C. K. ELMER.

AUTOMOBILE TURN TABLE.

APPLICATION FILED OCT. 29, 1908.

923,825.

Patented June 8, 1909.

3 SHEETS—SHEET 1.

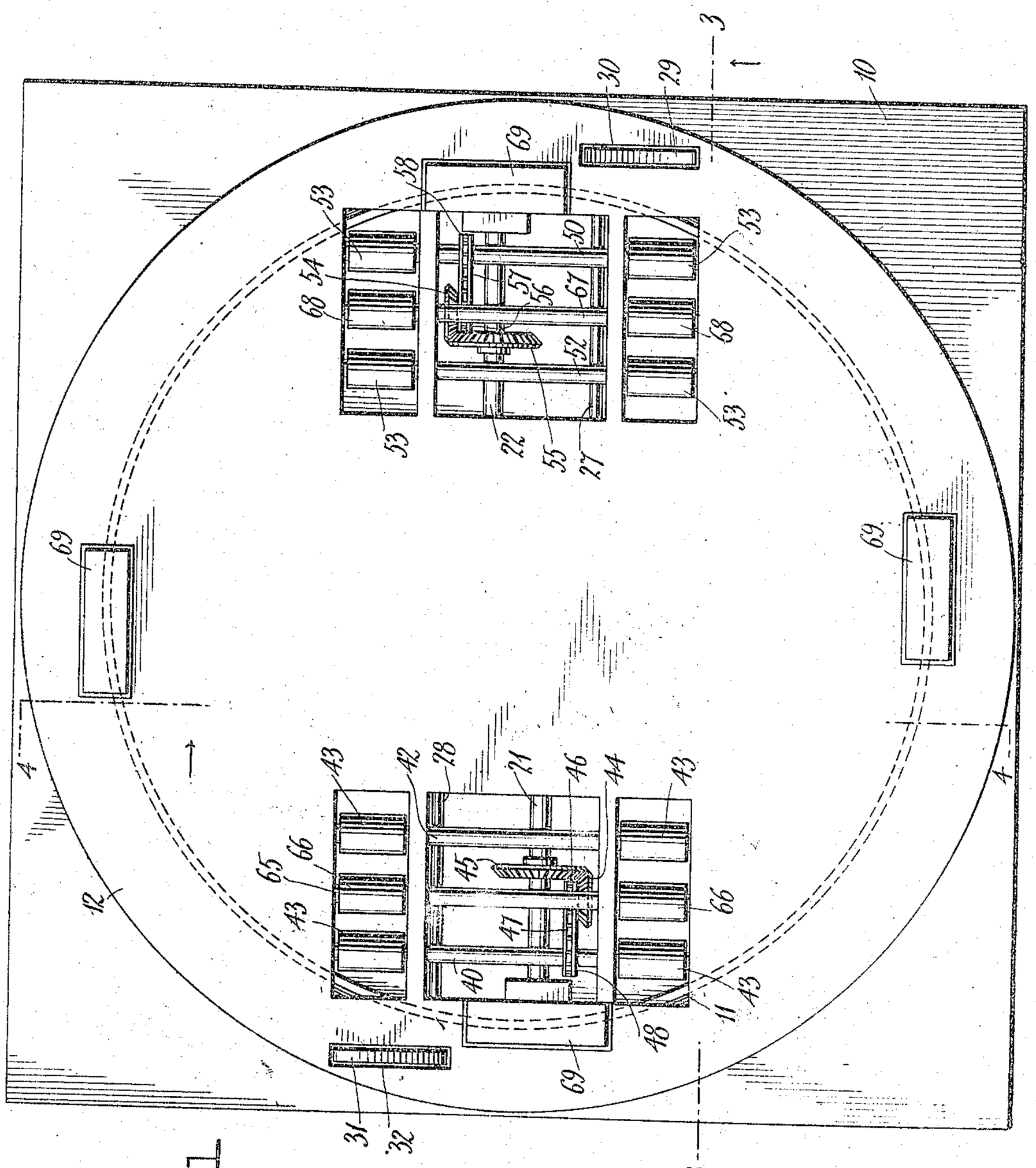

FIG. 1.

