

No. 652,721.

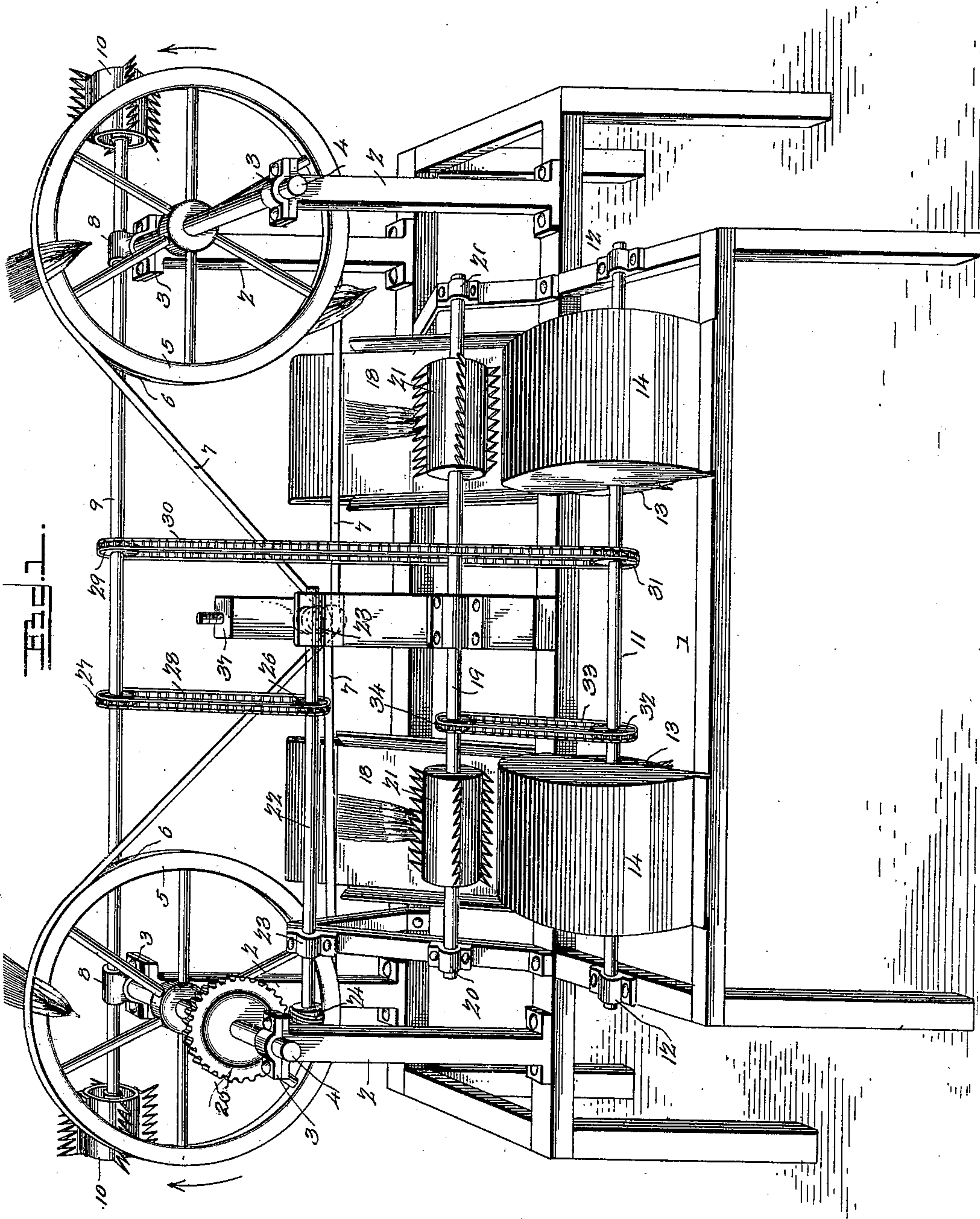
Patented June 26, 1900.

