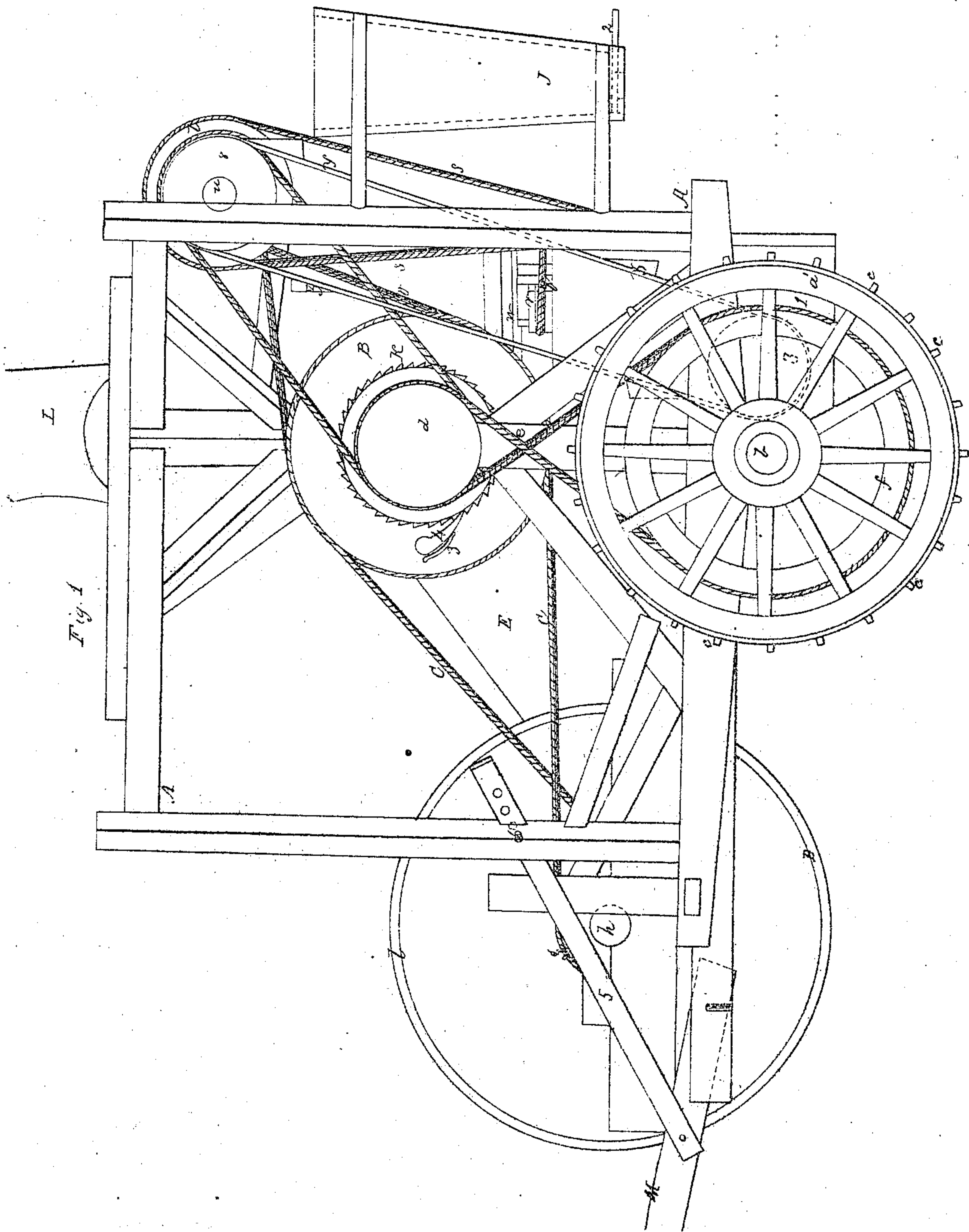


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Mower.

N^o 7222

Patented Mar. 26, 1850.

