

(No Model.)

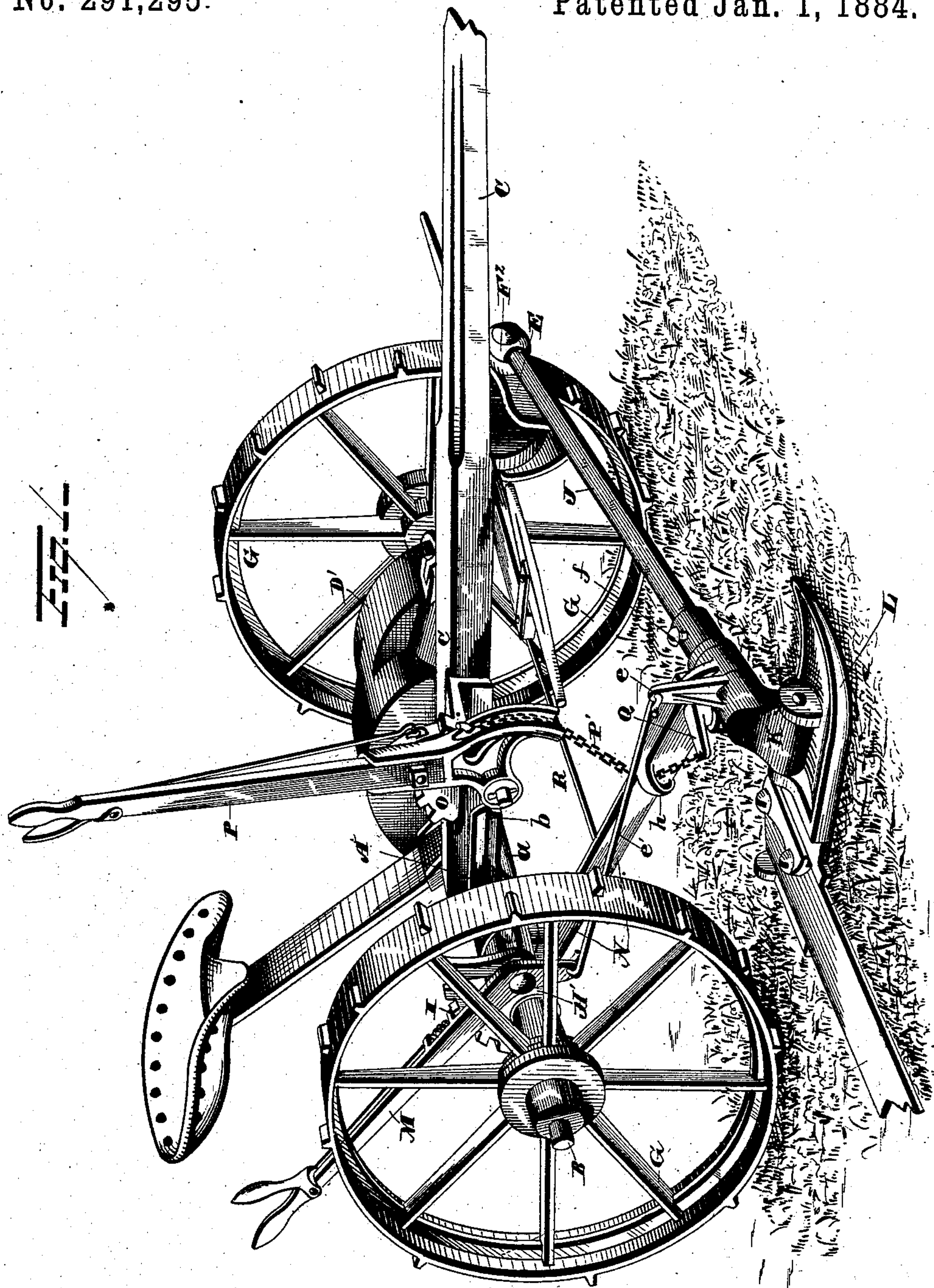
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S. C. COBB & N. A. WHEELER.

HARVESTER.

No. 291,295.

Patented Jan. 1, 1884.



WITNESSES
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(No Model.)