G. F. MILLER.  
DISINTEGRATING MACHINE.

(Application filed Feb. 24, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

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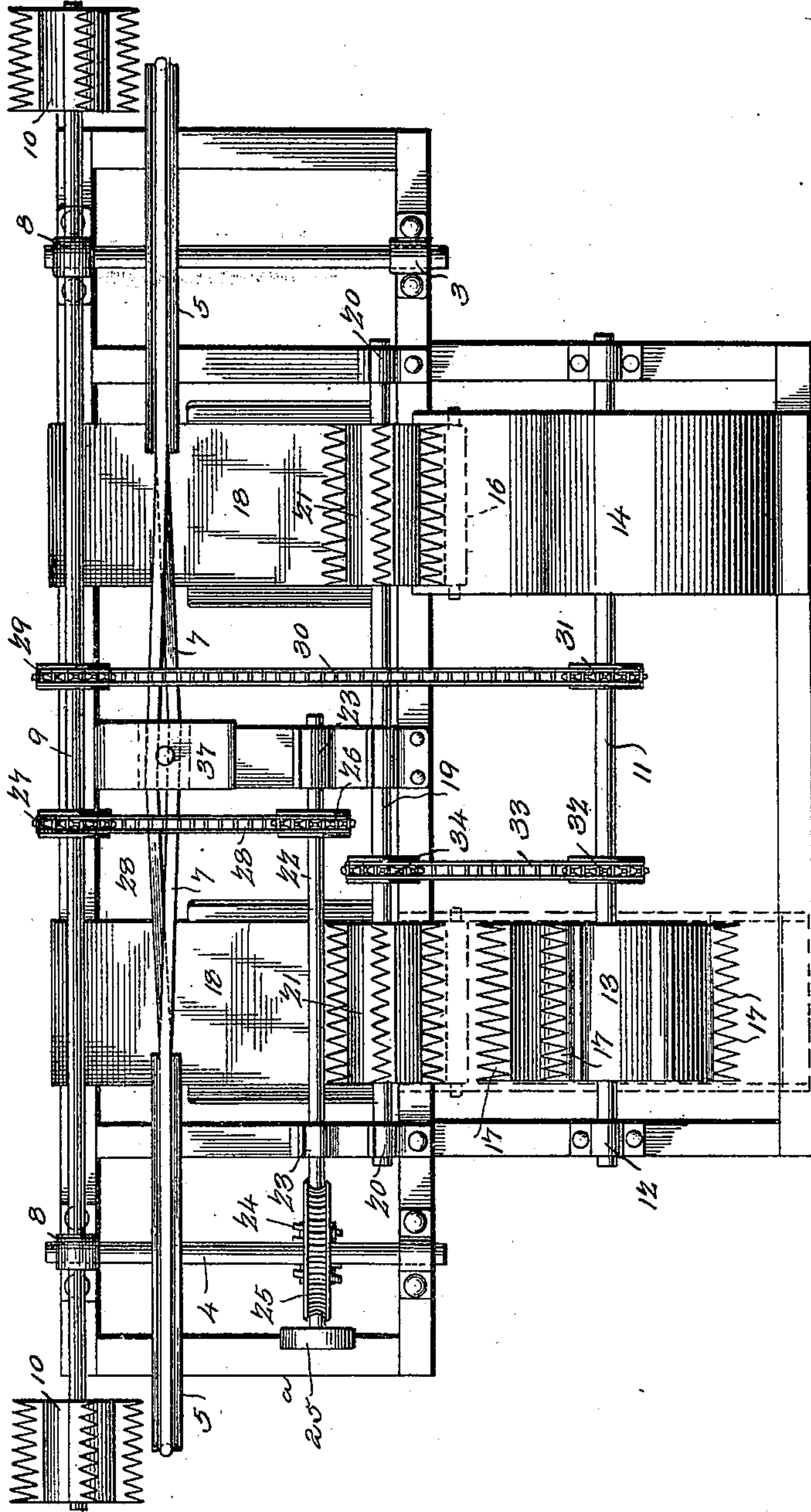


Fig. 2.

