

No. 640,862.

W. BILLINGSLEY.

Patented Jan. 9, 1900.

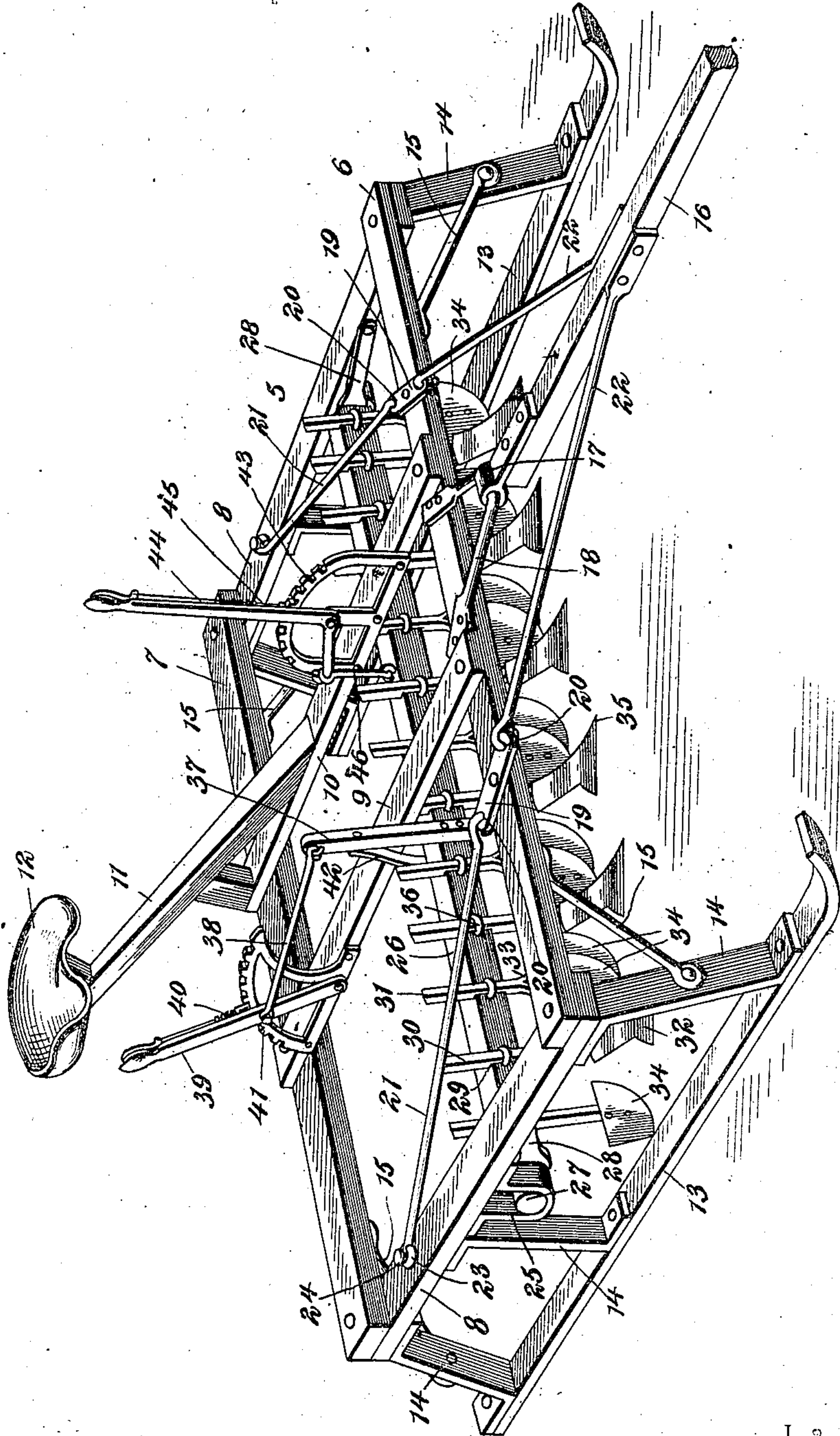
COTTON THINNER.

(Application filed Sept. 12, 1899.)

(No Model.)

2 Sheets—Sheet 1

Fig. 1.