Witnesses

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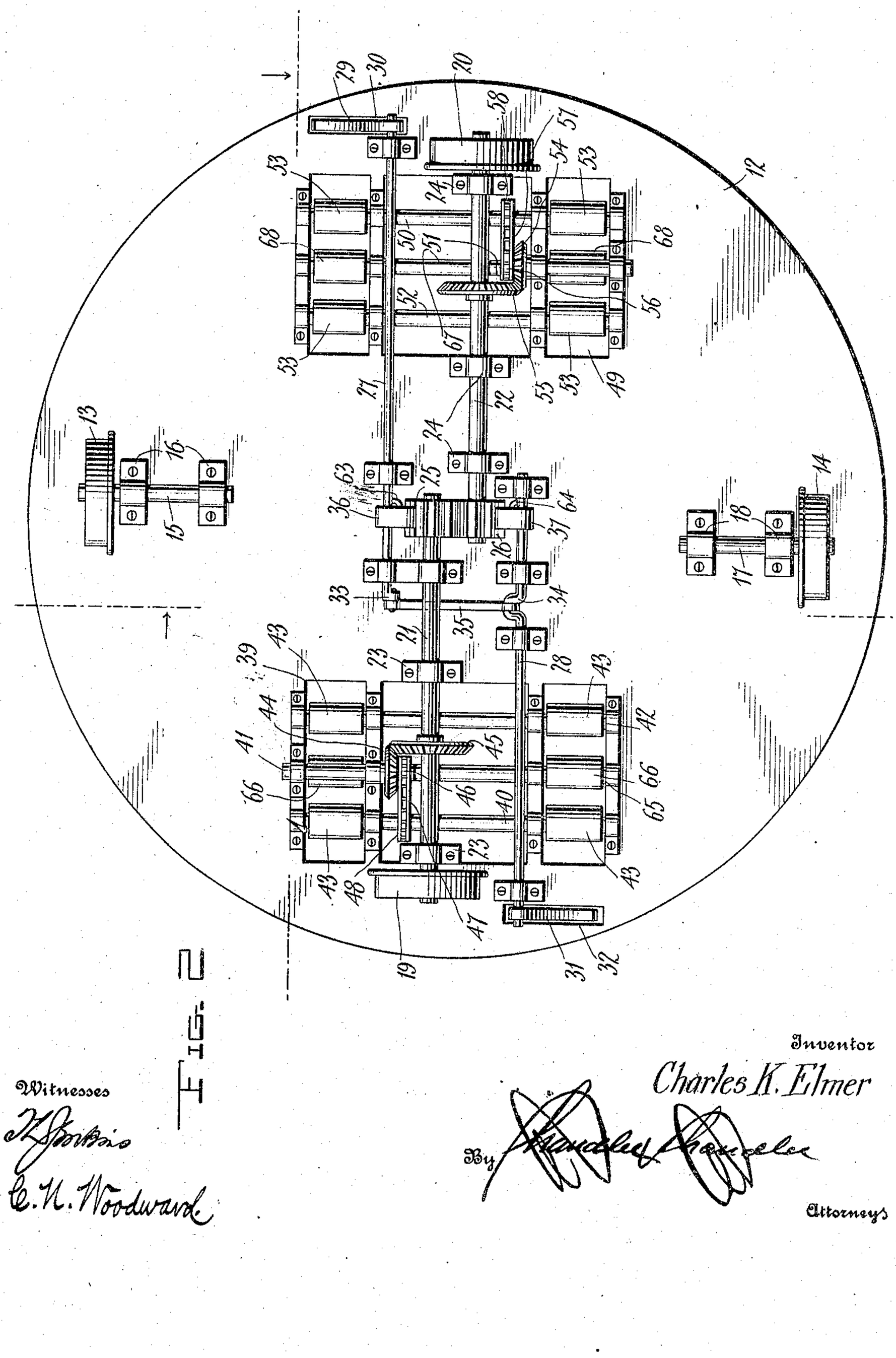

FIG. 2.

Witnesses

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3 SHEETS—SHEET 3.

