

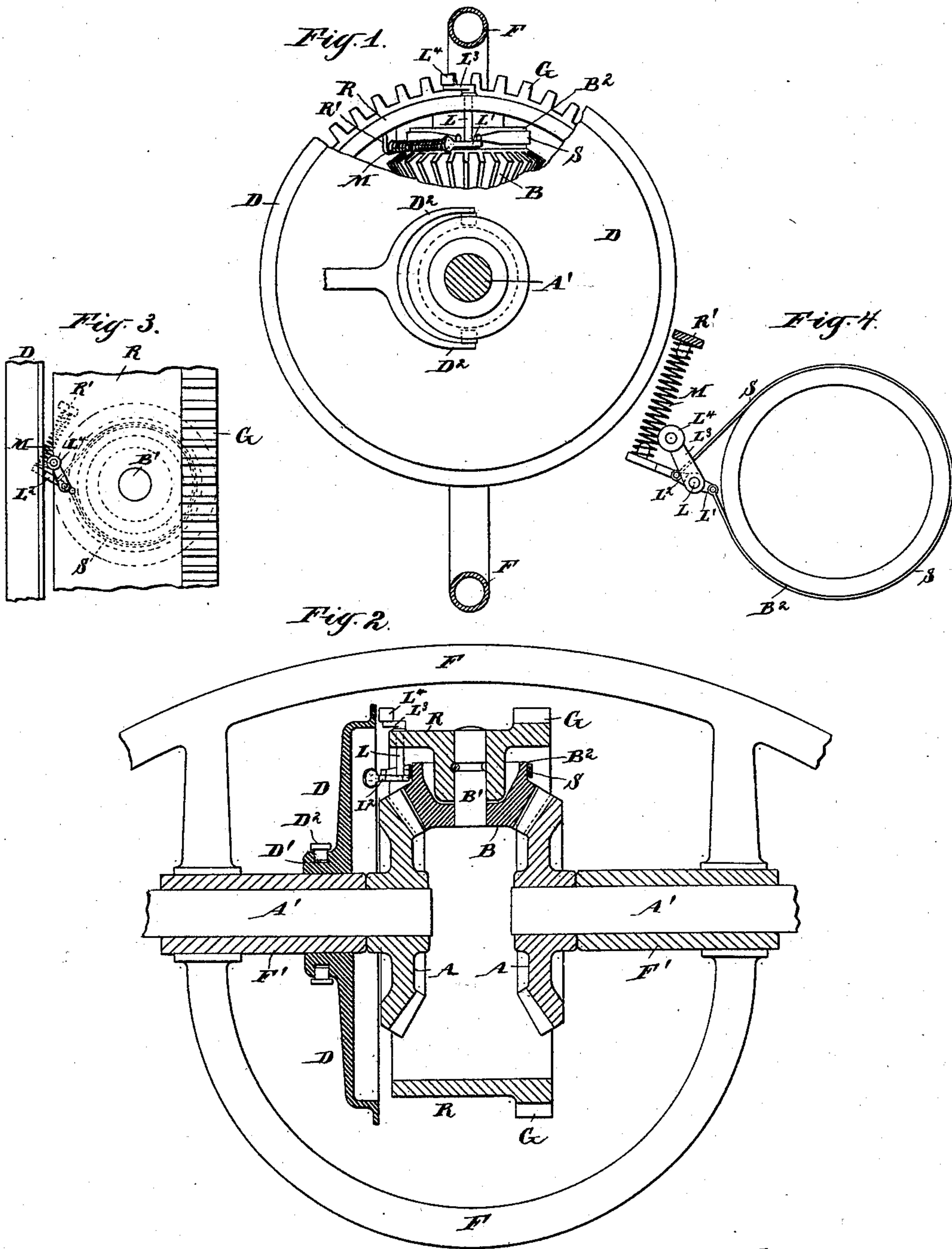
No. 671,828.

Patented Apr. 9, 1901.

C. L. KING.
DRIVING GEAR.

(Application filed July 10, 1900.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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DRIVING-GEAR

SPECIFICATION forming part of Letters Patent No. 671,828, dated April 9, 1901.

