

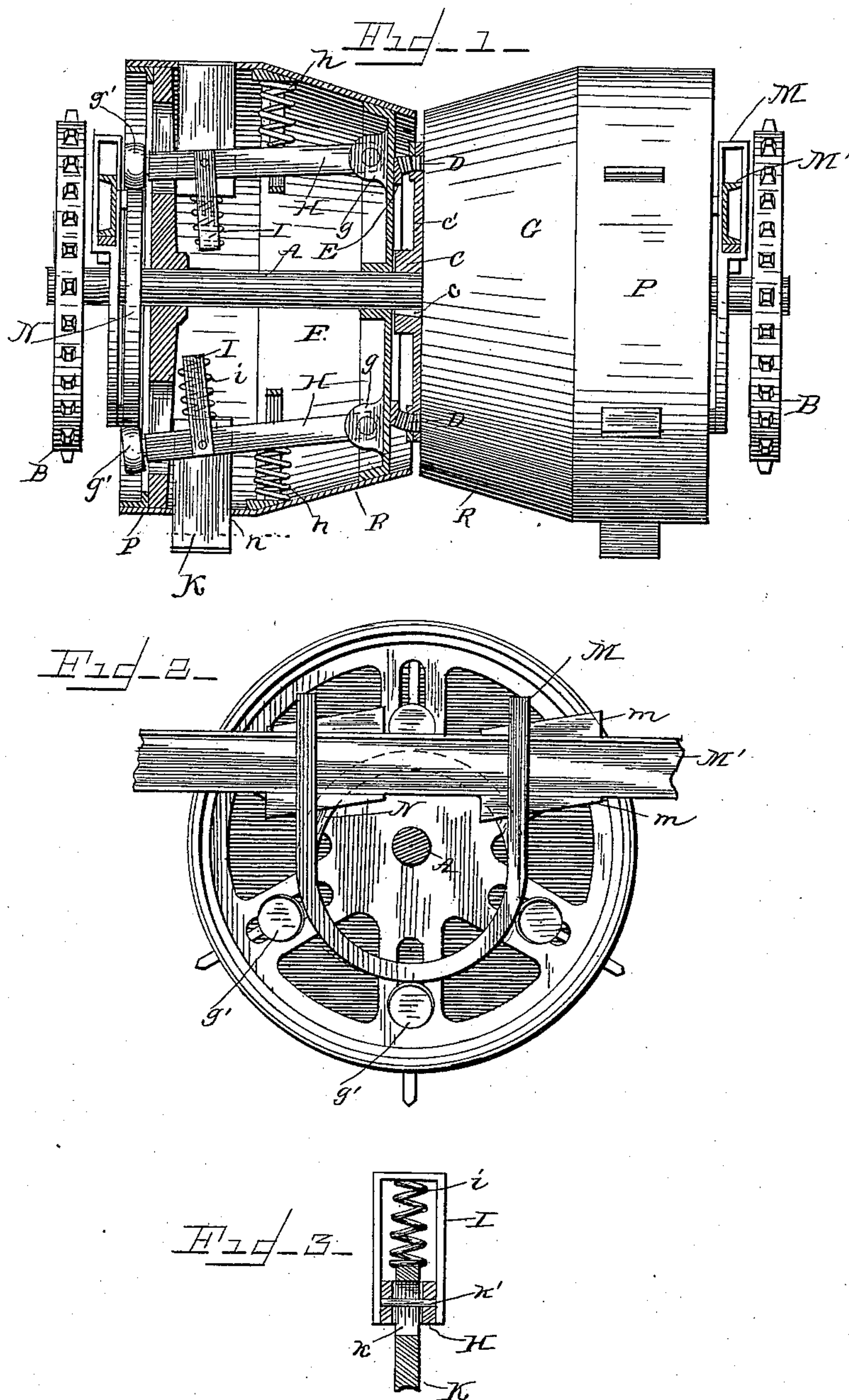
(No Model.)

C. H. ROBERTS.

TRACTION WHEEL.

No. 357,035.

Patented Feb. 1, 1887.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES H. ROBERTS, OF WASHINGTON, INDIANA.

TRACTION-WHEEL.

SPECIFICATION forming part of Letters Patent No. 357,035, dated February 1, 1887.

