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Emery R. Gard's

Imp^d Lawn Mower.

PATENTED JUN 27 1871

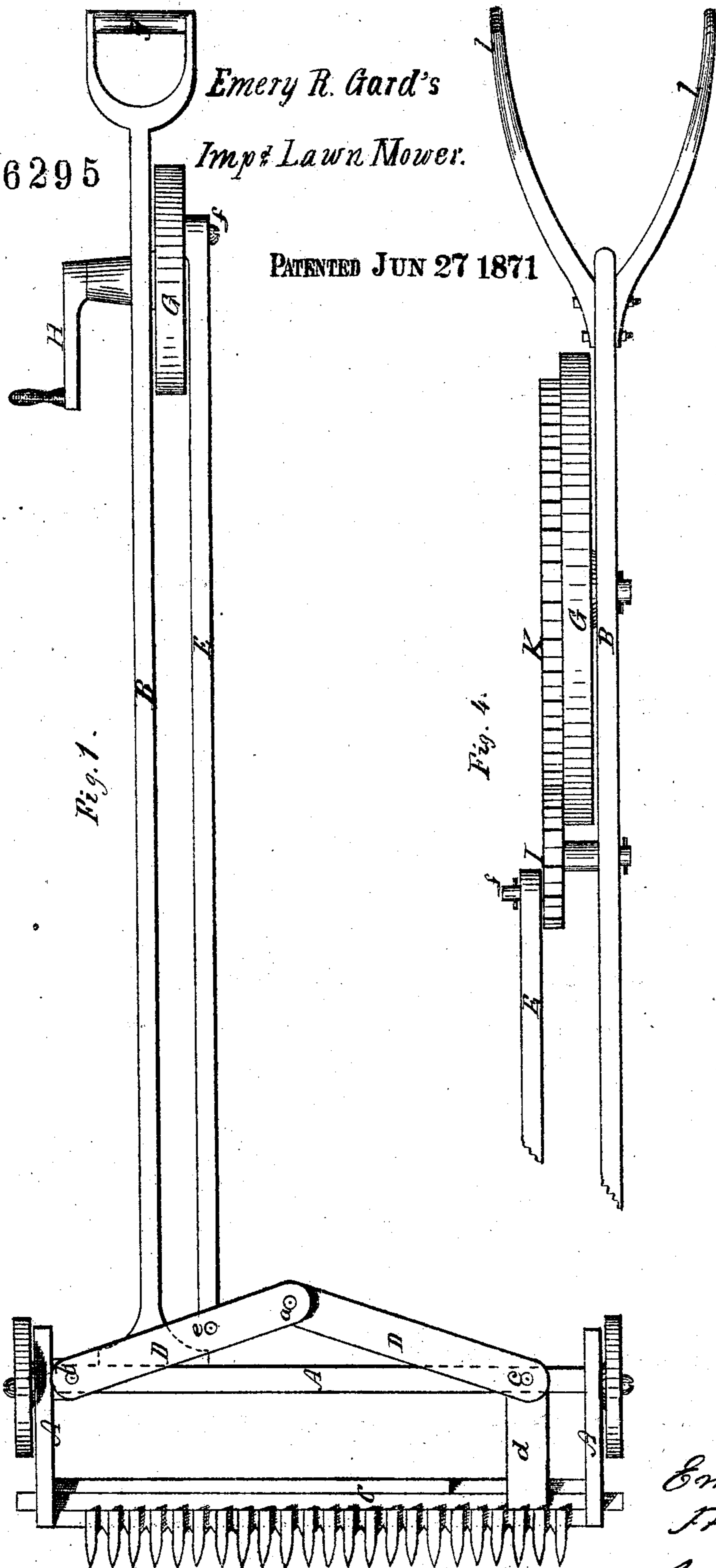


Fig. 1.

Fig. 4.

Witnesses,
D. J. Brown
R. D. Smith

Emery R. Gard,
Proprietor,
J. S. Brown.

