

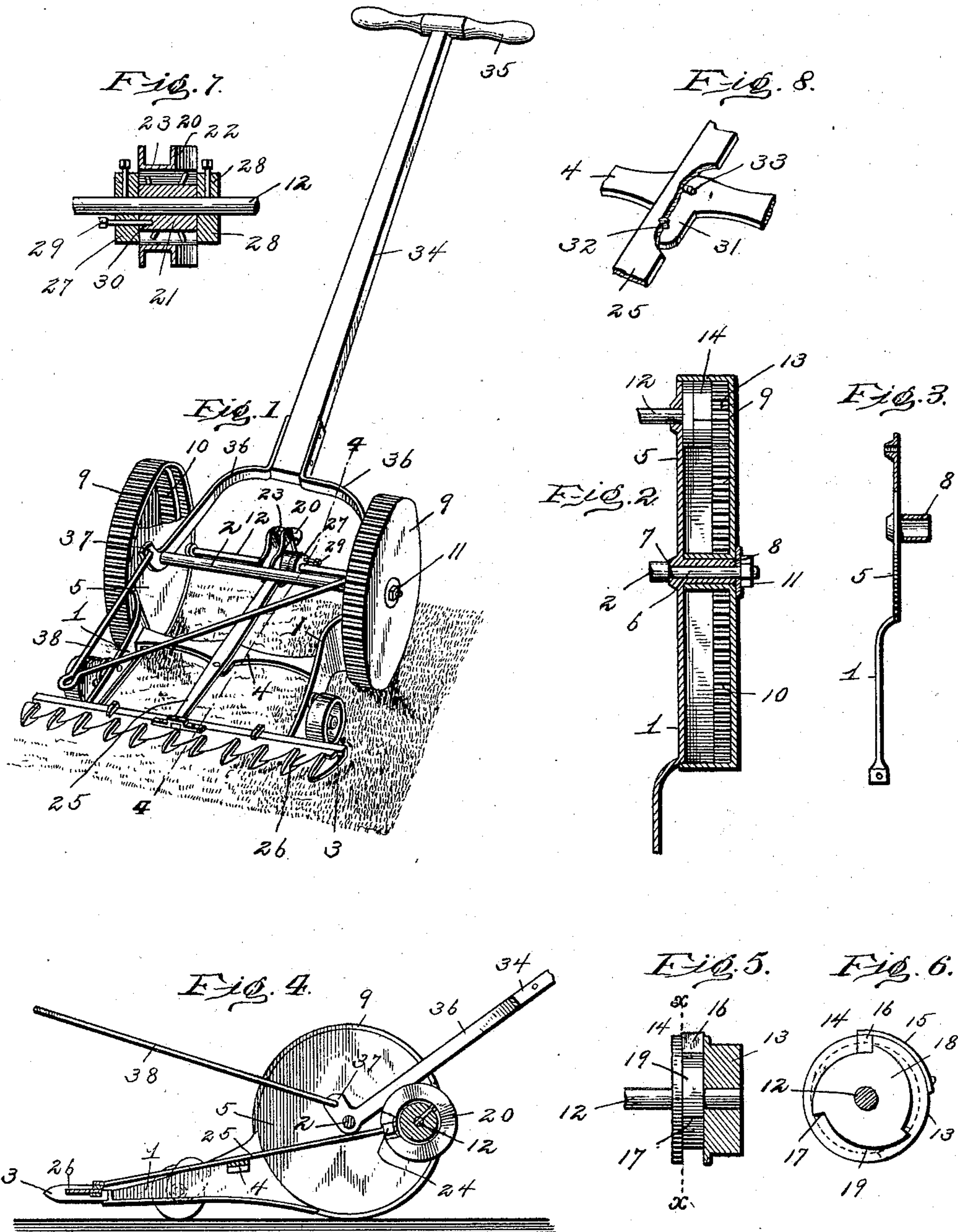
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Patented Aug. 30, 1898.

R. K. ORTT.
LAWN MOWER.

(Application filed Sept. 26, 1896.)

(No Model.)



WITNESSES:

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LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 610,081, dated August 30, 1898.

Application filed September 26, 1896. Serial No. 607,033. (No model.)

