

2 Sheets—Sheet 1.

No. 402,301.

Patented Apr. 30, 1889.



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(No Model.)

2 Sheets—Sheet 2.

A. H. CARPENTER.
MOWING MACHINE.

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Fig. 3.

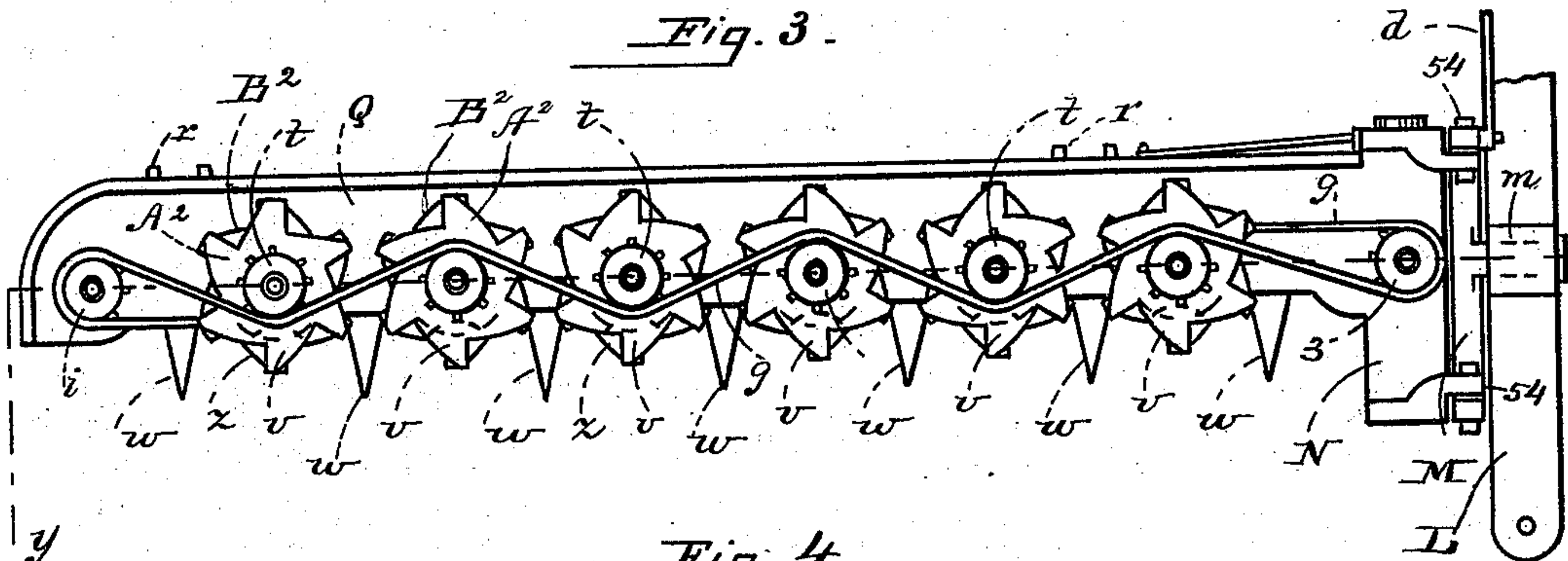


Fig. 4.