Witnesses

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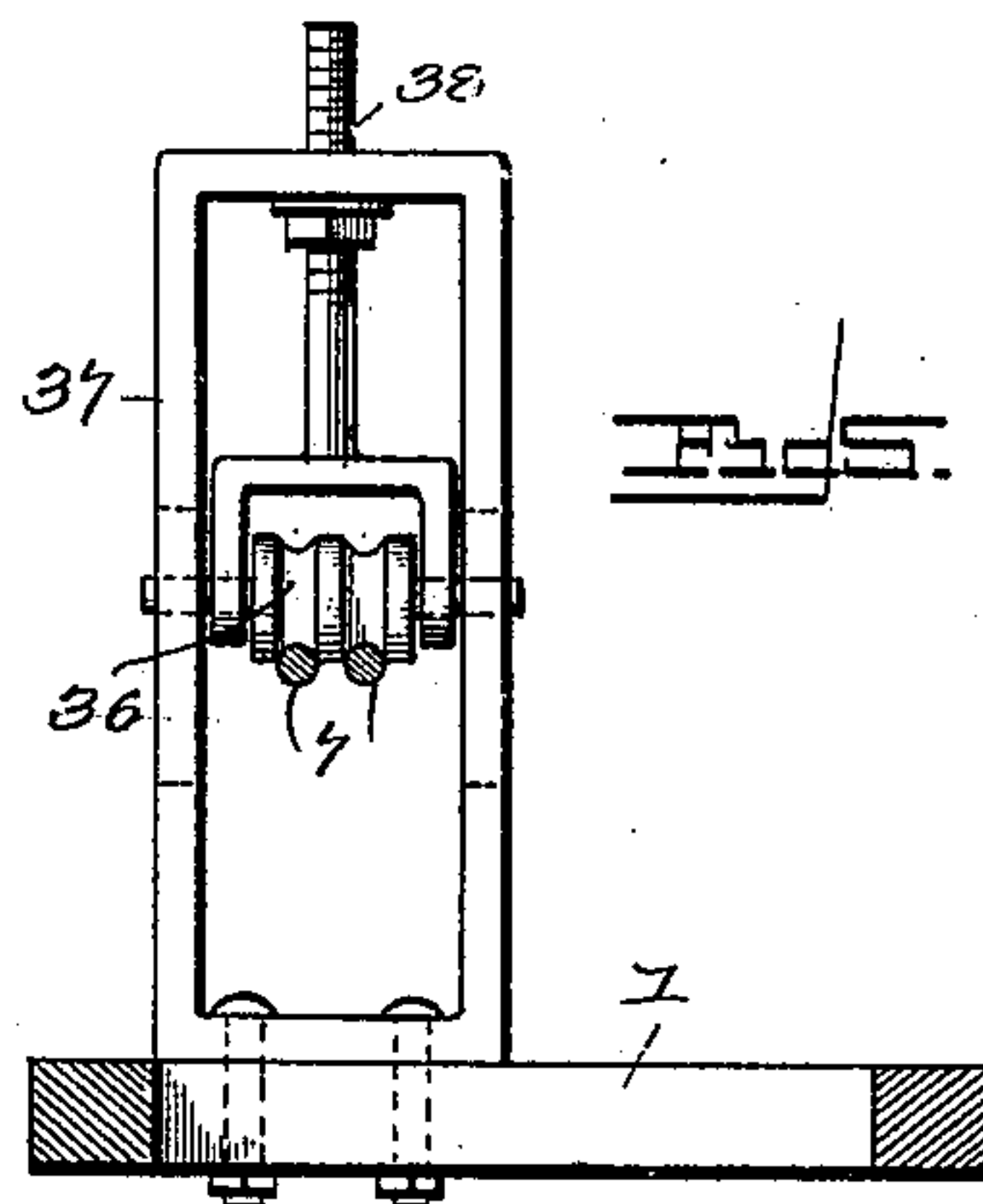