Application filed October 21, 1886. Serial No. 216,897. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. ROBERTS, a citizen of the United States, residing at Washington, in the county of Davies and State of Indiana, have invented certain new and useful Improvements in Traction-Wheels; and I do 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 ap-

10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification. My invention has relation to compound or 15 compensating traction-wheels for road or traction engines, and the object is to provide a main driving-wheel that will be capable of steering the machine, and to provide an increased bearing-surface when used in heavy or 20 marshy ground, and also one in which the spades may be automatically adjusted, so as to be projected at any desired distance to correspond to the nature of the ground traveled on; and to these ends the novelty consists in the 25 construction and combination of the parts of the same, as will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings the same letters of reference indicate like parts of the in-

30 vention. Figure 1 is a front elevation, partly in section, of my improved wheel. Fig. 2 is an end view with the sprocket driving-wheel removed, and Fig. 3 is a sectional detail of the 35 inner end of one of the movable spades.

A is the main shaft or axle, and it is provided at its outer ends with two sprocket driving-wheels, B B.

40 C is a hub, rigidly secured to the shaft A by a removable key, c, and this hub has a series of arms, c', the outer ends of which are each provided with a beveled pinion, D, all of which mesh on the one side with a beveled gear, E, on the drum F, and on the other side with a 45 similar beveled gear (not shown) on the opposite drum, G. This forms the well-known compensating gear, and no further description of its operation will be required.

50 H H are a series of levers fulcrumed to lugs g on the inside of the wheel, their outer ends being provided each with a friction-roller, g';

and h is a coil-spring, which serves to normally press the lever H inward toward the center of the wheel.

I is a strap which encompasses the lever and 55 extends radially inward, forming a box for the spiral spring i, one end of which rests against the yoke of the strap and the other end rests on top of the inner end of the spade K. The spade is provided with a vertical slot, k, through 60 which the bolt k' passes, said bolt performing the double function of securing the strap to the lever and forming a guide for the inner end of the spade, while the outer end of said spade is guided by the slot n in the periphery 65 of the drum, thereby insuring a parallel motion of the spade.

M is a frame depending from a portion, M', of the main frame of the machine, and it is adjustably secured thereto by means of the wedges 70 m m, as shown in Fig. 2, whereby it will be seen that the said frame may be adjusted up or down by changing the position of the wedges.

N is an annular ring secured to the inside of the frame M and, as shown, eccentric with the 75 shaft A.

The ring N being stationary, as the drum revolves, the friction-rollers g' ride around on the outside of it, and as the drum continues to revolve, the lever on the top is pressed inward 80 by the action of its spring h, so as to keep the roller on the end of the lever in contact with the ring N, thereby keeping the spade flush with the periphery of the drum. As the drum continues to revolve, the roller rides around 85 on the ring and comes to that part which is farther from the center of the shaft and gradually forces the lever and spade outward until the lowest point is reached, and the lever and spade as gradually withdrawn as it was pro- 90 jected in the first instance. This operation serves to keep the spade-blades clean and free from clogging; and by adjusting the frame M and ring N, as above described, the degree to which the spades will project may be regu- 95 lated to correspond to the nature of the ground that is being traveled over. Should the lower spade come in contact with a rock, stump, or other hard substance, the spring i will take up the strain and allow the spade to recede in- 100 wardly without interfering with the momentum of or jarring the machine.

In constructing the double drum I make the outside diameters parallel or cylindrical for a short distance, to form a firm support for the machine, and normally or in traveling on hard roads only these cylindrical portions P P come in contact with the ground, while as the ground becomes softer the cylindrical portions sink into the ground and the conical surfaces R R come in contact with the ground, and the amount of bearing-surface gradually increased until enough is presented to sustain the weight of the machine.

Having thus fully described my invention, I claim as new—

15 1. The combination, with a pair of divided drums having outer cylindrical rims and inner tapering rims provided with suitable gear-wheels, of the central hub having a series of arms provided with pinions mutually meshing with both of said gear-wheels on the drum, as set forth.

2. The combination, with the drum provided with a series of levers provided with spades, of the frame carrying an eccentric-ring for automatically operating the spades, as set forth. 25

3. The combination, with the main frame of the engine and the auxiliary adjustable frame provided with wedges for adjusting the same, of the drum provided with a series of levers pivoted therein and having the spades adjustably secured thereto and provided with friction-rollers arranged to travel around and in contact with a ring on the auxiliary frame, as set forth. 30

In testimony whereof I affix my signature in presence of two witnesses. 35

CHARLES H. ROBERTS.

Witnesses:

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