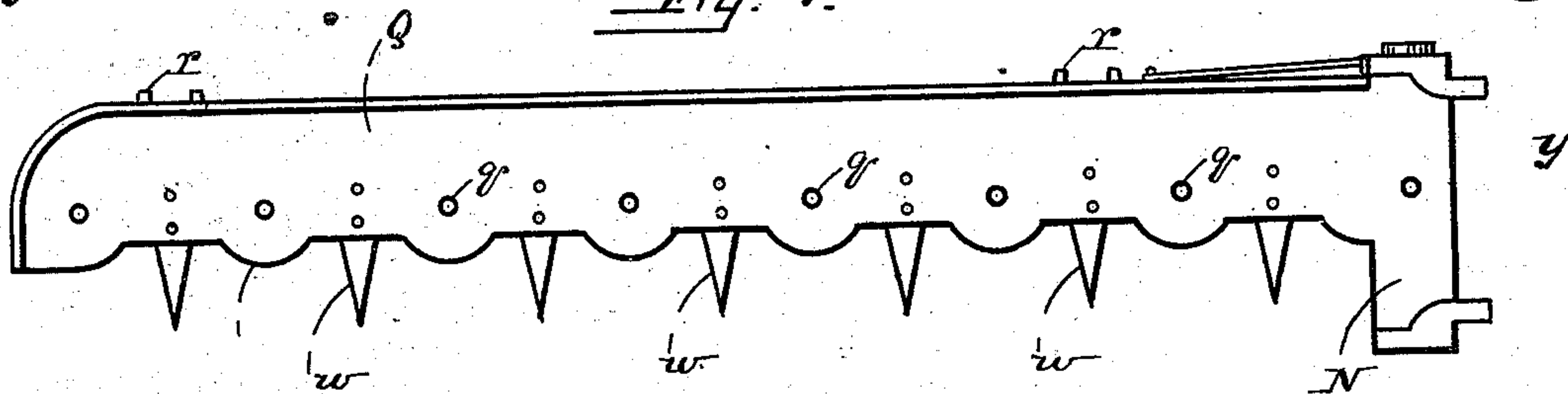


Fig. 6.

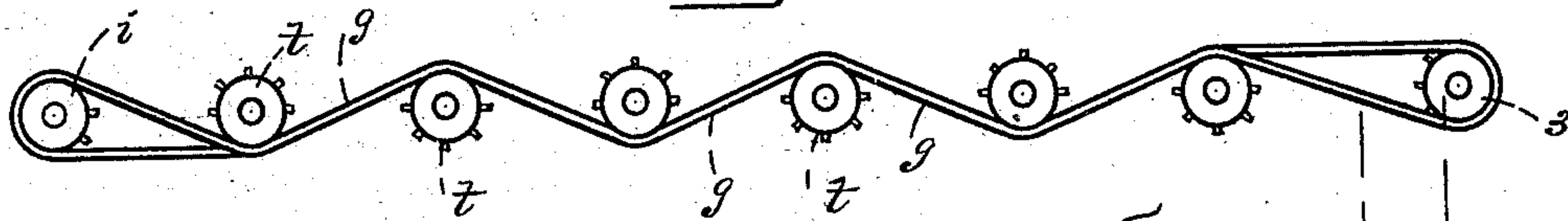


Fig. 7.