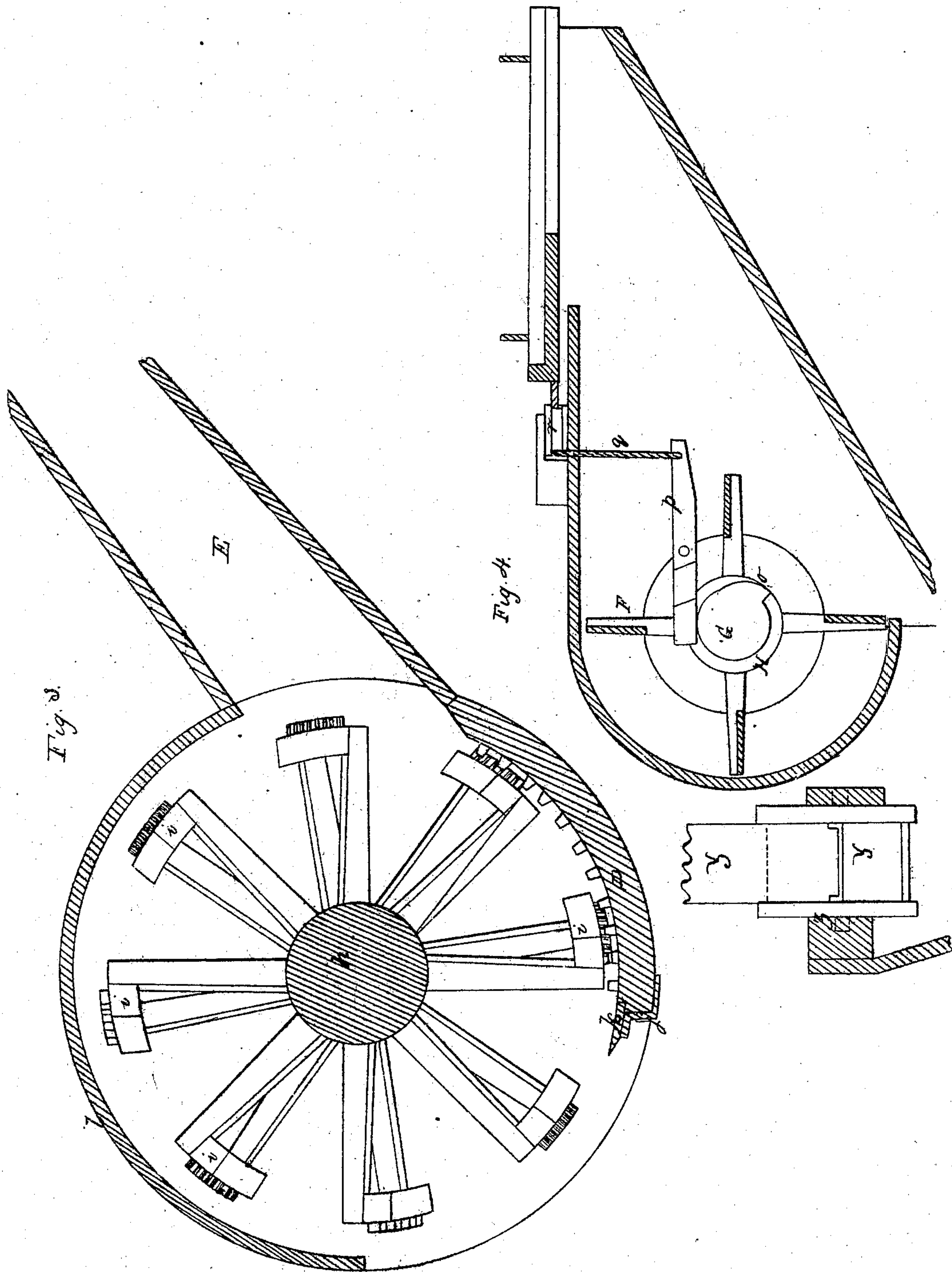


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