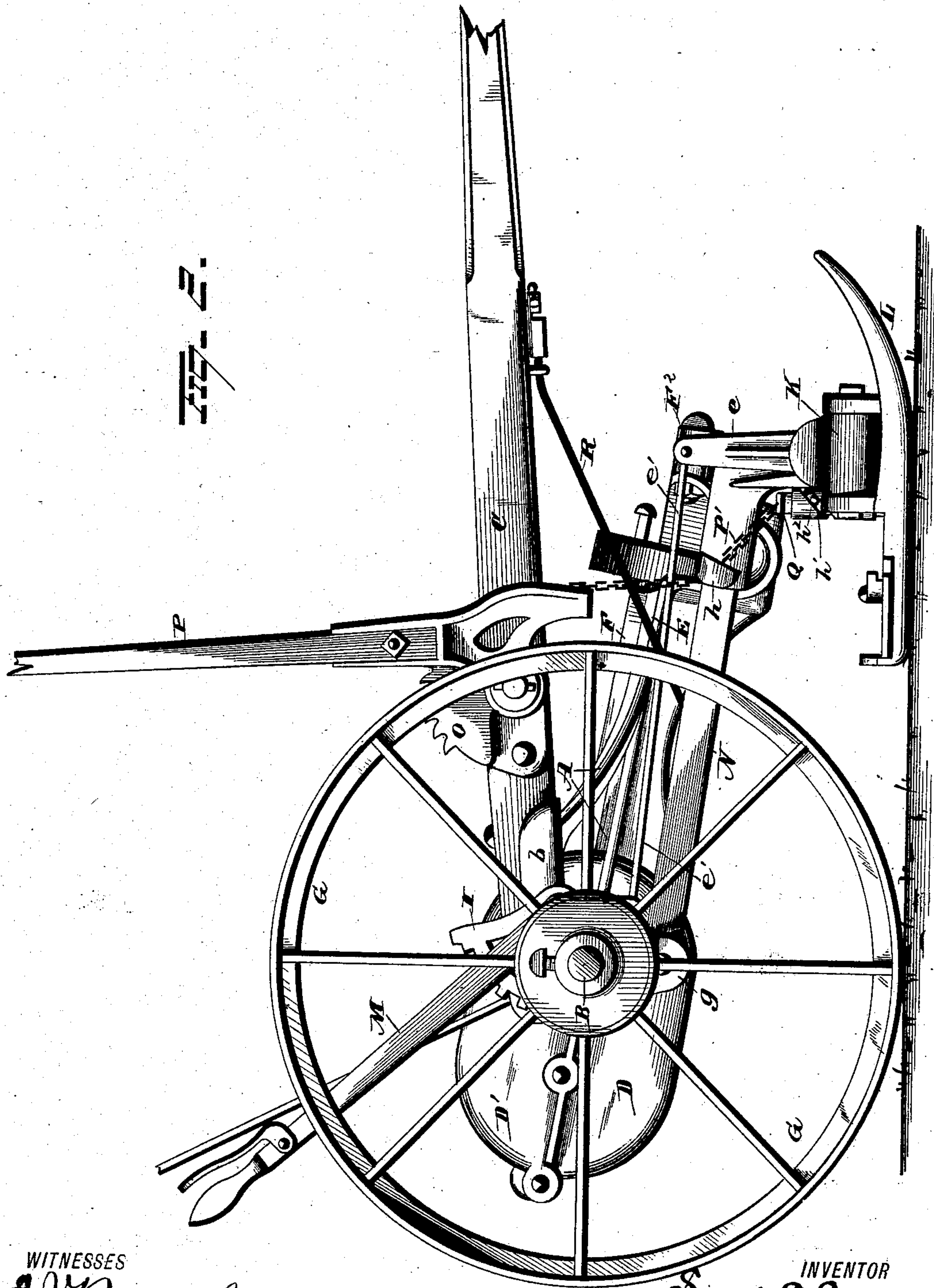
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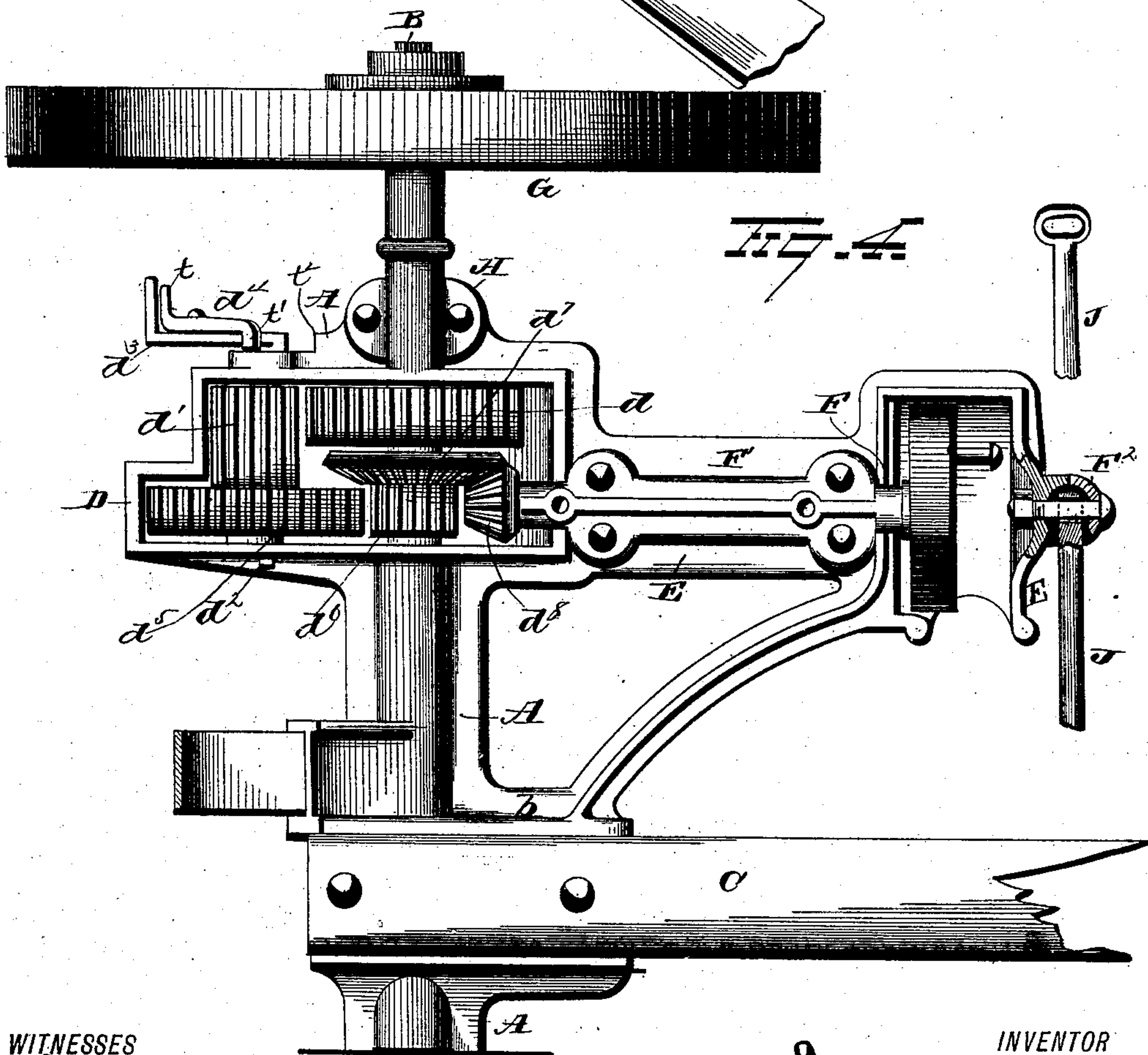
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4 Sheets—Sheet 3.

