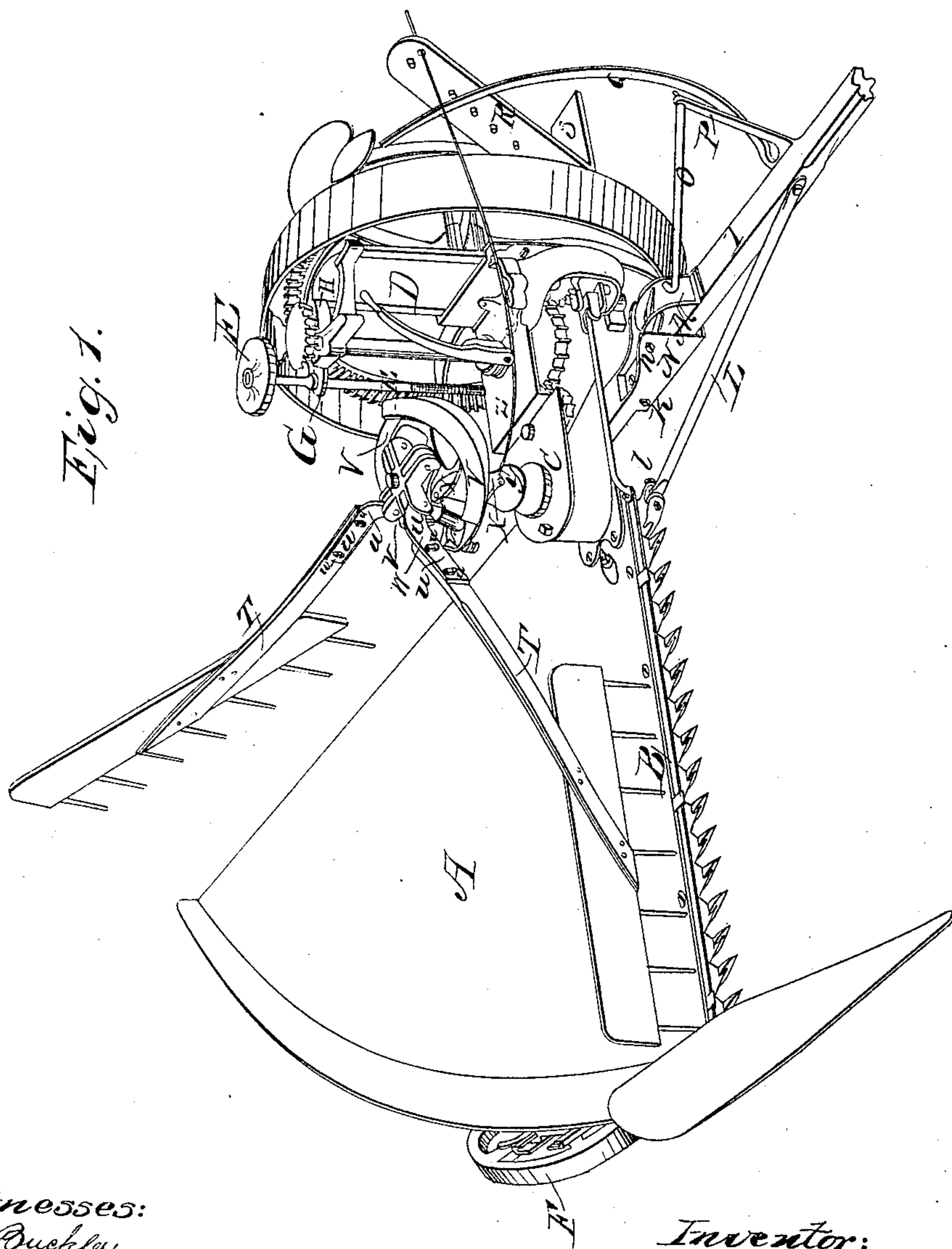


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2 Sheets—Sheet 1.

No. 79,575.

Patented July 7, 1868.



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2 Sheets—Sheet 2.

No. 79,575.

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Fig. 2.

