

W. C. FARNUM.
Lawn-Mower.

No. 224,523.

Patented Feb. 17, 1880.

Fig. 1.

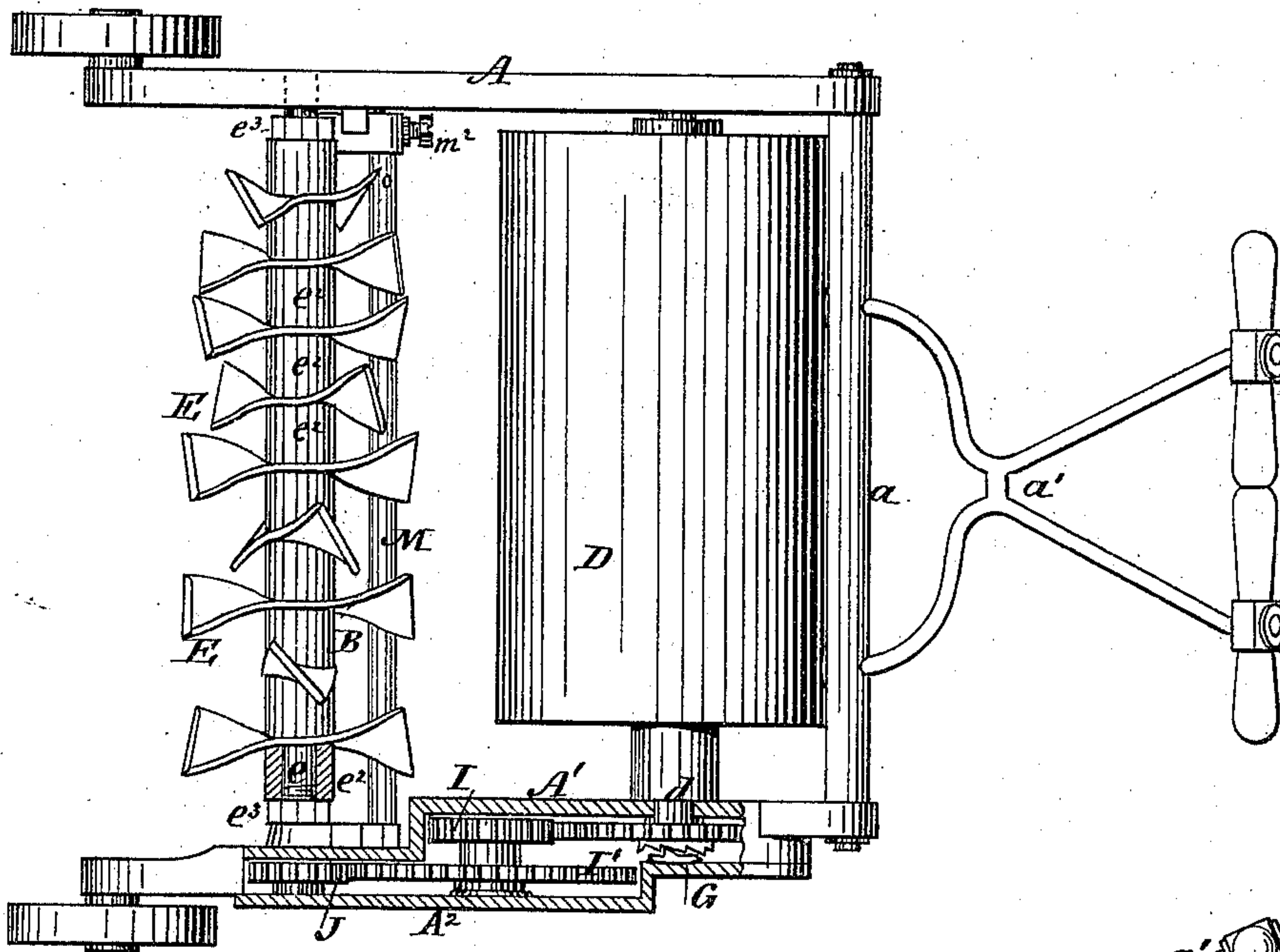


Fig. 2.

