

(No Model.)

2 Sheets—Sheet 1.

L. MILLER.
HARVESTER REEL.

No. 411,820.

Patented Oct. 1, 1889.

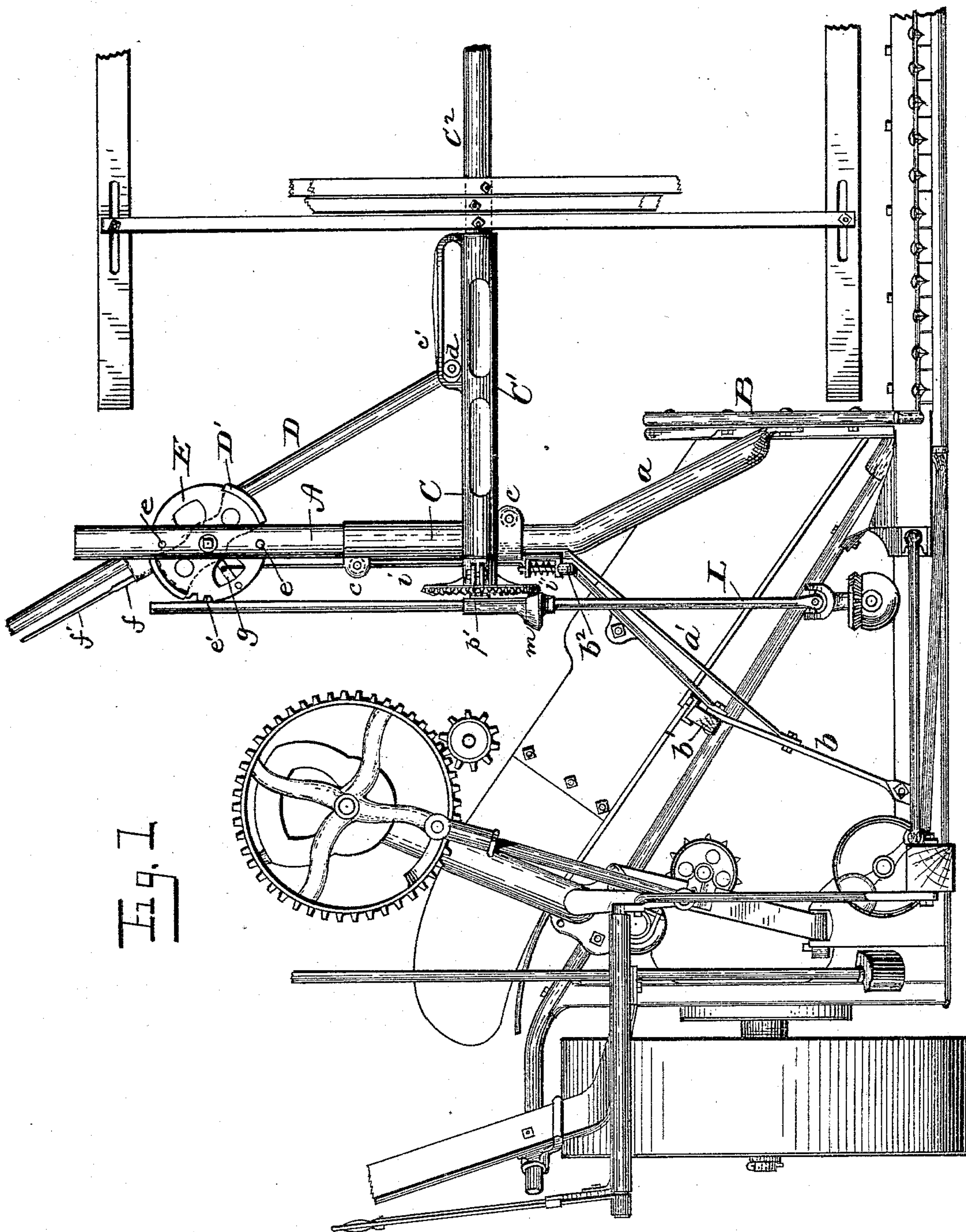


Fig. 1

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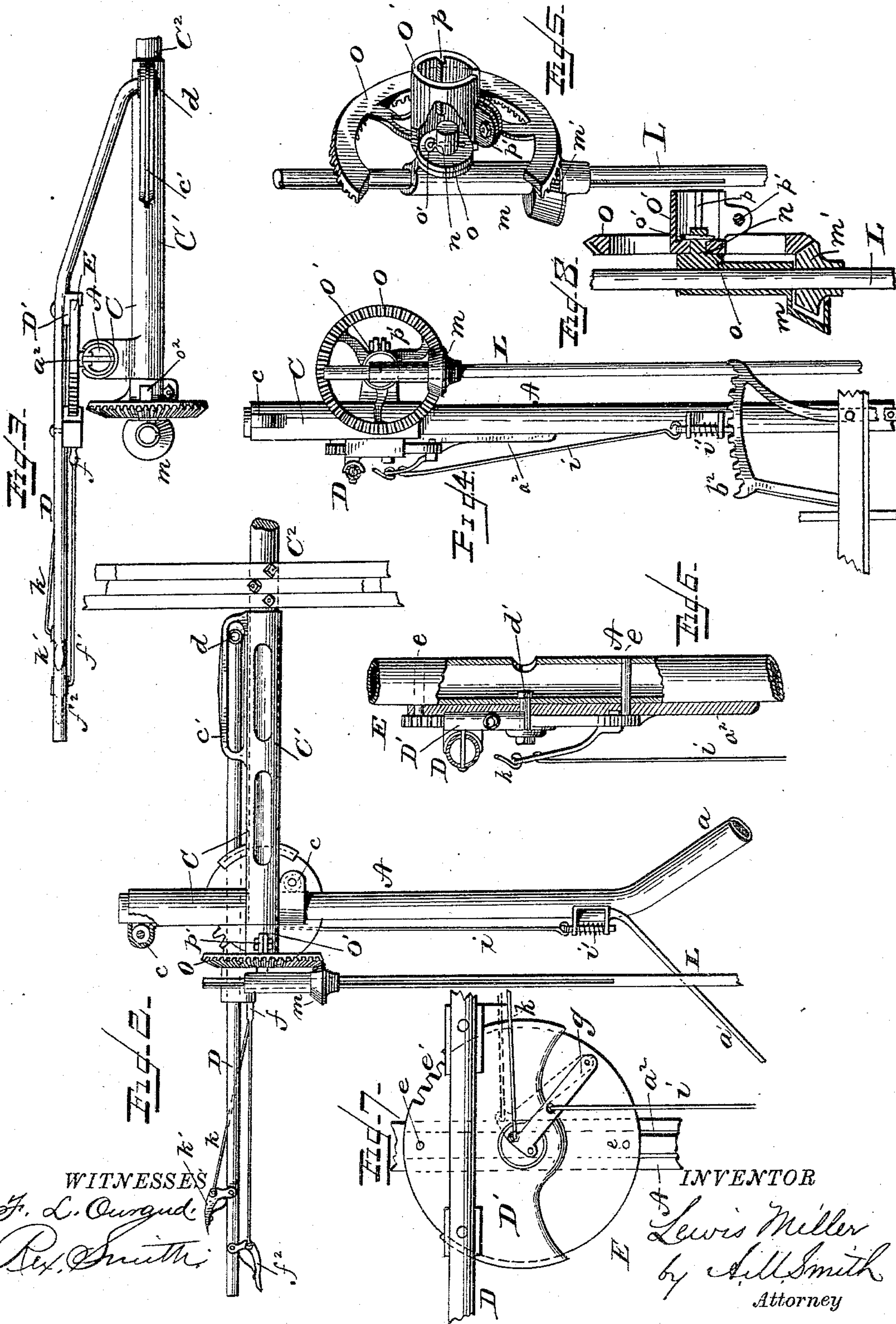
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2 Sheets—Sheet 2.

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WITNESSES
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UNITED STATES PATENT OFFICE.

LEWIS MILLER, OF AKRON, OHIO.

HARVESTER-REEL.

SPECIFICATION forming part of Letters Patent No. 411,820, dated October 1, 1889.

Application filed November 26, 1887. Serial No. 256,249. (No model.)

To all whom it may concern:

Be it known that I, LEWIS MILLER, of Akron, county of Summit, and State of Ohio, have invented a new and useful Improvement in Harvester-Reels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to means for supporting and effecting the adjustment of the reel of a harvesting-machine, and will be understood from the following description and claims, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of a portion of a harvesting-machine, sufficient to show my improvements and their relation to other parts of the machine. Fig. 2 shows also, in front elevation, a portion of the reel-post and the parts connected therewith for supporting and adjusting the reel. Fig. 3 is a plan view of the parts shown in Fig. 2. Fig. 4 is a side elevation of the same looking from the drive-wheel side, showing a modified form of attachment for the rack. Fig. 5 is a perspective view of the reel-driving gearing, the bevel gear-wheel and sleeve-shaped clasp which attach to the reel-shaft being partially broken away to show the manner of connecting said gear-wheel to its driving-shaft. Fig. 6 shows the reel-adjusting devices in side elevation and a portion of the reel-post, partly in section, to show the manner of attaching the adjusting devices thereto; and Fig. 7 is a rear elevation of a portion of the reel-adjusting devices, &c. Fig. 8 represents the parts shown in Fig. 5 in vertical section on the axes of the reel-shaft and its driving-shaft.