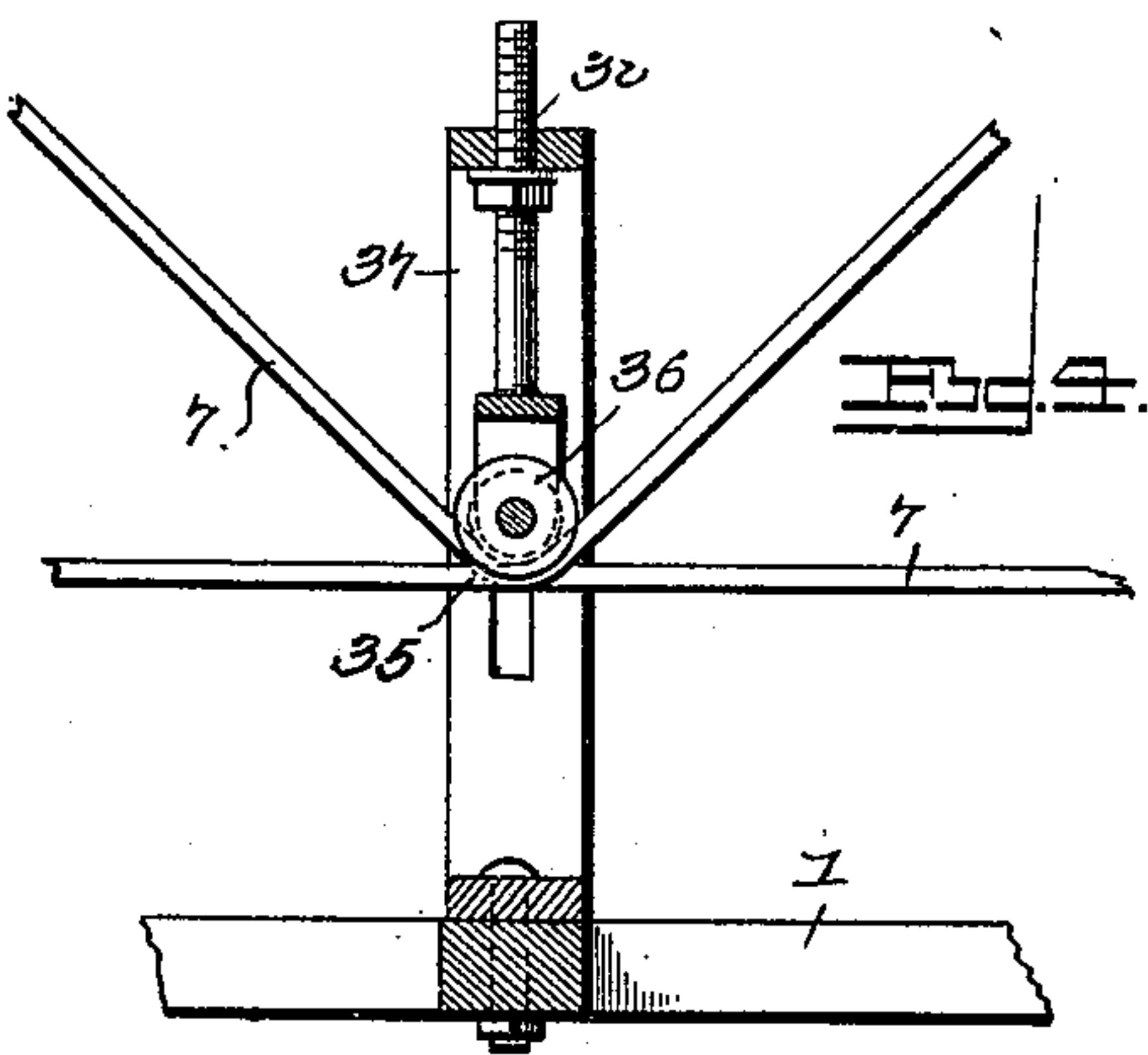
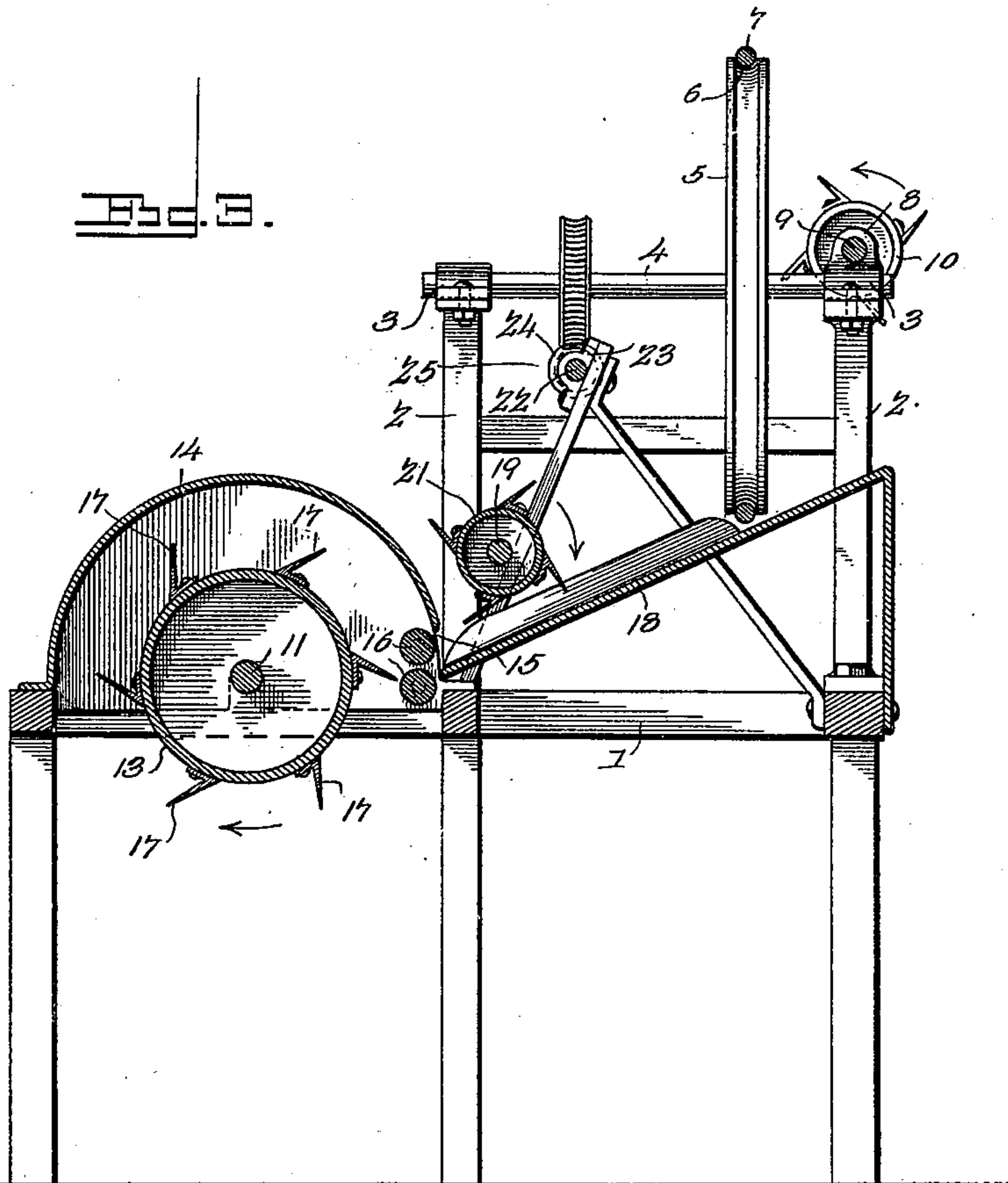
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3 Sheets—Sheet 3.



