

2. Sheets—Sheet 1.

MOWER.

Patented Jan. 1, 1889.



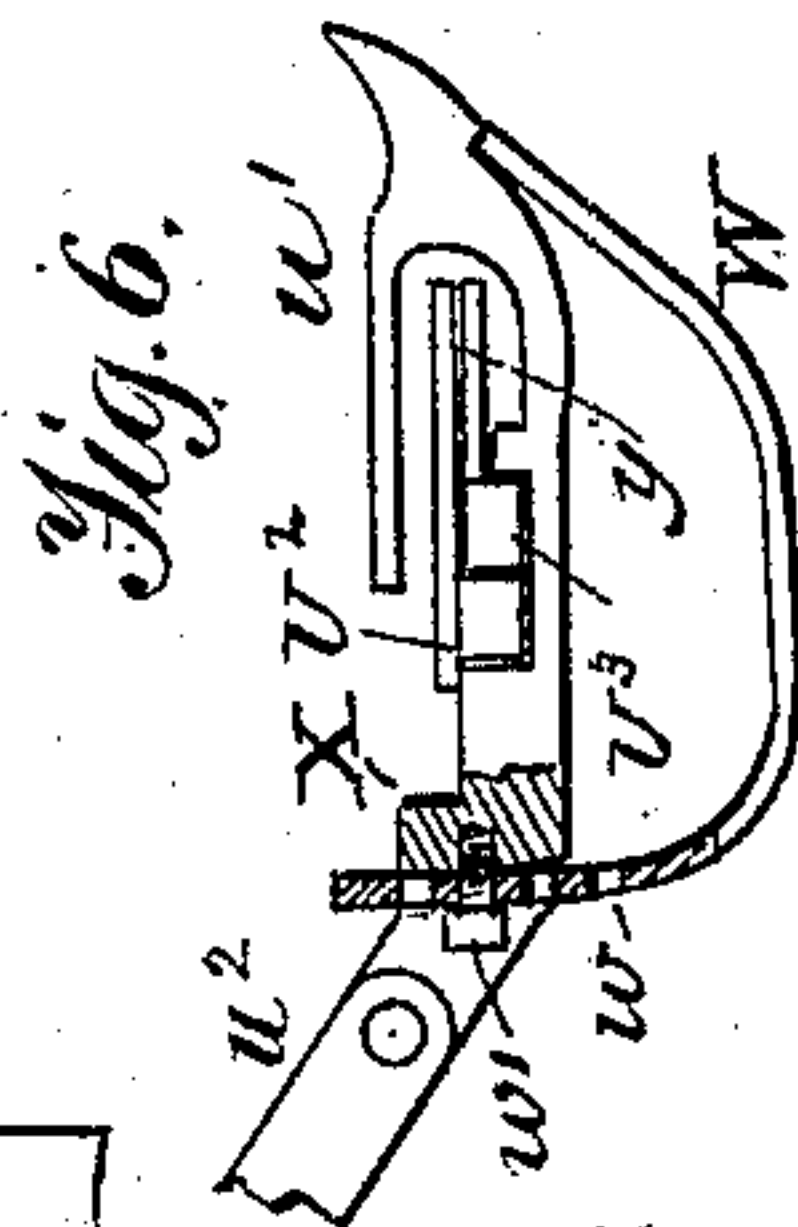