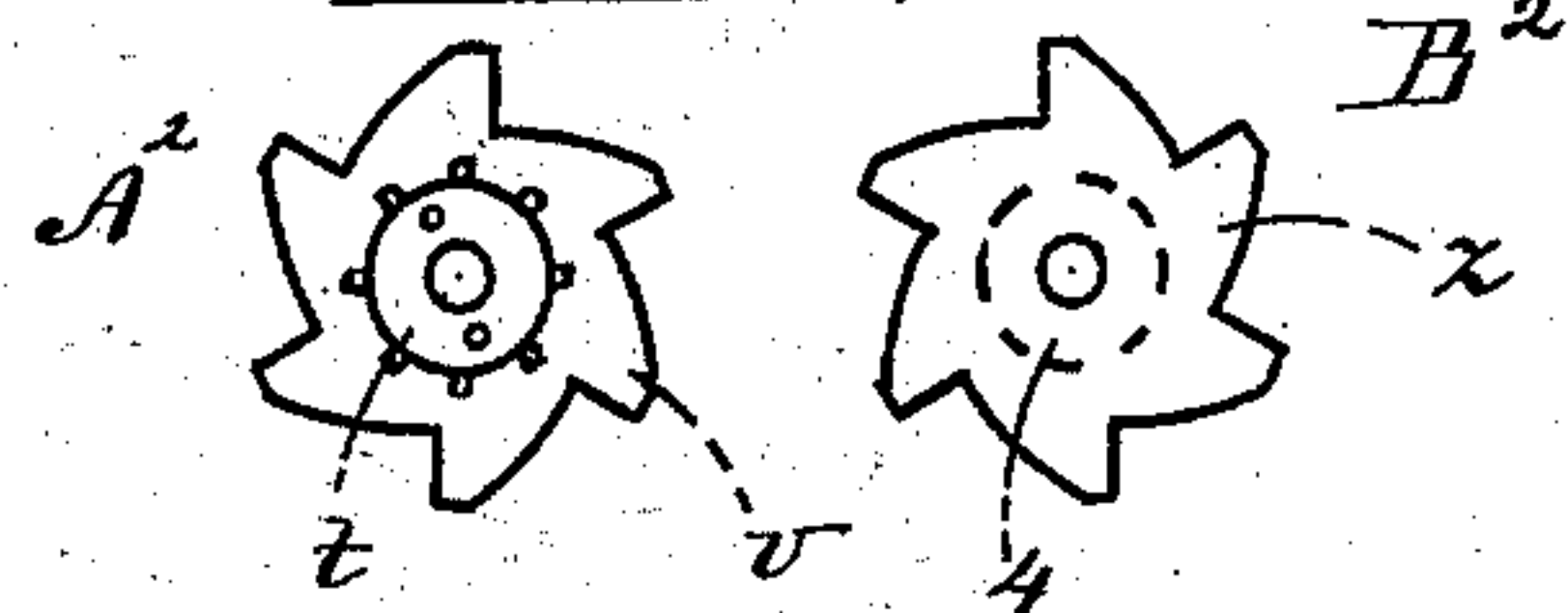


Fig. 8.

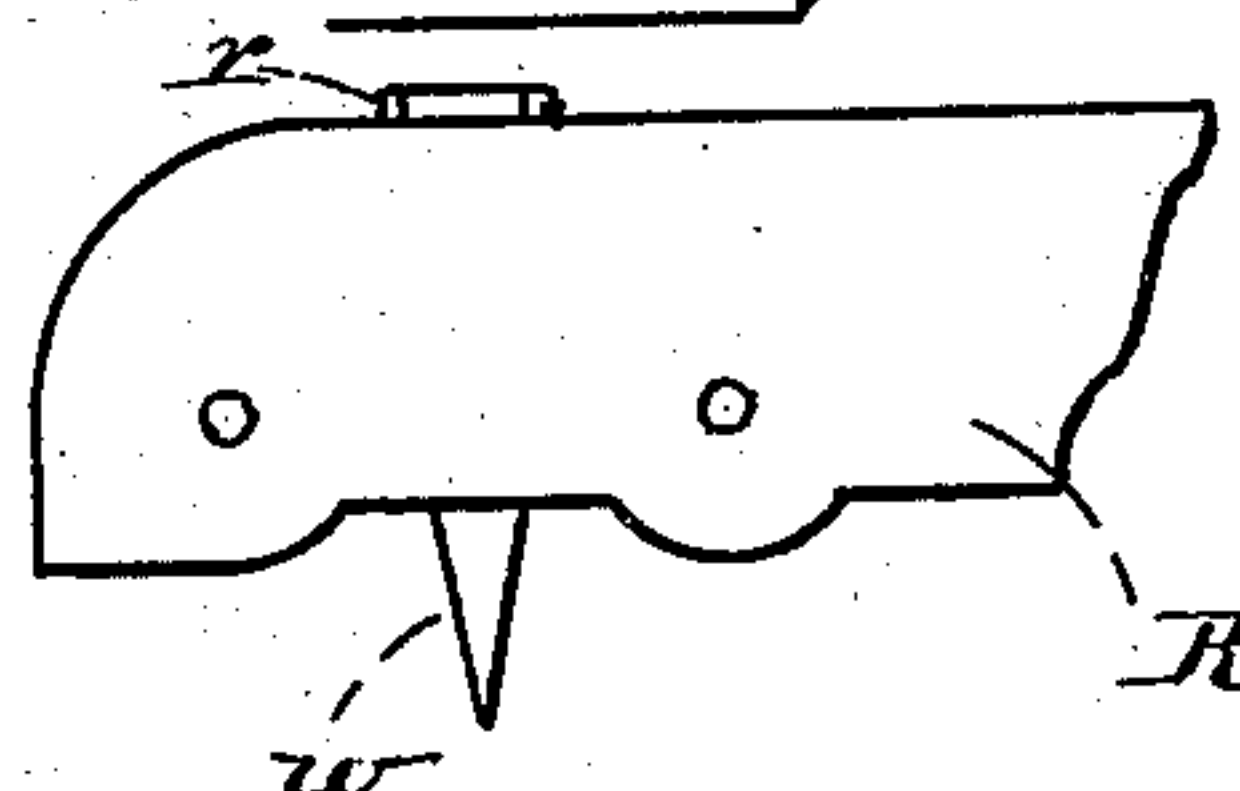
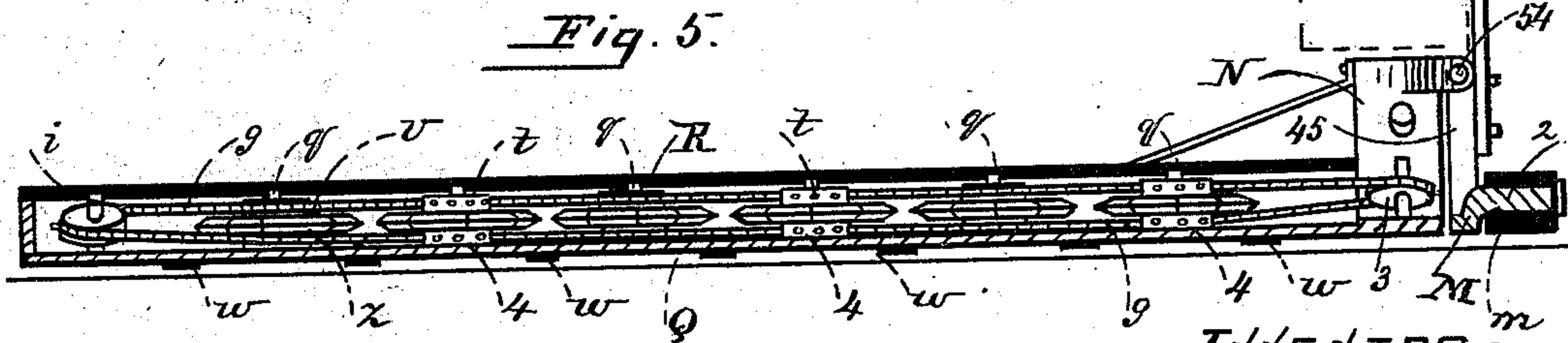