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# UNITED STATES PATENT OFFICE.

GEORGE FERNANDO MILLER, OF JACKSONVILLE, FLORIDA.

## DISINTEGRATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 652,721, dated June 26, 1900.

Application filed February 24, 1900. Serial No. 6,388. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE FERNANDO MILLER, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Disintegrating-Machine, of which the following is a specification.

My invention is an improved disintegrating-machine for shredding the leaves of textile plants, as the palmetto, to obtain the fiber therefrom, particularly in the form adapted for use in mattresses and in upholstering, the object of my invention being to provide a machine which is adapted for automatically shredding both ends of the leaves.

To this end my invention consists in the combination, with a carrier wheel and belt, of a hackle disposed on one side of the carrier-wheel and adapted to shred one end or side of the leaf, a finishing-hackle on the opposite side of the carrier-wheel to complete the shredding of the leaf, devices to hold the leaf while being shredded by the finishing-hackle, and means for feeding the partly-shredded leaf from the carrier wheel and belt to the finishing-hackle.

My invention further consists in the peculiar construction and combination of devices hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a disintegrating-machine embodying my improvements. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical transverse sectional view of the same, taken on the line  $x x$  of Fig. 2. Fig. 4 is a detail view of the tension device and the crossed carrier-belt. Fig. 5 is a similar view of the same at right angles to Fig. 4.

On a frame 1, which may be of any suitable construction, is a pair of standards 2, having bearings 3 on their upper sides in which is journaled a shaft 4. Said shaft has a carrier-wheel 5 keyed thereon, said wheel, as here shown, having a peripheral groove 6 in which operates an endless carrier-belt 7. On the rear side of the machine-frame in suitable bearings 8 is journaled a longitudinally-disposed shaft 9, which is arranged at right angles to shaft 4 and is provided with a hackle 10, which is disposed near one side of the car-

rier-wheel 5 and is adapted to rotate in the direction indicated by the arrow in Fig. 3.

A shaft 11, which is parallel with the shaft 9, is journaled in bearings 12 on the frame 1 near the side of said frame opposite the shaft 9, and on the said shaft 11 is a finishing-hackle 13, which is inclosed on its upper side by a casing or drum 14, having an opening 15 on its inner side. A pair of rollers 16 are mounted in suitable bearings and disposed transversely across said opening 15 and proximate to the finishing-hackle 13, the shredding-teeth 17 of the latter as the same rotates coming almost in contact with said roller 16.

An inclined feed-slide 18 is disposed transverse on the frame 1, the outer end thereof being in a slightly-lower plane than the lower side of the carrier-wheel 5 and the inner end of said feed-slide being disposed opposite the space between the pair of rollers 16 and communicating with the opening 15 in the drum or casing 14.

A shaft 19 is disposed longitudinally on the frame 1, is journaled in suitable bearings on said frame, said shaft extending transversely over the feed-slide 18 and being proximate to the upper side thereof. On the said shaft 19 is a feed-hackle 21, which is adapted to rotate in the direction indicated by the arrow in Fig. 3 and the teeth of which as the same rotates closely approach the upper side of said feed-slide.

