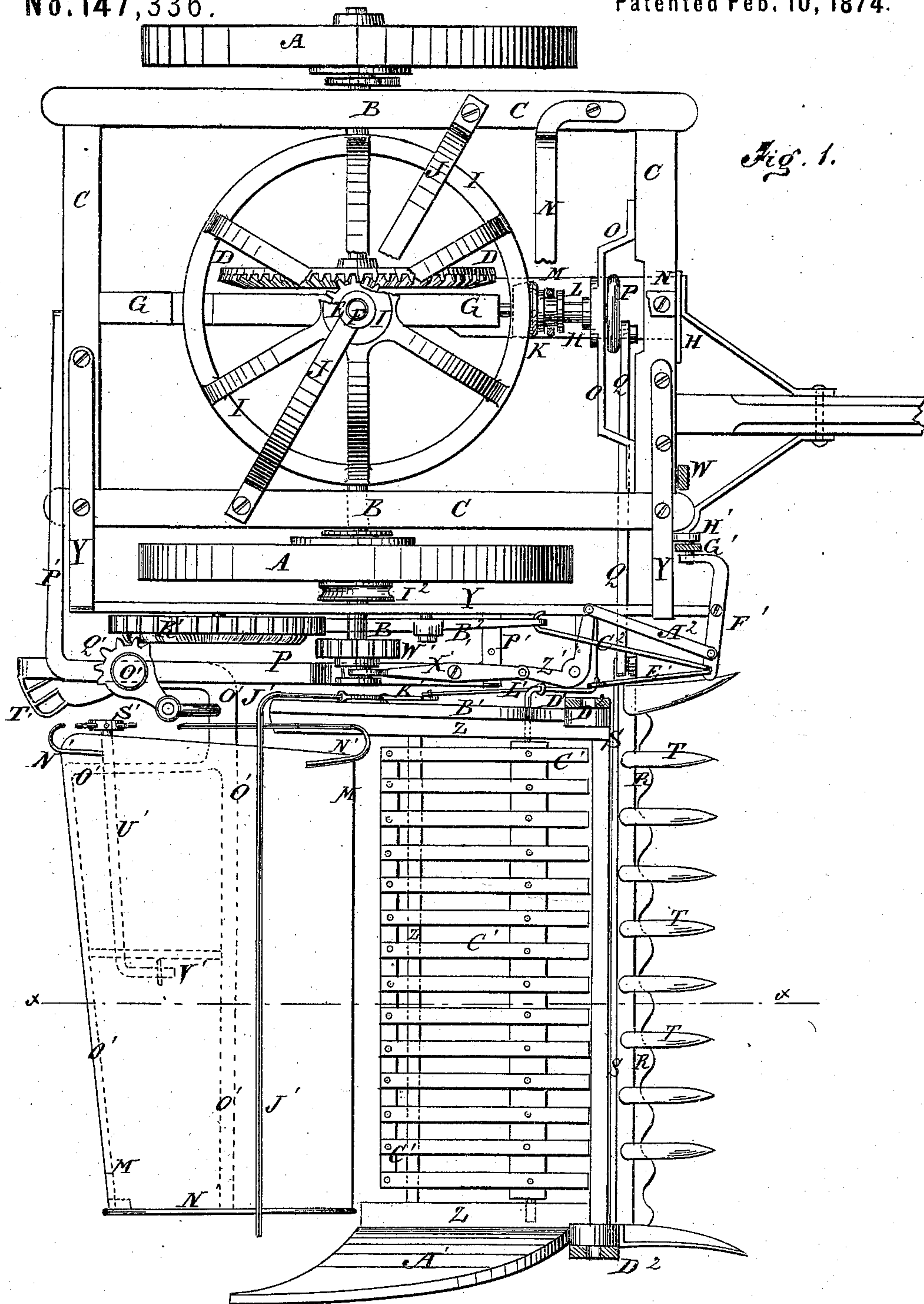


J. D. MARTIN,  
Harvesters.

No. 147,336.

Patented Feb. 10, 1874.



Witnesses.

*Chas. Nida*  
*Chapman*

Inventor.