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(No Model.)

4 Sheets—Sheet 4.

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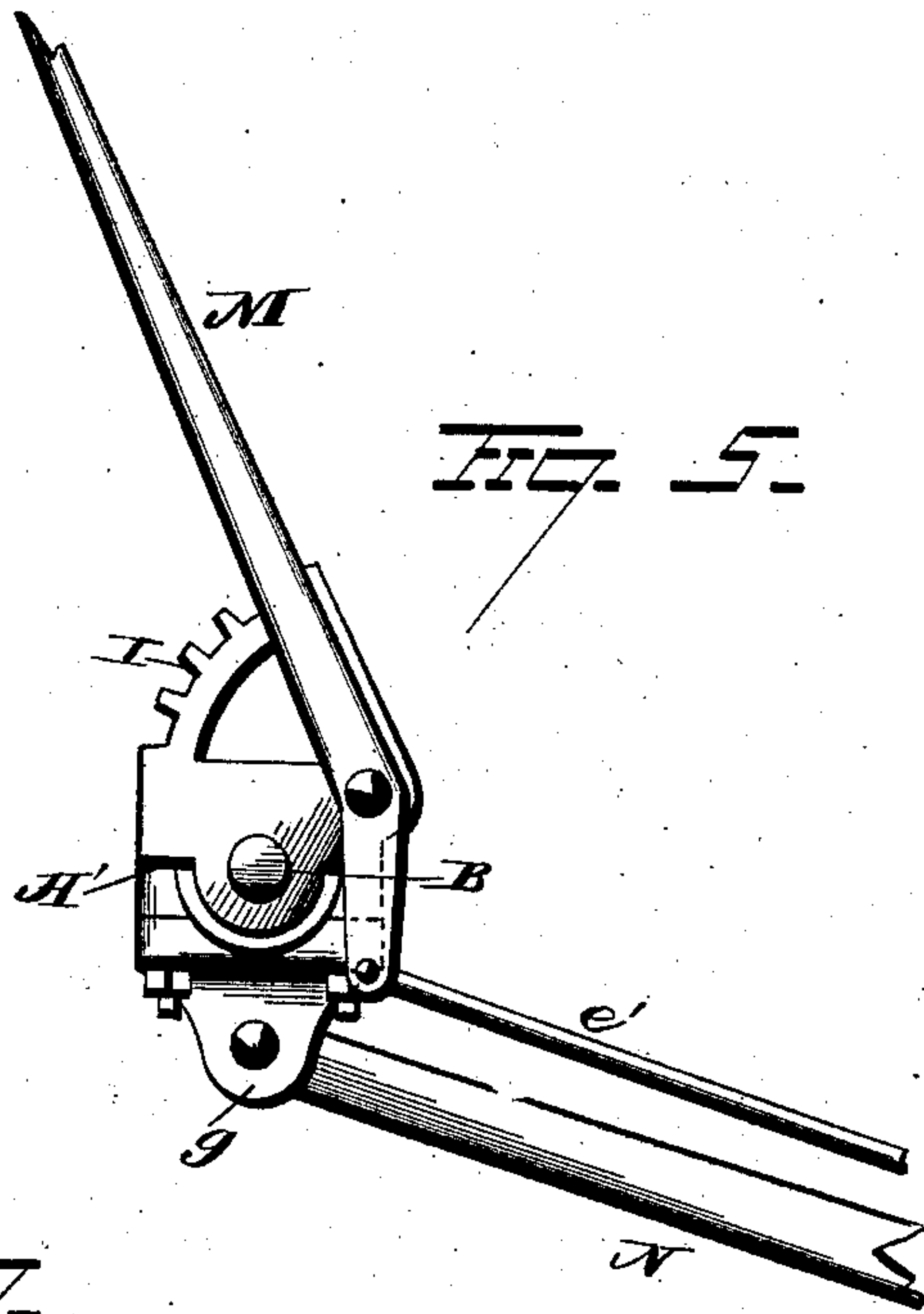