A counter-shaft 22, which is parallel with shafts 11, 19, and 9, is journaled in suitable bearings 23 on the frame 1, and the said shaft is provided with a worm 24, which engages a worm-gear 25 on the shaft 3. Said shaft 22 is provided with a power-pulley 25<sup>a</sup>, driven by an endless belt (not shown) from any suitable engine or other source of power. The shaft 22 is further provided with a sprocket-wheel 26, which is connected with a sprocket-wheel 27 on the shaft 9 by an endless sprocket-chain 28, and thereby power is communicated from shaft 22 to shaft 9. Said shaft 9 is further provided with a sprocket-wheel 29, which is connected by an endless sprocket-chain 30 with a sprocket-wheel 31 on shaft 11, whereby power is communicated from said shaft 9 to said shaft 11, and the latter is further provided with a sprocket-wheel 32, connected by



an endless sprocket-chain 33 with a sprocket-wheel 34 on shaft 19, whereby power is communicated from said shaft 11 to said shaft 19. The rotation of the shaft 4 communicates motion to the carrier-wheel and endless carrier-belt, and it will be observed by reference to Figs. 1 and 3 that the lower lead of the endless carrier-belt is substantially horizontal and is disposed slightly above the inclined feed-slide 18.

In the accompanying drawings I have shown the mechanism hereinbefore described in duplicate, the frame 1 being of sufficient length to admit of the duplication of the hackling mechanism, thereby effecting the material economy in the construction of the machine and doubling its capacity, and I have illustrated the carrier-belt as a single belt of sufficient length to engage both of the carrier-wheels and connect them together, said belt being crossed at its central portion, as at 35, and engaged by a tension-roller 36, mounted and adapted to move vertically in a standard-bearing 37 and provided with an adjusting device 38, by means of which the tension of the endless carrier-belt may be regulated.

The operation of my invention is as follows: The leaf to be shredded is fed by an operator between the lower lead of the endless carrier-belt and the lower side of the carrier-wheel, said leaf being grasped between said wheel and carrier-belt, and as the wheel rotates said leaf is carried upward thereby and brought in contact with the hackle 10, which shreds one side thereof while the leaf is passing said hackle, and as the leaf passes over the upper side of the carrier-wheel it drops from between the upper lead of the endless carrier-belt and said carrier-wheel onto the feed-slide 18 and slides by gravity down the same and under the feed-hackle 21, the unshredded side or end of the leaf first passing between the rollers 16, which serve to hold the said leaf while the same is being operated upon by the finishing-hackle 13, the tendency of the latter being to draw the leaf while the same is being shredded from between said rollers 16, thereby rotating said rollers and said rollers effectually retaining the leaf in operative position with relation to the finishing-hackle until it has been completely shredded,

and as the leaf finally escapes from between said rollers it drops to the ground or into a suitable receptacle below the finishing-hackle.

It will be understood from the foregoing that my improved disintegrating-machine is adapted for completely shredding both sides or ends of a palmetto or other leaf of a textile plant, so that the operation of obtaining the fiber therefrom is completed by the machine and no portion of the leaf is wasted or escapes the action of the hackle. It will be further understood that the capacity of the machine is only limited by the ability of the operator to feed the leaves successively between the carrier-wheel and belt and that the machine is capable of operation at high speed.

Having thus described my invention, I claim—

1. In a disintegrating-machine, the combination with a carrier-wheel and endless carrier-belt, of a primary hackle on one side of said carrier-wheel, a feed device adapted to receive the leaf when discharged from the carrier-wheel and belt, a finishing-hackle, and feed and holding rolls revoluble by the leaf as the latter is drawn between them by the hackle for holding the leaf in operative position thereto, said feed device conducting to said rolls, substantially as described.

2. In a disintegrating-machine, in combination with a hackle, feed and holding rolls, revoluble by the leaf as the latter is drawn between them by the hackle, substantially as described.

3. The combination, in a disintegrating-machine, of a carrier-wheel and endless carrier-belt, a hackle disposed at one side of said carrier-wheel and belt, an inclined feed-slide disposed under the lower lead of the carrier-belt, a feed-hackle, disposed over said inclined slide, a finishing-hackle to which said inclined slide conducts, and devices to hold the partly-shredded leaf in operative relation to the finishing-hackle, substantially as described.

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

GEORGE FERNANDO MILLER.

Witnesses:

JOHN M. ADAMS,

C. B. SMITH.