

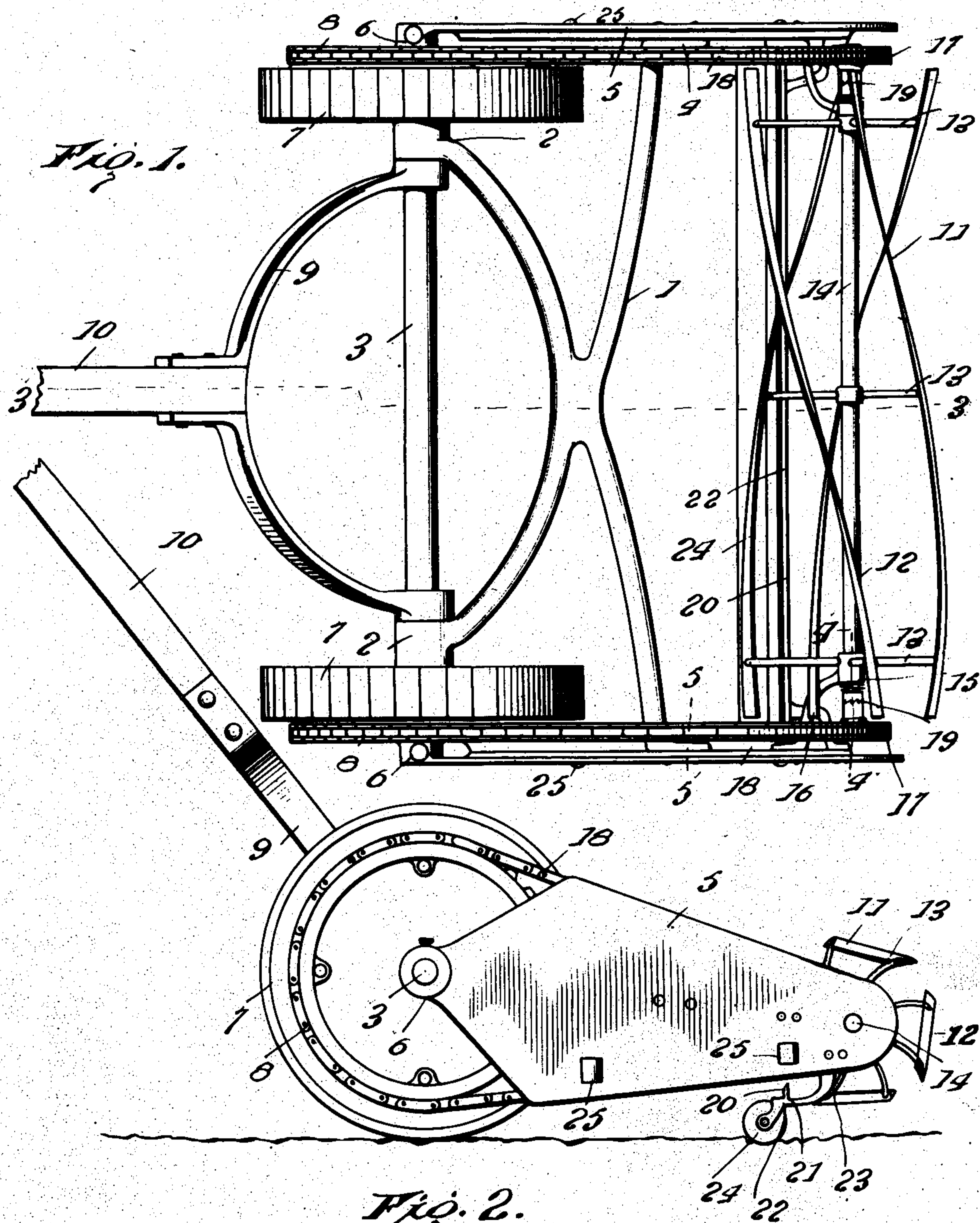
No. 833,996.

PATENTED OCT. 23, 1906.

G. H. BRYAN.
LAWN MOWER.

APPLICATION FILED APR. 16, 1906.

2 SHEETS—SHEET 1.



Witnesses

D. L. Lovelace
E. O. Langworthy

Guy H. Bryan
Inventor

By Watson E. Coleman
Attorney

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Fig. 4.