FIG. 5.

FIG. 7.

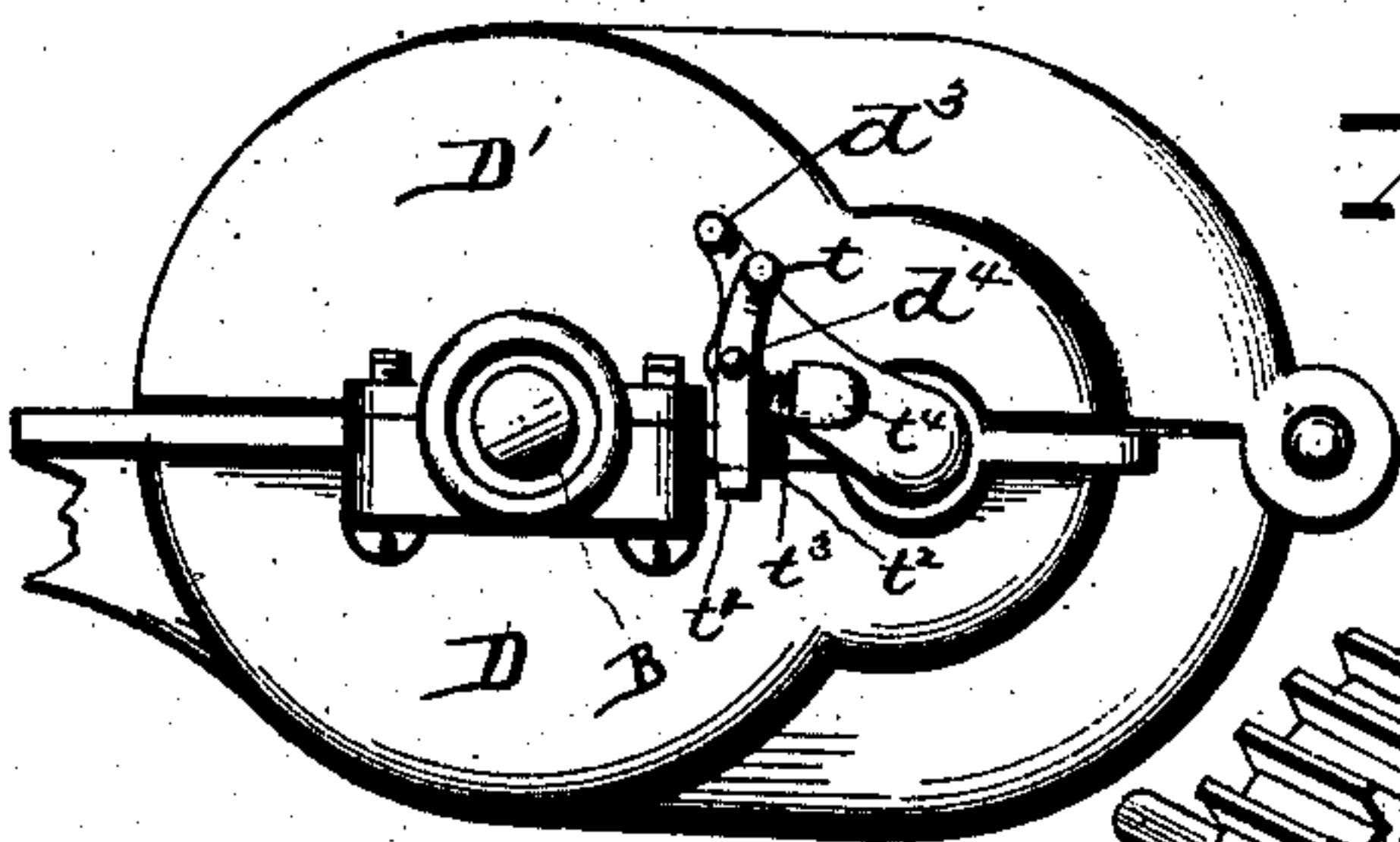


FIG. 6.