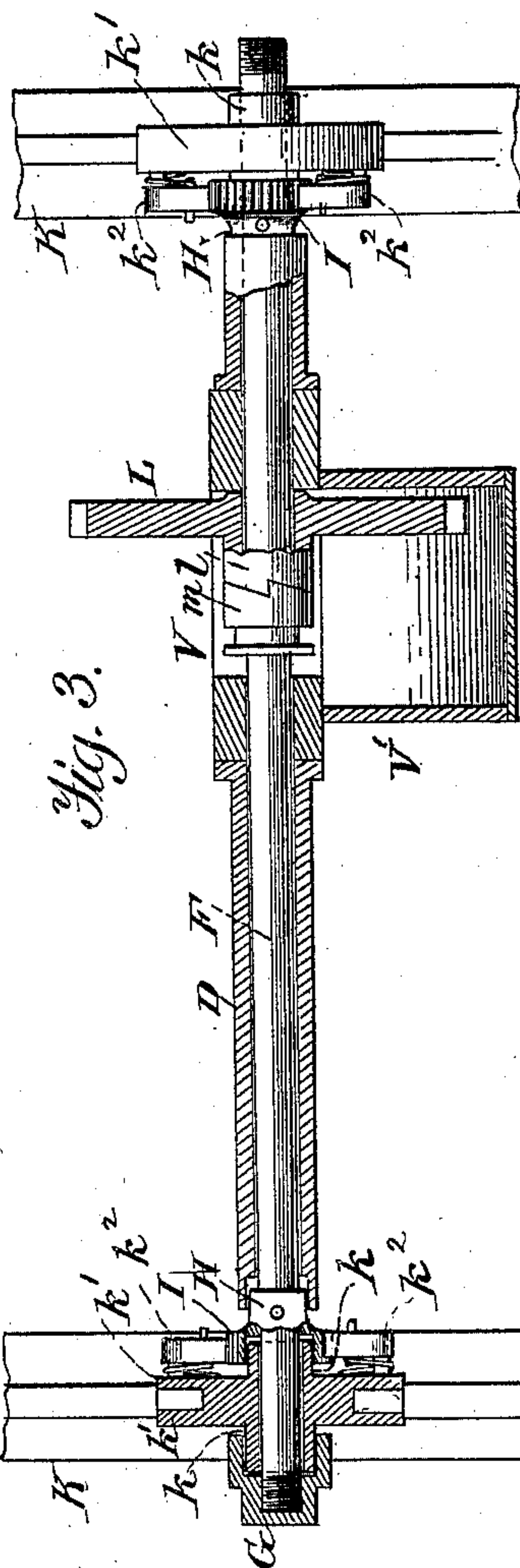
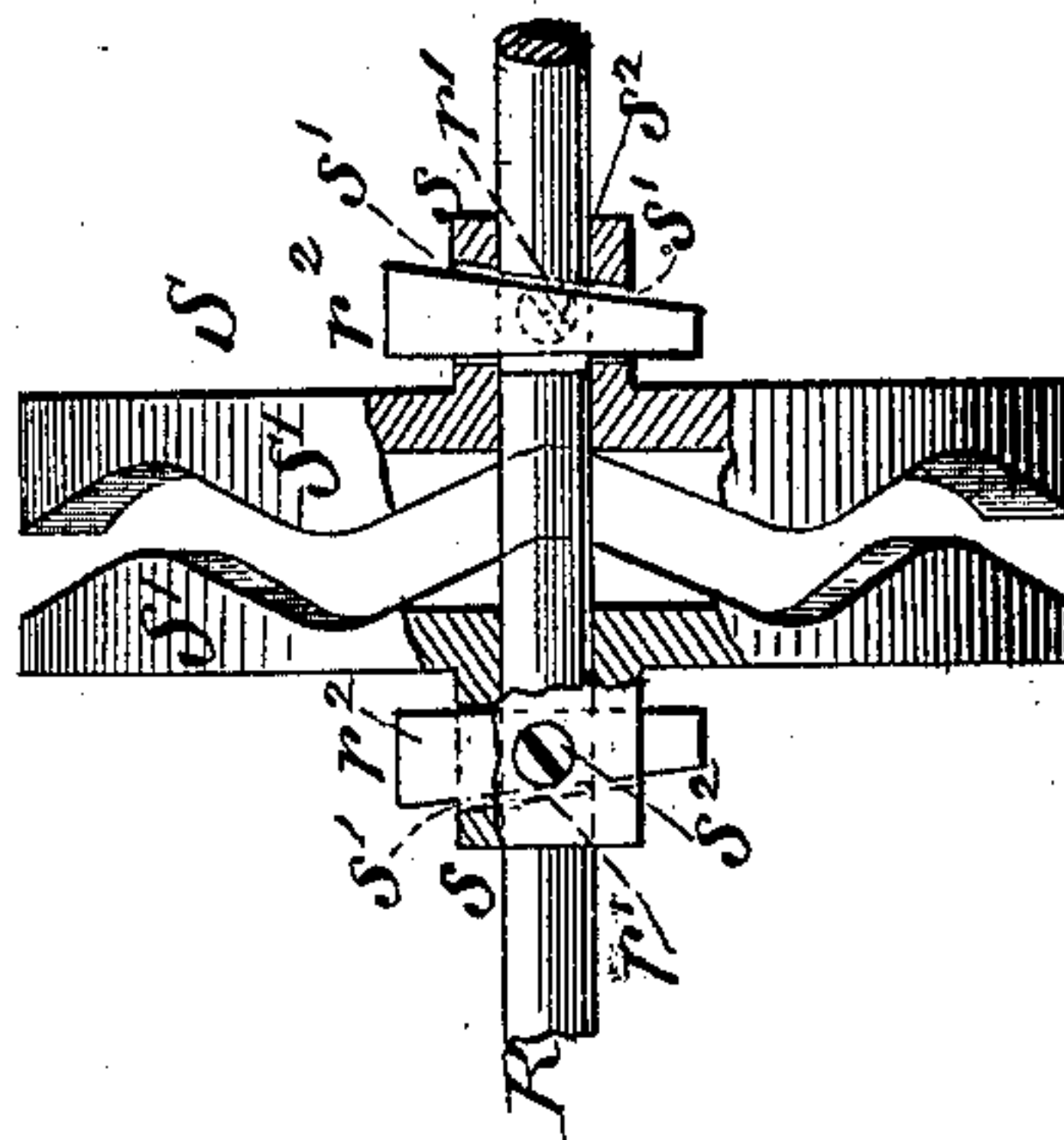
Jno. Mitchell.

