

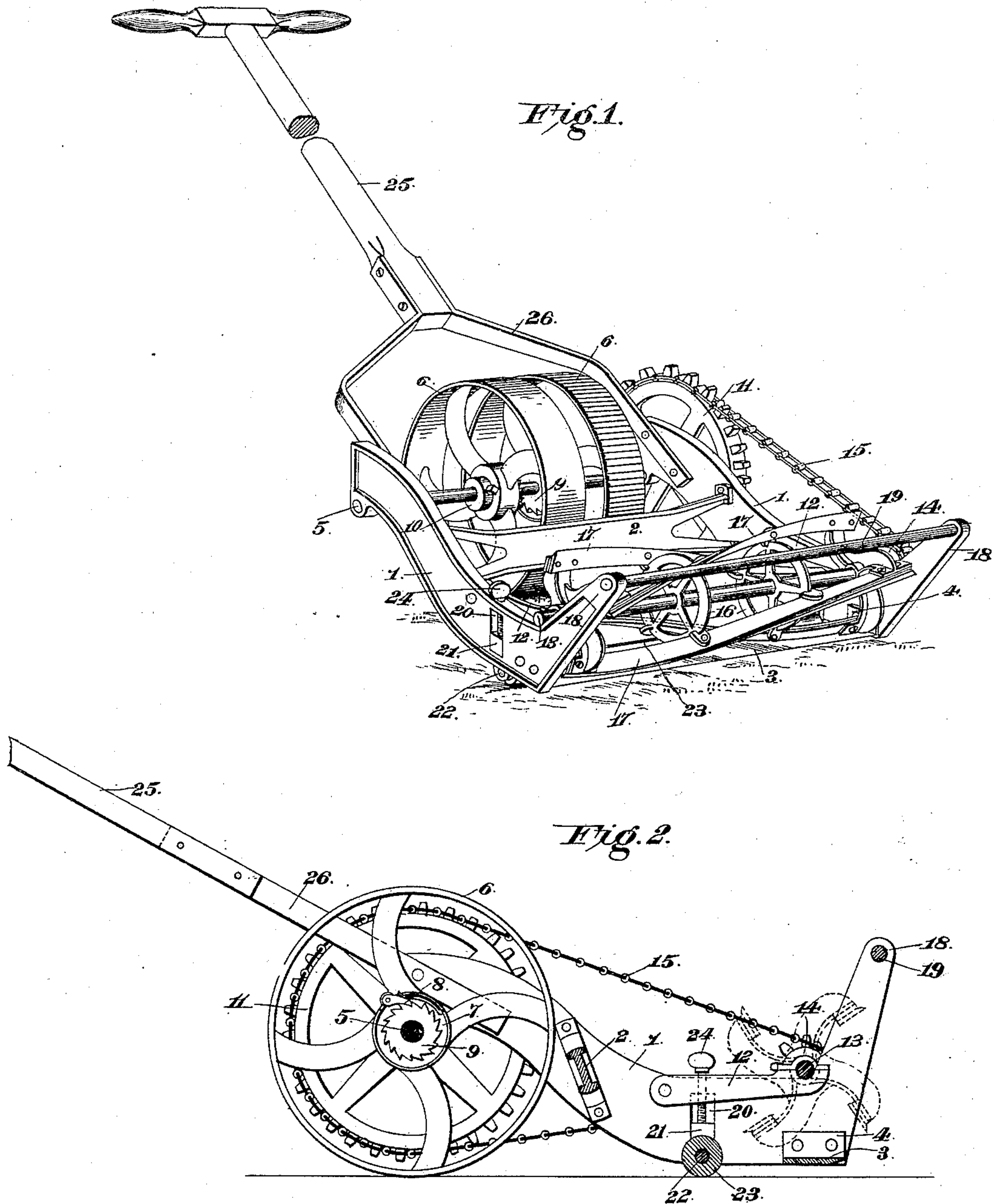
(No Model.)

2 Sheets—Sheet 1.

L. SMITH.  
LAWN MOWER.

No. 445,632.

Patented Feb. 3, 1891.



