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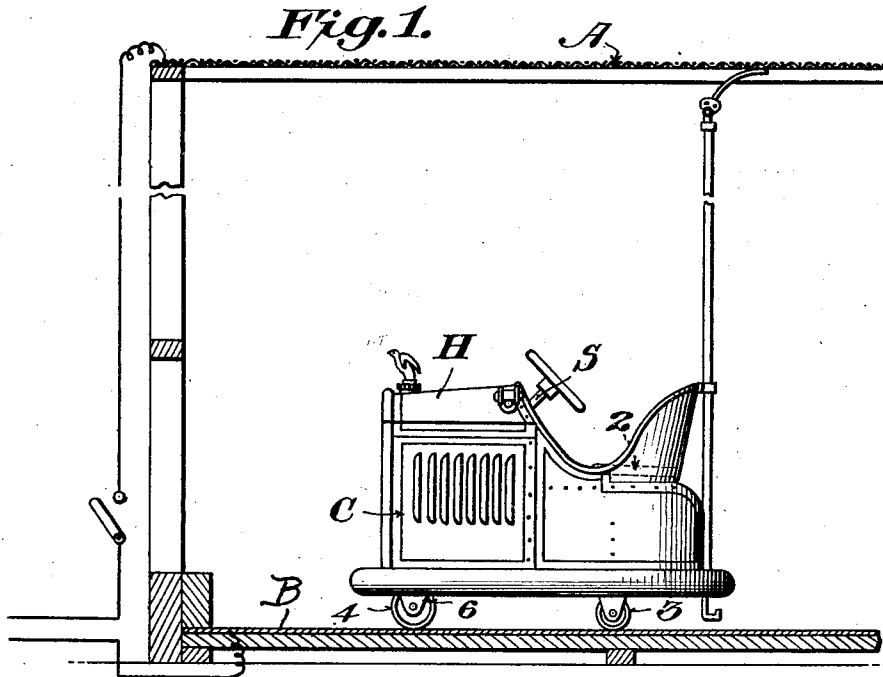
F. L. MARKEY

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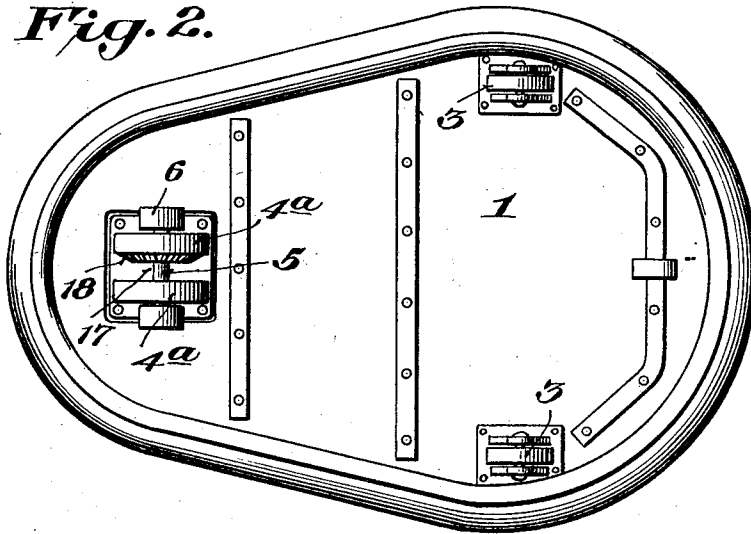
AMUSEMENT DEVICE

