

C. YOUNG.
HARVESTER.

No. 253,809.

Patented Feb. 14, 1882.

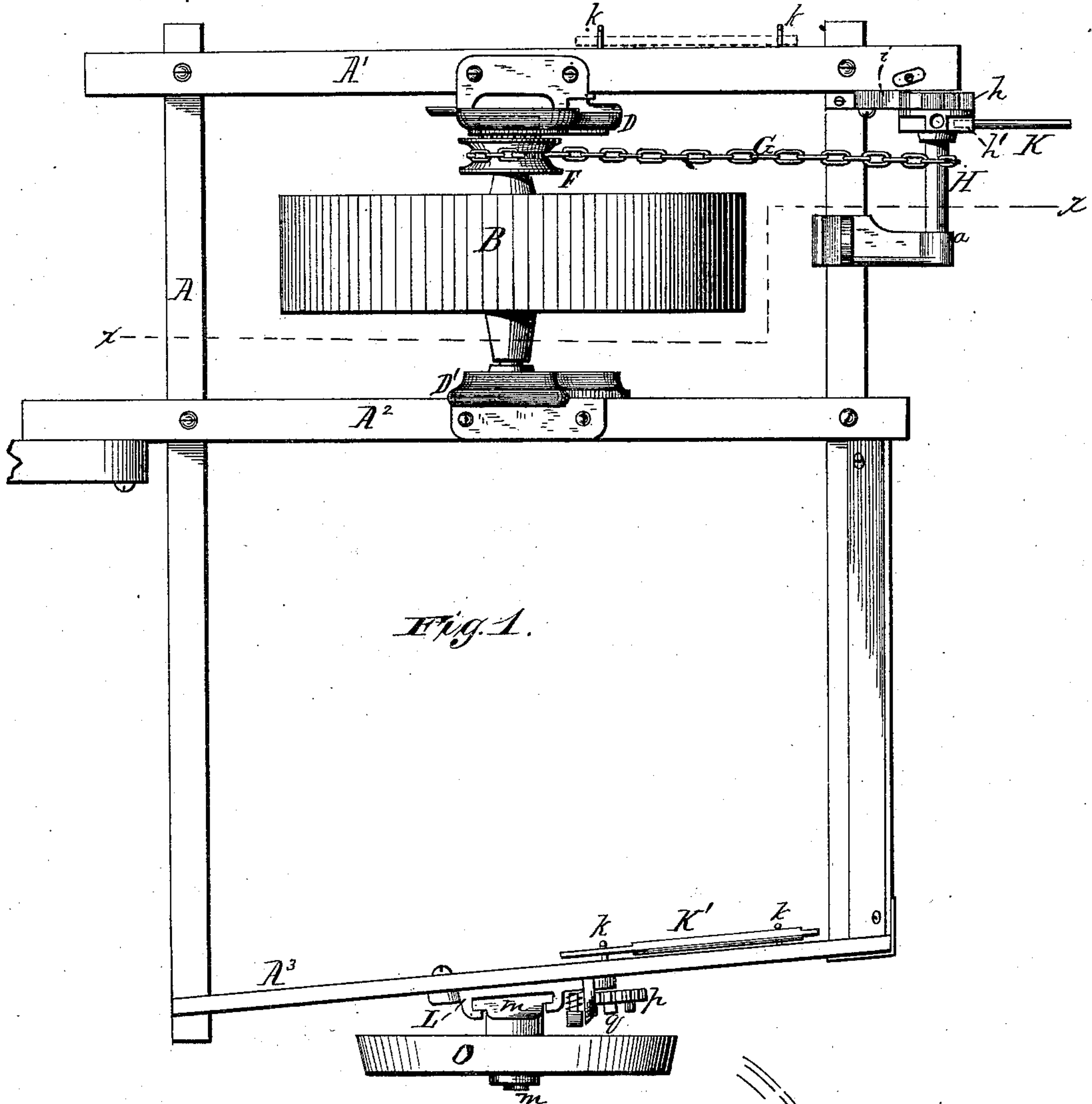
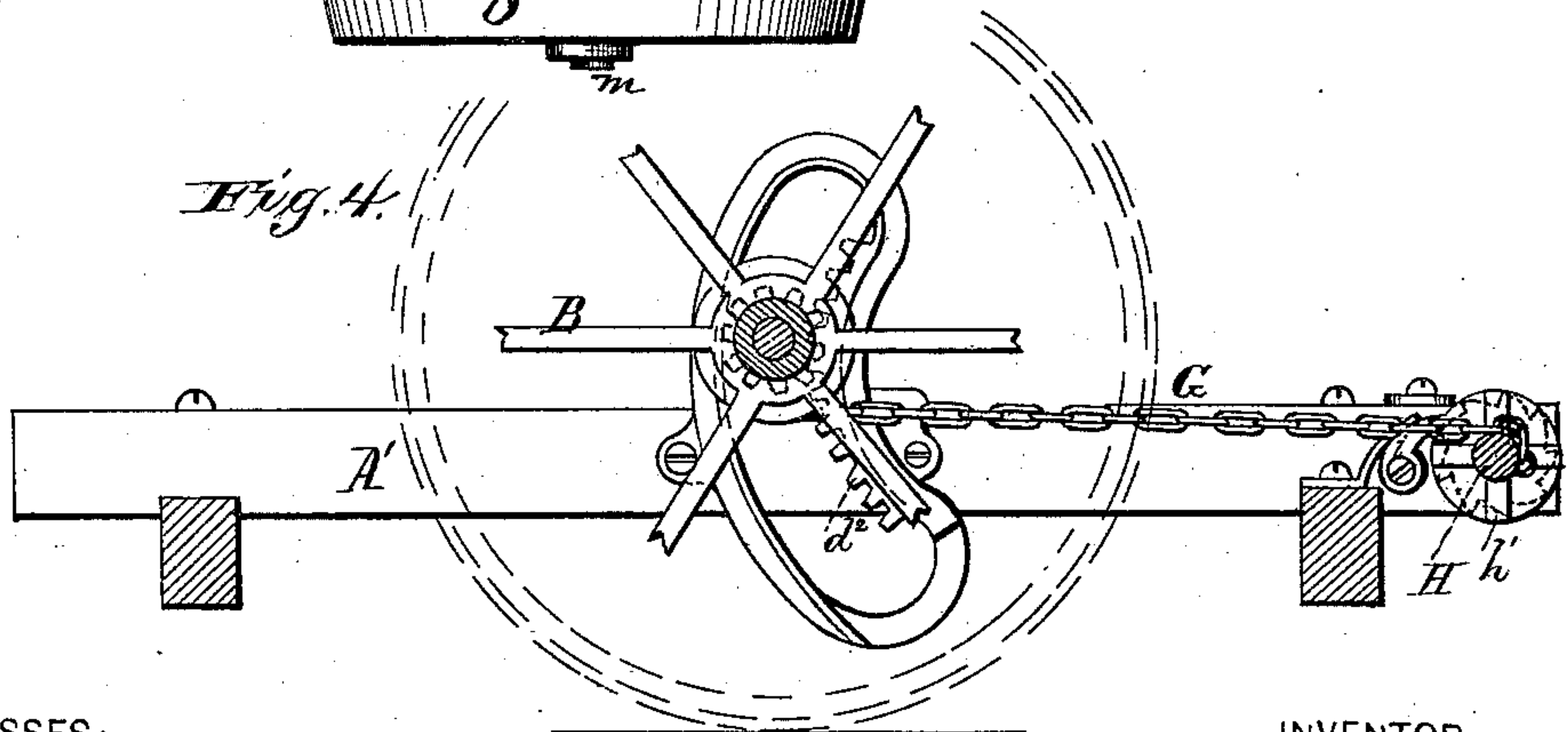


Fig. 4.



