the initial movement to the inertia wheel and causing the same to rotate at a relatively high rate of speed and for then transmitting the movement from the inertia wheel to the axle at a relatively low rate of speed. To this end a gear 5 is rigidly secured to the axle 2 and meshes with a pinion 6 mounted on a shaft 7 arranged parallel with the axle 2. Secured to and rotating with the pinion 6 is a gear 8 which in turn meshes with a pinion 9 rigidly secured to the inertia wheel 4. The counter shaft 7 may be mounted in any suitable structure but, as here shown, it is mounted in the side members of a housing 10 within which the inertia wheel and its gearing are mounted and which serves not only as a supporting frame for the gearing but also to prevent injury to the child operating the toy and to prevent strings or other matter from becoming entangled in the gearing. The housing, and, consequently, the gearing may be supported in any desired position relatively to the axle and to the body of the toy, and, as here shown, it occupies a substantially vertical position, one side member of the housing having an upwardly extending finger 11 which projects through an opening 12 in a transverse part 13 of the body, such as the seat of the automobile. The opening 12 is of a size sufficient to permit the finger 11 to have some play therein. Consequently, the axle 2 can shift its position to accommodate itself to the bearings in the frame and thus prevent any binding of the axle should these bearings be slightly out of line.

The inertia wheel may be of any suitable construction, but in the present device it is shown as having in that side opposite to the pinion 9 an axial recess 14 adapted to receive a lubricant, such as oil saturated felt, and this opening is closed by a disk 15 pressed into the enlarged end of the recess, which disk serves not only as a closure for the opening but also as a bearing for that side of the inertia wheel.

While I have shown and described one embodiment of my invention I wish it to be understood that I do not desire to be lim-

ited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described, a shaft, an inertia wheel rotatably mounted on said shaft, and means for imparting initial rotation to said inertia wheel and for transmitting power from said inertia wheel to said shaft and causing said shaft to rotate in the same direction in which said inertia wheel rotates.

2. In a device of the character described, a shaft, an inertia wheel rotatably mounted on said shaft, and a driving connection between said inertia wheel and said shaft for first imparting initial movement to said inertia wheel, and then transmitting power from said inertia wheel to said shaft and causing the latter to rotate in the same direction in which the inertia wheel rotates.

3. In a device of the character described, an axle, ground wheels connected with said axle for rotation therewith, an inertia wheel rotatably mounted on said axle, and a driving connection between said axle and said inertia wheel to cause the latter to rotate on said axle in the same direction that said axle rotates.

4. In a device of the character described, an axle, ground wheels connected with said axle for rotation therewith, an inertia wheel rotatably mounted on said axle, and multiplying gearing interposed between said axle and said inertia wheel to cause said parts to rotate in the same direction but at different speeds.

5. In a device of the character described, an axle, ground wheels connected with said axle for rotation therewith, an inertia wheel rotatably mounted on said axle, a gear rigidly secured to said axle, a pinion mounted on an axis parallel with said axle and meshing with said gear, a second gear secured to and rotating with said pinion, and a pinion rigidly connected with said inertia wheel and meshing with said second gear.

6. In a device of the character described, an axle, ground wheels connected with said axle for rotation therewith, an inertia wheel rotatably mounted on said axle, said inertia wheel having an axial recess in one side thereof, a disk to close said recess and form a bearing for said axle, and a driving connection between said axle and said inertia wheel to cause the latter to rotate on said axle in the same direction that said axle rotates.

7. In a device of the character described, a shaft, an inertia wheel rotatably mounted on said shaft, multiplying gearing connecting said inertia wheel with said shaft to cause said parts to rotate in the same direction at different speeds, a housing inclosing said inertia wheel and said gearing and forming a support for a part of said gearing.

8. In a device of the character described, a body portion, an axle journaled in said body portion, ground wheels connected with said axle for rotation therewith, an inertia wheel rotatably mounted on said axle, gearing interposed between said inertia wheel and said axle to cause said inertia wheel to rotate on said axle in the same direction that said axle rotates, and a housing mounted on said axle and inclosing said inertia wheel and said gearing, said housing and said body portion having coöperating parts to hold said housing against rotation with said axle.

In testimony whereof, I affix my signature hereto.

CHARLES F. BLACK.