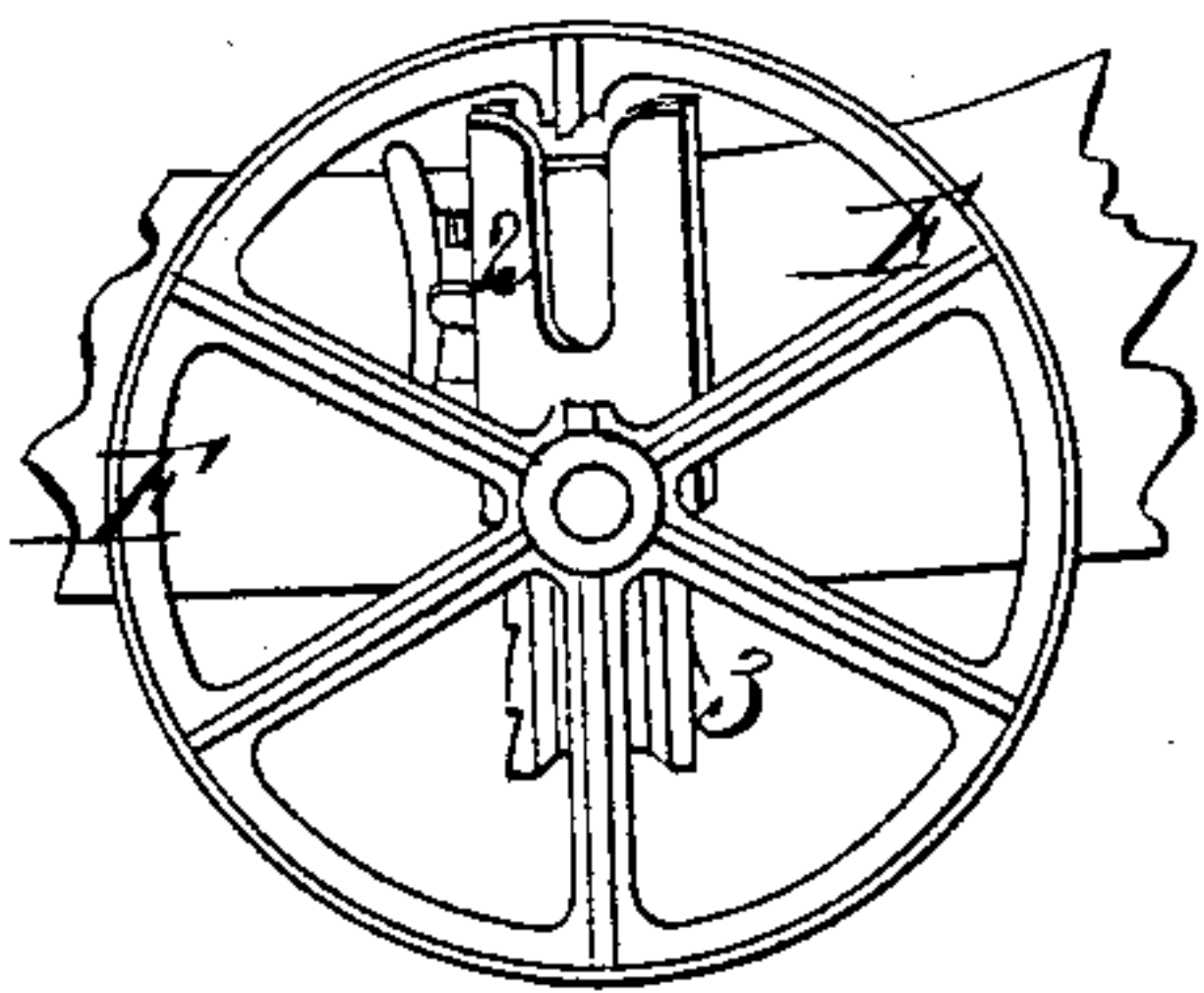


Fig. 3.