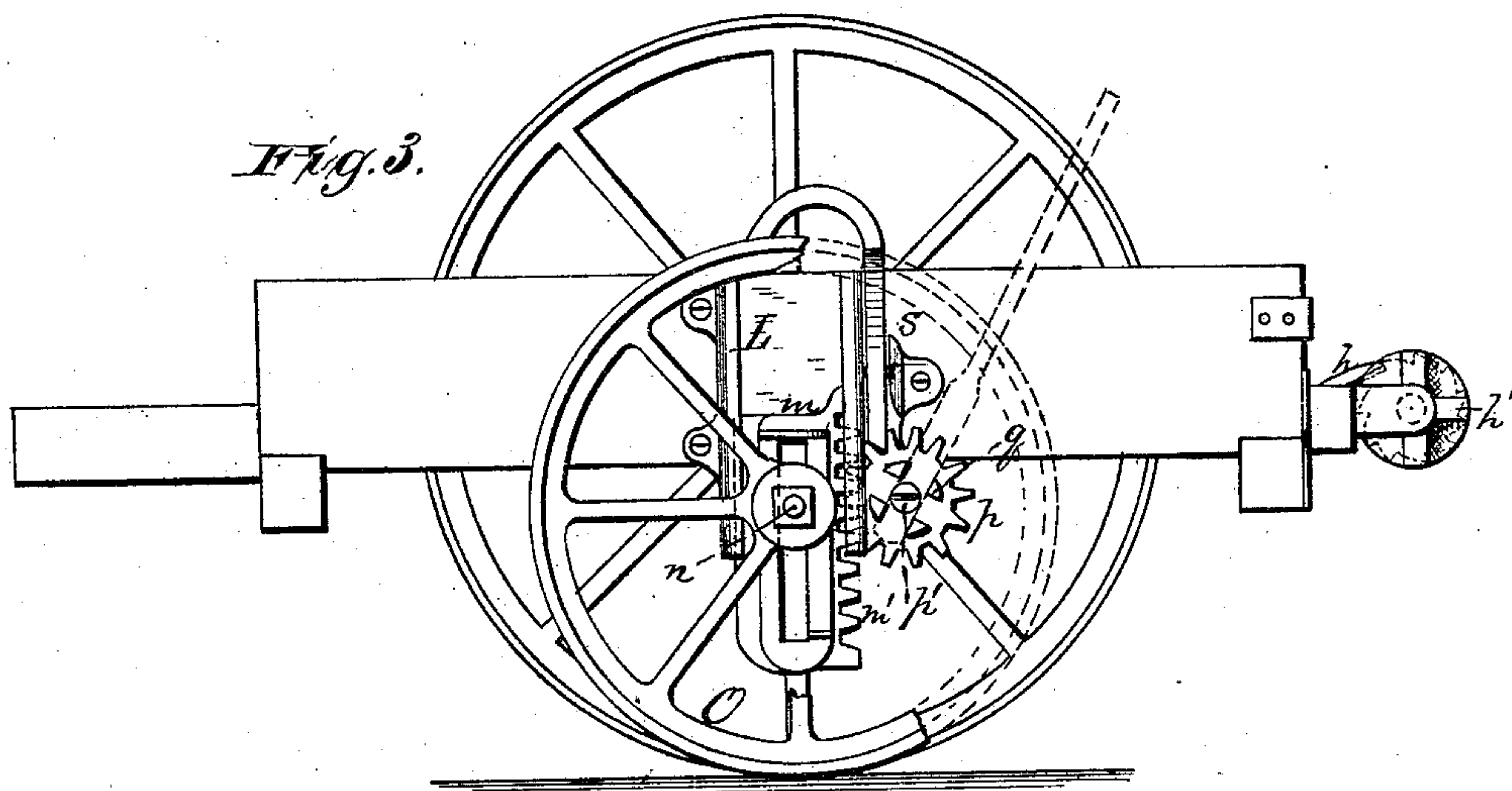
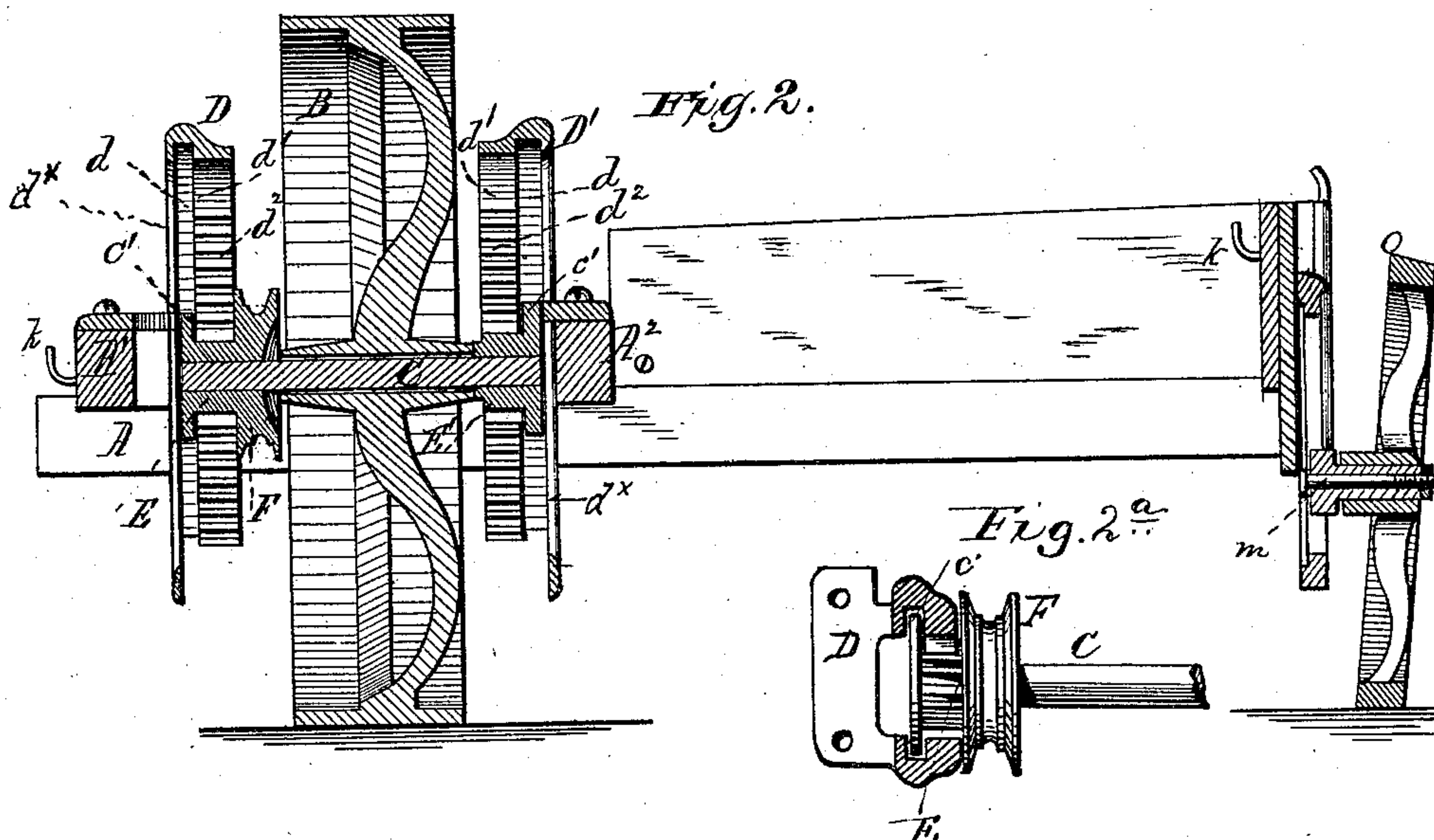
WITNESSES:
Frank L. Curand
Alexander Mahon