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*Fig. 2.*



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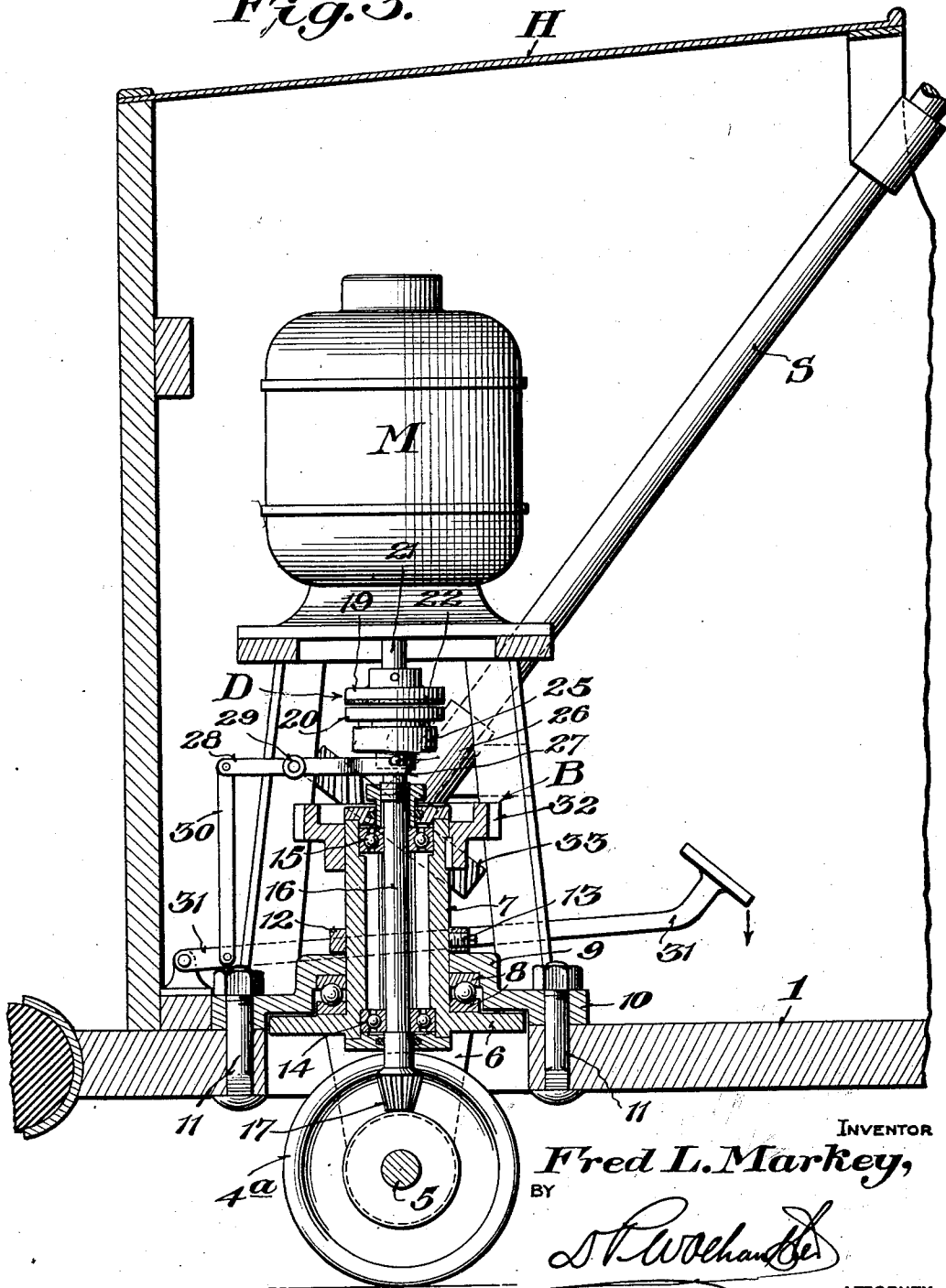
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Fig. 3.



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Fig. 4.

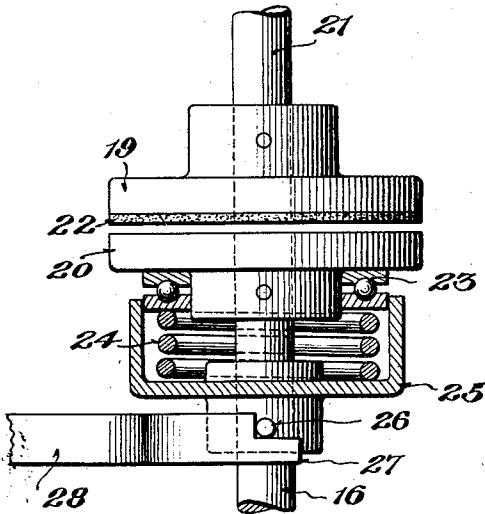


Fig. 5.