Witnesses

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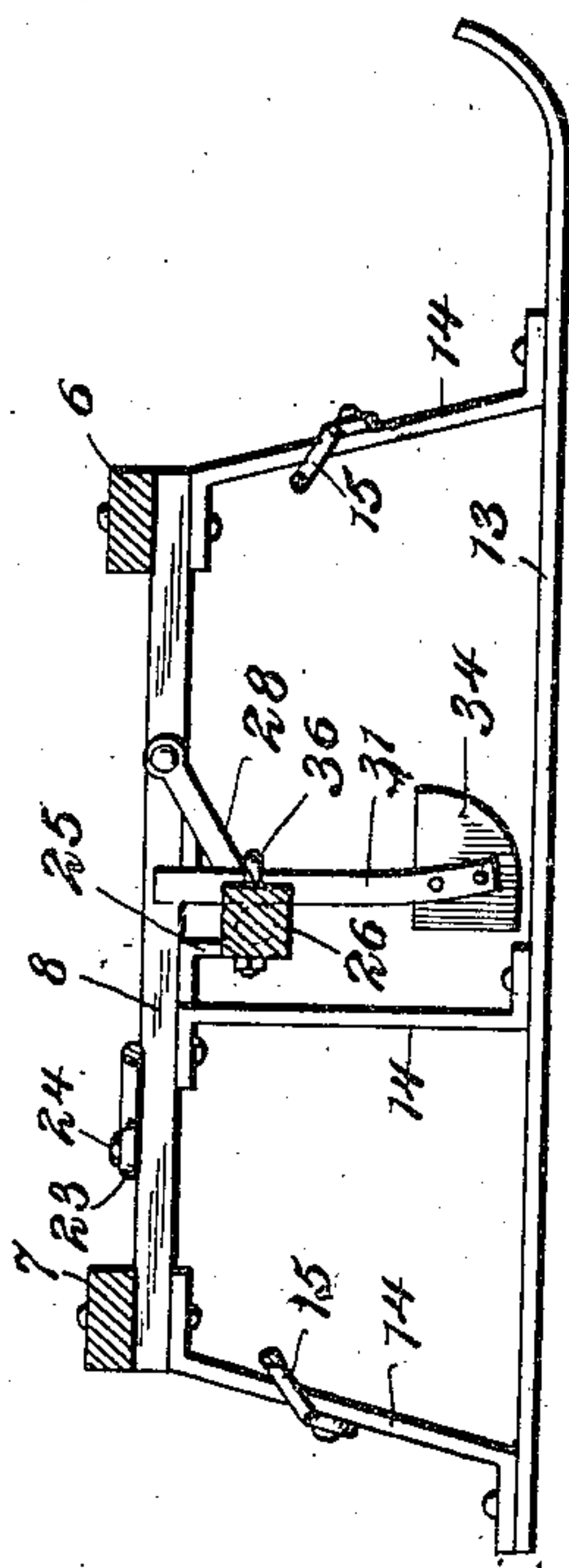
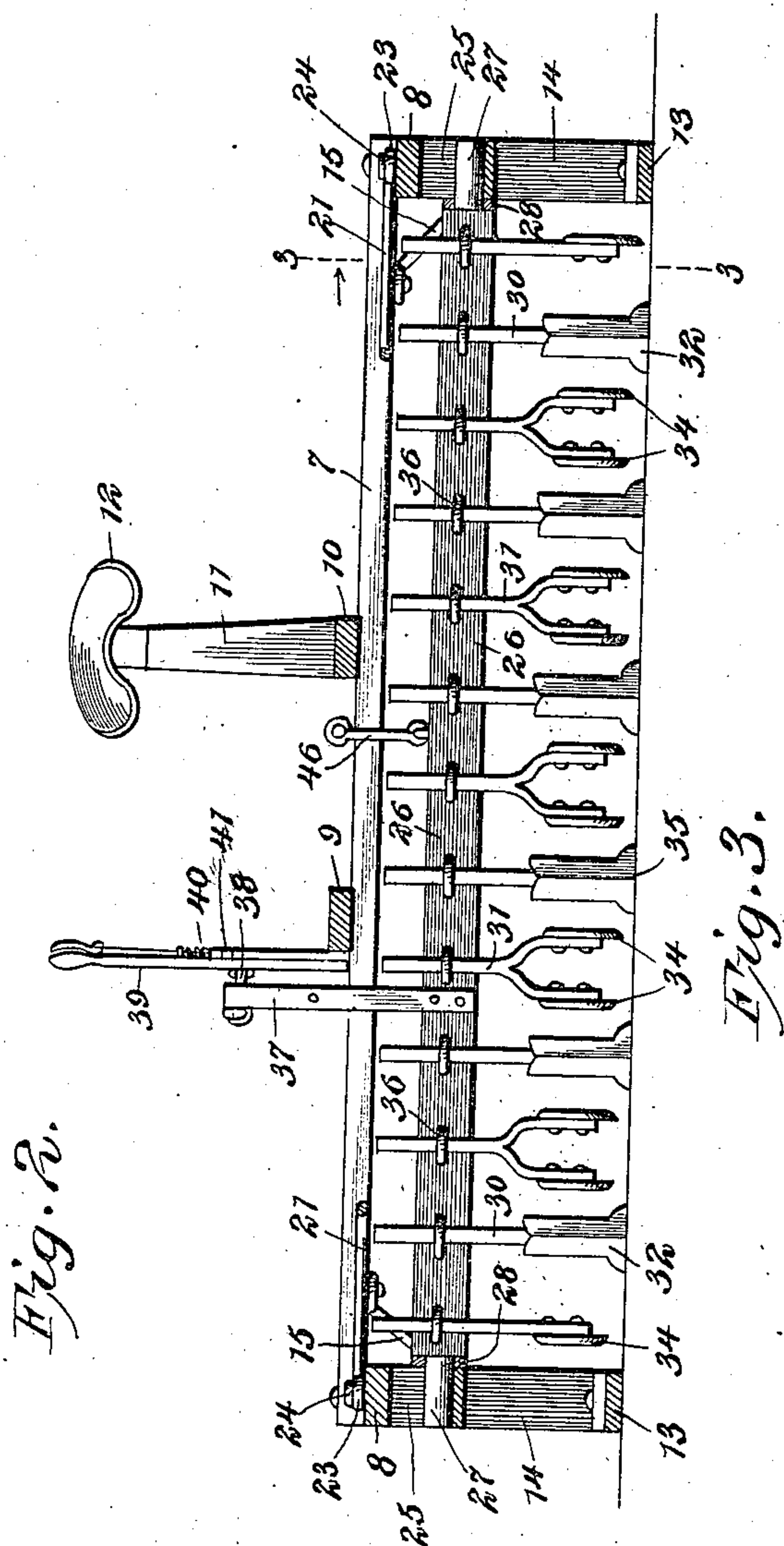
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Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM BILLINGSLEY, OF MCLENDON, TEXAS.