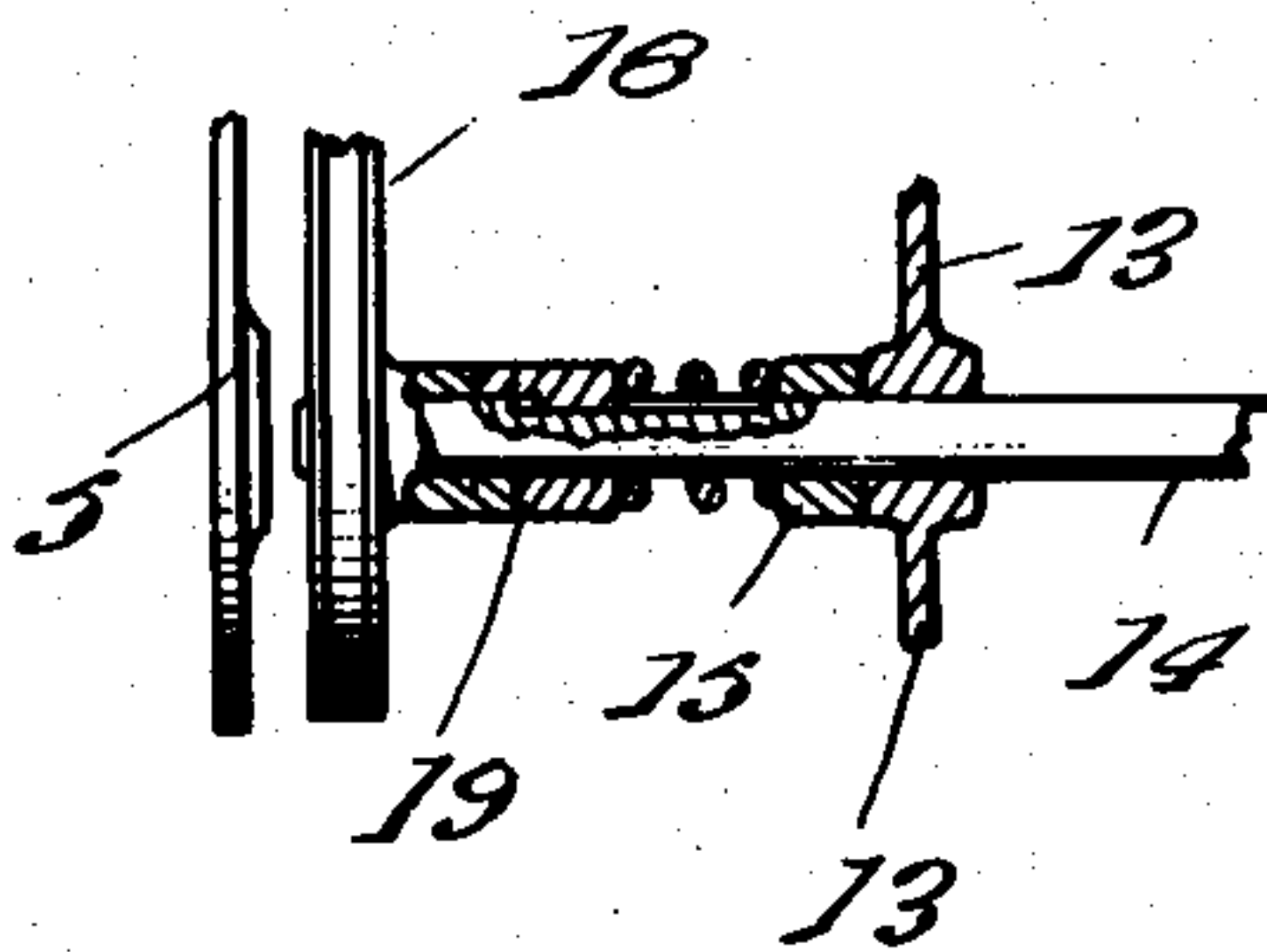


Fig. 5.