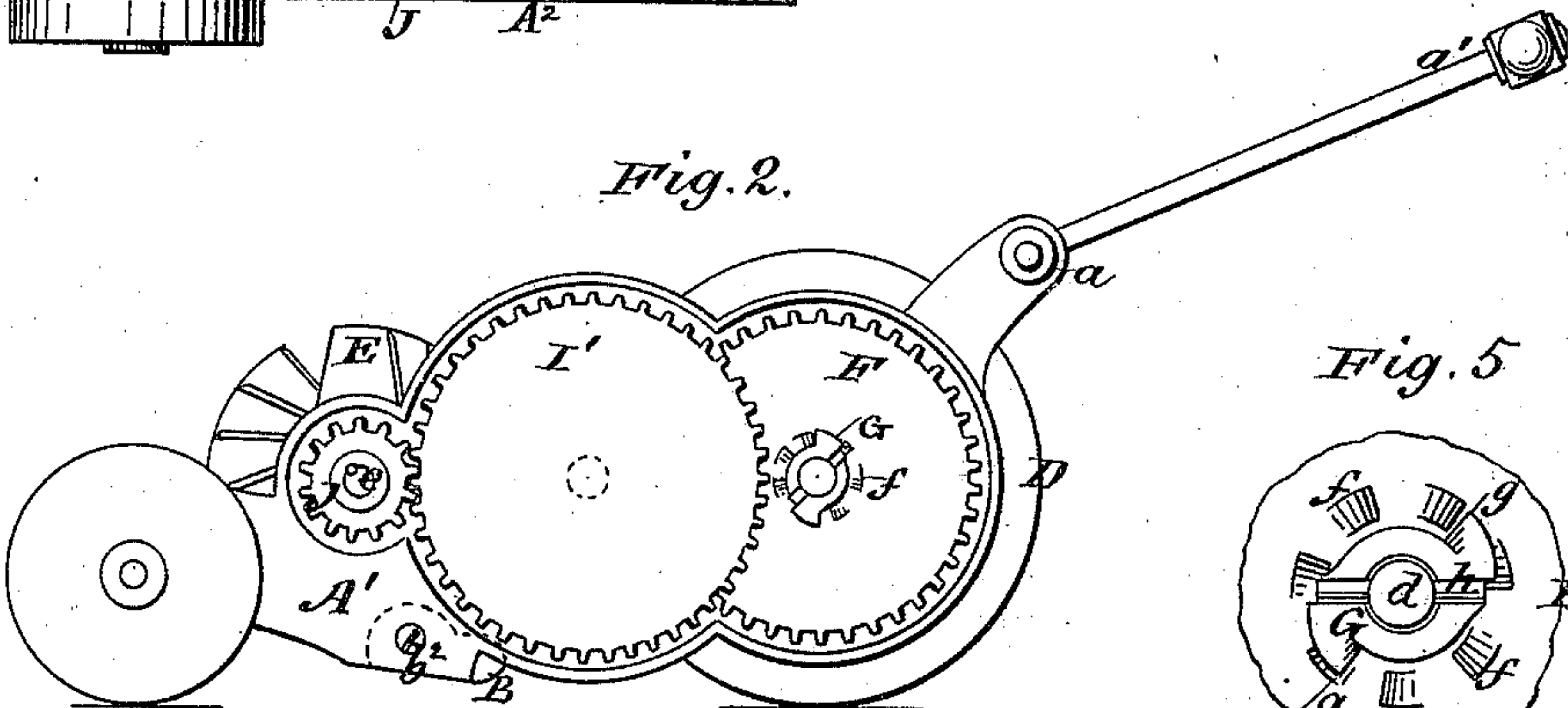


Fig. 5.