To all whom it may concern:

Be it known that I, ROWLEY K. ORTT, a citizen of the United States, residing at Norristown, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Lawn-Mowers; 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 lawn-mowers of that class wherein are employed reciprocating cutters, a rocking lever for operating the cutters, a drive-shaft, and a cam on said shaft within which the rocking lever fits and by means of which the same is actuated.

The objects of the invention are to provide means whereby the machine may be moved rearwardly without imparting movement to the drive-shaft, means whereby the cam may be readily and conveniently coupled with or uncoupled from the drive-shaft, means whereby the machine may be turned rearwardly upon the push-bar for convenience in transporting, and means whereby when the machine is propelled by draft-animals in advance of the same power may be exerted upon the push-bar for causing the draft-wheels to more closely engage the ground.

Other objects and advantages of the invention will hereinafter appear.

The invention consists of the construction, combination, and arrangement of parts which will be hereinafter more fully described and claimed.

In the drawings forming a part of this specification, Figure 1 represents a perspective view of the machine complete. Fig. 2 is a sectional view through one of the side bars of the frame and one of the drive-wheels connected thereto. Fig. 3 is an edge view, partly in section, of one of the side bars of the frame. Fig. 4 is a vertical section on the line 4 4 of Fig. 1. Fig. 5 is a section through one of the driving-pinions and the clutch mechanism through which the pinion is connected to the drive-shaft. Fig. 6 is a section on the line *x x* of Fig. 5, looking to the right. Fig. 7 is a sectional detail showing the cam-wheel on

the drive-shaft and the clutch mechanism co-acting therewith. Fig. 8 is a detail view, partly broken away, of the rocking lever for operating the cutters and the transverse bar of the frame, to which said lever is fulcrumed. Like reference-numerals indicate like parts in the different views.

The main frame of the machine is made up of the side bars or plates 1 1, the axle 2 connecting the same near their rear ends, the cross-bar 3, connecting the forward ends of the side bars, and the transverse bar 4, intermediate of the axle 2 and the cross-bar 3. The side bars 1 are circular in form at their rear ends, as shown at 5, and have their forward ends curved inwardly from the circular portions and extended in substantially parallel vertical planes. The cross-bar 3 constitutes the finger-bar and the axle 2 constitutes a tie-rod for the rear end of the frame, the latter having reduced end portions 6, forming outwardly-facing shoulders 7 thereon. The circular portions 5 of the side bars 1 are provided with hollow integral spindles or trunnions 8, which fit upon the reduced end portions 6 of the axle 2, and upon the spindles 8, on opposite sides of the machine, are mounted the flanged driving-wheels 9, the same being provided with internal cog-teeth 10. The wheels 9 are held in place upon the spindles 8, and the side bars 1 are held in place upon the axle 2 by means of nuts 11 upon the outer ends of said axle, which engage the outer surfaces of said wheels and hold the circular portions 5 of the side bars 1 in engagement with the shoulders 7. By this construction it will be observed that the circular portions 5 completely close the space within the flanged wheels 9 and that by the engagement of the nuts 11 with the outer surfaces of said wheels and by the engagement of the circular portions 5 with the shoulders 7 the said circular portions 5 and the outer surfaces of the wheels 9 are properly spaced apart and held at all times in this position.

Extending through openings in the circular portions 5 of the side plates 1 of the frame is a drive-shaft 12, whose outer ends carry pinions 13 loosely thereon. The said pinions mesh with the teeth 10 on the wheels 9 and are connected

to the shaft 12 by means of a clutch 14. (Illustrated in detail in Figs. 5 and 6 of the drawings.) The said clutch consists of a leaf-spring 15, secured at one end to the pinion 13 and carrying a dog 16 at its free end, which is adapted to engage shoulders 17 upon the ratchet-wheel 18, secured to the shaft 12 and having outwardly-curved cam-faces 19, upon which the dog 16 may ride and which terminate in the shoulders 17, heretofore referred to. By this construction it will be observed that upon the forward movement of the machine the wheels 9 will be turned and with them the pinions 13, which mesh with the teeth 10 on said wheels. Through the clutch mechanism described the movement of said pinions will be imparted to the drive-shaft 12 by the engagement of the dog 16 with the shoulders 17 on the ratchet-wheel 18. Upon the backward or reverse movement, however, of the machine the dog 16 will ride upon the cam-surfaces 19 of the ratchet-wheel 18 and impart no movement to the shaft 12.