Application filed July 10, 1900. Serial No. 23,124. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. KING, a citizen of the United States, residing in Brooklyn borough, city and State of New York, have invented an Improvement in Driving-Gear for Self-Moving Vehicles, of which the following is a specification.

My invention relates to the differential gearing commonly used in self-moving vehicles. In the construction of automobiles and steam road-rollers and trucks it is desirable that the wheel at each end of the driving-axle should have power applied to it and at the same time each wheel should be able to move faster or slower than the other, according to the amount of ground each has to travel when turning the vehicle. This is ordinarily accomplished by a form of epicyclic train of gear-wheels, the power being applied to the studs carrying the intermediate wheel, thus allowing each side of the vehicle to move in proportion to the resistance. In ordinary usage the steering-wheels guide the vehicle, while there is a constant tendency of the driving-wheels to turn more or less to the right or left, according to the surface of the road, or if the vehicle is loaded with a preponderance of weight on one side the tendency is aggravated.

This improvement is intended to cause the vehicle to move in a straight course at all times, except when the steering-wheels are used to turn from a straight course, and it is intended that the operation of this improved device should be governed either by the movement of the steering-gear automatically or by hand separately or together.

The accompanying drawings, forming part of this specification, show a plan of construction, in which—

Figure 1 is an elevation from the side with part broken away. Fig. 2 is a sectional elevation from rear. Fig. 3 is a section from top. Fig. 4 is an enlarged detail of an essential part.

Like references refer to like parts.

A A are two bevel gear-wheels on shafts A' A'. To shafts A A are fixed the driving-wheels of the vehicle.

F' F' are sleeves forming part of vehicle-frame F. Between wheels A A is wheel B on stud B', fixed to ring R. Ring R encircles

the gearing and carries one or several wheels similar to B.

G is a spur-gear fixed to ring R.

The gear-wheel B has at its base a cylindrical projection B², around which is a band S, with its ends secured to levers L' and L². These levers are fixed to and are part of stem or shaft L, with bearing in ring R. The cylinder B², band S, and stem L, with levers, form a clutch. On stem L, outside of ring R, is a fixed lever L³, with roller L⁴ on it. On ring R is a fixed projection R', and between R' and lever L² is a spring M.

D is a disk with flange portion to act on roller L⁴ and with groove D' in its hub. D² is a forked arm with pins or rollers in groove D'.

The action of this mechanism is as follows: In normal condition the spring M presses against lever L² and, through shaft L, acts on both ends of band S, clutching cylinder B², preventing the rotation of gear-wheel B on its stud, the motive power being applied by gearing meshing with gear-teeth on ring R. The wheels A A must necessarily move together at the same speed as though the axles A' A' were in one piece. Consequently the vehicle will go in a straight course. When it is desired to turn the vehicle from a straight course, the forked lever D² moves the disk D against the roller L⁴ and, through lever L³, stem L, and lever L², compresses the spring M and loosens the band S, thereby leaving the gear B free to turn on its stud and to roll between the gear-wheels A A and allow them to take such position in relation to each other as the course of the vehicle requires.

The connection of the forked lever D² is not shown. It can be connected to a lever convenient for operating by hand, or it can be connected to the steering-gear of the vehicle so that the band S is not released except when the steering-wheels move out of a direct course. The action can be the reverse of that here shown. For instance, the clutch can be operated to be gripped by the disk and released by the spring, or the spring can be dispensed with and other form of clutch used and other mechanism for applying and releasing.

The main feature of the invention is the power to convert a differential gearing to a positive and equal driving mechanism for both sides of the vehicle.

What I claim, and desire to secure by Letters Patent, is—

1. In a driving-gear, the gear-wheels A A and B, the ring R, the lever L², the cylinder
5 B², the band S and spring M connected to the lever L², and means for operating the lever to compress the spring, all combined to act substantially as shown.

2. In a driving-gear, the ring R with means
10 for applying power to rotate it, gear-wheels A

A attached to separate axles A' A', intermediate gear-wheel B on stud attached to ring R, and means for preventing gear-wheel B from turning on its stud, and means for releasing it, so that it can turn on its stud, substantially as shown, for purposes described. 15

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Witnesses:

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