Witnesses

*M. Fowler*

*Wm. Baggett*

Inventor

*Luther Smith*

By his Attorneys,

*C. A. Snow & Co.*

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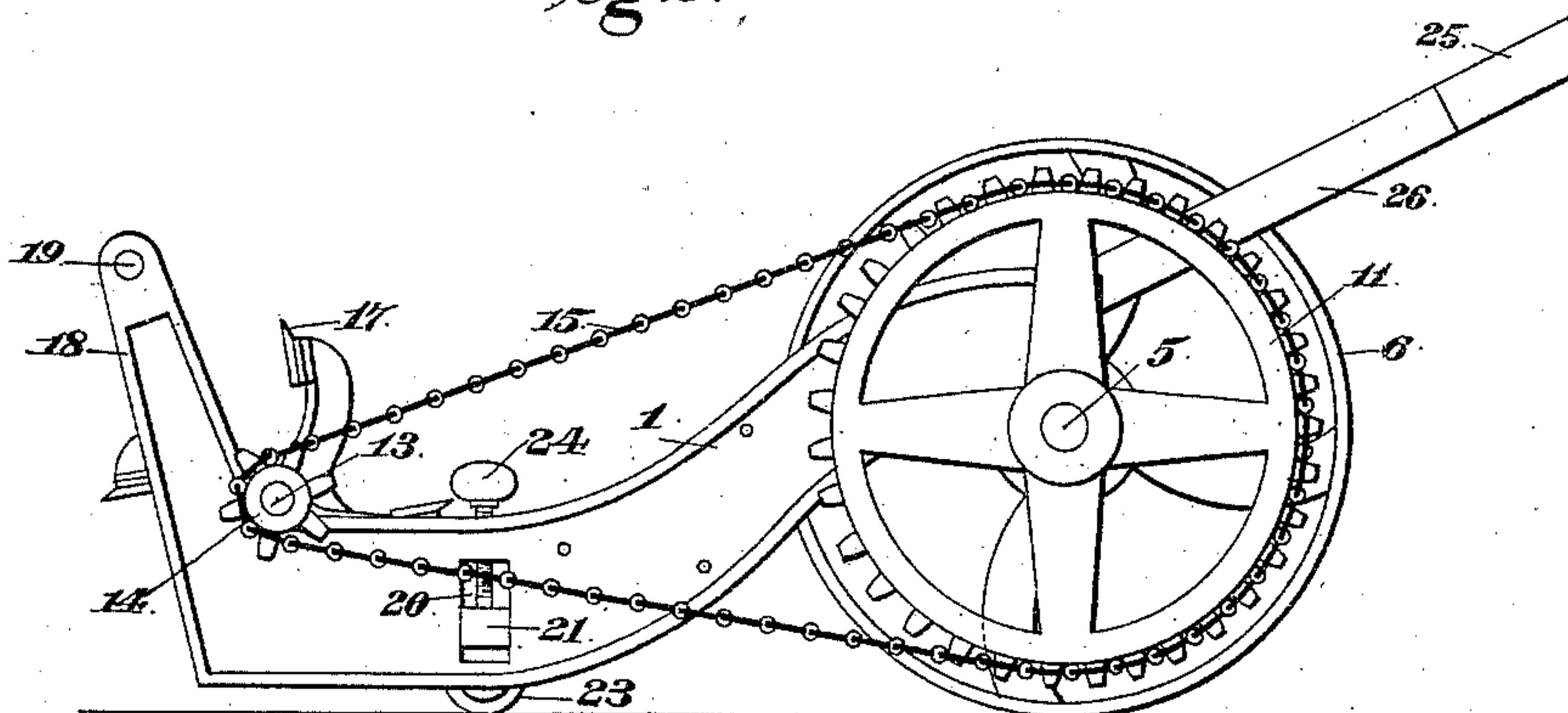