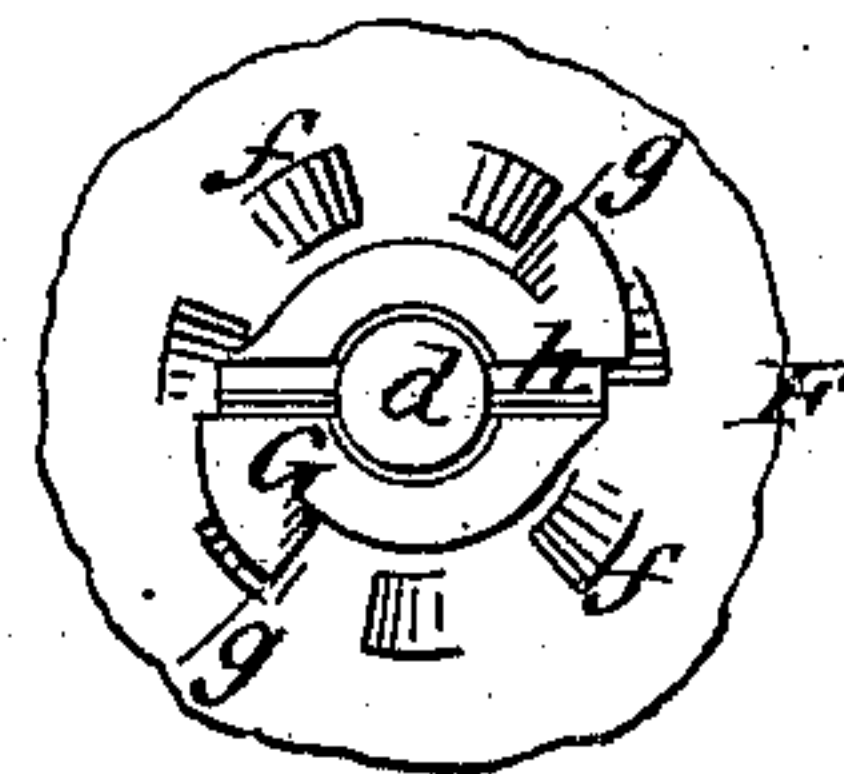


Fig. 3.

