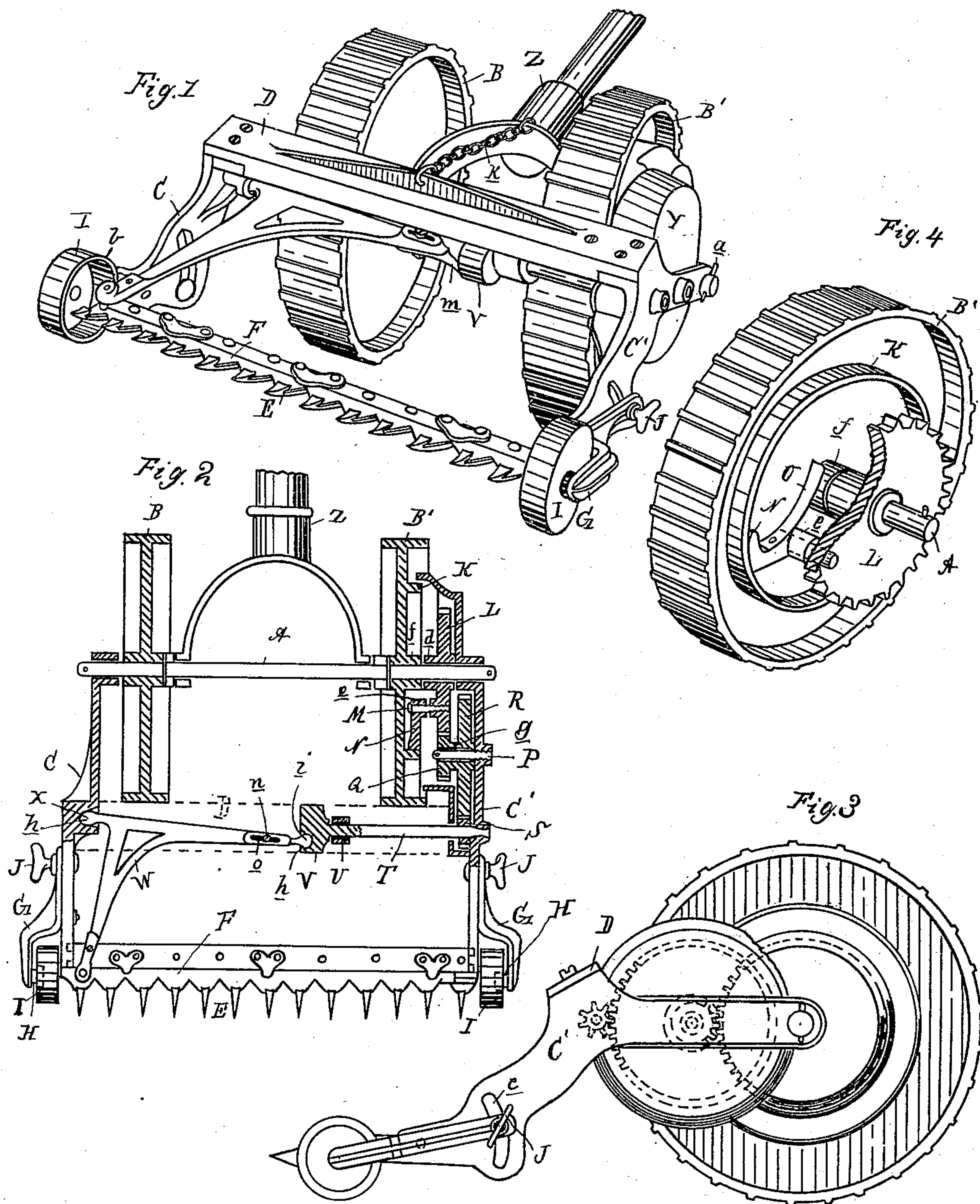


(No Model.)

J. KELLER.  
LAWN MOWER.

No. 330,714.

Patented Nov. 17, 1885.