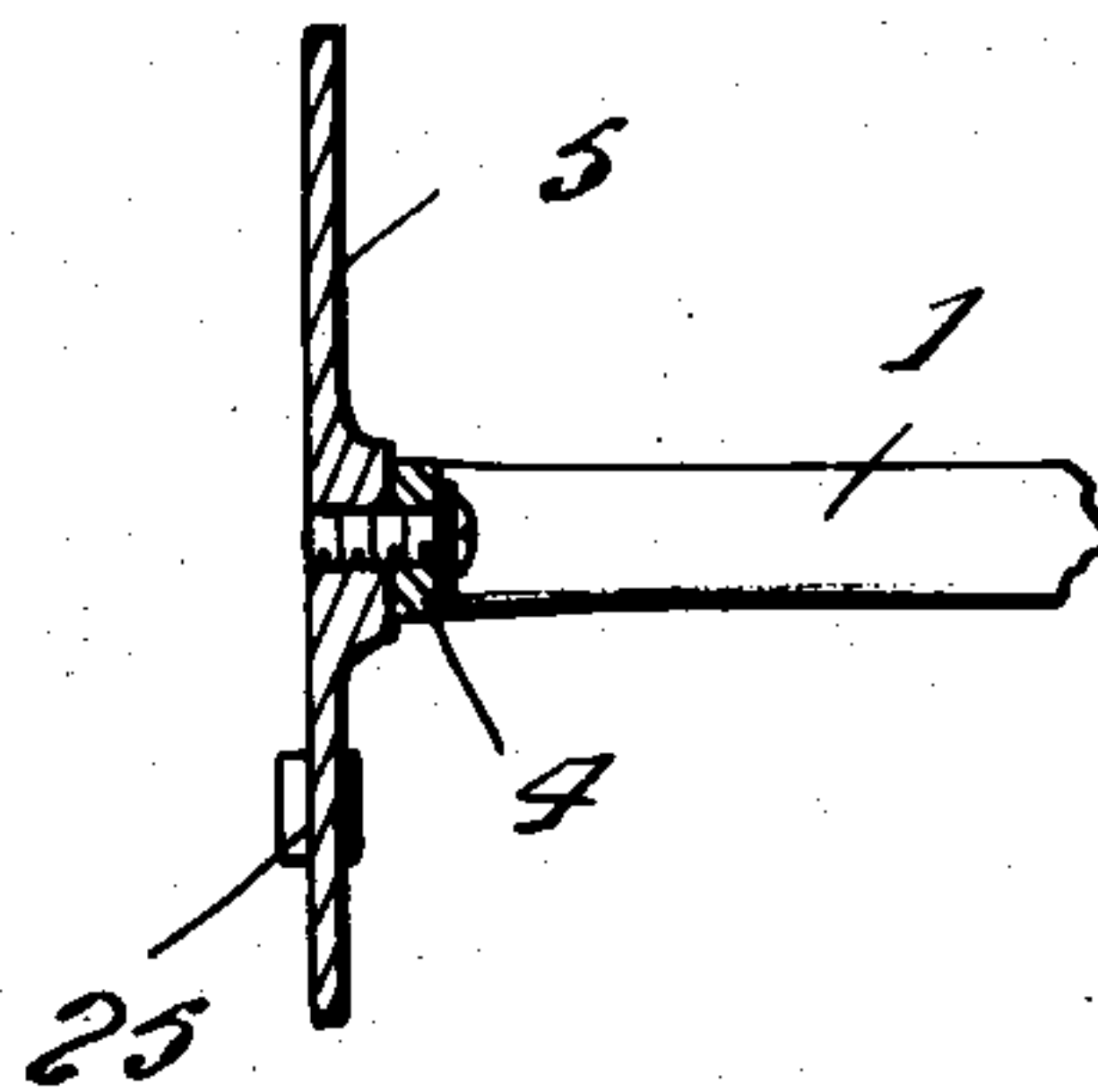
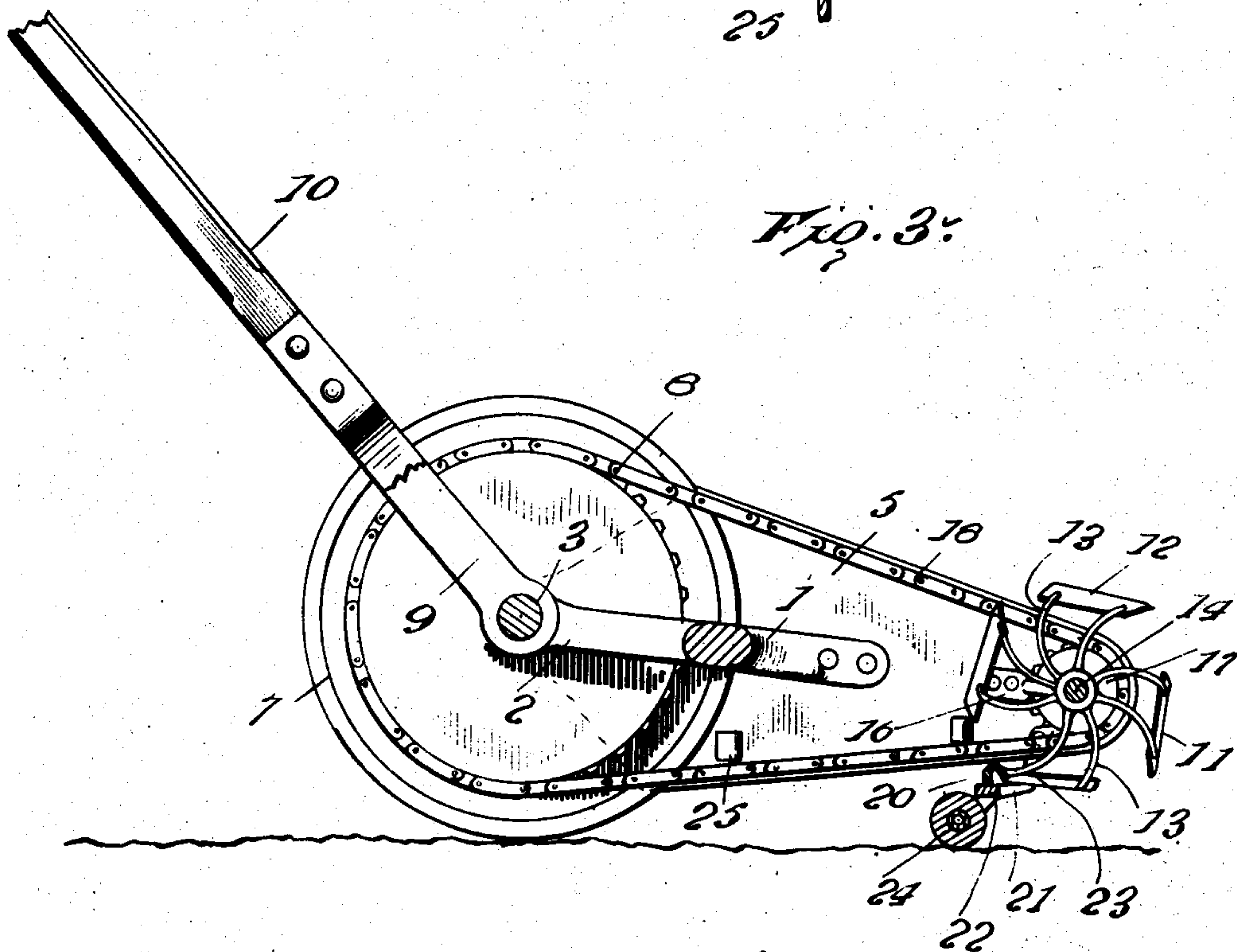