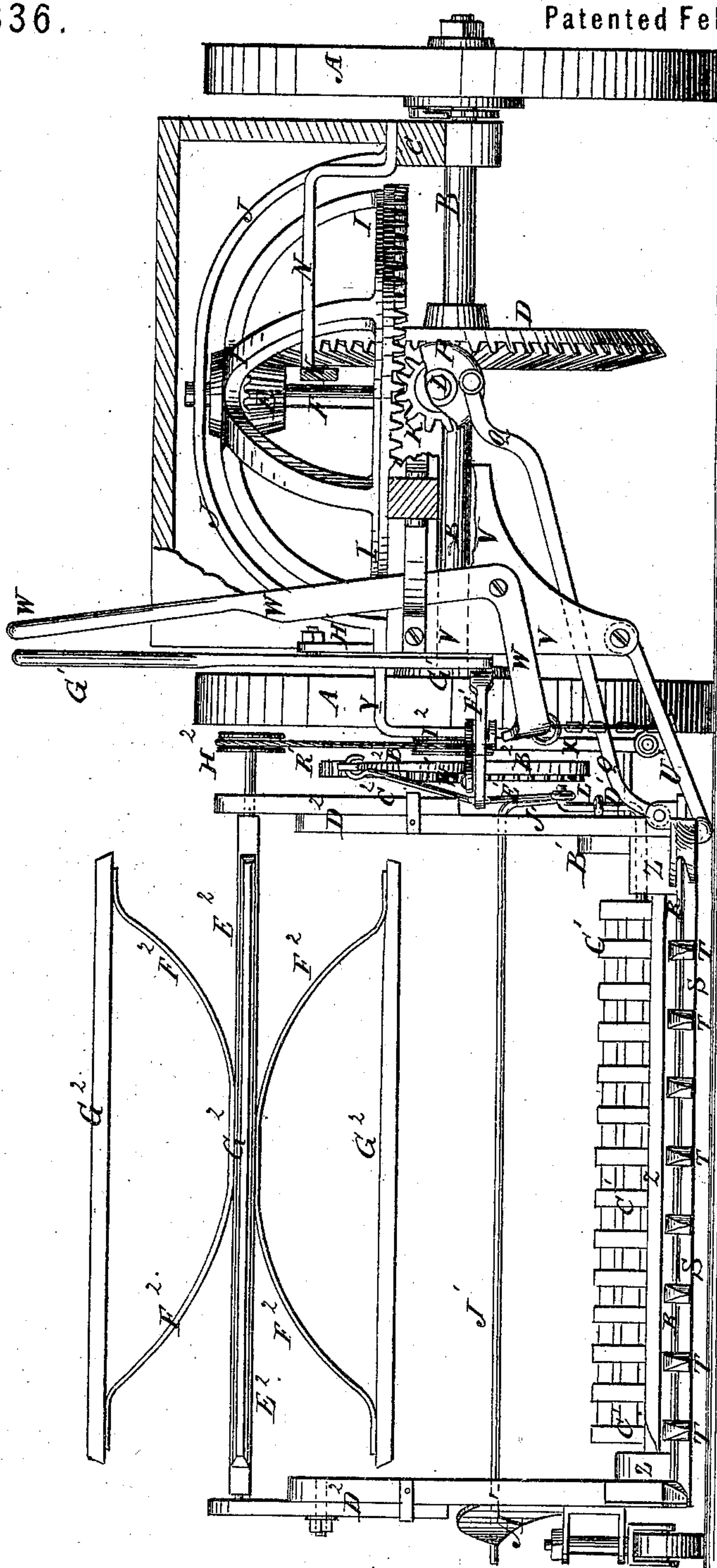
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Fig. 2.



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Fig. 3.