Per
Thomas Simpson
att'y

2 Sheets—Sheet 2.

MOWER.

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Geo. Mitchell

Per
Thomas P. Simpson
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UNITED STATES PATENT OFFICE.

JOHN HILL REDFIELD, SAMUEL HALL REDFIELD, AND ABRAHAM EDWARD HANSBRO, OF GLENDALE, OREGON.

MOWER.

SPECIFICATION forming part of Letters Patent No. 395,349, dated January 1, 1889.

Application filed January 29, 1887. Serial No. 225,896. (No model.)

To all whom it may concern:

Be it known that we, JOHN HILL REDFIELD, SAMUEL HALL REDFIELD, and ABRAHAM EDWARD HANSBRO, citizens of the United States, residing at Glendale, in the county of Douglas and State of Oregon, have invented certain new and useful Improvements in Mowers; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

Figure 1 is a plan view showing the parts of the mower connected together. Fig. 2 is a front view of the same. Fig. 3 is a detail view of the axle. Fig. 4 is a front view of the cam-wheel, partly in section. Fig. 5 is a cross-section of the axle with connecting parts. Fig. 6 is a detached view of the outer shoe. Fig. 7 illustrates in side view the shaft with oscillating arms, which is actuated by the cam-wheel.

In the drawings, A designates the draft-pole, which is secured to the angle-plate B by screws and between the flanges *b*, the said plate being held to the axle by clips C, which embrace the axle-tube D. The curved seat-bar E is held between the rear end of the pole and of the plate B, while the seat is supported on its more elevated and forwardly-curved end. The axle F passes entirely through the tubular bearings D, and is threaded at each end to receive the axle-nuts G. At or near the ends of tube D ratchet-wheels I are placed on the axle and made fast thereto, the ground-wheels K being placed next and the nuts G being screwed on the extremities.

The hub *k'* of each ground-wheel is provided with a tubular flange, *k*, on each side, and the ratchet-wheel I has an inward tubular extension, H, and, as shown in Fig. 3, the parts are so constructed that the outer flange of the hub extends under a rim of the axlenut, and the inward flange, *k*, extends under

the ratchet-wheel, the extension H of which extends under the end of tube D, the axle being thus effectually inclosed for the exclusion of dirt. The wheels K are loose on the axle, and the hubs *k'* are provided with the diametrically-opposite spring-pawls *k*², which engage with the fast ratchet-wheels I, so that when the wheels move forward the axle revolves with them; but when they move backward the axle is not rotated with them and the cutting mechanism ceases to operate.

Loose on the axle is arranged the large spur-wheel L, which carries one part, *l*, of a clutch, the other part, *m*, being movable, feathered to the axle, and connected with a forked lever, M, by means of the pins *m'*, which stand from the arms of the fork of said lever into the circumferential groove *m*² of the part or section *m* of the clutch. This lever M is pivoted to the piece *m*³, fixed to the frame, and carries at its rear end the pin *m*⁴.

N is a lever pivoted to the frame at *n'* and placed at right angles to the lever M, and having the inclined slot *n* in its outer end, which slot engages the pin *m*⁴. The pin *m*⁴ on the end of lever M is connected with the fulcrum screw or pin *n'* of the lever N by the spring O, the office of the spring being to keep the clutch locked. This construction of lever N with curved slot *n* for engagement with pin *m*⁴ on lever M serves to facilitate the proper movement of M, and also assists the retaining-spring O in holding the last-mentioned lever to keep the clutch locked. The power end of the lever N is connected by the rod *o* with pivoted handle P, which moves in a slot, *g*, of the fixed plate Q, which has a shoulder, *g'*, behind which the handle P is held to keep the parts *l m* of the clutch apart.