Fig. 3.



Witnesses

D. L. Lovelace.
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Guy H. Bryan
Inventor
By Watson E. Coleman
Attorney

UNITED STATES PATENT OFFICE.

GUY H. BRYAN, OF PLANKINTON, SOUTH DAKOTA.

LAWN-MOWER.

No. 833,996.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed April 18, 1906. Serial No. 311,977.

To all whom it may concern:

Be it known that I, GUY H. BRYAN, a citizen of the United States, residing at Plankinton, in the county of Aurora and State of South Dakota, have invented certain new and useful Improvements in Lawn-Mowers, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in lawn-mowers of that type in which the revolving knife-carrying reel is mounted in advance of the supporting and driving wheels.

The object of the invention is to improve and simplify the construction and operation of machines of this character, and thereby render the same more efficient and durable in use and less expensive to manufacture.

Further objects and advantages of the invention, as well as the structural features by means of which they are attained, will be made clear by an examination of the following specification, taken in connection with the accompanying drawings, in which the same reference characters denote corresponding parts throughout the several views, and in which—

Figure 1 is a top plan view of my improved lawn-mower. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical longitudinal sectional view taken on the plane indicated by the line 3 3 in Fig. 1; and Figs. 4 and 5 are detail vertical transverse sectional views taken, respectively, on the planes indicated by the lines 4 4 and 5 5 in Fig. 1.

The frame of my improved lawn-mower comprises a substantially X-shaped brace or casting 1, two of the arms 2 of which extend rearwardly to receive a transverse stationary shaft 3. The other two arms 4 of the brace 1 project forwardly and outwardly and are secured to ribs upon the inner faces of two cast side plates 5, which serve as guards for the drive-gearing presently explained. The side or guard plates 5 have formed on their tapered rear ends collars 6, adapted to fit upon the ends of the shaft and to be retained thereon by set-screws. Loosely mounted upon the shaft 3 within the side plates are two supporting and driving wheels 7, upon the outer faces of which are secured sprocket-gears 8. Upon the central portion of the shaft 3 and the frame or brace 1 is provided a yoke 9, to which is connected the usual handle 10.