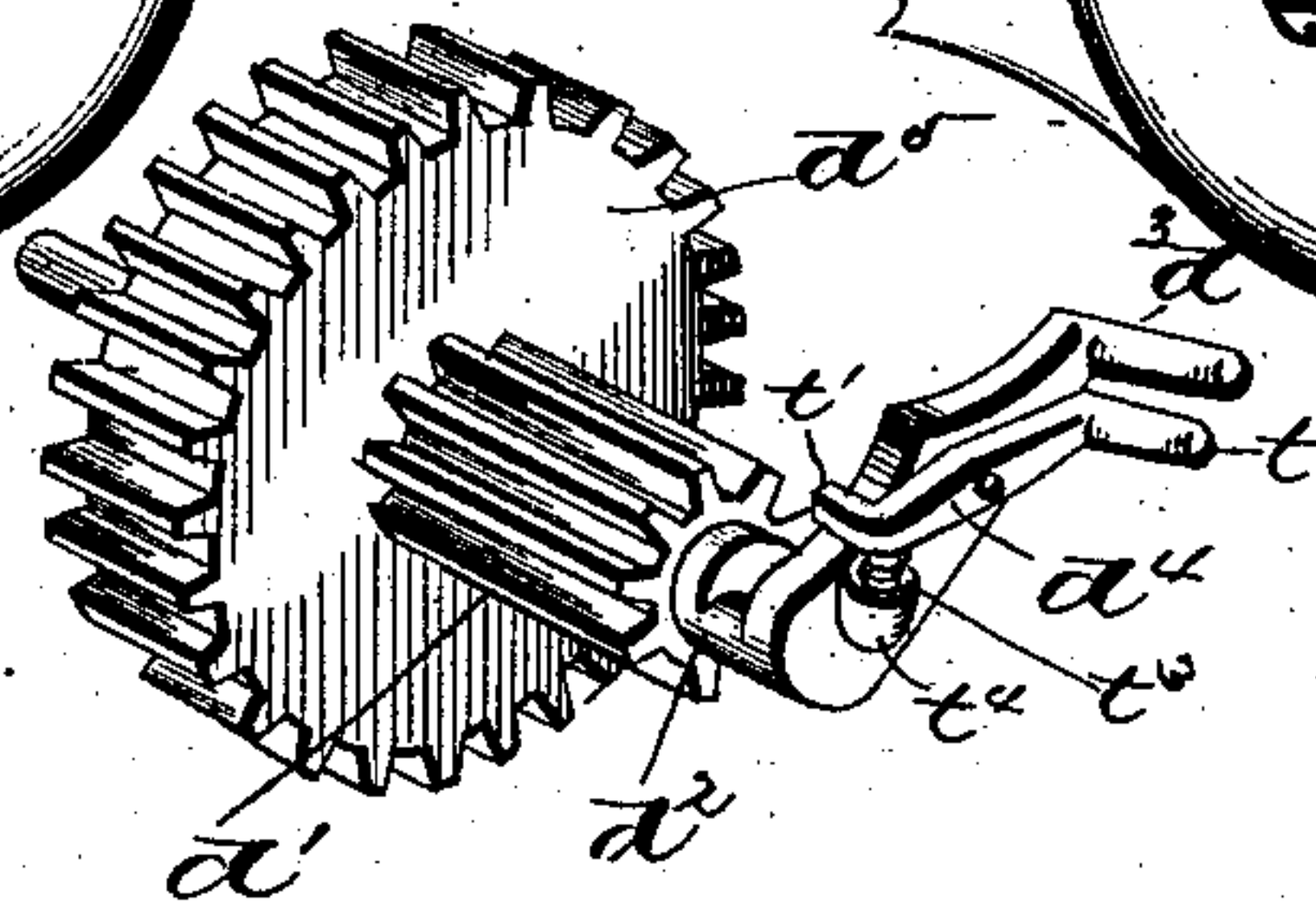
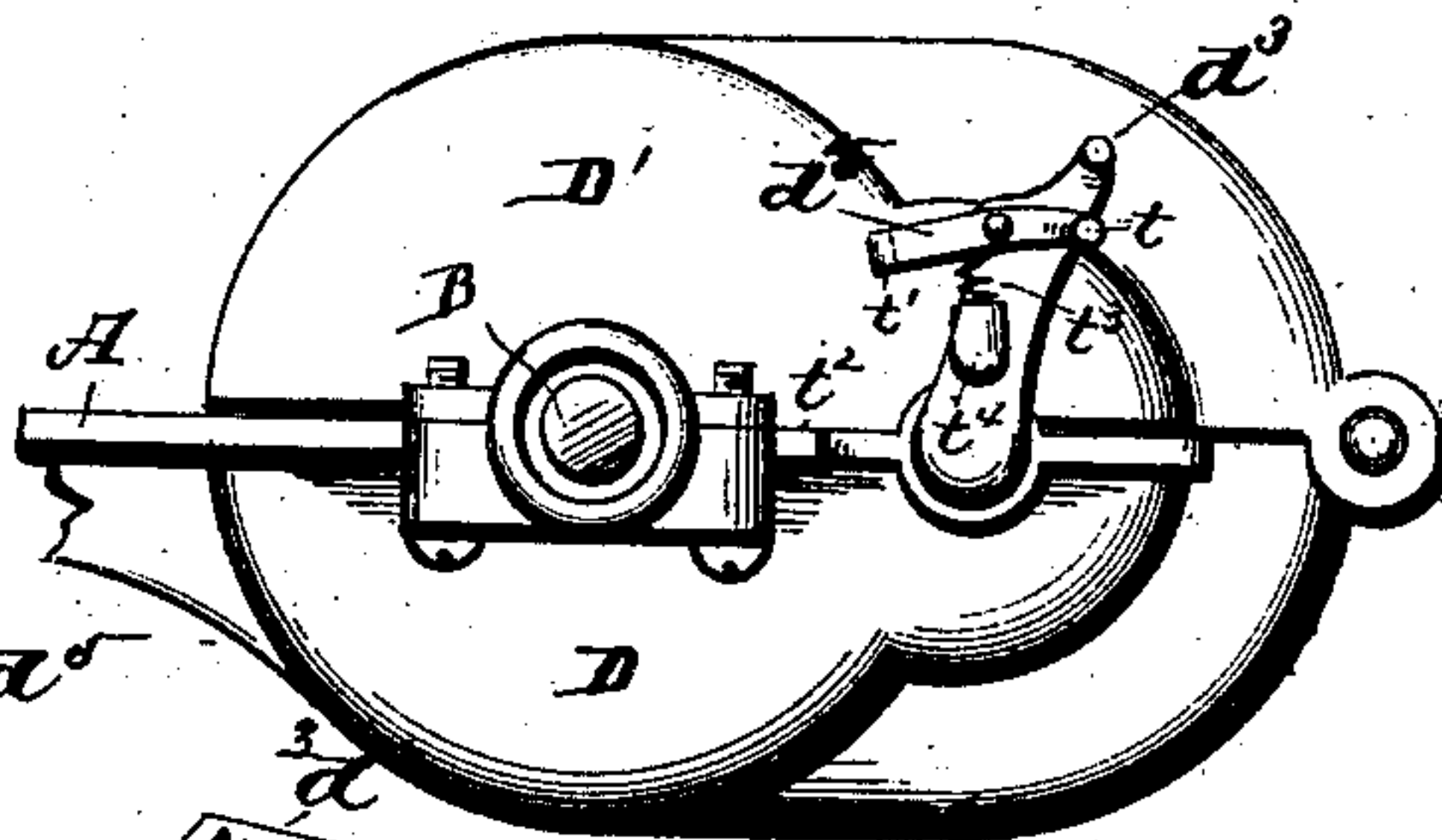