The type of machine to which my improvements are shown applied is one in which the grain is bound on the platform side of the driving-wheel on an inclined elevating-table, the binder-gear stand and lower end of the driver's-seat standard being represented to show the relation of these parts to the reel and its supporting and adjusting devices; but it will be apparent that my improvements may be applied to other types of machine.

A indicates the reel-post, which is tubular in form and has its lower end bent outwardly, forming an arm a , and provided with a brace

a' , diverging inwardly, and is pivoted, preferably, to the side of the inner divider-board or nose-piece B, the lower end of the brace a' being pivoted in line transversely with the lower end of the arm a to a bar b , extending from the front sill of the platform-frame to the forward end of a longitudinal bar b' of the frame upholding the elevating-table. This construction gives the post a wide base and makes it rigid laterally, thereby upholding the reel steadily, the latter being preferably of the type known as an "overhung" reel and wholly supported by said post. The reel-post, being supported upon transverse pivots, is free to be moved or swung forward or backward, as required, for thus adjusting the reel, and is held at any required adjustment by means of a latch, hereinafter referred to, engaging a rack b^2 , secured to the forward grain guard board or fender of the elevating-table or other suitable support.

Upon the reel-post is mounted a tubular bracket C, having an upright slotted sleeve, which embraces and is adapted to slide or be adjusted up and down on the post A, and a horizontal arm or sleeve, (indicated by C'), in which the reel-shaft C^2 is journaled. The upright sleeve or clasp embracing the reel-post is slotted or open on its rear face, for a purpose which will appear, and has mounted in bearings in suitable lugs or ears c , formed on its ends, friction-rollers—one at the lower end of said sleeve resting against and rolling upon the outer side of the reel-post and another at the upper end bearing upon the inner or drive-wheel side of said post for facilitating the adjustment and preventing the binding of said bracket. The arm or sleeve C' has a slotted longitudinal rib c' projecting radially on its upper side, within which a grooved roller mounted on a forwardly-projecting spur d on the outer or lower end of a lever D moves when said lever is adjusted for altering the height of the reel-bracket and reel. The reel-post has a vertical rib a^2 bolted or otherwise rigidly secured to it, which lies within the vertical slot or opening in the upright sleeve of the bracket C, and has secured to its rear face a disk E, which is secured to the reel-post by bolts or rivets e . The rib a^2 steadies the bracket C laterally, preventing it from rock-

ing or rotating on the reel-post, and serves also to support firmly the fulcrum bolt or pin d' of the lifting-lever D.

D' is a clasp extending across the face of the disk E and having hook-shaped ends which clasp the contiguous portions of the edge of the disk and are adapted to move thereon. This clasp D' is pivoted to the post A by the bolt d' , which passes through the center of the disk E and through the rib a^2 and the adjacent side of the tubular post A, as shown in Fig. 6, an opening being left in the opposite side of said post for the insertion or removal of said bolt. The clasp D' has flanges forming sockets, in which the lever D is rigidly secured, said lever carrying upon one end the spur d , above referred to, the other end of said lever extending into convenient position to be grasped by the driver for operating it. The disk E and clasp D' are arranged in planes parallel with the axis of the reel-shaft, as shown, and the disk has notches e' formed in its edge, with which a latch f engages for holding the clasp D' and lever D at any required adjustment. The latch f is connected by a rod f' to a thumb-lever f^2 , pivoted on the lever D in such manner that the driver by grasping the lever D and lever f^2 can withdraw the latch, when the lever D and clasp D' can be vertically vibrated on the disk E and post A, a suitable spring serving to hold the latch f engaged with disk E when the thumb-lever f^2 is released. The disk E has pivoted to it, near its lower stubble-edge, an arm g , which extends radially to the center of said disk, its free end projecting from the rear face of the disk, and to said arm one end of a link or rod i is secured, the other end of said link being connected to the sliding latch i' , which engages the rack b^2 , above referred to, for holding the reel-post at the desired adjustment. The arm g has a second link k secured to it, said link extending by the side of lever D to a second thumb-lever k' , also pivoted on said lever D, and by operating which the driver can release the latch i' from the rack b^2 , after which, with the lever D as a handle, he can swing the reel-post, and thereby move the reel backward or forward, as desired.