Attest:  
John Schuman  
N. J. Sprague

Inventor:  
Jeremiah Keller  
by his Atty  
N. J. Sprague



# UNITED STATES PATENT OFFICE.

JEREMIAH KELLER, OF SANDUSKY, OHIO.

## LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 330,714, dated November 17, 1885.

Application filed March 5, 1885. Serial No. 157,729. (No model.)

*To all whom it may concern:*

Be it known that I, JEREMIAH KELLER, of Sandusky, in the county of Erie and State of Ohio, have invented new and useful Improvements in Lawn-Mowers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in the construction of lawn-mowers; and the invention consists in the peculiar construction, arrangement, and various combinations of the parts, all as more fully hereinafter set forth and claimed.

Figure 1 is a perspective view of my improved machine. Fig. 2 is a horizontal section through the axle, showing the relative positions of the operating gears. Fig. 3 is a side elevation with a portion of the case broken away. Fig. 4 is a perspective view of the main drive-wheel detached, showing the application of the friction-dog.

In the accompanying drawings, which form a part of this specification, A represents the axle and drive-shaft, upon which are mounted the traction-wheels B B' in any such manner that when the wheels turn the shaft will be compelled to rotate, and these wheels are preferably made with flanges and solid webs, as shown.

C C' represent the side plates of the knife-carrying frame, the rear ends of which have holes formed in them to slip over the projecting ends of the shaft A, and are retained thereon by the pins *a*, and these side plates are secured together in their relative positions by the girt D. The forward ends of these side plates, C C', have secured between them the finger-bar E, in which the knife-bar F has a reciprocating motion, as in the usual construction of mowers and harvesters. To the forward ends of the side plates, C C', and upon the outer faces thereof, are pivotally secured brackets or arms G, in the outer ends of which are properly and rigidly secured stub-shafts H, upon which the wheels I are journaled, such wheels being provided with broad, inwardly-projecting flanges *b*. The rear ends of these brackets G have formed in them holes, which come coincident with curved slots *c* in the side plates, and through which suitable

thumb-bolts, J, having nuts thereon, pass, and by means of which the brackets are secured in the desired positions. Upon the outer face of the web of the wheel B' is formed an outwardly-projecting ring-flange, K.

L is a gear-wheel, the hub *d* of which is properly journaled upon the projecting end of the shaft A, and near the periphery of this gear-wheel L there is rigidly secured the inwardly-projecting stub-shaft M, upon the inner end of which is properly journaled the hub *e* of the friction-dog N, the face of which is provided with a suitable shoe, and is designed to be kept in frictional contact with the inner face of the flange K by a spring, O, one end of which is secured to the body of such friction-dog, while its free end rests upon the hub *f* of the wheel B'.

P is a stub-shaft, which is rigidly secured to and projects inwardly from the side plate C', and has journaled upon it a hub, *g*, which carries the pinion Q upon its inner end, and a gear-wheel, R, upon its outer end, such pinion Q being designed to engage with the gear-wheel L, while the gear-wheel R is designed to engage with the pinion S upon the shaft T, the outer end of which is journaled in proper bearings in the side plate C', while the inner end passes through, and is journaled in a hanger or bracket, U, projecting downward from the under face of the girt D. The inner end of this shaft T has rigidly secured to it a wheel or disk, V, in the outer face of which is formed a suitable socket, *h*, to receive the ball-end *i* of the bell-crank lever W, the other arm of which is pivotally secured to the knife-bar E. At the elbow of this bell-crank lever W is formed a projecting ball-arm, X, which is received in a suitable socket, *j*, formed in the inner face of the side plate C.

To protect the gearing herein described, I cast upon the rear end of the plate C' a suitable casing, Y, which, when the machine is put together, incloses the running-gear, as shown in Fig. 1. Between the wheels B B', I properly sleeve upon the axle a handle, Z, which is connected to the girt D by means of a chain, K.