FIG. 8.



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UNITED STATES PATENT OFFICE.

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ASSIGNORS TO THE JANESVILLE MACHINE COMPANY, OF SAME PLACE.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 291,295, dated January 1, 1881.

Application filed July 9, 1883. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL C. COBB and N. A. WHEELER, of Janesville, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Harvesters; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in harvesters, the object of the same being to provide a machine that will combine simplicity and economy in construction with durability and efficiency in use; and with these ends in view our invention consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of our improved machine. Fig. 2 is a side view of the same. Fig. 3 is a detached perspective view, showing the manner of tilting the finger-bar. Fig. 4 is a plan view, showing the pinions for operating the crank-shaft. Fig. 5 is an enlarged view, showing the manner of securing the connecting-bar to the frame of the machine; and Fig. 6 is a detached perspective view of the pinions and cam-shaft. Fig. 7 is a detached view in elevation, showing the cam or eccentric shaft in its locked position; and Fig. 8 is a similar view, showing it in its unlocked position.

A represents the frame proper, which consists simply of an elongated bearing, *a*, through the center of which the axle B passes. This bearing is enlarged transversely at *b*, to form a seat for the rear end of the draft-tongue C, and is provided near one side with an open shell or casing, D, in which the driving-pinions work. This shell is provided with a forwardly-extending arm, E, which forms a rest or bearing for the drive-shaft F. Both of the ground-wheels G are loosely mounted on the axle B, and both of them are connected thereto by backing-ratchets, to enable the machine to be backed without working the cutter. The axle B extends throughout the entire width of the frame A, but is supported principally by the boxes H and H', which latter are formed independently of the frame and connected