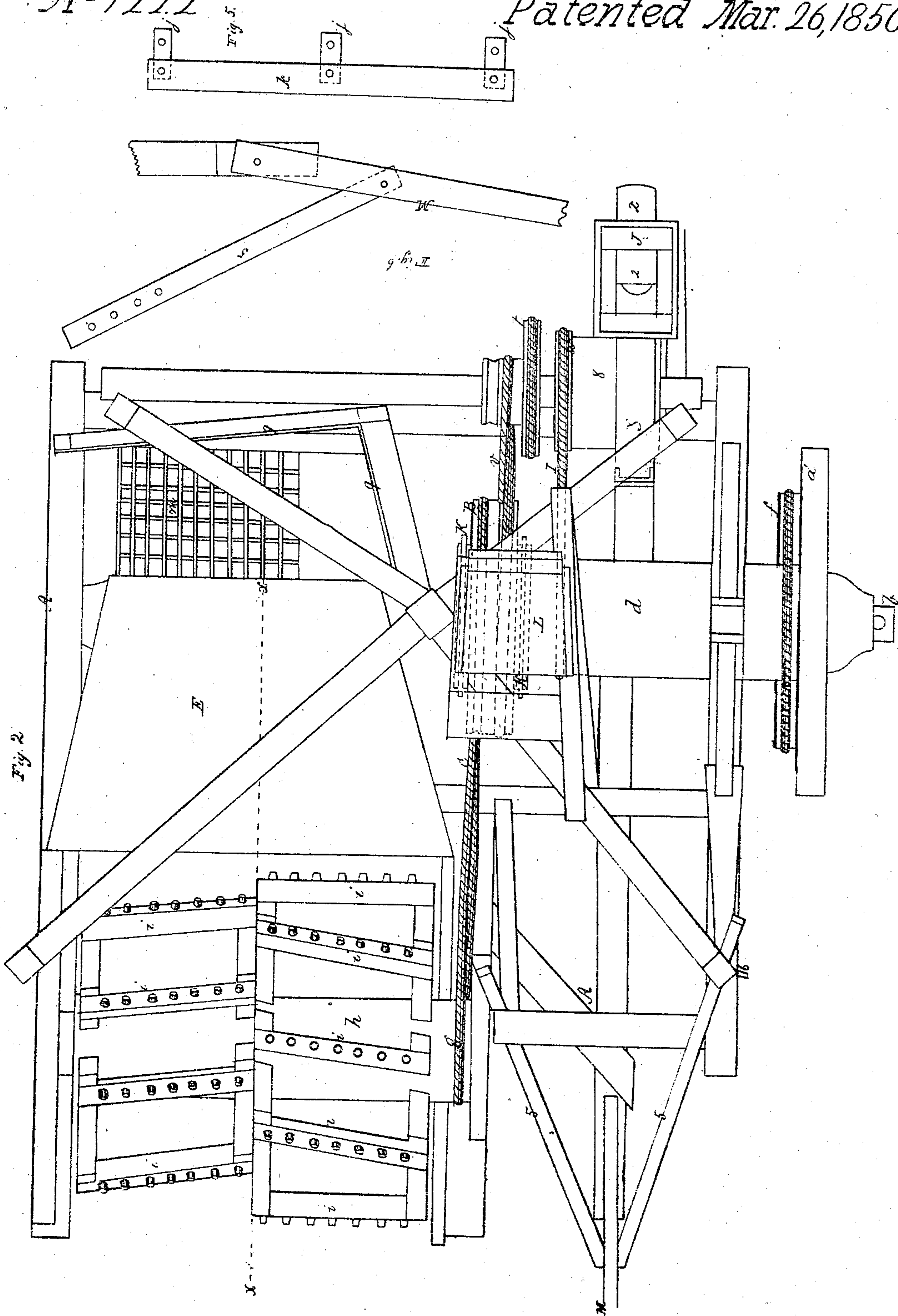