Fig. 5.



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UNITED STATES PATENT OFFICE.

AMOS H. CARPENTER, OF WATERFORD, VERMONT.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 402,301, dated April 30, 1889.

Application filed March 22, 1888. Serial No. 268,081. (No model.)

To all whom it may concern:

Be it known that I, AMOS H. CARPENTER, of Waterford, in the county of Caledonia, State of Vermont, have invented a certain new and useful Improvement in Mowing-Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which such invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved mowing-machine, a portion of the hood of the cutter-supporting bar and also of the pole being represented as broken away or removed; Fig. 2, a side elevation of the same with the cutter-supporting bar removed and the pole broken away; Fig. 3, an enlarged top plan view of the cutter-supporting bar, cutters, and belt, the hood being removed; Fig. 4, an enlarged top plan view of the cutter-supporting bar with the cutters and belt removed; Fig. 5, an enlarged vertical longitudinal section of the cutter-supporting bar and its hood, taken on line *y y* in Fig. 3, the cutters and belt being shown in side elevation; Fig. 6, a diagram showing the arrangement of the belt and sprocket-wheels; and Figs. 7 and 8, enlarged views showing certain details of construction.

Like letters and figures of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of mowing-machines in which motion is communicated to the cutters or knives through an endless belt mounted on the cutter-supporting bar; and it consists in certain novel features, as hereinafter fully set forth and claimed, the object being to produce a more effective and otherwise desirable device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, B represents the axle, C the pole, and D the wheels, these parts being all of the ordinary form and construction, excepting as hereinafter set forth.

A downwardly-inclined hollow arm, G, projects

in front of the axle B, on which its rear end is pivoted, said arm being provided with a curved bar or shoe, H, having a castor-wheel, K, journaled beneath its forward end, L, from which end a brace, *h*, extends to the housing of the axle B. A T-shaped bar, M, has its body portion journaled horizontally at *m* in the bar or shoe H, the head of said bar being turned upward at each end, as shown at 45, Fig. 5. A cutter-supporting bar, Q, has its inner end or head, N, hinged at 54 to the vertical posts of the T-bar M, and provided on its front edge with a series of fingers, *w*, projecting forward therefrom.

Projecting vertically from the bar Q there are a series of studs, *q*, arranged centrally between the fingers *w*, and mounted or journaled on each of said studs there is an upper cutting-disk, A², and a lower cutting-disk, B², the disk A² being provided peripherally with radially-arranged knives or cutters *v*, and the disk B² peripherally with radially-arranged knives or cutters *z*, said disks being arranged in parallelism with each other, and the knives or cutters on the upper disk facing in a direction opposite those on the lower disk, as best seen in Figs. 3 and 7.