The location of the lever D on the rear side of the reel-post, in connection with the location of the arm or sleeve C' for the reel-shaft in front of said post, as shown, brings the lever into a different transverse vertical plane from that of the reel-shaft, and I utilize this difference by bending the outer or lower arm of said lever, connecting with the slotted rib on the arm or sleeve C', forward toward the plane of said shaft, as shown in Fig. 3, thereby giving to said arm of the lever the function of a brace for steadying the reel and preventing it from rotating on the post.

L indicates the tumbling-shaft, which drives the reel, and which may be actuated from any suitable shaft on the machine. As shown in

Fig. 2, its upper end is feathered and has mounted upon it a sleeve and pinion casing m , adapted to slide up and down on said shaft, carrying a bevel-pinion m' with it, said pinion being rotated by said shaft. The pinion-casing is open on its outer side to allow the teeth of the pinion to engage a bevel-wheel O on the reel-shaft, and the upper end of the sleeve m is provided with an outwardly-projecting stud n , which passes through the hub o of the bevel-wheel O, a pin o' being passed through the end of the stud n for holding the wheel O in place thereon. The hub o has a sleeve-shaped clasp O' formed upon it, feathered internally at p , to engage the grooved end of the reel-shaft, and provided with lugs $p' p'$, through which a bolt is passed for clamping the sleeve-shaped clasp tightly to the reel-shaft. The inner end of this sleeve-clasp is left open on one side, as shown at o^2 in Fig. 3, to facilitate the insertion or removal of the pin o' . The clasp O' revolves with the wheel O on the stud n , carrying the reel-shaft with it, and as the latter is adjusted up and down on the post A or relatively to the reel-driving shaft L the pinion m' moves with it and is thereby always held in proper working relation to the bevel-wheel O.

The operation of the parts will be readily understood. Supposing the reel to be in its lowest position, (shown in Fig. 1,) and it is desired to raise it, the driver grasps the lever D and the thumb-latch lever f^2 , and, operating the latter to release the lever D and its clasp D' from the disk E, draws the lever inward and downward and causes the spur d on the outer end of said lever to travel outward through the slot in the rib c' until it reaches the outer end of said slot, as shown in Fig. 2, when the reel will be in its highest position, or to any intermediate position, as required, when by releasing the lever f^2 the lever D and reel will be immediately locked in such position by the engagement of the latch f with the disk E, as explained. By the arrangement of the lever fulcrum bolt or pin as described, in connection with the slotted reel-bracket, the lever is adapted to move in a plane parallel with the axis of the reel, and the bracket is adapted to move by said fulcrum-bolt on the reel-post and the lever fulcrum-bolt, its supporting-rib serving to guide and give lateral support to the bracket.

The operation of the other parts will be understood without further description.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the reel-post and a reel adjustable thereon, of a reel-lifting lever connected to said reel and moving in a vertical plane substantially parallel with the axis of the reel-shaft.

2. In a harvesting-machine, the combination, with the reel-post and reel, of a reel-adjusting lever pivoted on said post and moving

in a vertical plane parallel with the reel-shaft, and a reel-bracket sliding by the pivot of said adjusting-lever on said post.

3. The combination, with the tubular reel-post and the reel, of the adjustable slotted reel-bracket sliding on said post and having a slotted arm in which the reel-shaft is journaled and a reel-adjusting lever pivoted on said post and engaging said slotted arm, the slot in the bracket permitting the latter to pass the pivot of the lever, substantially as and for the purpose described.

4. The combination, with the tubular reel-post and the reel, of the adjustable slotted reel-bracket sliding on said post and having a slotted arm in which the reel-shaft is journaled, a reel-adjusting lever pivoted on said post to move in a transverse vertical plane parallel with the reel-shaft and engaging said slotted arm, and a rib on the tubular post, the slot in the reel-bracket engaging said rib for preventing the rotation of the slotted reel-bracket and permitting the latter to pass the pivot of the lever, substantially as described.

5. The combination of a reel-post, a reel,

and a reel-lifting lever fulcrumed on the reel-post and connected with the reel and moving in a plane parallel, or nearly so, with the axis of the reel-shaft.

6. The combination, with the reel-post, of a reel, a reel-adjusting lever pivoted on said post, a reel-bracket sliding on said post and having a slotted arm in which the reel-shaft is journaled and with which the lever engages for raising and lowering the reel, substantially as described.

7. The combination, with the reel-post, of a reel-bracket adjustable on said post and having a slotted arm or sleeve in which the reel-shaft is journaled, a reel, a reel-adjusting lever pivoted on said post and engaging said arm for adjusting the reel, and means, substantially as described, for preventing the reel-bracket from rotating on the reel-post.

In testimony whereof I have hereunto set my hand this 21st day of November, A. D. 1887.

LEWIS MILLER.

Witnesses:

O. L. SADLER,
W. N. MEANS.