J. BRAUN.

LAWN-MOWERS.

No. 195,336. Patented Sept. 18, 1877.

Fig 1.

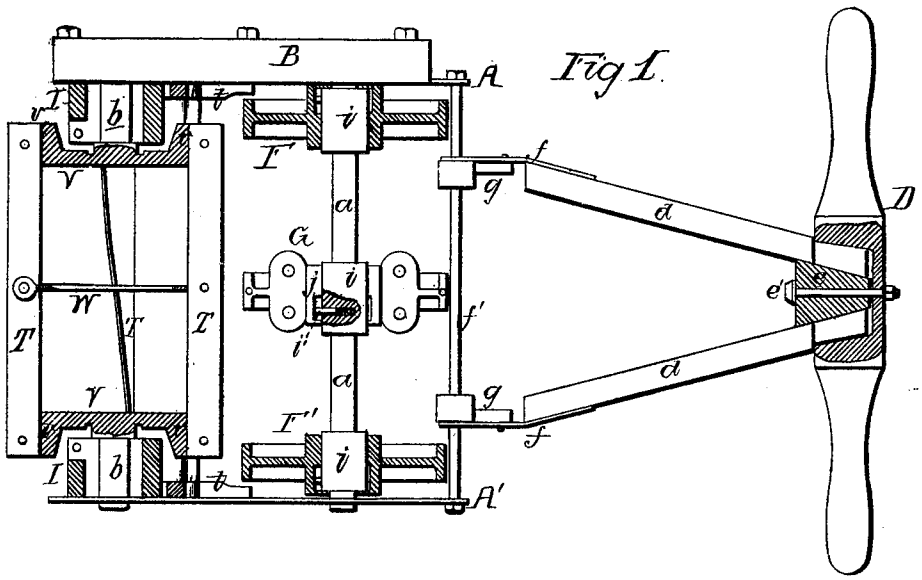


Fig 2.

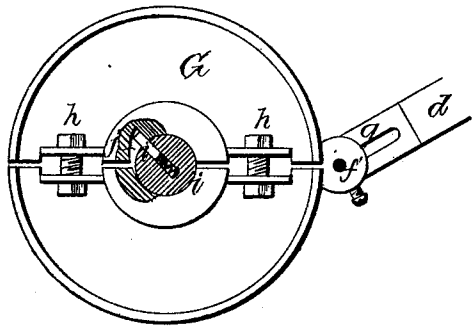


Fig 3.

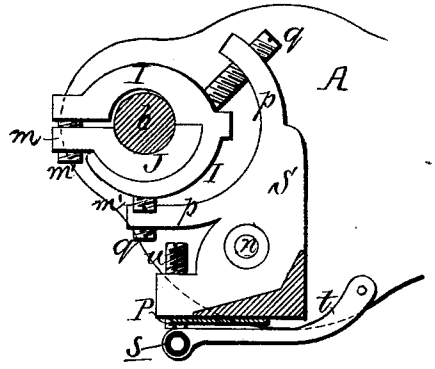
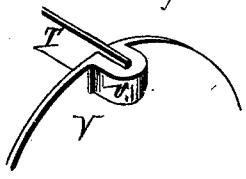


Fig 5.



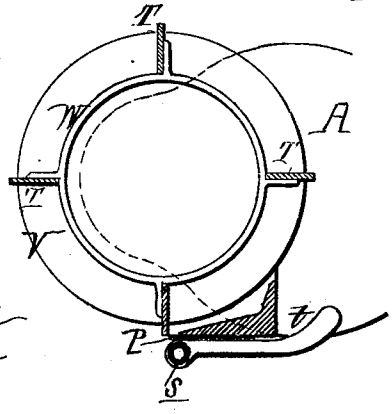


Fig 4.

Witnesses

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Harry Smith

Inventor

John Braun

by his Attorney

Bowson and Son

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UNITED STATES PATENT OFFICE.

JOHN BRAUN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN LAWN-MOWERS.

Specification forming part of Letters Patent No. **195,336**, dated September 18, 1877; application filed June 4, 1877.

To all whom it may concern:

Be it known that I, JOHN BRAUN, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Lawn-Mowers, of which the following is a specification:

The object of my invention is to improve the construction and operation of a lawn-mower, in a manner too fully described hereinafter to need preliminary explanation.

In the accompanying drawing, Figure 1 is a sectional plan view of my improved lawn-mower; and Figs. 2, 3, 4, and 5, detached views of parts of the same, illustrating different features of the invention.

A and A′ are the opposite side frames of the machine, connected together by suitable bolts, and having bearings for the opposite ends of the driving-shaft *a* and cutter-shaft *b*. The frame A carries a casing, B, in which is arranged the usual gearing for transmitting the motion of the driving-shaft to the cutter-shaft.