FIG. 3

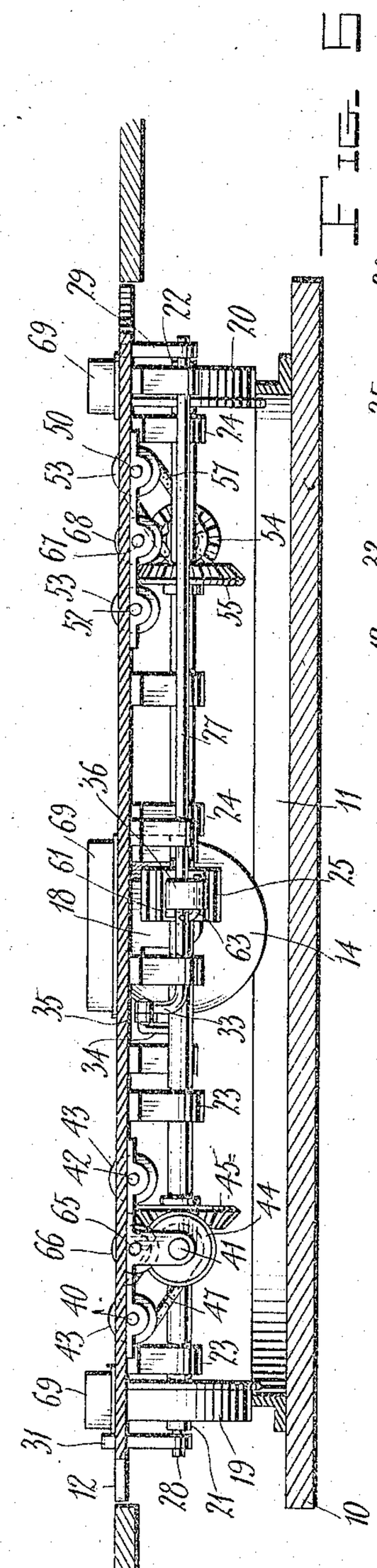

FIG. 5

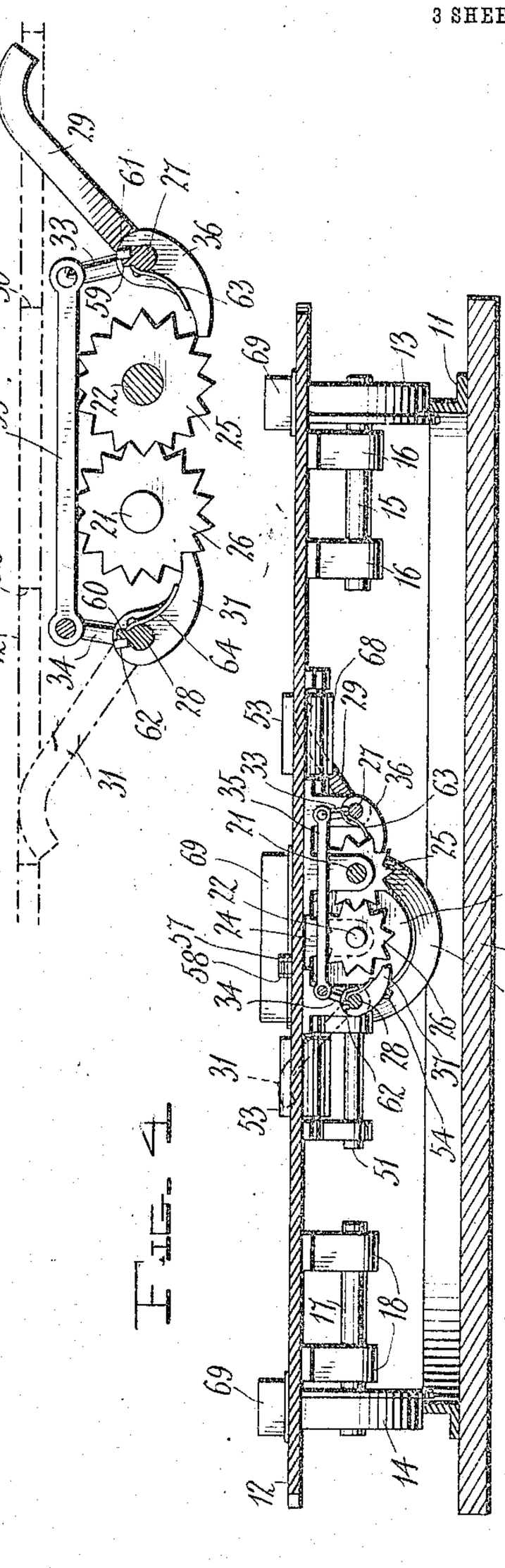

FIG. 4

Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES K. ELMER, OF ST. PAUL, MINNESOTA.

AUTOMOBILE TURN-TABLE.

No. 923,825. Specification of Letters Patent. Patented June 8, 1909.