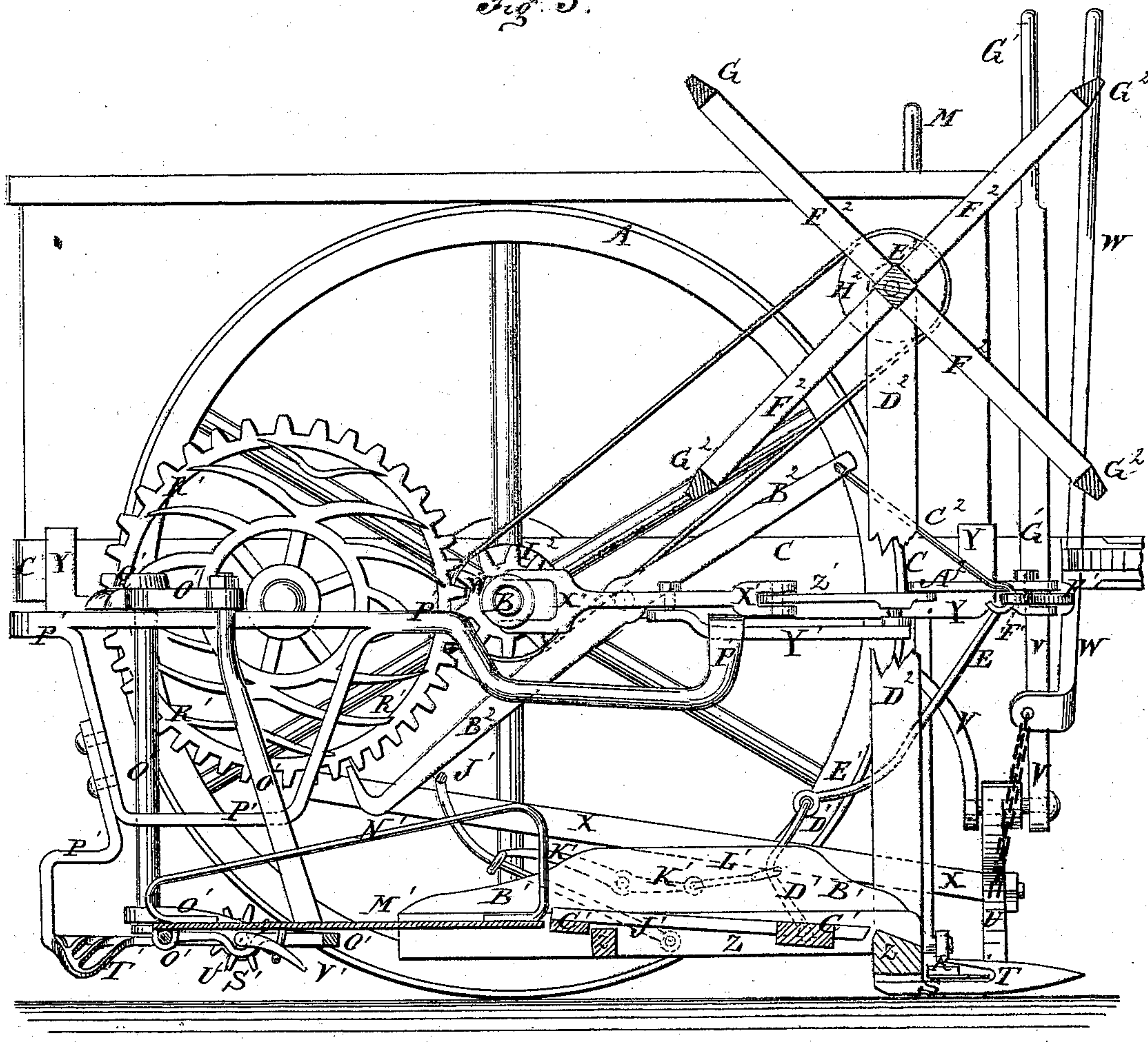
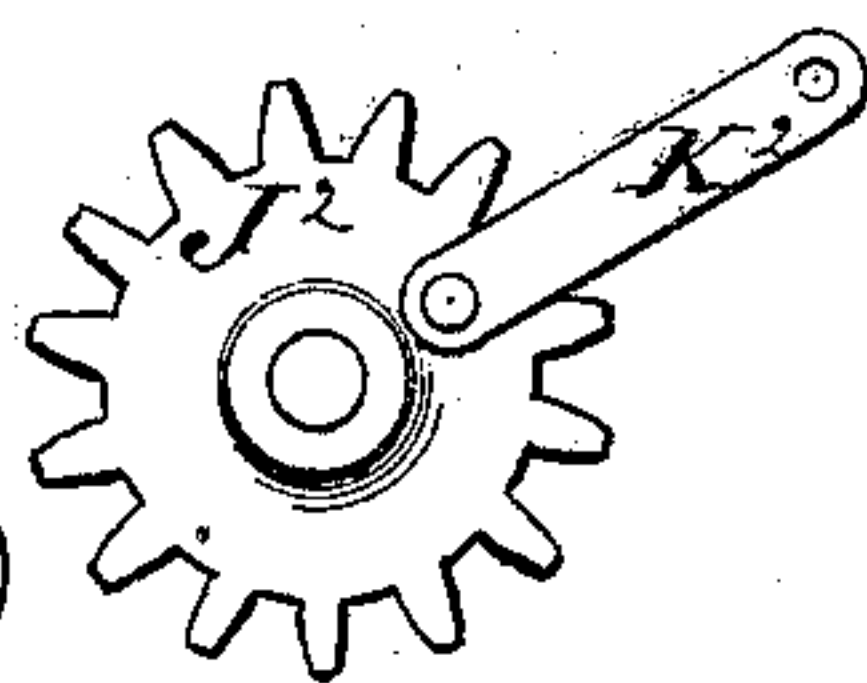