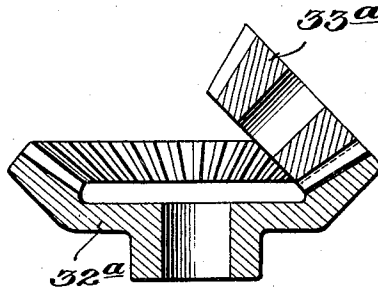


Fig. 6.

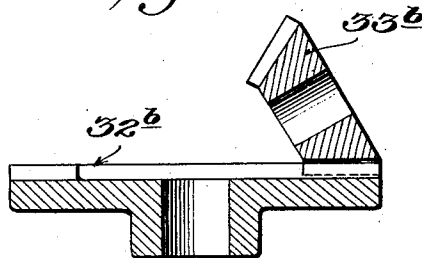
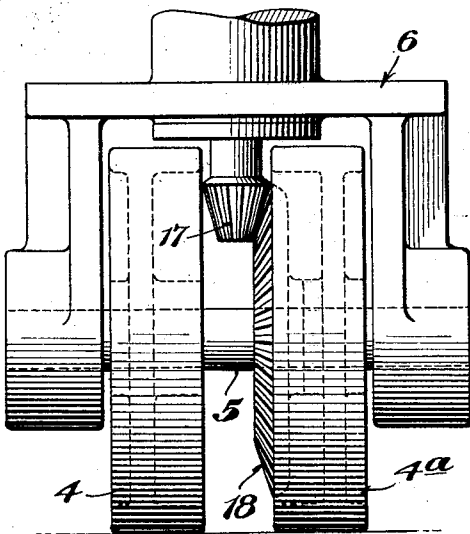


Fig. 7.



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# UNITED STATES PATENT OFFICE

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## AMUSEMENT DEVICE

Application filed November 8, 1928. Serial No. 317,955.

This invention relates to an improvement in amusement apparatus of the general type illustrated in the Stoehrer Patents Nos. 1,373,108, March 29, 1921; 1,467,959, Sept. 11, 1923; 1,478,979, December 25, 1923; and 1,652,840, December 13, 1927.

A primary object of the invention is to provide a novel and practical combined guiding and driving construction for a car used in amusement devices of the type including an electrically charged floor and ceiling which furnishes power to the driving motor. In that connection the invention contemplates a carrying forward of the idea shown in the Stoehrer Patent No. 1,373,108 wherein the guiding and traction units are combined to provide for the control of the car.

A further object of the invention is to provide a construction which is simple, practical, reliable and easily manufactured and assembled, and which has the advantage of producing a better tractive effect by locating the traction element at the front of the platform of the car. Heretofore, it has been the practice to locate the driving or traction means approximately beneath the position of occupants' seat so that all of the tractive effort of the driving unit is concentrated or focused more or less in a restricted zone which imposes unusual load on the driving motor to overcome the inertia of starting.

With the present arrangement, namely, that of locating the combined driving and steering unit at the front of the car, the load or weight will be more equally distributed so that the car will pick up quicker in starting, thereby saving both motor and other equipment from unnecessary wear or strain and also permitting quicker manipulation of the car.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts, hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a view illustrating the use of

the present car in combination with the overhead electrically charged ceiling and a floor. Fig. 2 is a bottom plan view of the improved car.

Fig. 3 is an enlarged vertical sectional view of the combined driving and steering unit.

Fig. 4 is a detail sectional view of the type of clutch employed.

Figs. 5 and 6 are detail sectional views showing forms of gearing between the steering column and the dirigible traction unit; and

Figure 7 is a front elevation of the steering wheels.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

As previously indicated, the present invention is adapted for use in connection with an amusement outfit which includes an electrically charged overhead wire mesh ceiling or the like A and a metallic floor B on which the car designated generally as C travels when propelled by the motor M. This motor is supplied by current from the floor and ceiling by the use of a suitable trolley T engaging with the ceiling and electrically connected with the motor.