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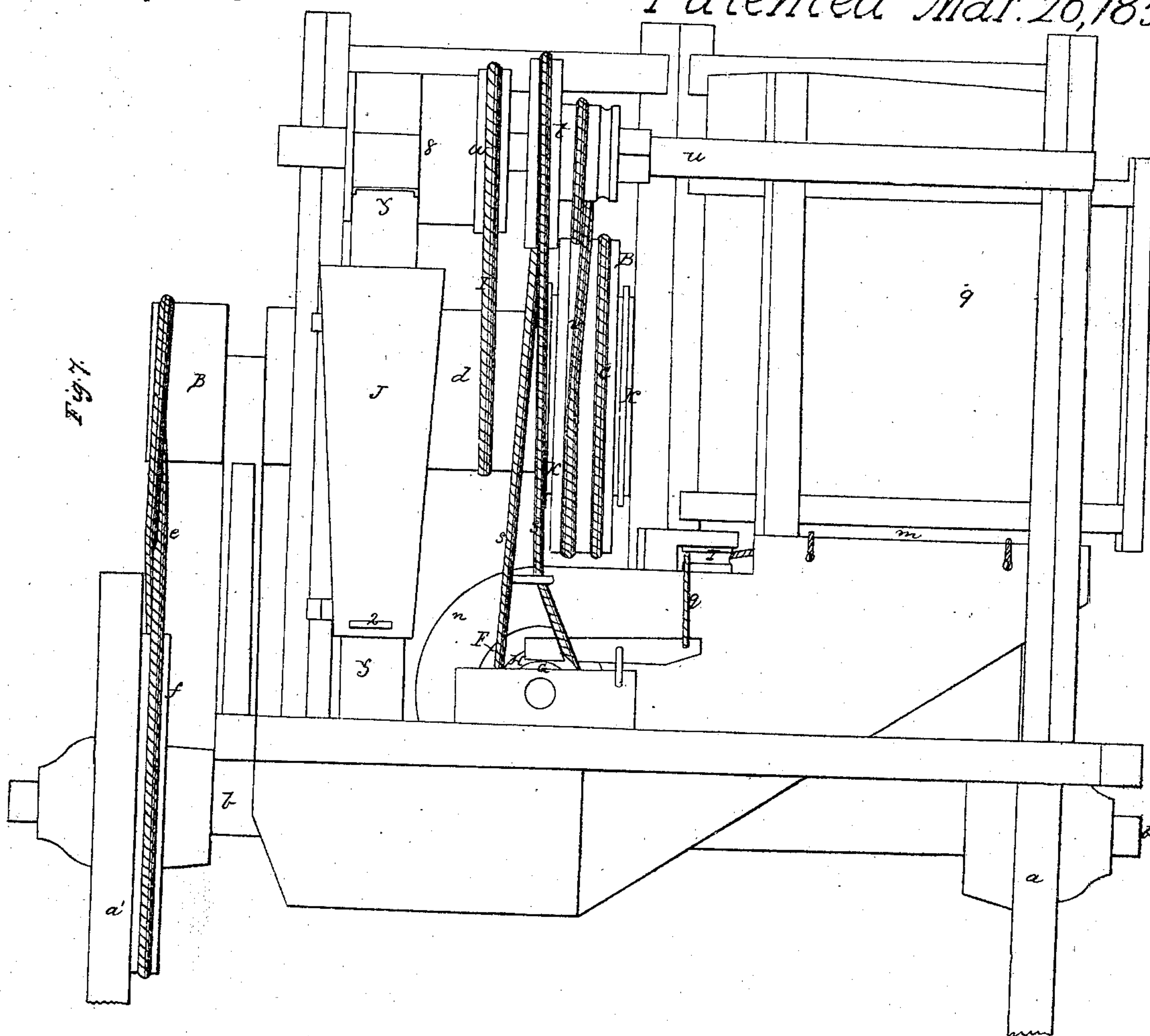
Patented Mar. 26, 1850.



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Nº 7222

Patented Mar. 26, 1850.



UNITED STATES PATENT OFFICE.

S. S. REMBERT, OF MEMPHIS, TENNESSEE.

IMPROVEMENT IN THRASHING-HARVESTERS.

Specification forming part of Letters Patent No. 7,222, dated March 26, 1850.

To all whom it may concern:

Be it known that I, S. S. REMBERT, of the Seven Hills, near Memphis, in the county Shelby and State of Tennessee, have invented a new and useful Improvement in the Machine for Cutting, Thrashing, and Cleaning Grain, called "Rembert's Improved Harvester," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a side elevation of the machine. Fig. 2 is a top or bird's-eye view of the same. Fig. 3 is a vertical longitudinal section through the gathering and thrashing wheel, concave beneath the same, and tangential trunk at the line *xx* of Fig. 2. Fig. 4 is a vertical transverse section through the fan-case and vibrating sieve or screen, showing likewise an elevation of the fan, cam on the shaft of the same, and lever, cord, and pulley for moving the screen. Fig. 5 is a top view of the knife secured to the concave for cutting the grain. Fig. 6 is a section of the tongue and perforated bar attached for raising and lowering the knife to adapt it to the height of grain to be cut. Fig. 7 is an elevation of the back part of the machine.