The spur-wheel L meshes with a pinion, L', which is fast on the shaft R, which carries the cam-wheel S. The latter is made in two parts, S', each with a tube, *s*, provided with the slots *s'*, while the shaft R has corresponding notches, *r'*. The keys *r*² are beveled on their outer edges, so that they narrow downward, the slots *s'* and notches conforming to them. They are passed downward in the slots and notches, and may be fixed at any desired adjustment by means of set-screws *s*², and by these means the sections S' may be adjusted

on shaft R toward or from each other for the purpose of taking up wear or to make the wheel work with as little friction as possible, the parts being so constructed and arranged that the inward adjustment of the two sections is effected by pressing the keys r^2 downward. (See Fig. 4.) The shaft R may be adjusted longitudinally by means of the screw-bolts r^3 .

The cam-faces of the sections S' are in equal alternating convexities and concavities, in order to uniformly vibrate the shaft T, which has its bearings in frame V, surrounding the cam-wheel and gearing, and is provided with the forward arms, t , and the rear arms, t' . (See Fig. 7.) The arms t' carry friction-rollers t^2 on studs or pins for engagement with the cam-wheel, and working between the sections S' , and the arms t are connected with the pivoted pitmen U and U' , which are connected with the upper and lower cutter-bars, U^2 and U^3 , to which bars reciprocating motion is thus imparted.

A casing (indicated by V') is usually provided for the operating mechanism.

U^4 is a front brace having a pivotal connection with the frame V at s^3 , and with the inner shoe, u , at s^4 , the said shoe being pivotally secured at its rear end to the outer end of the coupling-arm Z, which is pivoted at its inner end to the frame V.

U^5 is a thrust-bar pivotally connected with coupling-arm Z and with frame V. The shoe u is adjustable in elevation by means of a movable vertical piece, v' , from which extends a pin or shaft on which is mounted a wheel, v . The piece v' , being vertically adjustable, may be fixed at the desired point by means of a set-screw. The outer shoe, u' , has pivoted to its rear end the swath-board u^2 , carrying the track-clearer u^3 . This shoe is adjustable in height in the following manner: The rear part of the runner W of the shoe is turned upward and has a series of apertures, w , and it may be drawn up or moved down and secured at the desired point by means of a screw, w' , passed through an aperture, w , and screwed into the finger-bar X, the height of the shoe being diminished or increased as desired.

Z' is a lever provided with a curved and grooved arm, w^4 , and a pawl, w^5 , the latter being operated by the rod w^6 and finger-lever w^7 . The pawl w^5 works in a rack, w^8 , carried by the angle-plate w^9 , secured to the draft-pole. The lever Z' is connected by a chain or cord, z , with an eyebolt, z' , in the coupling-arm Z for raising the finger-bar and cutter-bars.

Z^2 indicates a tilting lever placed on the coupling-arm Z for the purpose of raising the points of the guard-fingers to avoid obstructions or to turn them downward as desired.

We claim—

1. In a mower, the combination, with the axle having a threaded end, of the ground-wheel K, provided with a hub having the annular flanges k standing out from both sides thereof, the ratchet-wheel I, recessed and seated on the flange k on the inner side of the hub, the spring-controlled pawl k^2 , arranged to engage said ratchet-wheel, and the recessed nut G, screwed upon the extended and threaded end of the axle and provided with a circumferential flange that embraces the flange k on the outer side of the hub and bears on the periphery of the latter, substantially as specified.

2. In a mower, the combination of the main axle or shaft having the ground-wheels attached, the gear-wheel L, seated loosely on said axle and having its hub l forming one section of a clutch, the opposite section, m , of said clutch splined or feathered on said axle and provided with a circumferential groove, the pivoted and forked lever M, having the pin m^4 on its outer or rear end and the pin m' on the arms of its fork, which pins project into the circumferential groove of the clutch part or section m , the pivoted lever N, provided with the inclined or diagonal slot n and the pin n' , the coiled spring o , connecting the pins m^4 and n' , and the pivoted lever-handle P, having its front end within easy reach of the driver's seat, substantially as specified.

3. The combination, with the cam S, composed of two sections having waved facing edges that would fit upon each other if the sections were brought into contact, which sections are seated on the shaft R, the tapered openings through said shaft and through the outstanding bosses of said sections, and the tapered adjusting-keys r^2 , of the centrally-pivoted shaft T, having anti-friction rollers on its ends entering between said sections, the pitmen U U' , connected to the respective ends of said lever T, and the cutter-bars attached to the outer ends of said pitmen.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN HILL REDFIELD.
SAMUEL HALL REDFIELD.
ABRAHAM EDWARD HANSBRO.

Witnesses:

JOHN W. REDFIELD,
JAMES H. ANDERSON.