INVENTOR
Calvin Young
by Ed. M. Smith
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UNITED STATES PATENT OFFICE.

CALVIN YOUNG, OF AUBURN, NEW YORK, ASSIGNOR TO D. M. OSBORNE,
OF SAME PLACE.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 253,809, dated February 14, 1882.

Application filed April 11, 1879.

To all whom it may concern:

Be it known that I, CALVIN YOUNG, of Auburn, in the county of Cayuga, State of New York, have invented certain new and useful Improvements in Harvesting-Machines, of which the following is a full and exact description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan or top view of a harvester-frame with my improvements applied. Fig. 2 represents a vertical transverse section through the same, taken in line with the axle; and Fig. 2^a, a horizontal section through one of the rack-standards, showing a plan view of one end of the axle with its pinion and chain wheel or pulley. Fig. 3 is a grain side elevation of the frame, showing the devices for adjusting the height of the same; and Fig. 4 represents a vertical longitudinal section taken on the line *xx* in Fig. 1.

The invention relates to a novel construction of the rack-standards attached to the frame of the machine for the support and adjustment of said frame on the axle, and to a novel construction of the axle employed in connection with said standards, the standards being provided each with a toothed rack and an open guideway at one end of or adjacent to the rack, which is formed upon one side of the slot or opening into the guideway, the guideway being closed at one end and open at the other to permit the introduction and withdrawal of the axle, the latter being provided on its ends with disks or button-shaped formations moving in said guideways, and with pinions engaging with the racks, actuating and raising or lowering the frame.

In the accompanying drawings, A represents the main frame of the harvesting-machine, made in any usual or preferred form; and B is the main drive-wheel, mounted and turning loosely on the axle C, the latter being secured and made adjustable up and down between two longitudinal frame-timbers, A' A², as follows:

D D' are grooved or slotted plates or standards secured to the adjacent vertical faces of the frame-timbers A' A², said standards, as also the grooves therein, being by preference

curved in the arc of a circle of which the pinion-shaft (not shown) is the center, and extending both above and below the frame-timbers, to which they are attached, though with certain forms of gearing this is not essential. The grooves are made in what is known as T or dovetail form in horizontal section, consisting of the groove proper (indicated at *d*) and the opening or slot *d'* into the same, opening the groove at its inner side, so that the end of the axle may pass into and move up and down therein. The portion or slot *d'* of the groove is made of less width (from front to rear) than portion *d* by means of flanges formed on the plate or standard at the inner side of the groove or guideway *d*, both in front and in rear thereof, said flanges forming the inner wall of the groove, as shown. The outer wall of the guideway *d*^x is also shown slotted or cut away at *d*, opposite the slot *d'*, giving the standard a skeleton form, and reducing the amount of metal required for its construction. Upon one of the flanges, at the side of the slot or opening *d'*, is formed a toothed rack, *d*², with which a pinion, E or E', on the axle C engages for actuating the racks and raising the frame. The ends of the axle pass through the slots or openings *d'* into the grooves *d*, and are provided with disks or button-shaped formations C', which move up and down in the grooves *d*, preventing end movement or displacement of the axle. These disks or buttons are by preference made fast on the axle, so as to revolve with it as the latter is rotated in raising or lowering the frame, and may be cast in one piece with the pinions, as shown; but they serve, independently of the latter, to prevent end-play of the axle. They may, however, be elongated, adapting them to slide in the grooves or guideways *d*, in which latter case the axle will necessarily have to be made to rotate in bearings therein. The pinions E E' are fast on the axle, as is also a sprocket-wheel or sheave, F, through which the axle is actuated for raising the frame, as will be explained.

