

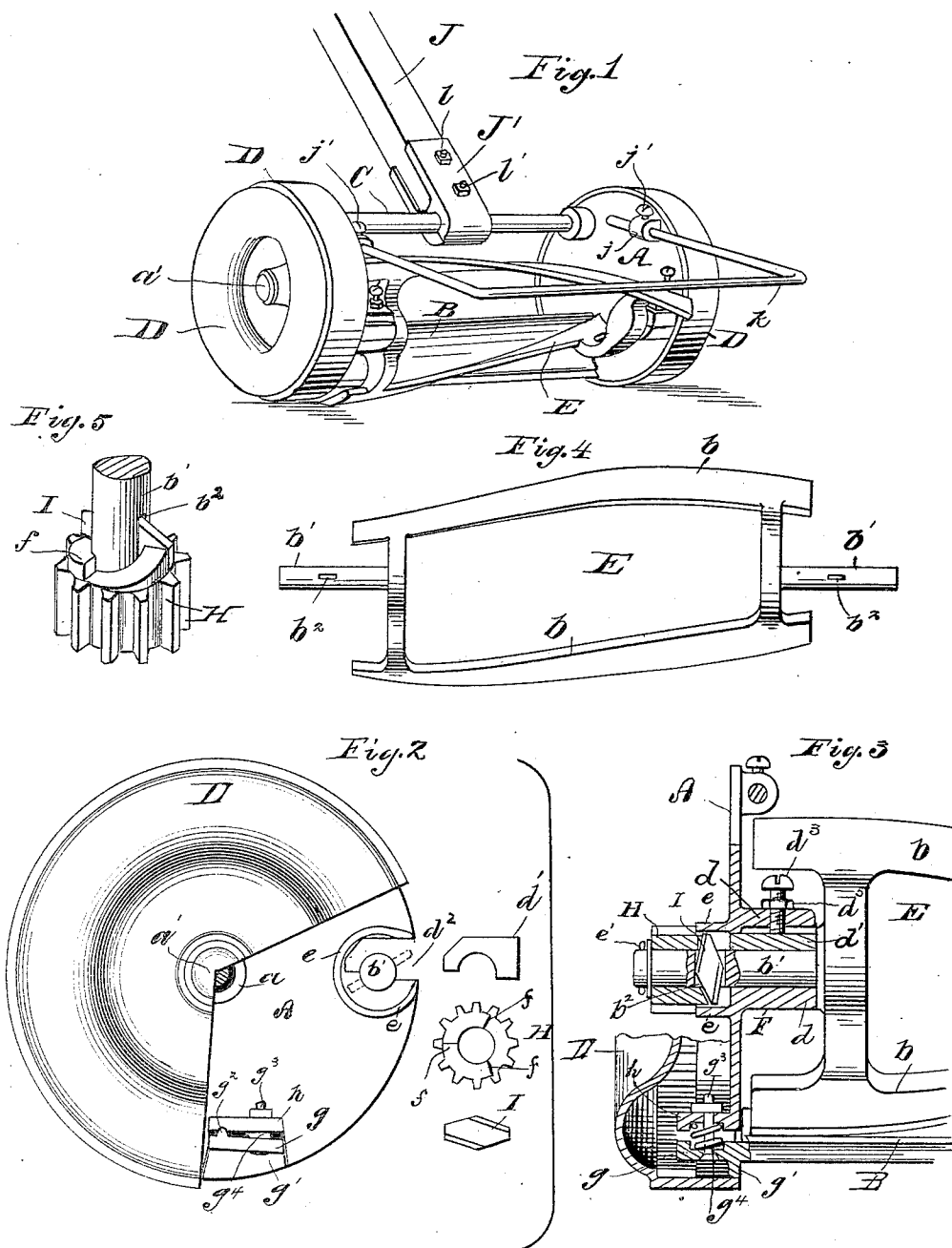
(No Model.)

3 Sheets—Sheet 1.

C. H. PAXSON.
LAWN MOWER.

No. 425,954.

Patented Apr. 15, 1890.