The revolving cutter 11 of the machine is preferably in the form of a heavy knife-carrying reel and comprises a plurality of curved or twisted knives 12, secured upon the arms of spiders or heads 13, which are in turn fixed to a transverse shaft 14, mounted to rotate in bearings 15, provided on brackets 16, which are secured upon the inner faces of the side plates 5 adjacent to their tapered forward ends. The ends of the blades or knives 12 project almost to the ends of the shaft 14, and the bearing brackets or arms 16 project inwardly from the side plates 5 in order that sprocket-pinions 17 may be mounted upon the ends of said shaft, as shown. This enables sprocket-chains 18, which connect the pinions 17 and the gears 8, to travel close to the ends of the knives, and it permits the cutter to make a swath almost as wide as the machine. This construction also enables the machine to be run very close to sidewalks, fences, trees, plants, and the like. The sprocket-pinions 17 have a clutch connection 19 with the cutter or reel shaft 14, so that the latter will be permitted to rotate faster than them at times, but will be caused to rotate with them in a forward direction when they are turned by the chains.

The knives or blades 12 of the reel coact with a transverse stationary knife 20, which is mounted, as shown at 21, in a strengthening-strip 22, secured upon brackets 23, which are in turn secured upon the inner faces of the forward ends of the side plates 5. In the lower ends of the brackets 23 are formed bearings for the shaft or journals of a transverse roller 24, which supports the front portion of the machine and prevents the cutter or reel from coming in contact with the ground.

In order to permit the machine to be run close to the edges of sidewalks and the like, I provide adjacent to the lower or bottom edges of the side or guard plates 5 two or more vertically or perpendicularly disposed rollers 25, which engage the edge of a sidewalk, the side of a fence, or the like and permit the machine to readily run along the same. These rollers are suitably journaled in openings or recesses formed in said plates, as shown.

The construction, operation, and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying draw-

ings and the following brief statement. When the machine is pushed forwardly, the motion of the wheels 7 will be imparted through the sprocket-chain gearing to the shaft of the cutter or reel 11, which latter will be given a rapid rotary motion to cause the grass between its curved knives or blades and the stationary knife to be severed. The weight of the cutter or reel will give it considerable momentum, and the clutch connection between its shaft and the driving-sprocket pinions will permit it to rotate at times faster than them. The provision of the reel at the front of the machine permits the supporting and driving wheels to travel over the mowed or cut grass. Hence no grass is tramped down and the machine will cut a clean swath. The construction of the reel and the frame permits the machine to be run close to sidewalks, trees, and the like, as previously explained. By tilting the machine so that its front end and cutter are elevated very tall grass may be effectively cut by moving the machine back and forth two or three times at different elevations.

While I have shown and described the preferred embodiment of my invention, it will be understood that I do not wish to be limited to the precise showing herein set forth, since various changes in the form, proportion, and minor details of construction may be made without departing from the spirit or sacrificing any of the advantages of the appended claims.

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

1. In a lawn-mower, a frame having pairs of rearwardly and forwardly extending arms,

a stationary shaft in said rearwardly-extending arms, side or guard plates secured upon said forwardly-extending arms and upon the ends of said shaft, supporting and driving wheels loosely mounted upon said shaft between said side plates, sprocket-gears upon said wheels, depending brackets upon the front ends of said side plates, a roller journaled in said brackets, a stationary knife between said brackets, inwardly-projecting brackets upon the front ends of said side plates, said inwardly-extending brackets having bearings at their inner ends, a rotary shaft journaled in said bearings, a reel or cutter secured upon said rotary shaft and having curved or spiral knives, sprocket-pinions having a clutch connection with said rotary shaft, sprocket-chains connecting said pinions and said gears, and a handle upon said frame, substantially as shown and described.

2. In a lawn-mower, a frame having parallel, vertical side or guard plates, inwardly-projecting bearing-brackets upon said plates, a shaft journaled in the bearings on said brackets, a reel or cutter upon said shaft and comprising curved or spiral knives, rotary driving elements upon the ends of said shaft and close to the inner faces of said plates and the outer ends of said knives, and a stationary knife supported from said plates, substantially as described.

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

GUY H. BRYAN.

Witnesses:

F. L. SNYDER,
N. H. AULD.