## COTTON-THINNER.

SPECIFICATION forming part of Letters Patent No. 640,862, dated January 9, 1900.

Application filed September 12, 1899. Serial No. 730,248. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM BILLINGSLEY, a citizen of the United States, residing at McLendon, in the county of Rockwall and State of Texas, have invented a new and useful Cotton-Thinner, of which the following is a specification.

This invention relates to machines for thinning cotton; and the object of the present construction is to provide a simple, effective, and compact machine of this character wherein are embodied features of adjustment for regulating the depression of a gang of hoes and fenders, and also to replace the ordinary wheel devices for propelling such machines over the ground-surface by runners which are long enough to span the hills, and also to distribute the draft over a greater portion of the machine.

With these and other objects in view the invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a machine embodying the features of the invention. Fig. 2 is a longitudinal vertical section considered relatively to the position of the gang of hoes and fenders and in advance of the latter. Fig. 3 is a section on the line 3 3 of Fig. 2, looking in the direction of the arrow, the beam being shown adjusted to bring the fenders and hoes in vertical position.

Similar numerals of reference are employed to indicate corresponding parts in the views.

The numeral 5 designates the frame of the machine, which is composed in the main of front and rear bars 6 and 7, bolted or otherwise attached to end bars 8. Extending from the bar 6 rearward to the bar 7 are a pair of spaced supports 9 and 10, the latter having a seat-arm 11 thereon, arranged at an angle of inclination, and having on its rear extremity a seat 12, the position of this seat being such as to afford convenient means for operating adjusting devices, which will be presently set forth, and for the purpose of regulating the depression of the thinning attachments. To the end bars 8 runners 13 are connected by front and rear and intermediate irons 14, the front ends of the rods being upturned for ob-

vious reasons, and the front and rear irons and the runners as an entirety are counter-braced by brace-rods 15, connected thereto and to adjacent under portions of the bars 6 and 7.