Application filed October 29, 1908. Serial No. 460,104.

To all whom it may concern:

Be it known that I, CHARLES K. ELMER, a citizen of the United States, residing at St. Paul, in the county of Ramsey, State of Minnesota, have invented certain new and useful Improvements in Automobile Turn-Tables; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to automatic turntables, more particularly to devices of this character whereby automobiles and similar devices may be caused to be turned within a space equal to their own lengths, and has for its object to provide a simply constructed turntable mechanism whereby the power of the machine itself is utilized to operate the turntable and reverse the position of the machine, to turn it part-way around as required.

The improved device is designed more particularly for use in small garages or other circumscribed localities but which may be adapted for use wherever devices of this character are required.

The improved device may also be employed for enabling steam locomotives and electric locomotives to operate the turntables upon which they are disposed, and it is not desired therefore to limit the use of the apparatus for use in connection with any form of motor with which it may be employed.

With these and other objects in view the invention consists in a turntable mounted by bearing wheels upon a circular track, two of the wheels mounted upon inwardly extending shafts having interengaging gears, pawls alternately engaging the gears, operating means connected respectively with said extended shafts, means whereby the weight of the motor in moving upon the turntable is utilized to lock the gears from movement in one direction while leaving them free to rotate in the opposite direction, means whereby the backward rotation of the motor while upon the turntable will operate said shafts in one direction and thus rotate the turntable upon its track, and means whereby the pawls are reversed in position to lock the mechanism to enable the motor to leave the turn table without producing rotary motion thereto.

The invention further consists in certain novel features of construction as hereafter shown and described and then specifically pointed out in the claims, and in the drawings illustrating the preferred embodiment of the invention, Figure 1 is a top plan view of the improved apparatus. Fig. 2 is a plan view of the same from beneath. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is an enlarged sectional detail of the trip mechanism.

The improved device comprises a bed or foundation 10 of any suitable construction and provided with a circular track 11.

The turntable portion of the device comprises a platform 12, preferably circular and with flanged wheels 13—14 bearing upon the track, the wheel 13 having an axle 15 connected by bearings 16 to the under side of the platform 12 and the wheel 14 having an axle 17 connected by bearings 18 to the under side of the platform 12, the wheels 13—14 being disposed at opposite sides of the platform.

Disposed at the opposite sides of the platform between the wheels 13—14 are similar wheels 19—20 mounted upon inwardly extending shafts 21—22, the shaft 21 supported from the platform by hangers 23, and the shaft 22 supported from the platform by hangers 24. The inner ends of the shafts 21—22 are provided respectively with interengaging gears 25—26 so that motion applied to either of the shafts 21—22 will rotate the wheels 19—20 in the same direction, as hereafter explained, and thus rotate the platform upon the track, the wheels 13—14 running as idlers upon the track and supporting the platform in a horizontal position.

Mounted for oscillation beneath the platform 12 are two rock shafts 27—28, the shaft 27 having a lever arm 29 extending therefrom and protruding through an aperture 30 in the platform adjacent to the wheel 20, while the shaft 28 is provided with a similar trip lever 31 protruding through an aperture 32 in the platform adjacent to the wheel 19, the shafts 27—28 being located at opposite sides of the shafts 21—22 and the gears 25—26. The inner end of the rock shaft 27 is provided with a crank 33, while the rock shaft 28 is provided with a similar crank 34, the two cranks being connected by a rod 35 so that the shafts oscillate in unison when operated, as hereafter explained.

Loosely engaging the rock shaft 27 is a pawl 36 adapted to engage the teeth of the

gear 25, and loose upon the rock shaft 28 is a similar pawl 37 adapted to engage the teeth of the gear 26. The shafts 27—28 are provided respectively with studs 59—60 while the pawls 36—37 are provided respectively with stop studs 61—62 engaging with the studs 59—60 when the pawls are arranged in one position. The pawls 36—37 are also provided respectively with springs 63—64 operating to maintain the pawls with the studs in yieldable engagement. The cranks 33—34 and the connecting rod 35 are so arranged that when the shaft 28 is rotated to bring the pawl 37 into engagement with the teeth 26 the pawl 36 will be held out of engagement with the gear 25 and when the positions of the shafts 27—28 are reversed, the pawl 36 will engage the gear 25 and the pawl 37 will be disengaged from the gear 26, the object to be hereafter explained.