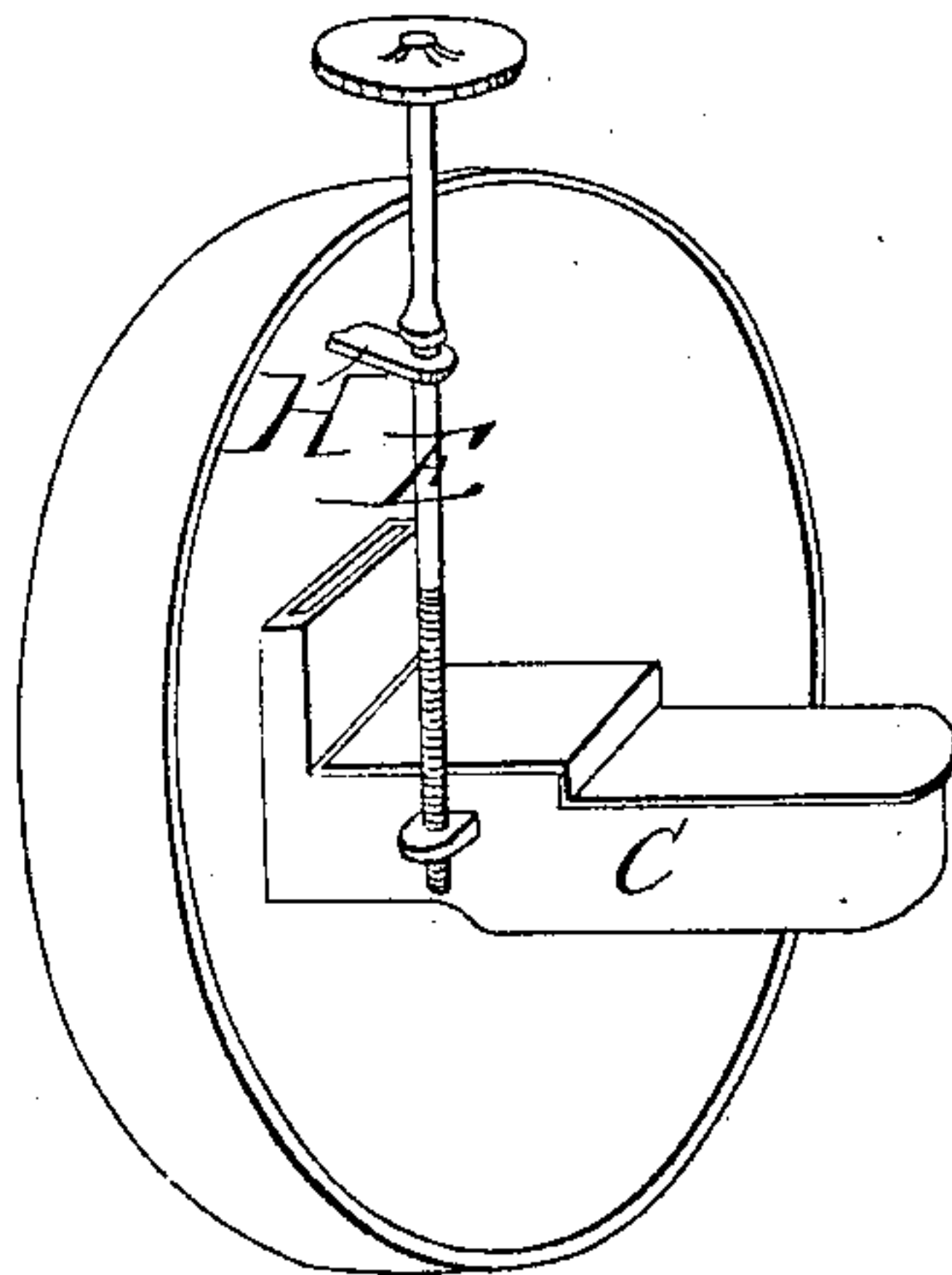


Fig. 4.