The tongue 16 is movably connected to the center of the bar 6 through the medium of an eye 17, fast on the rear end of the tongue, with which the front reduced bend portion of a substantially V-shaped yoke 18 has movable engagement, the terminals of the yoke being attached to said bars 6 between the front ends of the supports 9 and 10. Outside of the front ends of the supports 9 and 10 draft-links 19 are applied and pivoted at their central portions, the opposite terminals or extremities of the said links being formed with eyes 20 to receive the front and rear hooked ends of draft rods or braces 21 and 22, respectively fastened at their opposite ends to the upper rear portions of the end bars 8 and the opposite side edges of the tongue 16. The rear terminals of the rods 21 are in the form of horizontally-disposed eyes 23, movably connected to the bars 8 by vertically-disposed pivot pins or studs 24. By this arrangement of draft devices it will be observed that the draft is more uniformly distributed and applied to a greater portion of the machine-frame and capable also of responding to a slight give or variation in the draft power or force to thereby avoid the concentration of the draft strain on the front portion of the frame and make the said frame much more durable by preventing the parts thereof breaking loose. This mode of applying the draft devices is also highly beneficial in directing the course of travel or movement of the machine and also makes the latter sensitively responsive to turning movements. Furthermore, through the rods 21 the draft force is applied to the frame in rear of the location of the gang of hoes and fenders, and the entire machine is thereby braced against the strain emanating from the resistance of said hoes and is less liable to swing when the latter meet with obstructions in part.

In advance of the points of attachment of the intermediate irons 14 elongated bearing-loops 25 are secured to and depend from the end bars 8. In the said bearing-loops 25 the opposite ends of a plow-beam 26 are movably



and adjustably mounted, the said ends being reduced and rounded to provide bearings 27 and having attached to the inner termination thereof suspending links 28, which are pivotally attached, in advance, to the adjacent inner edge portions of the bars 8. The beam 26 is accorded a swinging movement through the medium of the links 28 and is adapted to be elevated or depressed, as well as turned, through the medium of adjusting devices, which will be presently set forth, and having an independent operation. The front edge of the beam 26 is formed with a series of mortises 29, which are inclined rearwardly in a vertical direction, and therein are removably mounted stocks 30 and 31, the former having the hoes 32 secured on their lower extremities and the latter bifurcated, as at 33, to provide means for attaching intermediate pairs of fenders 34, which have their front exposed edges standing at an angle to a horizontal plane. The outer stocks 31 are not bifurcated and thereto are attached single fenders 34 for the reason that for a practical operation a fender is necessary on each side of a hoe, and there being no hoes on the outer side of the end fenders the latter are used at this point in single form. The hoes 32 have flat bottoms 35, and each hoe is so shaped as to loosen and throw up the cotton-plants on opposite sides against the fenders, with an obvious result. The fenders will also protect or shield the rows of plants between the hoes to prevent covering of the same by the soil and loosened plants thrown up, and thus facilitate the thinning operation. The stocks 30 and 31 are held in the beam 26 by clips 36, which are preferably of U-shaped form, and in view of the seat provided in each instance for the stock through the medium of the mortises 29 only one of the clips is necessary to firmly and properly hold a stock in position, and with such firmness as to resist accidental loosening. As a further beneficial adjunct to this simple mode of fastening the stocks the latter are angular in cross-section and the mortises 29 are of a similar contour, so as to prevent turning, and thereby always insure a proper direction or position of the hoes and fenders.

As convenient means of controlling the angle of the hoes and fenders and for rotating the beam 26 an arm 37 is secured to the front side thereof and projects above the same adjacent the outer edge of the support 9. To the upper end of the said arm a link-rod 38 is movably attached, and also at its rear terminal to a shifting lever 39, carrying a sliding locking-dog 40, cooperating with a toothed segment 41, the said lever being pivoted to the face of the segment and movable closely against one side of the latter, as in ordinary devices of this character. To strengthen the arm 37 and prevent it from being pulled loose, a strap or analogous brace 42 is secured thereto and also to the rear edge of the beam 26, and it will be seen that provision is thus