Fig. 4



WITNESSES.

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# UNITED STATES PATENT OFFICE.

JACOB D. MARTIN, OF FRAZEYSBURG, OHIO.

## IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **147,336**, dated February 10, 1874; application filed November 8, 1873.

*To all whom it may concern:*

Be it known that I, JACOB D. MARTIN, of Frazeyburg, in the county of Muskingum and State of Ohio, have invented a new and useful Improvement in Grain-Harvesters, of which the following is a specification:

Figure 1, Sheet 1, is a top view of my improved device, parts being broken away to show the construction. Fig. 2, Sheet 2, is a front view of the same, parts being broken away to show the construction. Fig. 3, Sheet 3, is a side view of the same, partly in section, through the line *x x*, Fig. 1, to show the construction. Fig. 4, Sheet 3, is a detail view of the shifting gear-wheel and its connecting-rod.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved harvester, which shall be so constructed as to deposit the cut grain in the rear of the machine, and at such a distance from the standing grain as to be entirely out of the way of the machine in its next round.

The combination of devices deemed novel are specifically indicated in the claims, and hereinafter described in connection with others necessary to form a complete or operative machine.

A are the driving-wheels, which work upon the journals of the axle B, which revolves in bearings attached to the frame C, and is connected by ratchet-wheels and pawls with the wheels A, so that the forward movement of the said wheels may revolve the said axle, while the rearward movement of said wheels will not revolve the axle, and so that one wheel may move slower than the other without affecting the operation of the machine. To the middle part of the axle B is attached a large crown gear-wheel, D, the teeth of which mesh into the teeth of a small gear-wheel, E, attached to the upper part of the vertical shaft F, the lower end of which works in a step attached to the beam G, the rear end of which is attached to the rear cross-bar of the frame C. The forward end of the bar or beam G is connected with the front cross-bar of the frame C by a U-shaped plate, H. The upper rear part of the beam G is notched for the passage of the teeth of the crown-wheel I, the

frame of which is made cup-shaped, so as to receive in its cavity the gear-wheel E and the upper part of the crown-wheel D. The crown-wheel I is rigidly attached to the vertical shaft F, so as to be carried around by and with the said shaft in its revolution. The shaft F is supported in vertical position by, and its upper end revolves in, an arched bar, J, the ends of which are attached to the frame C. The teeth of the crown-wheel I mesh into the teeth of the small gear-wheel K placed upon the short shaft L, with which it is connected by a tongue and groove, so that it may be slid longitudinally upon the said shaft to throw it into and out of gear with the crown-wheel I. The hub of the gear-wheel K is grooved to receive the fork of the lever M, which is pivoted to a bar, N, attached to the frame C. The upper end of the lever M is in such a position that it may be conveniently reached and operated by the driver. The rear end of the shaft L revolves in bearings attached to the forward end of the beam G, and its forward part revolves in bearings in a bar, O, attached to the front cross-bar of the frame C. To the forward end of the shaft L, between the bar O and the front bar of the frame C, is secured a crank-wheel, P, to the crank-pin of which is pivoted the end of the pitman Q, the outer end of which has a pin attached to it to enter the eye of the sickle-bar R, and give it motion. The sickle-bar R vibrates in a groove in the finger-bar S, the sickles passing through slots in the fingers T. The inner end of the finger-bar S is hinged to the outer end of the bar U, the inner end of which is hinged to the lower end of the bracket V, which is securely attached to the frame C. W is a bent lever, which is pivoted at its angle to the bracket V, and the end of its lower and shorter arm is connected with the bar U by a short chain, or other convenient means. The upper and longer arm of the lever W is in such a position that it may be conveniently reached by the driver, and operated to raise the cutter-bar and its attachment away from the ground, for convenience in passing obstructions, and passing from place to place. The draft strain upon the bar U is sustained by the brace-rod X, the forward end of which is attached to the said bar U, and its rear end is attached to