Similar letters in the figures refer to corresponding parts.

The nature of this invention and improvement consists in securing to the front part of a horizontal concave, arranged at the lower part and on one side of the machine, a stationary knife, and suspending immediately above the same, on suitable journals, a revolving wheel of diagonally-arranged beaters, having teeth on their outer surfaces corresponding with teeth in the concave in such a manner as to cause said revolving beaters to force the grain against said knife as the machine is drawn toward the same by any suitable power with sufficient force to cut the stalk of the same and drive it between the teeth of the beaters and concave, so as to thrash it, and from thence convey it to a vibrating sieve or screen, through which it passes into a current of air produced by a fan, which cleans it of chaff and other extraneous matter lighter than itself into a box, from whence it is taken by an endless band of elevators and deposited in an upright box at the back part of the machine.

To enable others skilled in the art to make

and use my invention, I will proceed to describe its construction and operation.

A is the frame of the machine, made of suitable size, form, strength, and material to contain and support the several parts hereinafter stated, and mounted on two wheels, *a a'*, on which it moves over the ground, both of said wheels *a* turning loosely on the shaft *b*, and one of them, *a'*, which is provided with spikes or pins, *f C g'*, Fig. 1, projecting from its periphery to prevent it from slipping on the ground.

B is a band-wheel, secured on a horizontal transverse shaft, *d*, turning in boxes in up-rights in the frame A immediately above the shaft *b* and parallel with the same. This shaft *d* receives its motion from the main shaft *b* by means of a band, *e*, passing around a grooved band-wheel, *f*, secured to the inner side of the driving-wheel *a'*, and crossed and passed over a groove at the end of the shaft *d*, immediately above the wheel *f*.

C is a band passing around the band-wheel B and crossed and passed around a pulley, *g*, secured on a horizontal transverse shaft, *h*, turning in suitable boxes at the forward part of the frame and on the right-hand side of the same. This shaft *h* has a series of radial arms projecting from its periphery at the ends and center, to outer extremities of which are secured diagonal bars *i*, having spikes on their outer surfaces, which bars *i* are arranged in reverse positions to each other, those toward the right-hand end of the shaft *h* extending from the center of the same to the right at an angle of about ten degrees with the line of the shaft *h*, and those nearest the left-hand end of said shaft *h* extending from midway between the right-hand bars, *i*, to the left at the same angle (ten degrees) with the line of the shaft, but in a contrary direction to the right-hand bars *i*, as represented in Fig. 2.

D is a concave, secured to the frame of the machine below the shaft of bars or beaters *i*, and a little back of the same, having teeth projecting from its upper surface, between which the teeth of the diagonal bars *i* pass, and an oblong steel knife, *k*, secured at its forward edge by means of right-angled metallic plates *j* and screws in such a manner as to project a short distance beyond the edge of the concave D, as represented in Fig. 3. This con-

cave D is covered by a case, *l*, extending over the gathering and thrashing wheel or shaft of bars or beaters.

E is an inclined trunk, extending tangentially from the back part of the concave D and case *l* upward and back at an angle of about forty-five degrees, and terminating over a horizontal sieve or screen, *m*, suspended on cords at the back part of the machine, immediately over the outlet of the trunk of a fan-case, *n*, to be hereinafter described.

F is a revolving fan, secured on a horizontal longitudinal shaft turning in suitable boxes and inclosed in a case, *n*, at the lower part of the machine and back of the driving-shaft *b*. This fan-case *n* is provided with a tangential trunk extending upward toward the right-hand side of the machine under the sieve or screen, its bottom being on a line of about thirty-five degrees with a horizontal plane and its top horizontal, and the part of its top situated immediately below the reticulated work of the bottom of the sieve or screen, and its end being left open.

G is a wheel secured near the back end of the fan-shaft, having a cam or cog, *o*, on its periphery, which operates on the end of a lever, *p*, turning on a fulcrum near its center, fastened to the fan-case, and having a cord, *q*, attached to its opposite end, which passes up the side of the fan-case, over the top, and around a horizontal pulley, *r*, turning on suitable pivots in a block secured to the top of the fan-case and fastened to the end of the sieve for giving a vibratory motion to the same at every revolution of the fan.