made for shifting the lever 39 either forwardly or backwardly without danger of loosening or breaking said arm 37. The beam 26 is also adapted to have a vertical adjustment imparted thereto to vary the depth of penetration of the hoes 32, and for this purpose a toothed segment 43 is secured to the inner edge of the support 10 directly above the beam, and thereto is pivotally attached a bell-crank shifting lever 44, carrying a locking-dog 45 to engage the teeth of the said segment and having connected to the lower short arm thereof a link 46, which is also attached to the top edge of the said beam 26. By pushing the lever 44 forwardly the beam 26 will be raised to any elevation desired and the adjusted position sustained by the dog 45 locking between two of the teeth of the segment 43. A rearward movement of the lever 44 will depress the beam 26, and after this adjustment of the beam in a vertical plane its elevation may remain undisturbed and the lever 39 shifted either forwardly or rearwardly over its segment to change the angle of the hoes and fenders or to entirely clear the same. The manner of attaching the suspending links 28 to the opposite extremities of the beam 26 is shown by Fig. 1 and is of such a nature that the opposite bearings 27 of the beam are free to turn in the terminals of the links 28 engaging the same; but said links prevent the beam from moving rearwardly beyond a predetermined point and maintain its adjustment in the arc of a circle. This is particularly advantageous in view of the fact that the points of the hoes 32 are caused to first penetrate the ground and the flat bottoms 35 afterward brought squarely down in the soil and work in uniformity and unvarying horizontal plane at a preferred depth below the ground surface and until the vertical adjustment of the beam is changed.

In operating the machine it is slid transversely of the lines of hills, and the runners 13, as before indicated, span the said hills, thus keeping the machine in a regular plane of travel while the hoes 32 are uprooting and cleaning out the superfluous growth of cotton-plants, the plants left standing being shielded by the fenders passing thereover, and through the eliminating work carried on by the hoes said standing plants are relieved of the danger resulting from overgrowth or choking.

The entire machine can be controlled by one operator, and the particular work to which it is adapted may be rapidly carried on. In turning the machine the beam 26 is first elevated by the adjustment in a proper direction of the bell-crank lever 44, and, if desired, the hoes and fenders may be swung rearwardly by the lever 39 at the same time, though this is not actually necessary. In transporting the machine from a place of storage to the tract to be worked or in other movements thereof when not in use the hoes and fenders are swung clear of the ground for obvious reasons. The hoes can be removed at any



time for the purpose of sharpening or other manipulation, and the feeders are normally adjusted at such an elevation that when the hoes are depressed to a working position they will move close to the ground surface and regularly and distinctly define by their operation the lines of plants to remain standing.

Many other advantages and conveniences will become apparent in the use of the improved machine, and in certain applications it may be necessary to change the form, proportions, and minor details of construction. Such changes will be made in this direction as fully lie within the nature or spirit of the invention.

Having thus described the invention, what is claimed as new is—

1. In a device of the character set forth, the combination of a frame, a beam having independent vertical and rotary adjustments, a series of hoes carried by said beam, and feeders arranged intermediate of said hoes and also supported by the beam.

2. In a device of the character set forth, the combination of a frame, having end bars, depending bearing-loops secured to said end bars, a vertically-adjustable beam having its opposite ends fitted in said loops, suspending-links having their rear ends loosely fitted over the opposite terminals of the beam, a gang of hoes or cultivating devices on the beam, and separate adjusting mechanism for the beam adapted to independently control the vertical movement and the rotation of said beam.

3. In a device of the character set forth, the combination of a frame having elongated runners at opposite ends, a beam supported by the said frame and having independent vertical and rotary adjustments, cultivating devices on the beam, a tongue movably attached

to the front portion of the frame and adapted to have vertical movement, and draft devices in part rigidly connected to the tongue and all movably attached to the frame.

4. In a device of the character set forth, the combination of a frame having runners at opposite ends, a beam adjustably mounted in the said frame and having a gang of cultivating devices thereon, a tongue movably attached to the front central portion of the frame, draft-links movably attached to the front portion of the frame on opposite sides of the point of attachment of the tongue, draft-rods movably attached to the rear of the opposite end portions of the frame and to the rear terminals of the said draft-links, and other draft-rods fixed to the tongue at their front terminals and having their rear terminals in engagement with the front ends of the said draft-links.

5. In a device of the character set forth, the combination of a frame having runners at opposite ends, cultivating devices supported by the frame, a tongue movably attached to the front central portion of the frame, and draft devices in part rigidly secured to opposite portions of the tongue in advance of the attachment of the latter to the frame, another portion of said draft devices being connected to the frame in rear of the position of the cultivating devices and all the draft devices movably attached to the frame.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM BILLINGSLEY.

Witnesses:

E. D. FOREE;

G. A. TRUITT.