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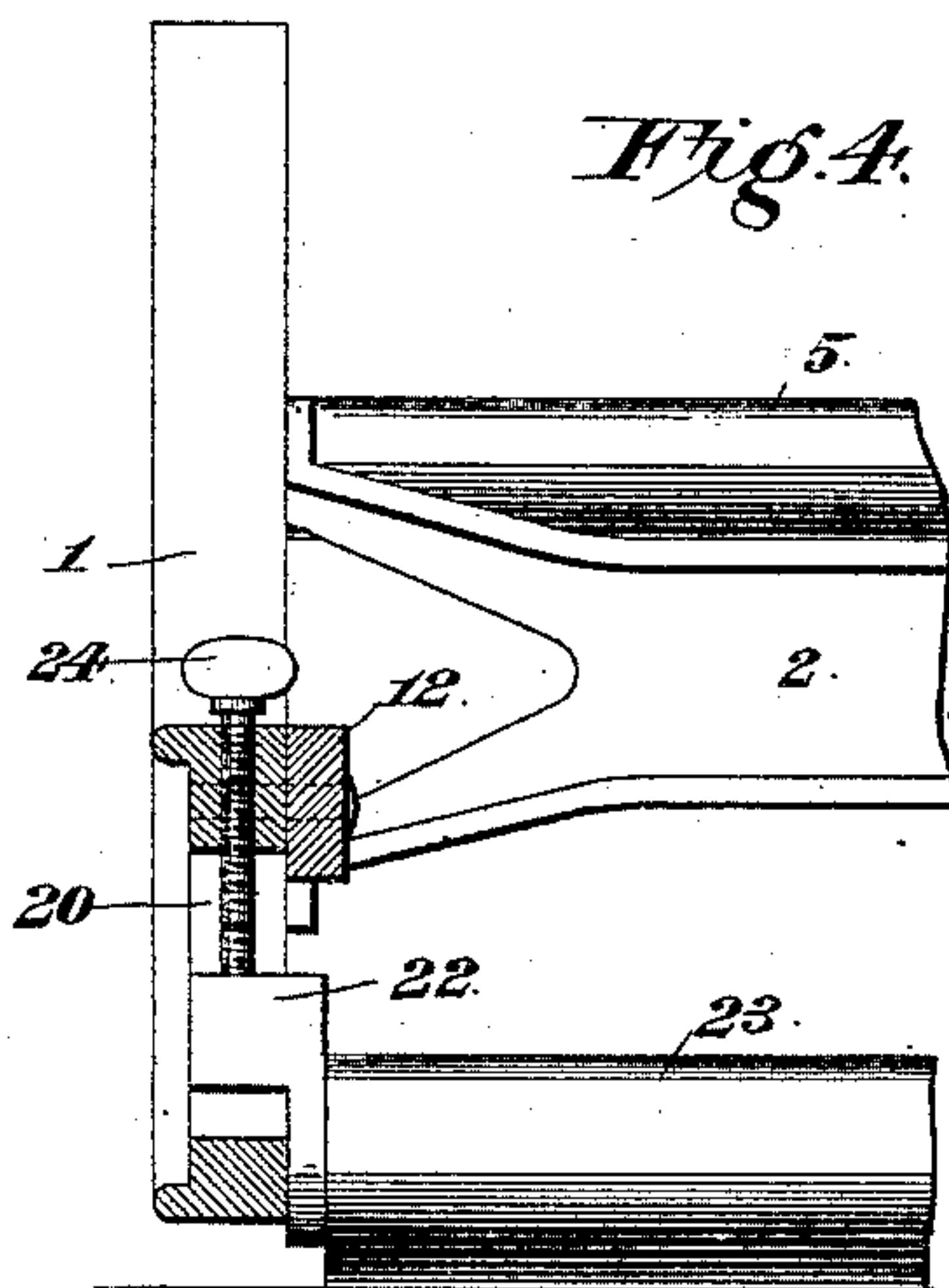
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*Fig. 3.*