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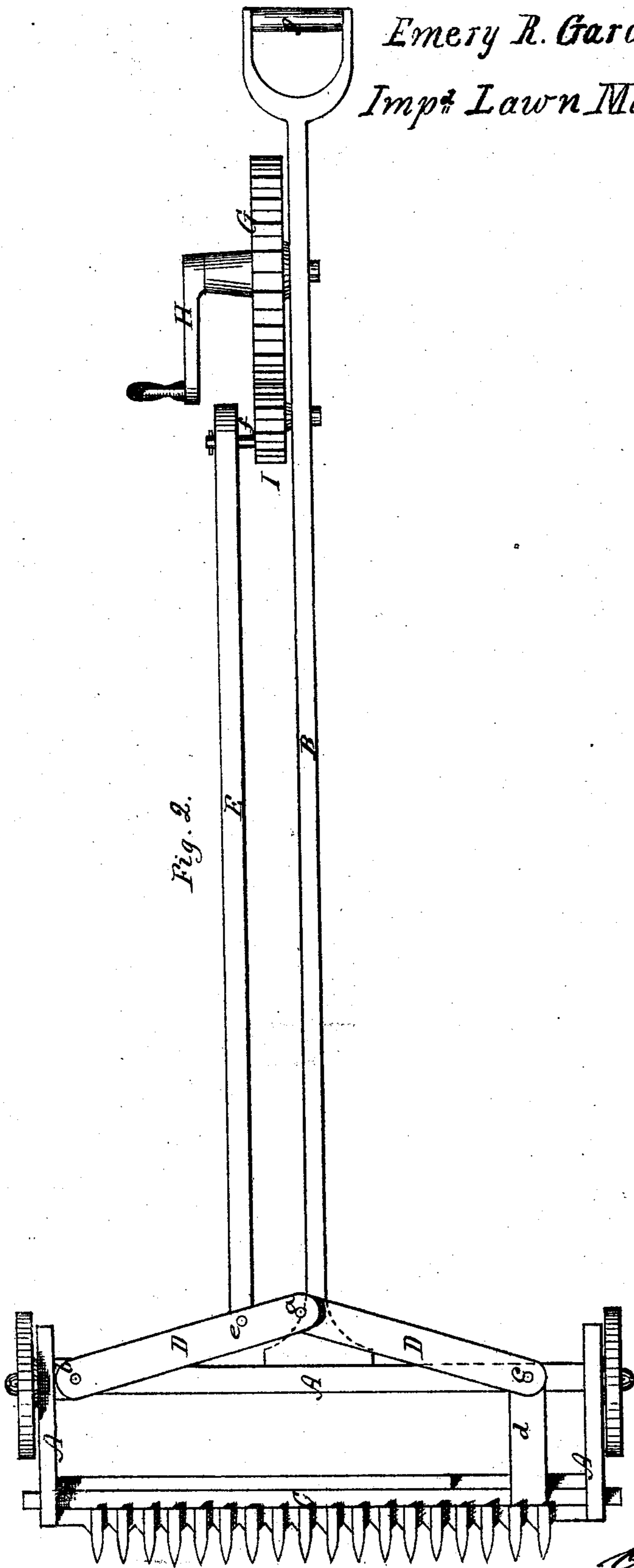


Fig. 2.