thereto by screw-bolts or otherwise. These boxes closely embrace the axle, and the box H is simply provided with two lateral projections arranged in the same horizontal plane, and adapted to rest on corresponding projections formed integral with the frame A. The box H', on the opposite side of the machine, is similar to the box H, and in addition thereto is provided with the sector-rack I, formed integral therewith. Within the box formed by the shell D and the cover D' are situated the driving-pinions. The first wheel, *d*, of the train is rigidly secured to the axle B and revolves therewith, and meshes with the smaller pinion *d'* on the cam-shaft *d*². This shaft *d*² is journaled in the shell D, and is provided at one end with a handle, *d*³, to which the catch *d*⁴ is pivotally secured. When the handle or crank *d*³ is moved upward and backward from the axle B, as illustrated in Fig. 8, the cam-shaft *d*² necessarily turns therewith and carries the pinion *d'* away from and out of engagement with the pinion *d*, and when turned in the opposite direction carries the pinion *d'* toward and into engagement with the pinion *d*. The catch *d*⁴ is pivoted to the handle *d*³, and is provided at one end with the handle *t* and at its opposite end with a lateral arm, *t'*, which latter engages beneath a projection, *t*², on the shell D, and is retained in engagement therewith by means of the spiral spring *t*³, one end of which is seated in a pocket, *t*⁴, on the side of the handle *d*³, while its opposite end bears against the catch; hence, when the handle *d*³ is thrown forward, the catch *d*⁴ engages the projection *t*² on the shell and retains the pinions in the cam or eccentric shaft in engagement with the pinions on the axle. By pressing forward on the handle *t* of the catch its arm *t'* is disengaged from the projection *t*² on the shell, thereby allowing the handle *d*³ to be moved backwardly and throw the pinions out of gear.

Rigidly secured to the pinion *d'*, or formed integral therewith, is a large pinion, *d*⁵, which meshes with the small pinion *d*⁶, loosely journaled on the axle B, and rigidly secured to or formed integral with the large bevel-wheel *d*⁷. This bevel-wheel *d*⁷ meshes with the small bevel-wheel *d*⁸ on the drive-shaft F, and turns

the latter when the machine is moving forward. When the machine is backed for any purpose whatever, the ratchet is brought into play and leaves the wheel free to revolve on the axle without turning the latter. In moving the machine from field to field or from farm to farm, it is simply necessary to withdraw the catch d^1 and move the handle d^2 rearwardly, as described, which breaks up the train of pinion-wheels and prevents the wheel d from transmitting its motion to the bevel-wheel d^1 . The drive-shaft F is journaled in the bearing F', which latter rests on and is secured to the forwardly-extending arm E of the frame A by screw-bolts or otherwise. This shaft F is provided at its outer end with a crank or a wheel having a wrist-pin thereon, to which one end of the pitman which operates the cutter is secured. This crank or its equivalent is protected by the arm E, which partly incloses the crank on the end of the shaft, and also forms a support for the inner end of the connecting-bar J, which latter connects the shoe to the frame proper and forms a portion of the flexible frame, to which the finger-bar is directly secured. The inner end of this bar J is provided with an oblong curved head, which rests in a corresponding semicircular recess formed in the end of the arm E. This head is provided with a slot for the passage of a screw-bolt, and is covered and protected by the cap F², which is also secured in place by the screw-bolt. The flexible connection thus formed is situated in a line with the drive-shaft F, so as to allow the outer end of the bar J a limited rolling motion, and also a radial motion, which thus provides for elevating and depressing the front edge of the cutter, and also for raising and lowering the cutting apparatus from the ground. The outer end of the connecting-bar J terminates in the hinge K, to which the shoe L is pivotally secured. This hinge is provided with an upwardly-extending arm, e , to which the lower end of the tilting-lever M is connected by the rod e' . This lever is pivoted to the sector-rack of the bearing H', and is provided with a spring-actuated pawl for holding the lever at the desired angle. Thus it will be seen that by moving the upper end of the lever M backward the bar J is partly turned, and the front edge of the finger-bar, which is rigidly secured to the shoe, is depressed, so as to run nearer to the ground. By moving the lever M in the opposite direction, the toe of the shoe is turned up and the front edge of the finger-bar elevated.

N is a thrust or push bar, the front end of which loosely embraces the connecting-bar J between the hinge and collar f , so as not to interfere with the rolling motion of the bar J, while the rear end thereof is pivotally connected to the depending hanger g , removably secured to the under side of the frame directly under the axle-box H'. This hanger is also constructed to permit of a free up-and-down movement of the rod J.