Mounted for rotation through a suitable opening 39 in the platform 12 are three shafts 40—41—42 disposed in parallel relations with the central shaft 41 below the line of the remaining shafts 40—42, the shafts 40—42 having rollers 43 upon their ends, as shown. The central shaft 41 is provided with a beveled pinion 44 engaging with a beveled gear 45 upon the shaft 21 so that the rotation of the shaft 41 will be communicated to the shaft 21. The shaft 41 is also provided with a sprocket wheel 46 over which a chain 47 runs and is conducted around a sprocket wheel 48 on the shaft 40 so that the motion will be communicated between the shafts 40—41 and their rollers 43. An idler shaft 65 is arranged between the shafts 40—42 and provided with idler rollers 66. The shaft 65 is lower than the shafts 40—42, so that the automobile wheels will bear equally upon all the rollers, as will be obvious. At the opposite side of the platform 12 another opening 49 is formed and mounted for rotation within this opening are three shafts 50—51—52 similar to the shafts 40—41—42, and provided with rollers 53 similar to the rollers 43. The shaft 51 is provided with a beveled gear 54 engaging with a beveled gear 55 on the shaft 22 so that the motion of the shaft 51 will be communicated to the shaft 22. The shaft 51 is also provided with a sprocket wheel 56 connected by a chain 57 to a sprocket wheel 58 on the shaft 50 so that motion will be communicated between the shafts 50 and 51 and the rollers carried thereby. By this arrangement it will be noted that the shafts 42—52 together with their rollers 43—53 operate as idlers, as hereafter more fully explained. An idler shaft 67 is arranged between the shafts 50—52 and provided with idler rollers 68 similar to the shaft 65 and rollers 66, the shaft 67 being arranged lower than the shafts 50—52 to cause the automobile wheels to bear upon all the rollers.

The improved device is double acting so that it is immaterial at which side of the platform the machine enters, but for the purpose of illustrating the operation of the device it is assumed that the machine enters from the left, and when this occurs the forward wheels depress the trip lever 31 thereby oscillating the shaft 28 and elevating the pawl 37 and depressing the pawl 36 and the machine stopped with its rear wheels upon the friction wheels 43. The machine is then run backward to cause the central shaft 41 to be rotated backwardly, the motion being transmitted through the pinion 44 and gear 45 to the shaft 21 and the wheel 19 and likewise through the gears 25—26 and shaft 22 to the wheel 20 in the same direction, this motion revolving the platform 12 as will be obvious.

As soon as the platform has been rotated to the required point the machine is moved forward over the rollers 53—68 and as the forward wheel strikes the trip lever 29 the pawl 36 is elevated and the pawl 37 depressed thus locking the wheels 19—20 from movement through the rotation of the wheels of the machine upon the rollers 53—68 but holding the rollers stationary and enabling the machine to be run off from the platform. If the machine enters upon the platform from the right the operation will be the same but reversed, as will be obvious.

It will be noted that the spring actuated pawl 36 drags over the gears all the time that the rear wheels of the automobile are running backward, and the gears changing the direction of motion of the forward rollers, so that while the rear wheels are running backward the front wheels are running forward. Thus the instant the automobile is started to run forward, it locks the gears and allows the automobile to run off the rollers, and when the front rollers strike the trip lever 29 it locks the gears from movement in the opposite direction, so that the rear wheels can run over the wheels just vacated by the front wheels without producing motion in the gear wheels. There are therefore two distinct operations of the locking gears each time the machine leaves the rotating table.

The improved device is simple in construction, can be readily adapted for machines of various sizes without material structural changes, and while the structure disclosed in the drawings illustrates the preferred embodiment of the invention, it will be understood that various changes may be made within the scope of the appended claims without departing from the principle of the invention or sacrificing any of its advantages.

If required, the platform 12 may be provided with apertures where the bearing wheels are disposed and through which the bearing wheels protrude, so that the platform may be located in a comparatively low position while employing bearing wheels of

relatively large diameter, the apertures being covered by protecting hoods 69.

What is claimed, is:—

1. The combination with a turntable, of means operative by the wheels of a motor driven vehicle when operated in one direction to cause the rotation of the turntable, and means operative by the wheels of a motor driven vehicle when operated in the opposite direction for locking the turntable rotating means.