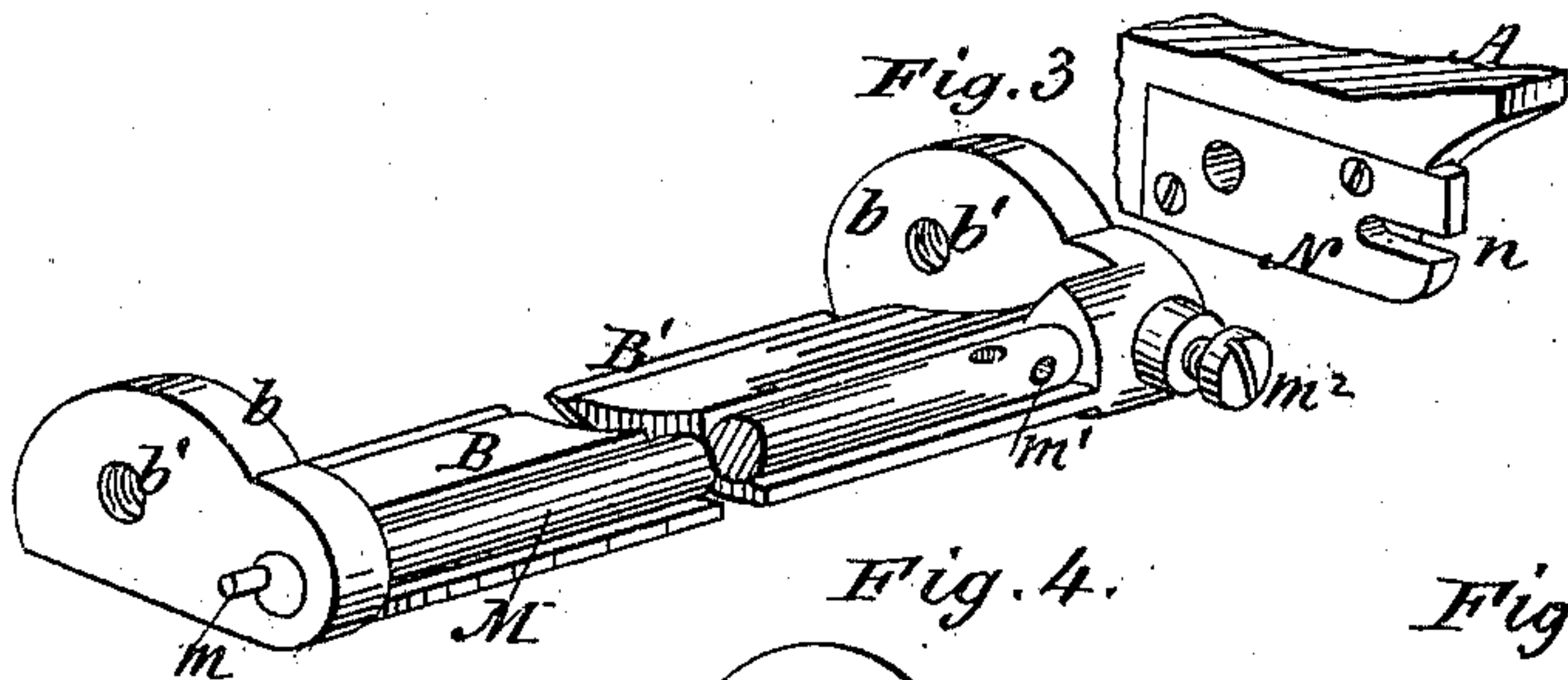


Fig. 6.

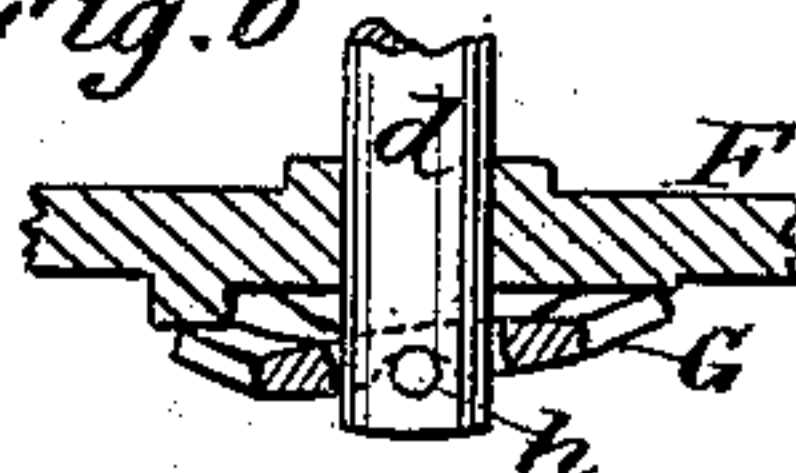


Fig. 7.

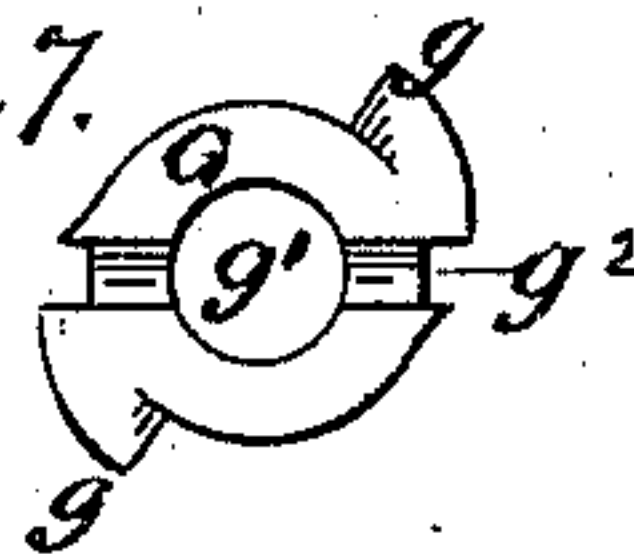


Fig. 4.