Secured to the upper side of each of the upper disks, A², there is a sprocket-wheel, *t*, and to the lower side of each of the disks B² there is a corresponding sprocket-wheel, 4. (See Figs. 5 and 7.) A hood, R, is provided for the cutter-supporting bar Q, said hood and bar being hinged together at *r* along their rear edges. A bevel-gear, *n*, is journaled on a vertical pivot on the inner end of the bar Q, said gear having secured to its lower side a sprocket-wheel, 3. A shaft, O, having a miter-gear at its upper end, which intermeshes with a larger miter-gear on the axle B, (said gears being covered by a box, F, and not shown,) is journaled in suitable bearings in the hollow arm G, said shaft being provided at its lower end with a coupling, *a*, having forks *b*.

A shaft, P, is journaled in the head N, said shaft being provided at one end with a bevel-gear, *p*, which intermeshes with the bevel-gear *n*, and at the other end with forks *b'*, which are connected in the usual manner with the forks *b* on the coupling *a*, to form a universal joint.

A lever, J, provided with a segment, *j*, is pivoted to the pole C nearly opposite the inner end of the bar Q, said segment being connected with the bar H by a chain, *k*, in such a manner that the driver, by pulling said lever in the direction of its arrow, may raise the bar H, arm G, and bar Q from the ground to pass rocks, stumps, or other obstructions in the path of the machine.

An endless chain belt, *g*, passes around the sprocket-wheel 3 at the inner end of the bar Q, and also around the guide sprocket-wheel *i* at its outer end, the upper member or half of said belt engaging the sprocket-wheels *t* on the upper cutting-disks, A², and the lower member or half engaging the sprocket-wheels 4 on the lower cutting-disks, B², the belt being carried alternately around the front and rear sides of said sprocket-wheels, as best shown in Figs. 3, 5, and 6.

A handle, *d*, has its lower end rigidly secured to the T of the bar M, and its upper end provided with a spring pawl or catch, 75, which engages a ratchet-bar, *f*, the object of said handle being to enable the driver to partially rotate the bar M on its journal 2, and thereby elevate or depress the fingers *w* and knives or cutters *v z*, as desired.

A driver's seat, E, is mounted at the rear of the machine, and the pole provided with a doubletree, 56, and whiffletrees 94, in the usual manner.

In the use of my improvement, as the machine is drawn over the ground the jointed shaft O P will be caused to rotate, thereby imparting rotary movements to the gear *n* and cutting-disks A² B², and as said disks will be rotated in different directions the grass or grain will be caught between the edges of the knives *v* and *z* and cut in a manner that will be readily understood by all conversant with such matters without a more explicit description.

The cutters or knives *v z* are designed to project forward of the bar Q a sufficient distance to enable them to perform their functions properly, a separating-finger, *w*, being employed between each pair of the cutting-disks A² B², and so arranged as to perform their functions to the best advantage.

Having thus explained my invention, what I claim is—

1. In a mowing-machine, the disk A², provided peripherally with the radially-arranged cutters or knives *v*, and having the sprocket-wheel *t* secured to its upper side, in combination with the disk B², provided peripherally with the radially-arranged cutters or knives *z*, and having the sprocket-wheel 4 secured to its lower side, said disks concentrically journaled one above the other on the cutter-supporting bar of the machine, and a single endless chain engaging all the upper and lower sprocket-wheels and turning each vertical pair of said disks in opposite directions, substantially as set forth.

2. In a mowing-machine, the cutter-supporting bar Q, provided with the fingers *w*, the disks A² and B², arranged in pairs and journaled on said bar, said disks being provided with sprocket-wheels, the guide sprocket-wheel *i*, journaled at the outer end of said bar, the sprocket-wheel 3, journaled at the inner end of said bar, the endless chain *g*, the two plies of the chain engaging each sprocket-wheel of a pair on the same side, and those of different pairs on opposite sides alternately, and means for actuating the sprocket-wheel, all being combined to operate substantially as set forth.

3. In a mowing-machine, the combination of the cutter-supporting bar Q, the sprocket-wheels *i* 3, journaled at the opposite ends of said bar, the cutting-disks A² B², provided, respectively, with the sprocket-wheels *t* 4 and journaled in pairs on said bar, the endless chain belt *g*, the two plies of the chain engaging each sprocket-wheel of a pair on the same side and those of different pairs on opposite sides alternately, the beveled gear *n*, connected with the sprocket-wheel 3, the beveled gear *p*, intermeshing with the gear *n* and mounted on the shaft P, journaled on said bar, the shaft O, jointed to the shaft P, and means for actuating said shafts, substantially as set forth.

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Witnesses:

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