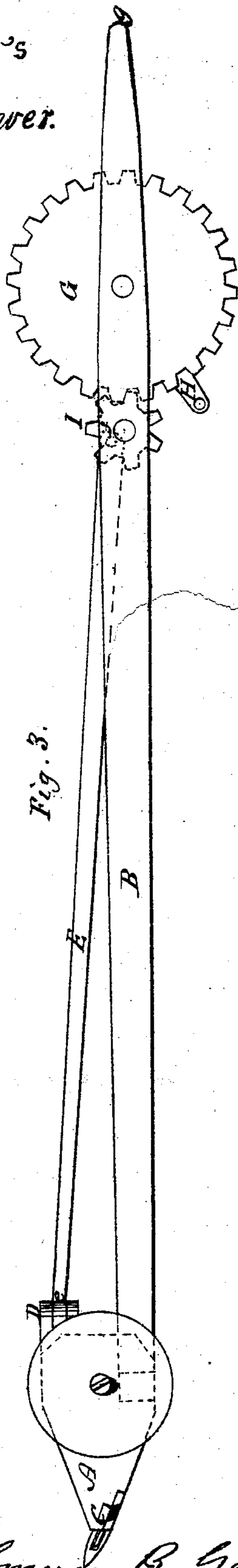


Fig. 3.

Witnesses,
D. J. Brown
R. O. Smith

Emery R. Gard,
Inventor's attorney,
J. S. Brown

UNITED STATES PATENT OFFICE.

EMERY R. GARD, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LAWN-MOWERS.

Specification forming part of Letters Patent No. 116,295, dated June 27, 1871.

To all whom it may concern:

Be it known that I, EMERY R. GARD, of Chicago, in the county of Cook and State of Illinois, have invented an Improved Lawn-Mower; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing making part of this specification—

Figure 1 being a plan of a lawn-mower constructed with my improvement; Fig. 2, a plan of a lawn-mower, showing my improvement applied in a modified way; Fig. 3, a side elevation of the same; Fig. 4, a partial plan, showing another modification of the construction.

Like letters designate corresponding parts in all the figures.

Let A represent the frame of a lawn-mower, directed by a handle, B, by which the operator guides and pushes the mower before him, and C the cutter-bar thereof. In order to give the vibratory movement to the cutter-bar C I employ two swinging arms, D D, pivoted together at *a*, forming a toggle-joint. One of the arms is pivoted at *b* to the frame A at one side of the machine; and the other arm is pivoted at *c* to a projection, *d*, of the cutter-bar. It is obvious that when the two arms D D are in a straight line the cutter-bar will be moved to the left, as presented in the drawing, to its fullest extent; and when the arms assume a bent form, or form an angle, as shown in the drawing, the cutter-bar will be moved to the right. The bending is sufficient to give the requisite movement to the cutter-bar. If the arms are moved to the other side of the right line, the cutter-bar also will be vibrated again, so that at every forward and backward transverse vibration of the arms across the cen-

tral straight line two double vibratory motions are communicated to the cutter-bar, thereby the effect of gearing up to a double speed being obtained without gearing. Thus, by simply connecting the vibratory arms D D by a connecting-rod, E, pivoted to one of the arms at *e* with a crank-pin, *f*, on a driving-wheel, G, as in Fig. 3, the simple revolution of the wheel by a crank, H, in one hand will give a moderate speed to the cutter-bar without any gearing whatever, the mower being guided by one hand holding the end *g* of the handle B. But, to give a more rapid and effectual movement to the cutter-bar the crank-wheel G may gear into a pinion, I, one-half or one-third of its diameter in size, as shown in Figs. 1 and 2. As much speed as may be desired will be obtained, the connecting-rod receiving a crank-pin, *f*, on the pinion. If it is desired to make the motion automatic the driving-wheel G is made large enough to roll on the ground, as in Fig. 4, and a cog-wheel, K, is secured thereto, or to its shaft, to gear into the crank-pin I. The whole is simply wheeled along by grasping the two handles *l l*.

What I claim as my invention, and desire to secure by Letters Patent, is—

A lawn-mower, constructed with the transversely-vibrating pivoted arms D D, cutter-bar C, connecting-rod E, driving-wheel G, and handle B, all arranged and operating together in the manner and for the purpose herein specified.

Specification signed by me this 8th day of April, 1871.

EMERY R. GARD.

Witnesses:

J. S. BROWN,
D. J. BROWN.