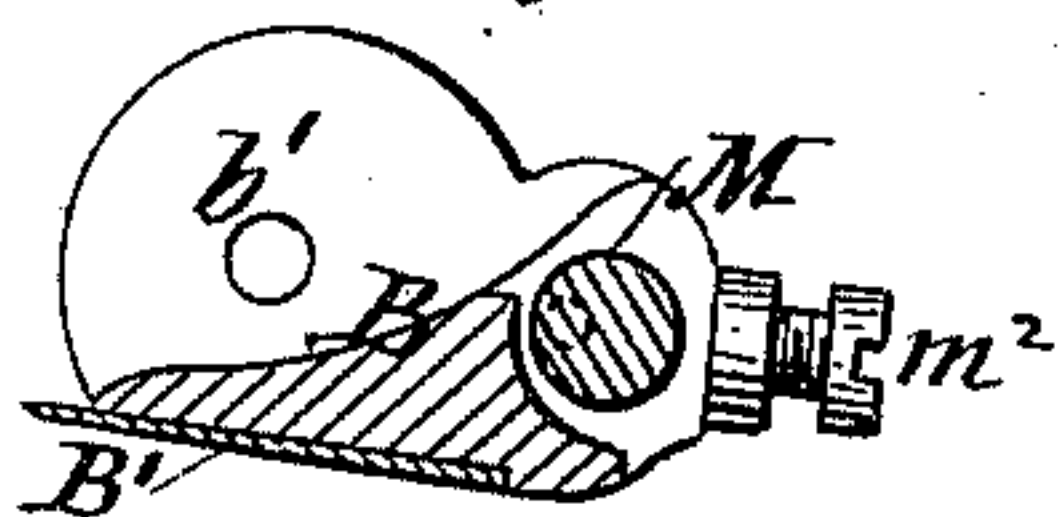


Fig. 8.



Witnesses:

W. B. Masson
W. E. Bowen

Inventor:

William C. Farnum
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att'y

UNITED STATES PATENT OFFICE.

WILLIAM C. FARNUM, OF HOOSICK FALLS, NEW YORK, ASSIGNOR TO
LYMAN WILDER, OF SAME PLACE.

LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 224,523, dated February 17, 1880.

Application filed April 25, 1879.

To all whom it may concern:

Be it known that I, WILLIAM C. FARNUM, of Hoosick Falls, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Lawn-Mowers; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a top view of the mower, with a portion of the frame in section to show the gearing. Fig. 2 represents a side view of the same with the outer casing of the gearing removed. Fig. 3 represents a perspective view of the stationary knife, its bar and connections. Fig. 4 represents a vertical section of the same. Fig. 5 represents a side view of the clutch and pawl detached. Fig. 6 represents a transverse section of the same. Fig. 7 represents a side view of the pawl detached. Fig. 8 represents one of the revolving blades detached.

My invention relates to lawn-mowers having a stationary knife and a revolving spiral cutter or series of blades operated by an inclosed side gearing connected to the main driving-roller.

Heretofore various means have been used to regulate the relative position of the stationary and spiral cutters. This has generally been done by elevating or depressing one end of either cutter independently of the opposite end, requiring much care to secure a correct adjustment.

The object of my invention is to produce means by which both ends of the stationary or ledger blade can be elevated or depressed uniformly and at one operation.

My invention consists in pivoting the stationary or ledger knife frame to the main frame at each end and supporting its rear portion upon a rod extending its whole length, journaled in said frame, and terminating in pins set eccentrically in its ends and entering grooves in the main frame, said rod being retained in any desired position by a screw set into one end of the knife-frame and impinging upon this adjustable rod.