G is a chain or stout cord, one end of which is secured to and winds upon the wheel or pulley F, the other end being connected with and winding upon a shaft or drum, H, in the form

of a windlass mounted in suitable bearings on the frame, and, provided with a ratchet-wheel, *h*, and a pawl, *i*, engaging therewith, serves to hold it and the shaft at any desired adjustment. A hub or collar, *h'*, on the shaft *H*, has a series of radial sockets formed in it for the reception of one end of a rod or lever, *K*, by means of which the shaft is rotated for winding the chain upon it when it is desired to raise the frame.

The operation of the parts will be readily understood. The disks or buttons *C'* on the ends of the axle are inserted in the open lower ends of the retaining grooves or guideways *d* of the standards *D D'*, and as the frame descends the axle is rotated through the action of the racks *d² d²* and pinions *E E'*, the chain *G* by such rotation being wound upon the wheel *F* until the frame is at its lowest point of adjustment, and while in this position the opposite end of the chain is secured to the shaft or windlass *H*. If now it is desired to raise the frame, the windlass is rotated by means of the lever *K*, wrapping the chain upon it and unwrapping it from the wheel *F*, rotating the latter and with it the pinions *E E'*, and the latter, acting upon the racks *d² d²*, serve to lift the frame until the desired height or adjustment is secured, when the pawls *i* and ratchet *h* serve to hold it at such adjustment. To lower the frame it is only necessary to release the windlass from its retaining-pawl, when the frame will descend by its own gravity as far as permitted, the racks again acting to rotate the axle and wrap the chain upon the wheel *F*.

The outer longitudinal bar, *A³*, of the platform-frame has a plate or standard, *L*, secured to it, provided in its outer face with a vertical groove made in *T* or dovetail shape, and in which is fitted a sliding plate or block, *m*, to which the stud-axle *n*, carrying the grain-wheel *O*, is secured. One edge of this plate has a toothed rack, *m'*, formed upon it, and a pinion or spur wheel, *p*, mounted on a stud-shaft, *p'*, on the plate *L*, engages said rack and serves by its rotation to move the block or slide *m*, and with it the wheel *O*, up and down relatively to the frame-bar *A³*, for adjusting the height of the latter as desired. The wheel *p* is provided on its outer face with spurs or ribs *q*, forming radial sockets between them for the

reception of a bar or lever, *K'*, by means of which said wheel *p* is rotated as desired. A spring latch or pawl, *s*, engages with the wheel *p*, for holding it, and with it the rack-plate *m* and wheel *O*, at any desired adjustment relative to the frame-bar *A³*. Sockets or hooks *k* are provided at convenient points on the frame for the safe retention of the levers *K* and *K'* when not in use.

Parts of the machine not particularly described may be constructed in any usual or preferred way.

Having now described my invention, I claim—

1. The button-shaped formations at each end of the axle, formed to act independently of the pinions thereon, for preventing endwise movement, in combination with the open guideway in the rack-standards, in which guideways said button-shaped formations have a vertical movement.

2. The supporting-plates attached to the frame of the machine at either end of the axle, each provided with a rack for the pinion on the axle, and an open guideway for the end of said axle formed by flanges in front and rear thereof, in combination with the axle having disks or button-shaped formations at its ends.

3. The supporting plates or standards for the main axle, each formed with a rack for the pinion, an open guideway, raised flanges at the sides of said guideway, meeting each other at the top and open at the bottom, and a channel outside of said flanges for the reception of a disk or button upon the end of the axle.

4. The combination, with the supporting plates or standards, formed, as described, with racks, open guideways, raised flanges, and underlying channels, and the axle and its pinions, and the disks or buttons on the ends of said axle.

5. The combination, with the supporting plates or standards having the racks, open guideways, raised flanges, and underlying channels, as described, of the main drive-wheel axle, with its pinions, disks, or buttons, and chain-wheel or sheave for actuating the same, substantially as described.

CALVIN YOUNG.

Witnesses:

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WM. O. BAKER.