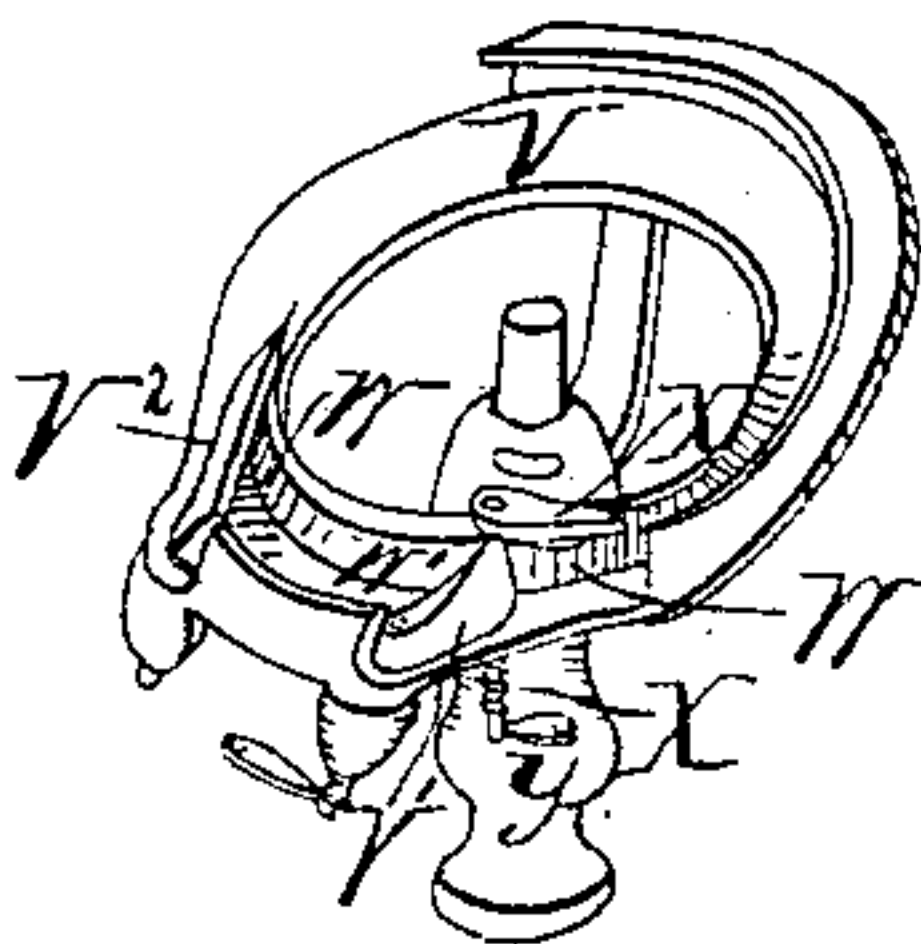
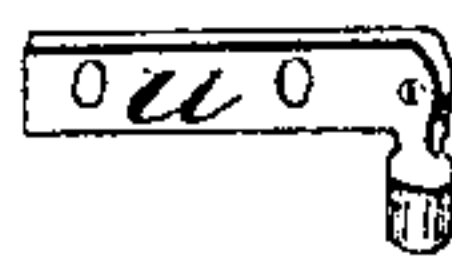


Fig. 5.



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United States Patent Office

SAMUEL JOHNSTON, OF SYRACUSE, NEW YORK.

Letters Patent No. 79,575, dated July 7, 1868.

IMPROVEMENT IN HARVESTERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL JOHNSTON, of Syracuse, in the State of New York, have invented a new and useful Improvement in the Construction of Self-Rakes; and I do hereby declare the following to be a full and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of my entire machine.

Figure 2, the attachment of the grain-wheel.

Figure 3, a detached view of the device for elevating the cutting-apparatus and gear-frame.

Figure 4, a detached view of the double cam-way and the eccentric for operating the movable part of the cam.

Figure 5, a detached view of the metallic connecting-piece, to which the wooden rake-arms are attached.

A represents the platform of my machine, attached to a finger-beam, B, of the usual form. The finger-bar is attached to the gear-frame C, by bolts, in the usual manner. The gear-frame is attached to the axle-plate D, so as to slide up and down upon it perpendicularly.

The outer side of the platform is supported upon the grain-wheel. There is a bracket, 3, fig. 2, over which the axle-plate, 2, slides. A pawl is attached to the axle-plate 2, and works into ratchets in the bracket 3. A spring holds the pawl into the ratchet. The operation of these parts is such that by elevating the platform the pawl slips into the ratchet, and sustains the platform at the desired elevation.

The platform and gear-frame are made to move up and down on the axle-plate by means of a vertical screw-shaft, E, having a hand-wheel on top. The lower end of the screw-shaft passes through a nut attached to the back side of the gear-frame. There is a collar on the screw-shaft E, at G, which works upon a bracket, H, extending from the axle-plate, and it is by this collar and bracket that the upper end of the screw E is supported, and to which the gear-frame is thus adjustably suspended.

The driver can, from his seat, turn the hand-wheel and screw E to the right or left, and thus raise or lower the gear-frame, platform, and cutting-apparatus relating to the axle-plate.

The tongue I is attached to the gear-frame by a bolt, K, at its rear end, and the brace-piece L is attached by a bolt, l, at the shoe of the finger-beam. A slotted wedge, M, is attached to the upper side of the tongue.