H is a grooved pulley, secured on the fan-shaft next the wheel G, around which is passed a band, *s*, extending upward and leading around a grooved pulley, *t*, turning loosely on a horizontal transverse shaft, *u*, secured to uprights at the back part of the machine. This grooved pulley *t* has another pulley of smaller diameter secured on its side, around which is passed a band, *v*, crossed and passing around a groove in the band-wheel B on the shaft *d*.

I is a band passing around a groove formed in the shaft *d* and leading around a grooved pulley, *w*, secured to a drum, 8, turning loosely on the shaft *u*, around which drum is passed an endless band of buckets or elevators, *y*, and extending downward and passed under a drum, *z*, turning on journals in a box, 1, on the left-hand side and below the fan-case, the bottom of said box 1 joining and forming a continuation of the bottom of the trunk of the fan-case and causing the box to communicate with the trunk through the space 7, between the fan-case and the bottom of the trunk.

J is an upright box, made tapering toward its lower end and secured to the back part of the machine immediately behind the elevators and under the back part of the periphery of the upper drum, 8, so as to cause the elevators to discharge the grain brought up from the box into said upright box when they pass over the upper drum to descend. This upright box

has an opening in its lower end for the discharge of the grain when required, which is covered with a slide, 2, moving in grooves in the box.

K are ratchet-wheels, secured permanently to the shaft on either side of the band-wheel, in the notches of which are pressed, by means of springs 3, secured to the sides of the band-wheel, pawls 4, suspended at one end by pins passing through them and entering the sides of the band-wheel. These pawls will slip over the teeth of the ratchet-wheels when a back motion is given to the machine, and the abrupt edges of the teeth will press against them and cause the band-wheel B to turn when the machine is drawn forward.

L is a chair, secured on top of the machine, for the driver to sit on.

M is the tongue to which the horses are attached, secured between cheek-pieces by a pin and having braces, 5, attached by a pin a little in advance of the other pin, on which the tongue moves, which braces extend upward and pass through slots formed in uprights of the frame, and are perforated near their upper ends with a number of round openings, through which and similar openings in the uprights pass pins, 6, for securing the front end of the tongue at any required height.

The mode of operation is as follows: The tongue M being raised to correspond with the height of the grain to be cut, and secured by the pins 6, and the horses attached, the machine is drawn forward toward the grain, which causes the main driving-wheel, *a'*, to turn the horizontal shaft *d* and band-wheel B and band C, passing over the same, which conveys the motion to the gathering and thrashing wheel or revolving shaft of bars or beaters, causing said beaters or bars *i* to force the grain against the sharpened edge of the knife *k*, and to cut the tops or heads from the straw and drive them between the teeth of the bars or beaters and the teeth of the concave D with sufficient violence to thrash the same in its passage through, and to convey it through the trunk E onto the sieve or screen *m*, it being prevented from being thrown beyond the same by a canvas cloth, 9. This sieve or screen *m* being kept in a continual state of vibration during the operation of the machine by the cam *o* on the fan-shaft, lever *p*, and cord *q*, will cause all the grain to pass through its reticulated bottom, while the straw will be blown off at the side of the machine by the force of the blast of air created by the fan F, which receives its motion through the band *s* and pulleys *t* H. The grain, in its descent through the trunk of the fan-case to the box 1, will likewise be acted upon by the blast of air from the fan, and the chaff and all other extraneous matter, of less specific gravity than the grain, will be blown out at the outlet of the tangential trunk of the fan-case, while the grain, by its superior weight, will descend into the box 1, from whence it will be taken by the endless band of elevators *y* and carried up over the upper drum, 8,

and discharged into the upright box J. From this box it may be emptied into bags or boxes or other suitable receptacles through the opening in the lower end of the same.

When it is desired to move the machine over the ground without operating the gathering or thrashing wheel, or shaft of bars or beater *i*, the pawls 4 are disengaged from the ratchet-wheels K on the shaft *d*, and said shaft will be caused to turn without giving motion to the band-wheel B.

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

The mode of cutting and thrashing the grain by forcing the same against the knife *k* and, after being cut, between the teeth of the concave D and the teeth of the gathering or thrashing wheel or shaft of bars or beaters *i*, during the progress of the machine, as herein set forth.

SAMUEL S. REMBERT.

Witnesses:

JOHN HARDING,

RICHD. C. WYATT.