Witnesses
Issiah Richards
Joshua Scott

Inventor
Charles H. Paxson
By *Paul N. Mather*

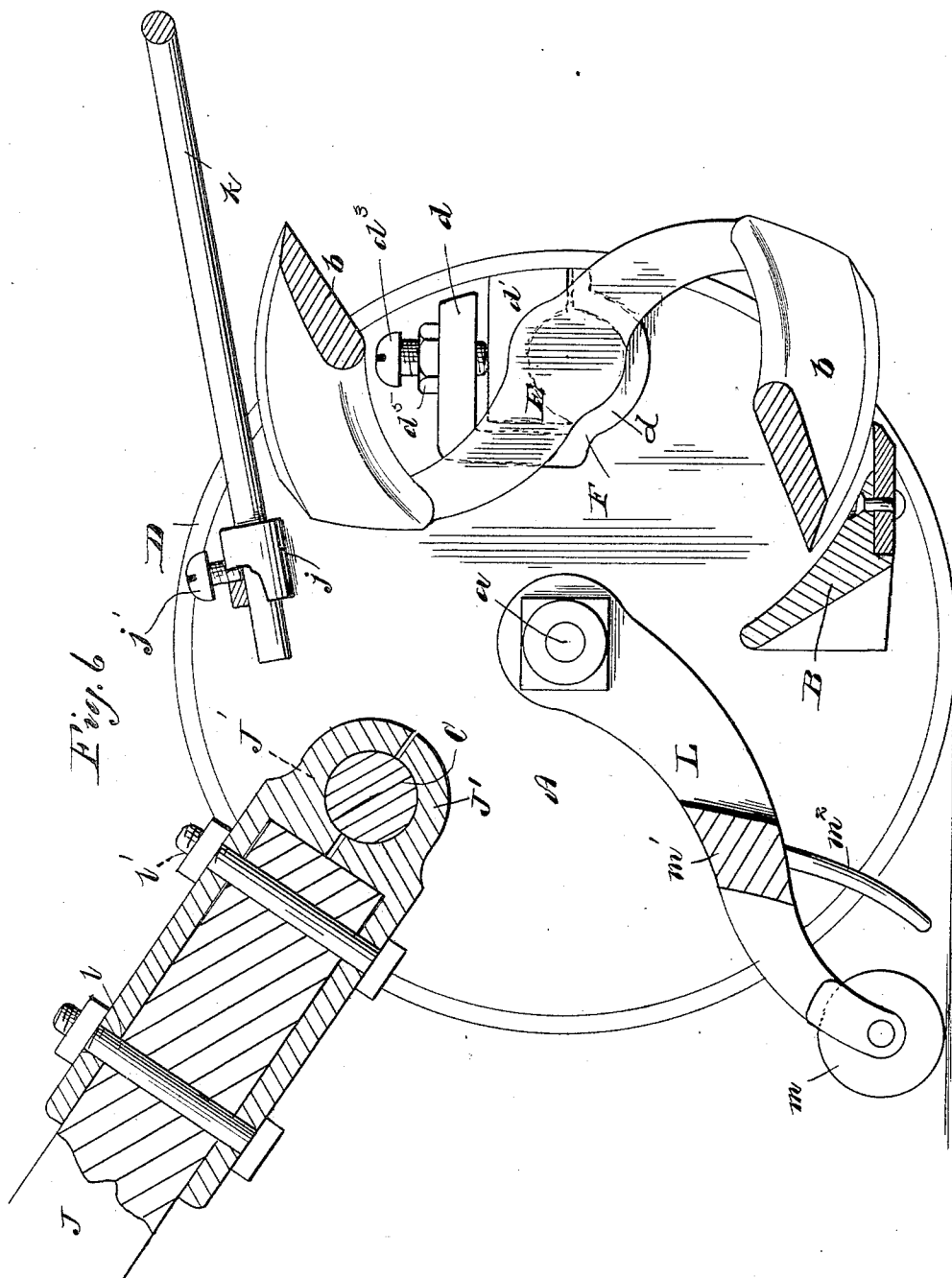
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LAWN MOWER.

No. 425,954.

Patented Apr. 15, 1890.



Witnesses
Isaiah Richards
Joshua Scott

Inventor
Charles H. Paxson
By *Paul A. Waterbury*

UNITED STATES PATENT OFFICE.

CHARLES HENRY PAXSON, OF SPRINGFIELD, ASSIGNOR TO THE SUPERIOR MACHINE COMPANY, OF NEW CARLISLE, OHIO.

LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 425,954, dated April 15, 1890.

Application filed October 22, 1888. Serial No. 288,831. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HENRY PAXSON, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Lawn-Mowers, of which the following is a specification.

The object of my invention is to simplify the constructions heretofore used in lawn-mowers and provide a lawn-mower which, while being strong and durable in its construction and efficient and accurate in its operation, may be cheaply and economically constructed. I attain these objects by the constructions set forth in the accompanying drawings, in which—

Figure 1 is a perspective view of a lawn-mower embodying my invention. Fig. 2 is an end view of a portion of the same, the driving-wheel being partly broken away to better disclose the operating parts, and the upper part or loose portion of the bearing, the pinion, and clutch-pawl being removed and placed at one side for perspicuity. Fig. 3 is a partial sectional view through one of the end disks and the reel-bearing, showing the location and construction of the driving-clutch and the stationary cutter or cutter-bar. Fig. 4 is an elevation view of the reel in detail. Fig. 5 is a detail view in perspective of the driving-pinion and the clutch. Fig. 6 is an enlarged sectional elevation view of a mower complete, showing the rake attachment. Fig. 7 is a rear and Fig. 8 a sectional elevation showing the raking-frame.