A cast-iron bracket, N, is attached to the gear-frame, and a bolt, n, passes through this bracket and the slot of the wedge-piece M. A connecting-rod, O, extends from the heel of the slotted wedge M to the short arm P of the bent lever P Q.

An upright notched or toothed board, R, is attached to the foot-board S. The lever P Q extends beyond this board, so that the driver can work it freely. A series of teeth is placed in the board R, and the bent lever P Q has sufficient spring to fit into the notches and be forced up and down, and remain wherever it is placed against the notches. By this arrangement the platform and cutting-apparatus can be tilted upon the axles of the two supporting-wheels, and the proper pitch given to the fingers.

My invention relates, first, to the improved mode of adjusting and sustaining the platform of reaping-machines for different heights of cut, and consists, first, of a pawl held in position by a spring and ratchet, in connection with the sliding action of the ground-wheel; and, secondly, of a vertical screw, working through a projection attached to the axle-plate of the main wheel, and a nut attached to the gear-frame; thirdly, an improved mode of fastening the tongue by attaching its rear end to the gear-frame by a bolt, on which it vibrates, and attaching the tongue-brace by a bolt to the inner shoe, in combination with a bent lever, connecting-rod, and slotted wedge, and a fender-board, with notches or steps; fourthly, in the employment of an eccentric-movement for causing the rake-arms automatically to operate the movable cam-way at the will of the driver, instead of the driver directly operating the movable cam-way.

This arrangement prevents the roller, at the heel of the rake-arms, from ever coming in contact with the point of the movable cam-way, and prevents the possibility of two revolving arms next to each other in succession from following that cam-way by which they would be made to discharge the grain from the platform.

The rake-arms T T' are attached to the central rake-head by means of metallic connecting-pieces U U, having slots *u u* in them, and bolts, whereby the rake-heads can be adjusted up or down, so as to suit the gathering or discharging of the grain, as described. This adjustment is especially important with the employment of a double cam-way, as shown in the drawing, one cam-way for guiding the revolving rake-heads, which merely gather and do not discharge, and the other cam-way for guiding those rake-heads which both gather and discharge.

The revolving rake-heads are guided, while gathering and discharging the grain, by projections from the lower side of the metallic rake-arms passing into one of the two cam-ways, as heretofore patented by me, one cam-way, V V' V'', guiding those rake-heads which gather and do not discharge the grain, and the other cam-way, *w w' w''*, guiding those rake-heads which both gather and discharge the grain. I also make a portion of one of these cam-ways movable at the will of the driver, so as to cause any gathering-arm, at pleasure, to discharge or not. The movable cam-piece *v'* is moved, so as to permit the rake-arm to discharge, by means of an eccentric, *x*, turning on a pivot, and operated by means of a lever, *y*, and cord *x'*. That eccentric is so constructed that by the driver pulling the cord, the eccentric is turned in front of the movable cam-way, and the roller attached to the rake-arm, in revolving, carries the eccentric on, and this eccentric moves the movable cam-way *v'*, so as to cause the roller of the rake-arm to pass on the inside of the movable cam-way *v'*, and thus the rake discharges the grain from the platform.

The movable cam-way *v'* is restored to its position by a spring acting directly upon the cam-way. The roller on the heel of the rake-arm retains the eccentric in position until the next succeeding rake has passed the point at which the eccentric can act upon the movable cam, and thus no two arms in succession can discharge the grain from the platform, no matter how negligent the driver may be, and it is impossible for the roller on the rake-arm to come in contact with the extremity of the movable cam-way.

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

1. The combination of the grain-wheel, bracket, ratchet, and spring-pawl, for raising and lowering the outer end of the platform.
2. The combination of the bent lever, slotted wedge, and hinged tongue, for tilting the platform and cutting-apparatus.
3. The combination of an adjustable grain-wheel, a platform, and gear-frame, movable perpendicularly up and down on the main axle-plate, and a hinged tongue and lever for tilting the platform and cutting-apparatus.
4. The employment of a double cam-way or track, provided with a movable switch, adapted to be moved by the revolving rake and reel-arm, for changing the path of said arm.
5. The eccentric-lever *x*, or its equivalent, for operating the movable cam-way, substantially as described.

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