the rear part of the iron bar or frame Y, which extends along the outer side of the wheel A, and its ends are bent inward and are secured to the front and rear side corners of the frame C. Z is the platform-frame, which is attached to the rear side of the finger-bar S, and to the ends of which are secured the outer side board A<sup>1</sup> and the inner side board B<sup>1</sup>. C<sup>1</sup> is the platform, which is made in the form of a rack, rests upon the frame Z, and is pivoted at the forward part of its ends to the end bars of the frame Z. To the end of the inner pivot of the platform-rack C<sup>1</sup> is rigidly attached a lever, D<sup>1</sup>, which is bent, as shown in Fig. 3, and its upper end is pivoted to the lower end of the connecting-rod E<sup>1</sup>, the upper end of which is pivoted to the outer end of the short lever F<sup>1</sup>, which is pivoted to the frame V, and its inner end is pivoted to the lower end of the lever G<sup>1</sup>. The lever G<sup>1</sup> is pivoted to a short standard, H<sup>1</sup>, attached to the forward corner of the frame C, and its upper end is in such a position that it may be conveniently reached and operated by the driver. By this construction, by moving the upper end of the lever G<sup>1</sup> to the rearward the rear edge of the platform-rack C<sup>1</sup> will be lowered to allow the cut grain to slide from the said platform-rack C<sup>1</sup>, and, by moving the upper end of the said lever forward the rear edge of the platform-rack C<sup>1</sup> will be raised into position to receive the cut grain. J<sup>1</sup> is a guard-rod or cut-off, which extends across and above the rear part of the platform, and the inner part of which is bent downward and curved forward, and its end is pivoted to the middle part of the end of the platform-frame Z. K<sup>1</sup> is a lever, the rear end of which has an eye formed in it to receive the rod J<sup>1</sup>. The lever K<sup>1</sup> is pivoted to the inner side board B<sup>1</sup>, and its forward end is connected with the bent lever D<sup>1</sup> by a short connecting-rod, L<sup>1</sup>. By this construction, as the rear edge of the platform-rack C<sup>1</sup> is lowered to discharge the grain the guard-rod J<sup>1</sup> is moved forward by the same movement into such a position as to receive the falling grain and prevent it from being intermingled with the grain being discharged. As the platform-rack C<sup>1</sup> is again raised the guard-rod or cut-off J<sup>1</sup> is moved back out of the way, allowing the grain to fall upon the said platform-rack. As the grain slides from the platform-rack C<sup>1</sup> it is received upon the dropper M', which is provided with end guards N', and is attached to and supported by a frame, O', which is pivoted to the iron frame P', the upper rear part of which is attached to the rear corner of the frame C, and its forward part is secured to the forward part of the frame Y. To the inner upper corner of the frame O' is attached, or upon it is formed, a segmental gear-wheel, Q', the teeth of which mesh into the scroll-teeth formed upon the side of the gear-wheel R', and which are so formed as to swing the dropper M' back through a quarter of a circle, and then return it to its proper place in the rear of the platform C<sup>1</sup>. As the