In the drawings, A and A' represent the side

pieces of the frame. They are united at the rear by a horizontal rod, *a*, upon which the handles *a'* are mounted, and toward the front by the ledger-plate B. This plate is provided at each end with lugs *b*, having a screw-threaded hole, *b'*, to receive screws *b²* passing through the sides A and A', the screws *b²* being used with the plate B, not only to unite the side pieces together at that point, but to secure a pivot upon which said plate can be rocked or partly rotated. The side pieces, A and A', present also suitable bearings for the axle *d* of the main roller D, and for the shaft *e*, carrying the double series of knives E. The axle *d* is connected to the shaft *e* by gearing placed on the outside of the frame A', as follows: Upon the axle *d* is placed a gear-wheel, F, capable of rotating upon said axle independently of the latter. This wheel F has, in the form of a circle, an odd number of ratchet-teeth, *f*, projecting from its face, with which the radial edges *g* of a peculiarly-constructed pawl, G, can engage to turn this cog-wheel while the machine is advancing, but over the face of which it will slip and pass while the machine is backing. This pawl has a central opening, *g'*, slightly larger than the diameter of the axle *d*, upon which it is placed, and is retained at a very short distance from the wheel F by a pin, *h*, passing tightly through said axle. This pin enters and fits loosely in a diametrical groove, *g²*, in the pawl, and allows the latter to rock upon it as an axis. The ratchet-wheel having an odd number of teeth and the sides *g* of the pawl being in line upon the same diameter, it follows that while one of the ends or sides *g* of the pawl rides upon the highest part of one of the ratchet-teeth the other end will be upon the lowest, directly in the rear of one of the teeth, and in position to engage with the latter if the machine is advancing. The action of this pawl is always positive in engaging with every cog, tooth, or projection of a ratchet-wheel over the face of which it passes, and it does not require any spring to make it operative.

If the ratchet-wheel had an even number of teeth, the pawl should be constructed with its engaging ends *g* off a diametrical line, so that

one end would be elevated while the other rests in the hollow between two teeth.

By means of the pawl and ratchet the forward motion of the roller D is transmitted to the gear-wheel F. The latter meshes with the pinion I, having upon its shaft the gear-wheel I', and the latter meshes with the pinion J, keyed upon the end of the shaft *e*, that can by this combination of gears be revolved rapidly, and the whole gearing is inclosed by the side plate, A².

The above-described pawl-and-ratchet device forms the subject-matter of a separate application, also made by me.

The knives E are all made alike in form, of plate metal, and perforated at the center *e'* to receive the shaft *e*, upon which they are separated and kept at a uniform distance apart by a series of thimbles, *e*², and the whole securely held together by nuts *e*³, adjoining the two extremities of the shaft *e*.

To cut grass evenly each cutter E is placed upon the shaft nearly at right angle with its adjoining fellow, so that one wing of any pair of cutters will cut from right to left, and the opposite wing of the same pair will cut from left to right.

The relative position of the revolving cutters to the ledger-blade B' is regulated and secured by means of its plate B, to which it is permanently attached by rivets or screws. This plate is, as above mentioned, pivoted at each

end to the frame at *b'*. In its rear end is journaled a rod, M, extending its whole length. This rod has pins *m* formed on or driven in eccentrically and projecting from each end in the same radial plane, to enter slots *n*, formed in the side plates, A and A', of the frame, or in a plate, N, attached to said side plates. This rod can be rotated with a pin or nail made to enter one of the holes *m'*. The eccentric pins *m*, bearing against the top or bottom of the slots *n*, will elevate or depress the whole edge of the ledger-blade toward or from the revolving cutters. After it is so adjusted the rod M is secured by a screw or screws, *m*², entering the rear of the lugs *b*² and impinging upon said rod.

In place of the holes *m'*, the rod may be made polygonal and turned by a wrench or other suitable tools.

Having now fully described my invention, I claim—

In combination with the side pieces of the frame, provided with grooves *n*, and the ledger-blade frame pivoted to said side pieces, the rod M, provided with pins set eccentrically in its ends and journaled to the ledger-frame, and a screw by which it is secured, substantially as and for the purpose described.

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Witnesses:

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