Mounted loosely on the drive-shaft 12, at a point intermediate of its ends, is a cam-wheel 20, the same consisting of a hub 21 and an outer flanged rim 22, having a sinuous groove 23 therein. Within the groove 23 of the cam-wheel 20 fits a roller 24 upon the rear end of a rocking lever 25, fulcrumed upon the transverse bar 4 and connected at its forward end to the cutter-bar 26, which moves upon the upper surface of the finger-bar 3. The cam-wheel 20 is adapted to be coupled with or uncoupled from the drive-shaft 12 by means of the clutch mechanism illustrated in Fig. 7 of the drawings, the same comprising a pair of disks or collars 27 28, secured to the shaft 12 and located upon opposite sides of the cam-wheel 20. The collar 27 carries a bolt or pin 29, which extends laterally therethrough and is adapted to fit within a slot or recess 30 in the hub 21 of the wheel 20. By this construction it will be seen that by simply moving the pin 29 outwardly or inwardly the cam-wheel 20 may be disengaged from or engaged with the shaft 12. As the shaft 12 moves, therefore, it will be independent of the cam-wheel or will move the same with it, according to the position of said snap-catch. When the cam-wheel 20 is locked to the drive-shaft 12 in the manner described, the rotation of the shaft 12 will cause an oscillatory movement to be imparted to the lever 25 and through it to the cutter-bar 26. This, however, would be a disadvantage at any time except when the machine was engaged in the operation of cutting grass. When being transported from place to place, it is important that the machine may be rolled upon the wheels 9 without causing a movement of the cutting mechanism. It is for this purpose that means has been provided for disconnecting the cam from the drive-shaft. The provision of two clutches between the drive-

wheels and the cam 20, through which the cutting mechanism is actuated, enables the machine to be moved rearwardly at all times without actuating the cutting mechanism and to be moved forwardly at certain times without accomplishing the same result. This is a marked advantage, as it does away with the necessity of wear upon the operative mechanism when the machine is not actually at work.

The transverse bar 4 is provided at its central point with a forwardly-extending tongue 31, through which the pivot-pin 32, upon which the rocking lever 25 is fulcrumed, passes. In the rear of said pin, but concentric therewith, is formed in the upper surface of the bar 4 a groove 33, in which is located one or more balls which provide an antifrictional bearing between the lever 25 and the bar 4.

When the machine is to be propelled by hand, a push-bar 34 is used. The same is provided with a handle 35 at its rear end and has secured to its forward end a yoke 36, whose branches are pivoted to the axle 2 and are formed with upturned ends 37 in advance of said axle. To these upturned ends is pivoted a draft-frame 38, to which the tugs of the harness of the draft-animals may be attached. The connection between the draft-frame 38 and the yoke 36 enables a downward pressure to be exerted upon the wheels 9 for the purpose of obtaining closer engagement between said wheels and the ground, as the downward movement upon the handle 35, resisted by the power exerted by the draft-animals, will give a leverage upon said wheel in a downward direction. The connection between the draft-frame 38 and the upturned ends 37 of the yoke 36 also provides for the raising of the push-bar 34 into a vertical position away from the ground when a forward pressure is exerted upon said draft-frame.

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

1. In a lawn-mower, the combination with a transverse shaft on the frame thereof, of a push-bar, a yoke secured thereto whose branches are pivoted to said shaft and whose forward ends are upturned and lie in advance of said shaft, and a draft-frame attached to the upturned ends of said branches.

2. In a lawn-mower, the combination with the frame thereof comprising side bars having circular rear ends and hollow spindles or trunnions extending outwardly therefrom, suitable cross-bars, and an axle having reduced ends forming outwardly-facing shoulders, the said reduced ends extending through the hollow trunnions on said side bars and the shoulders engaging the inner surfaces of said side bars, of flanged drive-wheels mounted upon said trunnions and provided with internal teeth, nuts upon the ends of said axle

engaging the outer surfaces of said wheels for
holding the latter in place upon said trun-
nions and for holding the side bars of the
frame in contact with the shoulders on said
5 axle for retaining said wheels and said side
bars in proper relative positions, a drive-
shaft extending through the circular portions
of said side bars, and pinions carried by said

drive-shaft meshing with the internal teeth
on said wheels.

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

ROWLEY K. ORTT.

Witnesses:

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