Like parts are indicated by similar letters of reference throughout the several views.

The main frame of the machine consists, essentially, of the end disks A, cutter-bar or stationary cutter B, and connecting-rod C. The driving-wheels D D are journaled on trunnions *a* on the end disks A, and are adapted to extend over the said end disks and inclose the driving-pinions, the said driving-wheels being held in place on said trunnions by small fastening-bolts *a'*, which pass through said trunnions in a well-known manner. The reel or revolving cutter E, I preferably cast of steel in a single piece with the cutting-blades *b b* and trunnions *b' b'*, the said trunnions

each being provided with slotted openings *b²* *b²*, which extend entirely through the same, these slotted openings being cast or, rather, cored out in the process of casting said wheel. The cutting-reel E is journaled in the inwardly-projecting bearings F F in the end disks A. The bearings F are preferably formed in two parts, an outer part *d* and an inner part *d'*, the outer portion *d* being cast integral with the disks A, the inner part being detachable, as shown in Fig. 9. The lower bearing-surface of each of the trunnions is formed in the outer portion *d*, the upper bearing-surface being in the inner part of the bearing F, which consists in a loose block or cap *d'*, adapted when the reel is in place to be slipped longitudinally into the bearings F from the outer sides of the disks A, over the trunnion between the same and the outer portion *d* of the bearing, and in this position close an opening *d²*, formed in the end disks, and through which the reel-trunnions are adapted to be inserted into the lower part of the said bearing. (See Figs. 2 and 3.) The inner movable portion *d'* of the bearing F is adapted to be held in place in the outer portion *d*, and adjusted to the proper position with reference to the trunnion *b'* by a set-screw *d³*, having a suitable lock-nut *d⁴*.

Projecting outwardly from each of the end disks A immediately around the trunnion *d'* is an annular flange *e*. This annular flange extends entirely around the trunnion *b'*, except at the opening *d²* in the end disk, the said flanges being cut away opposite to said opening and coincident therewith to permit the clutch-pawls and trunnions to be removed when desired, said cut-away portion being adapted to be closed by the projecting flange of the driving-wheel D when in place over the disk A.

Located on the trunnions *b'* beyond the annular flanges *e* and inclosed by the driving-wheels D are the driving-pinions H, adapted to turn loosely on the shaft or trunnion *b'*, and held in position by a washer and pin *e'*, as shown in Fig. 3. The pinions H are each provided at one end with clutching-faces *f*, adapted to project slightly within the annular flange *e*, the ends of the teeth of said pinion

being adapted to come against said flange and thus hold the said pinion against lateral movement on the shaft or trunnion b' .

Located within the slot b^2 of each of the trunnions b' and adapted to engage with the clutching projections f of the pinions H are the clutch-pawls I. These clutch-pawls consist of a single piece of flat steel or other metal, and are of a lozenge or diamond shape, the opposite sides thereof being slightly beveled in opposite directions, as shown in Figs. 2, 3, and 5. The clutch-pawl fits loosely in the slot b^2 , and by reason of its peculiar shape is adapted to oscillate therein to permit the pinion H to turn in a backward direction, but to engage the clutch projections f when turned in a forward direction, the inclined faces of the clutch projections being such that the pawl is forced into engagement and does not depend on gravity for its action.

The cutter-bar or stationary cutter B is provided with projecting ends g , each having a downwardly-projecting flange portion g' , which fits into an opening cut in the end disks A to receive the cutter-bar and complete the outline, and in effect form a part of the disk. The projections g are each provided with a small rib g^2 , adapted to bear against a projecting lug h on the end disk A. A bolt g^3 serves to secure the projecting portions g to the projecting lugs h .

Between the projecting portions g and the projecting lugs h , I place a spring g^4 , preferably of coiled steel, as shown in Fig. 3, though rubber or other suitable material, as in Fig. 2, may be used. This spring serves to hold the end projections g away from the projecting lugs h , while the bolt g^3 serves to draw the same together. Means are thus provided whereby the cutter-bar may be moved toward the cutting-reel to adjust the same as the cutting-reel becomes worn.