2. In an apparatus of the class described, a turntable, means for rotating said turntable, means operative by the wheels of a motor driven vehicle when moving in one direction for actuating the turntable rotating means, and means operative by the wheels of a motor driven vehicle when moved in the opposite direction for locking said turntable rotating means.

3. The combination with a turntable mounted upon bearing wheels, of friction wheels with which the drive wheels of a motor driven vehicle are adapted to be engaged to rotate the same, means operative by the rotation of said friction wheels for communicating motion to said bearing wheels, and means for locking said friction wheels from motion in one direction.

4. The combination with a turntable mounted upon bearing wheels, of means adapted to be actuated by the drive wheels of a motor driven vehicle when moved in one direction for communicating motion to said bearing wheels, and means adapted to be operated by said drive wheels when moving in the opposite direction for locking the bearing wheels from movement in one direction.

5. The combination with a turntable mounted upon bearing wheels, two of the wheels having axle shafts, interengaging gears carried by the axle shafts, pawls arranged for alternate engagement with said gears, means adapted to be actuated by the motion of the drive wheels of a motor driven vehicle to communicate motion to the bearing wheels, and means adapted to be operated by said drive wheels for reversing the position of the pawls and locking the operating means.

6. The combination with a turntable mounted upon bearing wheels, two of the wheels having axle shafts, interengaging gears carried by said axle shafts, rock shafts carried by said turntable, operating levers carried by said rock shafts, pawls carried respectively by said rock shafts and arranged for alternate engagement with said gear wheels, and means adapted to be actuated by a motor driven vehicle when moving upon the platform to cause motion of the axle shafts in one direction, and means adapted to be actuated by the movement of the vehicle to lock the actuating means when leaving the platform.

7. In an apparatus of the class described, a circular track, a platform arranged above said track, bearing wheels carried by said platform and engaging said track, two of said bearing wheels having inwardly extending axle shafts, interengaging gear wheels carried by said shafts, rock shafts carried by said platform, operating levers carried by said rock shafts, pawls carried respectively by said rock shafts and arranged for alternate engagement with said gear wheels, means adapted to be actuated by a motor driven vehicle to communicate motion to said axle shafts, and means adapted to be operated by a motor driven vehicle for locking the axle shafts from movement in one direction.

8. In an apparatus of the class described, a circular track, a platform arranged above said track, bearing wheels carried by said platform and engaging said track, two of said bearing wheels having inwardly extending axle shafts, interengaging gear wheels carried by said shafts, rock shafts carried by said platform and provided with cranks, operating levers carried by said rock shafts, pawls carried respectively by said rock shafts, a coupling rod extending between said cranks and maintaining the pawls out of engagement alternately with the gears, means adapted to be actuated by a motor driven vehicle to communicate motion to said axle shafts, and means adapted to be operated by a motor driven vehicle for locking the axle shafts from movement in one direction.

9. In an apparatus of the class described, a circular track, a platform, bearing wheels carried by said platform and engaging said track, two of said bearing wheels having inwardly extending axle shafts, interengaging gear wheels carried by said shafts, rock shafts carried by said platform, operating levers carried by said rock shafts, pawls carried respectively by said rock shafts and arranged for alternate engagement with said gear wheels, a drive shaft mounted for rotation upon said platform at each side of the center thereof and provided with friction rollers, means for communicating the motion of said drive shafts respectively to said axle shafts, said friction rollers adapted to be engaged by the drive wheels of a motor driven vehicle and thereby rotated, and means adapted to be operated by a motor driven vehicle for locking the axle shafts from movement in one direction.

10. In an apparatus of the class described, a circular track, a platform arranged above said track, bearing wheels carried by said platform and engaging said track, two of said bearing wheels having inwardly extending axle shafts, interengaging gear wheels carried by said shafts, rock shafts carried by said platform, operating levers carried by said rock shafts, pawls carried respectively by

said rock shafts and arranged for alternate engagement with said gear wheels, a plurality of drive shafts spaced apart and mounted for rotation upon said platform at opposite sides of the center thereof, friction wheels carried by said drive shafts and adapted to be engaged by the drive wheels of a motor driven vehicle, means for communicating motion between said drive shafts, means for communicating the motion of said drive shafts to said axle shafts, and means adapted to be operated by a motor driven vehicle for locking the axle shafts from movement in one direction.

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

CHARLES K. ELMER.

Witnesses:

DAN W. DOTY,

ANNA A. LINDSTROM.