To facilitate the putting of the machine together, and to be able to compensate for the wear of parts, I provide the horizontal arm of the bell-crank lever W with an adjustable arm, *m*, which carries the ball *i*, to engage with



the disk V, such arm being secured to its adjustable position by a bolt, *n*, which passes through it and a slot, *o*, in the adjacent arm of the bell-crank lever.

5 In practice, as the machine is pushed forward by the operator, the friction-dog M is so arranged and adapted as to engage with the ring-flange K, and compel the gear-wheel to rotate, and, by the connections herein fully described, necessarily impart a reciprocating motion to the knife-bar, causing it to cut the grass in the manner of that class of mowers that are provided with a reciprocating knife. As the machine is drawn or pushed in the reverse direction the dog will slide upon the flange K without imparting any movement whatever to the operating-gear.

By providing the forward end of the machine with the arms G, adjustable about a center, which carry the wheels I, it will be observed that the knife-bar may be raised or lowered, so as to cut the swath at the desired distance from the ground, and it will also be observed that as the knife-bar is reciprocated its ends project into the flanged wheels I, which latter protect them, and prevent their being broken off by coming in contact with the fence, trees, sidewalk, and other obstructions.

Machines of this class which are provided with cylindrical or rotating knives are not available in cutting grass that has grown to any considerable height, but a machine constructed substantially as herein described is available for use at any time, no matter what the height of the grass may be.

While I have shown and described a disk, V, I do not intend to limit myself to a disk, as it is evident that an arm carried by the shaft T would accomplish the same result.

40 I deem it important that the ball X be formed integral with the lever at its elbow, and that it works in an open socket in the frame, as shown, for this construction provides for the easy and ready insertion of the arm, and when the ball is once in place in its socket no additional provision is necessary to keep it in place. This is not the case where the lever is formed with a socket and the ball carried by a rod secured to the frame, for in such instance some means has to be provided to keep the ball from getting out of its socket.

What I claim as my invention is—

1. In a lawn-mower, the combination, with the frame and knife-bar and revolving disk V, of the bell-crank lever W, having pivotal connection with said knife-bar, and a ball-

bearing in said frame, and provided with a removable arm, *m*, having eccentric bearing in said disk, as and for the purposes specified.

2. In a lawn-mower, the combination, with the frame, knife-bar, and revolving disk V, of the bell-crank lever W, having pivotal connection with said knife-bar, and a ball-bearing in said disk, and provided at its elbow with a ball formed integral therewith, and working in an open socket in said frame, substantially as described.

3. In a lawn-mower, the combination, with the frame, knife-bar, and revolving disk V, of the elbow-lever W, having pivotal connection with said knife-bar, a ball at the elbow formed integral therewith and working in a socket in the frame, and a removable adjustable arm, *m*, carrying a ball working in a socket in the disk V, substantially as and for the purpose specified.

4. In a lawn-mower, the combination, with the frame and knife-bar, of the bell-crank lever W, having connection with said knife-bar, and a ball-bearing in said frame, and an adjustable arm, *m*, for said lever, having a ball-bearing in a revolving disk, as and for the purposes specified.

5. In a lawn-mower, the combination, with the frame and knife-bar and revolving disk V, of the bell-crank lever W, having one arm pivotally secured to the knife-bar, a ball-arm, X, formed at the elbow of said lever, and working in a socket in said frame, the arm *m*, adjustably secured to the horizontal arm of said lever, and carrying a ball, *i*, eccentrically secured in said disk, and mechanism for revolving said disk, substantially as described.

6. In a lawn-mower, the combination, with the frame and knife-bar, of the bell-crank lever W, having pivotal connection with said knife-bar, and a ball-bearing at its elbow in said frame, the shaft T, journaled in bearings in one side of said frame in line with the bearing of said lever, the disk V, carried by said shaft, gearing, as described, driven by one of the traction-wheels for revolving said disk, and the horizontal arm of said lever provided with an adjustable and removable arm, having an eccentric ball-bearing in said disk, substantially as and for the purpose specified.

JEREMIAH KELLER.

Witnesses:

JULS. ERCKENER,  
H. S. SCHUMACHER.