*Fig. 4.*



Witnesses

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# UNITED STATES PATENT OFFICE.

LUTHER SMITH, OF CEDAR FALLS, IOWA.

## LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 445,632, dated February 3, 1891.

Application filed September 11, 1890. Serial No. 364,596. (No model.)

*To all whom it may concern:*

Be it known that I, LUTHER SMITH, a citizen of the United States, residing at Cedar Falls, in the county of Black Hawk and State of Iowa, have invented a new and useful Lawn-Mower, of which the following is a specification.

This invention relates to lawn-mowers; and it has for its object to construct a machine of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency, and by means of which motion shall be transmitted to the revolving knife-carrying reel or cylinder direct from the supporting-wheels of the machine without the use of wheels or gearing traveling in the uncut grass.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of a lawn-mower embodying my improvements. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a side elevation. Fig. 4 is a transverse sectional view.

Like numerals of reference indicate like parts in all the figures.

The frame of my improved lawn-mower is composed of the side pieces 1 1, which are connected near the middle by the transverse brace 2. The front ends of the side pieces are also connected by the knife or cutter 3, which occupies a horizontal position, and the ends of which are provided with flanges 4, bolted or otherwise suitably secured to the inner sides of the side pieces of the frame. The side pieces 1 1 are provided near their rear ends with bearings for a transverse shaft 5, carrying the supporting-wheels 6 6, the rims of which may be plain or corrugated, as preferred. In the drawings one of said wheels has been shown with a plain and the other with a corrugated rim. The hubs of the said supporting-wheels are provided with recesses 7, in which are pivoted pawls 8, engaging ratchet-wheels 9, which are mounted securely on the axle, the wheels being mounted loosely upon said axle and collars 10 being provided to prevent lateral displacement of

said wheels. By this construction when the machine is driven in a forward direction, with the wheels in contact with the ground, a rotary motion will be imparted to the axle. When the machine is backed, the axle will remain stationary and the wheels will rotate thereon. One end of the axle projects slightly beyond the side of the frame and carries a sprocket-wheel 11.

To the inner sides of the side pieces 1, near the front ends of the latter, are pivoted the links 12, the front ends of which have bearings for a shaft 13, the ends of which project above the upper edges of the frame-pieces, upon which the said projecting ends of the shaft 13 are adapted to rest. One end of the shaft 13 carries a sprocket-wheel 14, which is connected by a chain 15 with the sprocket-wheel 11 upon the axle 5, from which latter motion is thus transmitted to the shaft 5 when the machine is traveling in a forward direction. The shaft 13 is provided with a series of wheels or disks 16, the peripheries of which are connected by the knives 17, which are arranged spirally in the usual well-known manner. These knives, together with the axle and the disks to which they are attached, constitute the reel by which the grass is forced into contact with the knife or cutter 3 and severed by the latter.

The side pieces 1 are provided at their front ends with upwardly-extending brackets 18, which are connected by a transverse guard-rod 19, which serves to prevent the reel from coming in contact with obstructions that may be encountered during the operation of the machine.

The side pieces 1 1 are provided near their front ends with vertical slots 20, in which are mounted the vertically-sliding boxes 21, having bearings for a shaft 22, carrying a roller 23, which is normally in contact with the ground and which serves to gage the elevation of the knife or cutter. The boxes 21 are adjustable by means of set-screws 24, extending through the upper edges of the frame-pieces 1.

The machine is provided with a handle 25, having arms 26, which are suitably connected with the frame.

The operation and advantages of my invention will be readily understood from the foregoing description, taken with the draw-



ings hereto annexed. When the machine is pushed in a forward direction, motion is transmitted from the axle 5 to the shaft 13, carrying the reel. When the machine is backed, the supporting-wheels will revolve upon the axle and the reel will remain stationary. The reel, as will be seen, is capable of yielding in an upward direction, owing to the arrangement of the pivoted links in which the reel-shaft is journaled. It will be observed that neither of the sprocket-wheels comes in contact with the ground, and that no part of the gearing of the machine outside of the frame-pieces 1 will at any time come in contact with the uncut grass. The draft of the machine will therefore be found to be very light, and the machine may be very easily operated.

The general construction is simple and the machine may be manufactured at a small expense.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the side pieces, the central transverse brace connecting the same, the knife or cutter, the links pivoted to the

inner sides of the side pieces, the shaft journaled in said links and resting loosely upon the upper edges of the side pieces, and the wheels or disks mounted upon said shaft and having the spirally-arranged knives, substantially as set forth.

2. The combination of the frame, the axle having the supporting-wheels, the links pivoted to the inner sides of the side pieces of the frame, the reel, the shaft of which is journaled in said links and rests loosely upon the upper sides of the side pieces of the frame, the brackets extending upward from said side pieces and connected by a guard-rod, the knife or cutter, the vertically-adjustable gage-roller, and means for transmitting motion from the axle to the reel-shaft during the forward movement of the machine, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

LUTHER SMITH.

Witnesses:

F. S. VANCE,  
C. P. MILLS.