On the inner face of each of the end disks A, I provide a small lug or projection j , having a transverse opening through the same adapted to receive the end of a guard or fender k . This guard or fender preferably consists of a steel wire bent in a U shape, with the projecting ends passing through the lugs j . Set-screws j' are provided, by means of which the guard may be held in place and adjusted, as desired. The guard k extends outwardly beyond the cutting-reel E, and prevents the same from coming in contact with trees or other obstacles when in use.

The handle J, I preferably make of wood in the ordinary manner, and secure the same to the connecting-rod C by a clamp J' , formed in two parts, adapted at one end to inclose the said connecting-rod and at the other to receive the end of the wooden handle J. Two clamping-bolts l' serve to secure the handle J in the said clamp and at the same time draw the parts of the clamp against the connecting-rod, thus binding the handle tightly to said rod and furnishing means for

adjusting the handle at different angles to the main frame or longitudinally along the rod.

Connected loosely to each of the end disks A, preferably by means of the bolt a , which secures the same in place, is a raking-frame L. This frame L hangs loosely from its pivoted bearings, and is provided at either end with a curved bearing or wheel m , and with a longitudinal bar m' , provided with a series of teeth m^2 , extending longitudinally across the frame immediately behind the cutter-bar or stationary cutter B. This raking-frame preferably extends entirely across the machine, as shown in rear elevation in Fig. 8. Instead of being pivoted to the bolts a , the frame L may be provided at each side with a hook m^5 , adapted to engage with the cutting-rod C, as shown in Fig. 9. By this arrangement the cut grass thrown backward by the reel is, as the mower is drawn backward, raked up out of the way of the cutting-reel, so that in case a tuft of long grass is left after running over once the cut portion thereof is removed, so that the reel will not be clogged at a second passage over the same, the grass at the same time being raked down to a better position for cutting.

It will be seen that by the constructions above described, a lawn-mower is provided in which all the parts are simple and easily adjusted and not likely to get out of repair. All the operating parts are inclosed by the driving-wheels. By removing the driving-wheels the clutch-pawls may readily be removed or inserted through the opening d^2 . By removing the clutch-pawls and pinions and slipping out the inner movable portion d' of the bearings F the reel may readily be removed from its place without removing the other parts. By having the flange portion g' on the stationary cutter, and having the projecting portion g within the periphery of the driving-wheel, the cutter-bar or stationary cutter may be removed by removing the driving-wheels without disturbing the other portion.

The cutting-reel is cast of a single piece of steel, the cutting-edges being formed integral with the reel-blades, arms, and trunnions, thus dispensing with the operation of riveting, and reducing the cost of manufacture of extra parts and at the same time forming a strong and rigid cutting-reel. I am at the same time enabled to form the slotted openings for the clutch-pawls by means of cores, dispensing with drilling or filing.

It is evident that modifications of my invention may be had without departing from the spirit of my invention. I do not, therefore, limit myself to the exact constructions described; but

I claim as my invention—

1. In a lawn-mower having the end disks, as described, an adjustable fender or guard secured to the said end disks, substantially as specified.

2. In a mower, the combination, with the

main frame and cutter, of a rake attachment pivoted to said frame behind said cutter, said rake attachment being provided with runners or supports adapted to rest on the ground or supporting surface behind the said cutter-bar, substantially as specified.

3. The combination, with the end disks having the projecting lugs thereon, of a stationary cutter having projecting ends adapted to extend through said end disks, and a flanged portion to form a continuation of said end disks, and means for connecting the projecting ends of said stationary cutter with the projecting lugs within the periphery of the driving-wheels, substantially as specified.

4. In a lawn-mower, the combination, with the end disks having projecting lugs, of a stationary cutter connected to said lugs, clamping-bolts connecting said lugs and cutter, and springs, each having one end resting against said cutter and the other against said projecting lugs, substantially as specified.

5. The combination, with the reel-shaft, a driving-pinion on said shaft, a slotted opening having straight sides extending through said driving-shaft, and a diamond-shaped pawl located in said slotted opening and

adapted to pivot against the sides thereof and engage with said pinion, and a sleeve about said shaft to retain said pawl in said slotted opening, substantially as specified.

6. The combination, with the reel-shaft having the slotted opening with straight sides, as described, of a diamond-shaped pawl located in said slotted opening and provided on each side with contact-points adapted to pivot with the side of said opening, substantially as specified.

7. The combination, with the reel-shaft having the slotted opening therein, and a revolving wheel on said shaft having clutch projections, of a diamond-shaped reversible pawl located in said slotted opening, said pawl being provided on either side with a contact-point and adapted to pivot against the sides of said opening and engage with said wheel, substantially as specified.

In testimony whereof I have hereunto set my hand this 9th day of October, A. D. 1888.

CHAS. HENRY PAXSON.

Witnesses:

PAUL A. STALEY,
JOSHUA SCOTT.