Referring to the car C, it will be observed that the same includes a body consisting of a car floor or platform 1 having thereon a seat 2 for the operator and other occupants according to the size or capacity of the car and adapted to be supported on suitable wheels or casters 3 and 4, the former being located at the rear of the car and the latter being arranged at the front thereof and forming a part of the novel combined driving and guiding unit of the present invention. The said combined driving and guiding unit is preferably located at the front end of the platform and may be concealed by a hood designated generally as H and from which the steering column S projects to carry at the upper end thereof the steering wheel W suitably located with reference to the seat 2.

Referring to the details of construction of the combined driving and guiding unit, it will be observed that the front wheel 4 which functions as a support for the car as well as

one of the steering elements, and also as the tractive means for the car preferably consists of a pair of disks or wheels 4<sup>a</sup> mounted on a shaft 5 carried by a bracket 6 mounted on one end of a sleeve 7, the said bracket and sleeve being rotatably journaled in the recessed portion 9 of a base member 10. The latter may be bolted or otherwise secured to the platform 1 of the car by the fastenings 11 and for the purpose of maintaining the sleeve 7 in assembled relation with reference to the base member 10 the outside of the sleeve has fitted thereto a ring 12 which is secured in position by a set screw 13 or its equivalent.

The hollow sleeve 7 is provided at opposite ends of its inside bore with the shaft bearings 14 and 15 adapted to receive the motor driven shaft 16 which transmits motion to one of the wheels 4<sup>a</sup> of the traction or driving wheel 4. While various forms of driving mechanism between the shaft and the wheel may be employed, nevertheless, by way of example the shaft is shown as having a beveled pinion 17 at its lower end adapted to mesh with a bevel gearing 18 on one of the wheels 4<sup>a</sup>.

The upper end of the shaft 16 which projects beyond the sleeve 7 is connected with one element of a clutch device designated generally as D and arranged between the motor and the shaft 16. Any suitable and convenient form of clutch device may be used to connect the motor with the traction wheel 4.

In amusement devices of this type, it is the general practice to close the circuit to the floor and ceiling whereupon the motors of all the cars standing on the floor will be set in operation, and to avoid movement of the car until the operator or occupant desires, the clutch device D is of the normally open type. In other words, the shaft 16 is normally disengaged from the motor and in order to impart motion to the car it is necessary for the occupant or operator to positively connect the motor with the traction unit which has the advantage of causing the car to stop if the operator removes foot pressure, or hand pressure, on the clutch according to the type of clutch employed, thereby rendering the car entirely safe under all conditions of use.

By way of example, a foot operated type of clutch device is shown in the drawings. This device includes a clutch proper consisting of the clutch disks 19 and 20, the former being carried by the motor shaft 21 and the latter being slidably keyed on the upper end of the shaft 16 and faced with a suitable friction lining 22. The slidably clutch disk 20 is provided on its underside with a thrust bearing 23 which is supported by a spring 24 mounted in a hollow spool or cup 25 which is provided with an offset lug 26 adapted to be engaged by the free end 27 of a lever 28 ful-

crumed as at 29 and pivotally connected with a link 30 which is moved by a foot pedal 31. The arrangement is such that when the operator presses downwardly on the foot pedal 31, that is in the direction of the arrow, the lever 28 will swing on its pivot 29 to move the end 27 upwardly and thereby elevate the spool 25 to compress the spring 24 and force the movable disk 20 into engagement with the relatively fixed clutch disk 19 driven by the motor.

As long as the operator maintains a downward pressure on the foot pedal 31, the clutch elements 19 and 20 will be maintained in engagement and the car will be driven by the tractive effort of the front wheel unit 4 being driven by the motor. When the foot pressure is released from the pedal, the clutch elements will become disengaged, due to the relaxation of the spring 24.

The upper end of the sleeve 7 is provided on its outer face with a suitable gear 32 which may be of the spiral type indicated and which is adapted to mesh with a spiral gear 33 carried by the steering column S. This arrangement permits of locating the steering wheel to one side of the longitudinal center line of the car, thereby positioning the steering wheel W in front of the occupant of the car who is to operate the same and leaving the other portion of the seat free for another occupant.