dropper M' approaches the end of the rearward movement the small spur-wheel S' comes in contact with the inclined rack T' formed in or attached to the lower rear part of the frame P', and rolls up the said rack T'. The small spur-wheel S' is attached to the end of the rod U', which passes in beneath the dropper M' and works in bearings attached to the rear bar of the frame O', upon which the dropper M' rests, and to which rear bar the rear edge of the said dropper is pivoted. To the inner end of the rod U' is attached a curved or cam arm, V', which rests against the middle part of the under side of the dropper M', so as when the small gear-wheel S' is turned the arm V' may raise the forward edge of the said dropper and allow the grain to slide from it to the ground. Into the teeth of the gear-wheel R' mesh the teeth of the small gear-wheel W', placed upon the projecting journal of the axle B, with which it is connected by a tongue and groove, so that the said wheel W' may be carried around by and with the said axle in its revolution, and at the same time may be moved longitudinally to throw it out of and into gear with the gear-wheel R'. The hub of the gear-wheel W' is grooved to receive the forked end of the lever X', which is pivoted to a bar, Y', attached to the frames P' and Y. The other end of the lever X' is pivoted to one end of the bent lever Z', which is pivoted at its angle to the box Y', and the other end of which is pivoted to the rear end of the connecting-rod A<sup>2</sup>, the other end of which is pivoted to the lever F<sup>1</sup>, as shown in Fig. 1. B<sup>2</sup> is a lever, which is pivoted to the frame Y, and its lower end is so formed as to take hold of the teeth of the gear-wheel R' and hold it stationary while out of gear with the gear-wheel W'. To the upper end of the lever-pawl B<sup>2</sup> is pivoted one end of a connecting-rod, C<sup>2</sup>, the other end of which is pivoted to the lever F<sup>1</sup>. By this construction the movement of the lever G<sup>1</sup> to lower the rear edge of the platform C<sup>1</sup> withdraws the lever-pawl B<sup>2</sup> from the wheel R', and throws the wheel W' into gear with the wheel R', which swings the dropper, bringing the spur-wheel S' into contact with the rack T', tilting the dropper and dropping the grain. In the same way the movement of the lever G<sup>1</sup> to raise the platform C<sup>1</sup> to receive the grain throws the wheel W' out of gear with the wheel R', and causes the lever-pawl B<sup>2</sup> to engage with the gear-wheel R'. D<sup>2</sup> are the reel-posts, which are attached to the forward end parts of the platform-frame Z, and which are made in two parts sliding upon each other, so that the reel may be raised and lowered to adjust it to the height of the grain. In the upper ends of the posts D<sup>2</sup> revolve the journals of the reel-shaft E<sup>2</sup>, to which are attached the middle parts of the bent springs F<sup>2</sup>, to the ends of which are attached the reel-arms G<sup>2</sup>. To the inner end of the reel-shaft E<sup>2</sup> is attached a pulley, H<sup>2</sup>, to receive a band, which also passes around a pulley, I<sup>2</sup>, attached to the axle B, so that the



reel may be driven from the said axle.  $J^2$  is a small crank-gear wheel, which may be pivoted to the pivot of the journal of the lever-pawl  $B^2$ , in line with the gear-wheel  $R'$ . To the crank-pin of the gear-wheel  $J^2$  is pivoted one end of a connecting-rod,  $K^2$ , the other end of which may be pivoted to the connecting-rod  $C^2$  or lever  $F^1$ , so that the dropper may be operated automatically and without its being necessary to operate the lever  $G^1$ .

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

1. The combination of the pivoted and swinging frame  $O'$ , the segmental gear-wheel  $Q'$ , the scroll-gear wheel  $R'$ , and the sliding gear-

wheel  $W'$ , with the axle  $B$ , frames  $Y P'$ , and dropper  $M'$ , substantially as herein shown and described.

2. The combination of the rack  $T'$ , spur-wheel  $S'$ , bar  $U'$ , and curved arm  $V'$  with the frame  $P'$  and dropper  $M'$ , substantially as herein shown and described.

3. The combination of the lever-pawl  $B^2$  and connecting-rod  $C^2$  with the gear-wheel  $R'$  and levers  $F^1$  and  $G^1$ , substantially as herein shown and described.

JACOB D. MARTIN.

Witnesses:

ISRAEL W. EWING,  
JOHN LECKY.