D is a handle, which is connected to the machine by means of inclined bars *d*, the upper ends of which are adapted to an inclined recess formed in the under side of the handle, and are firmly clamped therein by means of a wedge-shaped block, *e*, which is caused to bear against the inner sides of the bars *d* by a bolt, *e′*, furnished with a nut, which bears upon the top of the handle. The latter can thus be readily removed and replaced, when necessary.

The lower ends of the bars *d* are provided with plates *f*, pivoted to a rod, *f′*, at the rear end of the machine, and having openings adapted to pins on arms *g*, the latter being also pivoted to the rod *f′*, and having set-screws, by which they may be secured in any position which the desired angle of the handle in respect to the machine may demand.

On the driving-shaft *a* are three wheels, F, F′, and G, the two former being arranged near the ends of the shaft, and the wheel G in the center, and the hubs of all three wheels being adapted to collars *i* formed on the shaft *a*, as shown in Fig. 1.

In each of the collars *i* is an opening, in which is arranged to slide a spring-pin, *i′*, and in the hub of each wheel are formed one or more recesses, *j*, one edge of which is inclined and the other abrupt. Into these recesses the ends of the spring-pins *i′* are caused to project, as seen in Fig. 2, so that as the wheels revolve in the forward direction pointed out by the arrow, the abrupt end of the recess will strike the end of the pin and cause the movement of the same and the consequent turning of the shaft *a;* but when the wheels revolve in the contrary direction, the inclined edge of the recess will depress the pin without imparting a rotary movement to the same and the shaft.

By forming on the shaft *a* collars *i* for the reception of the spring-pins *i′*, the size of the latter may be increased, and better facilities for their operation afforded than if they were arranged within the limited area afforded by the shaft itself.

For ordinary field-work the machine would operate without the central driving-wheel G, the object of using the same being to adapt the machine to the mowing of narrow borders of lawns, flower-beds, &c., upon which the end driving-wheels would not have sufficient bearing.

In order, however, to permit the removal of the central wheel G, when its use is not desired, I make said wheel in halves, and secure the same together by means of bolts *h*, Fig. 2. By removing these bolts, the halves can be separated and removed from the shaft, but can be readily replaced when again needed.

The bearings I of the cutter-shaft *b* have openings larger than the said shaft, which rests upon boxes J, which are made of a segmental form, and are adapted to segmental recesses formed in the lower portion of the bearing I. Each box J has a lug, *m*, at one side, and to this lug is adapted a set-screw, *m′*, by operating which the outer end of the box J may be raised or lowered. Thus, as the knives are reduced by wear or by sharpening, the set-screws *m* may be loosened and the shaft of the cutter allowed to descend to the desired extent to compensate for such reduction.

In order to compensate for wear of the stationary knife P, I secure each end of the same to a frame, S, pivoted at *n* to one of the side frames of the machine, and forked at the up-

per end, so as to form two arms, *p*, each of which is provided with a set-screw, *q*, abutting against the bearing I.

By manipulating these set-screws, the frame S may be caused to turn upon its pivot, and the knife P raised or lowered, as desired.

Instead of having the usual wheels for the support of the front end of the machine, I place immediately beneath the front edge of the knife P a roller, *s*, which forms the sole support for said front end of the machine, and, owing to its position and its small size, permits the effective use of the machine irrespective of any unevenness of the ground, as it will closely follow sudden depressions or elevations in the surface, and thus permit the knives to cut the grass at the same height at all points.

The roller *s* is hung at each end to a pivoted arm, *t*, and its distance from the knife P, and, consequently, the height at which the grass is cut, is governed by elevating or depressing the end of each arm *t* by means of a set-screw, *u*.

The cutting-wheel consists of the blades T, flanges V at each end, and an intermediate ring, W. The flanges V have on the outside, around the circumference, as many sockets or lugs *v* as there are blades, the ends of the latter being secured in the lugs by casting the latter around the same, or by means of rivets, or both, the lugs in either case serving to materially stiffen the blades and improve their operation.

I claim as my invention—

1. The combination of the handle D and its inclined recess, the inclined bars *d*, the wedge-shaped block *e*, and confining-bolt *e'*, as specified.

2. The combination of the rod *f'*, bars *d*, carrying the handle and hung loosely to the rod, and the arms *g* connected to the bars *d*, hung to the rod *f'*, and provided with set-screws, by which they may be secured to the same, as specified.

3. The combination of the shaft *a* and its end driving-wheels F F' fixed thereon with the central driving-wheel G, so secured to the shaft as to be readily removable, as specified.

4. The combination of the cutter-shaft *b*, the bearing I, and the adjustable box J, having a lug, *m*, and set-screw *m'*.

5. A lawn-mower, supported at its front end upon a roller, *s*, extending across the machine beneath the edge of the cutting-knife P, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN BRAUN.

Witnesses:
HERMANN MOESSNER,
HARRY SMITH.