It will be apparent that various forms of gearing may be used between the end of the steering column S and the sleeve 7, and by way of illustrating the range of modification of such gearing, Figures 5 and 6 illustrate further embodiments. Fig. 5 for example shows the use of an internal bevel gear 32<sup>a</sup> and a pinion 33<sup>a</sup>, while Fig. 6 shows a crown gear 32<sup>b</sup> and a bevel pinion 33<sup>b</sup>.

One of the distinctive features of the invention is the reversibility of the dirigible driving unit. That is to say, by making a half-turn of the driving wheel, the direction of movement of the car may be completely reversed. And that can be done without shifting the position of the motor. According to the present construction the motor has a fixed mounting while the unit which it drives, namely, the traction unit 4, consisting of the two wheels or disks 4<sup>a</sup>, is dirigible and under the control of the operator at all times. It is possible to make very small circles with this type of car by turning the wheels of the driving unit at right angles. It is possible to get away from the bumper on other cars by either making a complete half-turn of the driving wheel, in which event the car will back away, or by turning the driving wheel to a slightly greater than a quarter turn in which case the front of the car will pull away from its obstruction. In connection with the supporting wheels or casters 3 it may be pointed out that the same

may be fixed or swiveled as desired in accordance with the teachings of the patents hereinbefore referred to.

From the foregoing it will be apparent that the present invention provides a combined driving and guiding unit adapted to be directly controlled and manipulated by a steering column without the use of chains or intermediate connections, thereby eliminating unnecessary equipment and rendering the manipulation of the car, by inexperienced operators, easier, while at the same time the arrangement also permits of a better distribution of the load with relation to the tractive effort of the combined driving and steering unit which not only contributes towards easier steering but also assists in lightening the burden imposed on the motor by frequent stopping and starting to manipulate the car when in use.

Without further description it is thought that the features and advantages of the invention will be readily apparent to those skilled in the art, and it will of course be understood that changes in the form, proportion and minor details of construction may be resorted to, without departing from the spirit of the invention and scope of the appended claims.

I claim:—

1. In an amusement device of the class described, a floor, a sleeve rotatably mounted on the floor, a wheel carried by said sleeve, a shaft journaled in said sleeve, a driving connection between said shaft and said wheel, a motor mounted with its drive shaft in axial alignment with said first mentioned shaft, a clutch disk fixed to the drive shaft of said motor, a cooperating clutch disk splined to said first mentioned shaft, a member rotatable and longitudinally slidable on said first mentioned shaft, a spring between said member and said second mentioned clutch disk, and means for longitudinally moving said member along said second mentioned shaft.

2. In an amusement device of the class described, a floor, a sleeve rotatably mounted on the floor, a wheel carried by said sleeve, a shaft journaled in said sleeve, a driving connection between said shaft and said wheel, a motor mounted with its drive shaft in axial alignment with said first mentioned shaft, a clutch disk fixed to the drive shaft of said motor, a cooperating clutch disk splined to said first mentioned shaft, a cup-shaped member rotatable and longitudinally slidable on said first mentioned shaft, an expansion coil spring housed within said cup member and reacting therefrom to force said splined clutch disk towards the other clutch disk, and means for longitudinally moving said cup-shaped member along said second mentioned shaft.

3. In an amusement device of the class described, a floor, a sleeve rotatably mounted on

the floor, a wheel carried by said sleeve, a shaft journaled in said sleeve, a driving connection between said shaft and said wheel, a motor mounted with its drive shaft in axial alignment with said first mentioned shaft, a clutch disk fixed to the drive shaft of said motor, a cooperating clutch disk splined to said first mentioned shaft, a member rotatable and longitudinally slidable on said first mentioned shaft, a spring between said member and said second mentioned clutch disk, an intermediately pivoted lever operatively connected at one end with said member, a pivoted foot lever, and a link connecting said foot lever with the second end of said intermediately pivoted lever.

In testimony whereof I hereunto affix my signature.

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