From the foregoing it will be seen that the

greater portion of the strain is borne by the push-bar, while the bar J prevents the finger-bar from moving longitudinally, and the two combined form a flexible frame, which can be elevated and lowered at will by the driver. The draft-tongue is provided with a sector-rack, O, to which the lever P is pivotally secured. This lever is held in place by a suitable dog or pawl, and is connected to one end of a chain, P', the opposite end of which is connected to the "gag-iron" Q. This chain passes through the loop h of the thrust-bar, and besides operating the gag-iron also serves to elevate the flexible frame. The gag-iron is an L-shaped bolt provided with a laterally-extending lug, h' , which moves in a spiral slot formed in the vertical box h^2 , in which the gag-iron moves. This box in the present instance is secured to the hinge on the end of the bar J. The shoe L is provided with a laterally-projecting finger, i , which latter rests immediately under the box h^2 and holds the shoe, and consequently the finger-bar and cutter, in proper position. The lower end of the vertical arm of the bolt also rests on this toe, and the horizontal arm is connected to the chain before referred to. By putting on the chain P' the gag-iron turns in its box, and, by means of the laterally-projecting lug and spiral groove before referred to, is also caused to descend. As the bolt descends, the lower end thereof bears on the finger i of the shoe L and turns the shoe, which latter elevates the finger-bar and cutter. This improved device last described enables us to so construct our harvester that the finger-bar can drop over the side of a bank or into a furrow and cut the grain as well as upon a level surface, and by partly turning the gag-iron the finger-bar is caused to come to a horizontal position, where it can be held as long as desired. Again, by simply turning the gag-iron around as far as it will go, the finger-bar is elevated sufficiently higher to pass over all ordinary obstructions, and by continuing to draw on the chain after the finger-bar is elevated the adjacent ends of the bar J and push-bar and the shoe and its connected parts are elevated above the ground.

R is a draft-rod connecting the thrust-bar to the whiffletree. This draft-rod is connected to the thrust-bar between the frame A and the rod J, and the outer ends are connected to the whiffletree, which latter is free to slide a limited distance on the draft-tongue. By means of this construction, the draft-rod, when the team is in motion, tends to lift the weight of the cutting apparatus from the ground, and thus reduce the friction of drawing the cutting apparatus over the ground. Another good result effected is that when the cutters strike an obstruction the strain is transmitted to the team through the flexible frame and draft-rod, and thus the main frame of the machine is relieved of the shock and a liability of breaking the important parts avoided. Another result accomplished is that the tendency of the right-hand drive-wheel to rise from the ground in

heavy cutting is relieved and the mower has a much stronger cutting-power than when a draft-rod is not employed.

This machine is exceedingly simple in construction, is durable and effective in use, is of few parts, and comparatively cheap to manufacture.

It is evident that slight changes in the construction and relative arrangements of the several parts might be resorted to without departing from the spirit of our invention, and hence we would have it understood that we do not confine ourselves to the exact construction shown and described, but consider ourselves at liberty to make such changes and alterations as fairly fall within the spirit and scope of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a harvester, the combination, with the main axle, a cam or eccentric shaft, and pinions on said axle and eccentric-shaft, of a handle secured to the cam or eccentric shaft, a catch, d^1 , pivoted to the handle and provided with an arm, t' , adapted to engage a projection on the frame and retain the pinions in engagement, substantially as set forth.

2. In a harvester, the combination, with the main axle, a cam or eccentric shaft, and pinions on said axle and cam-shaft, of a catch pivoted to the handle, said catch having an arm adapted to engage the under side of a projection on the shell or frame, and a spring interposed between the handle and catch for preventing the accidental displacement of the latter, substantially as set forth.

3. The combination, with the main frame having a hemispherical bearing formed in its outer end, of the connecting-bar having a spheroidal end, a hemispherical cap, and a bolt for securing the parts together, substantially as set forth.

4. The combination, with the main frame, a straight connecting-bar connected at one end to the main frame, substantially as described, so as to have a vertical and rocking movement,

and a thrust-bar pivotally secured at one end to the main frame, and at its other end provided with a collar, in which is supported and allowed to rotate the free end of the connecting-bar, of a shoe hinged to the free end of the connecting-bar at a point in advance of the cutter-bar, and an arm, connecting-rod, and hand-lever for imparting rotary adjustment to the connecting-bar, substantially as set forth.

5. The combination, with the connecting-bar, hinged shoe, and thrust-bar provided with a collar at its forward end, in which is supported and allowed to rotate the outer end of the connecting-bar, of a gag-iron for tilting the shoe, a hand-lever, and a chain connecting the gag-iron and thrust-bar with said handle, substantially as set forth.

6. The combination, with the hinged shoe, of a combined rotary and reciprocating gag-iron, a hand-lever, and a chain connecting the hand-lever and gag-iron, substantially as set forth.

7. The combination, with the hinged shoe, an elongated bearing having a spiral slot connected with the hinge-section, and a gag-iron provided with a lug that engages said spiral slot, and with an arm at its upper end, of a hand-lever and a chain connecting the hand-lever and the arm on the gag-iron, substantially as set forth.

8. The combination, with the connecting-bar, the vertical box or bearing having a spiral slot therein, the shoe having a finger which rests under the box, and the thrust-bar, of an L-shaped bolt having a laterally-projecting lug which moves in the spiral slot of the box or bearing, and device for turning the bolt.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

SAMUEL C. COBB.

NELSON A. WHEELER.

Witnesses:

ISAAC FARNSWORTH,

L. L. ROBINSON.