2 Sheets--Sheet 1.

C. LIDREN.

Improvement in Harvesters.

No. 127,252. Patented May 28, 1872.

Fig 1.

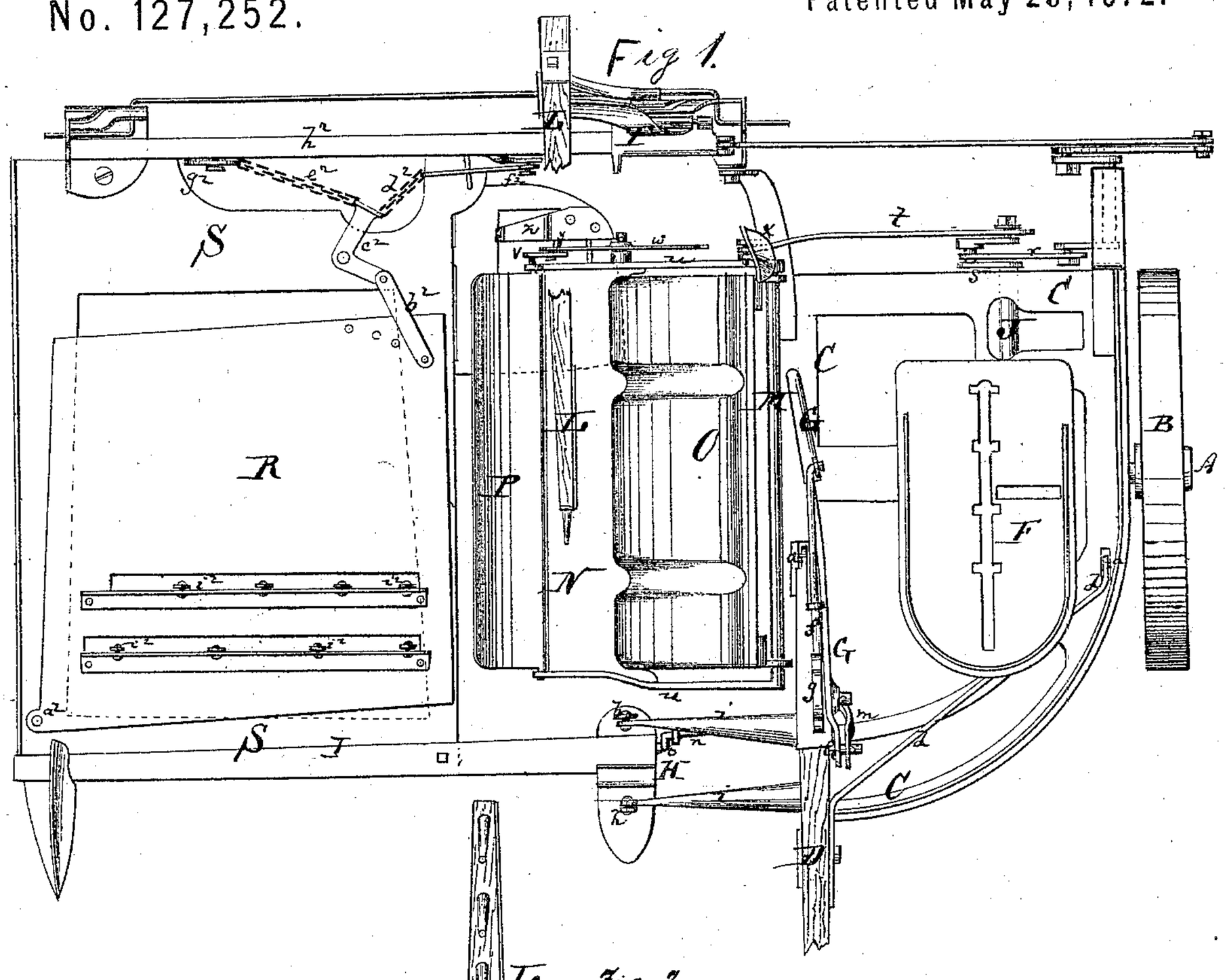
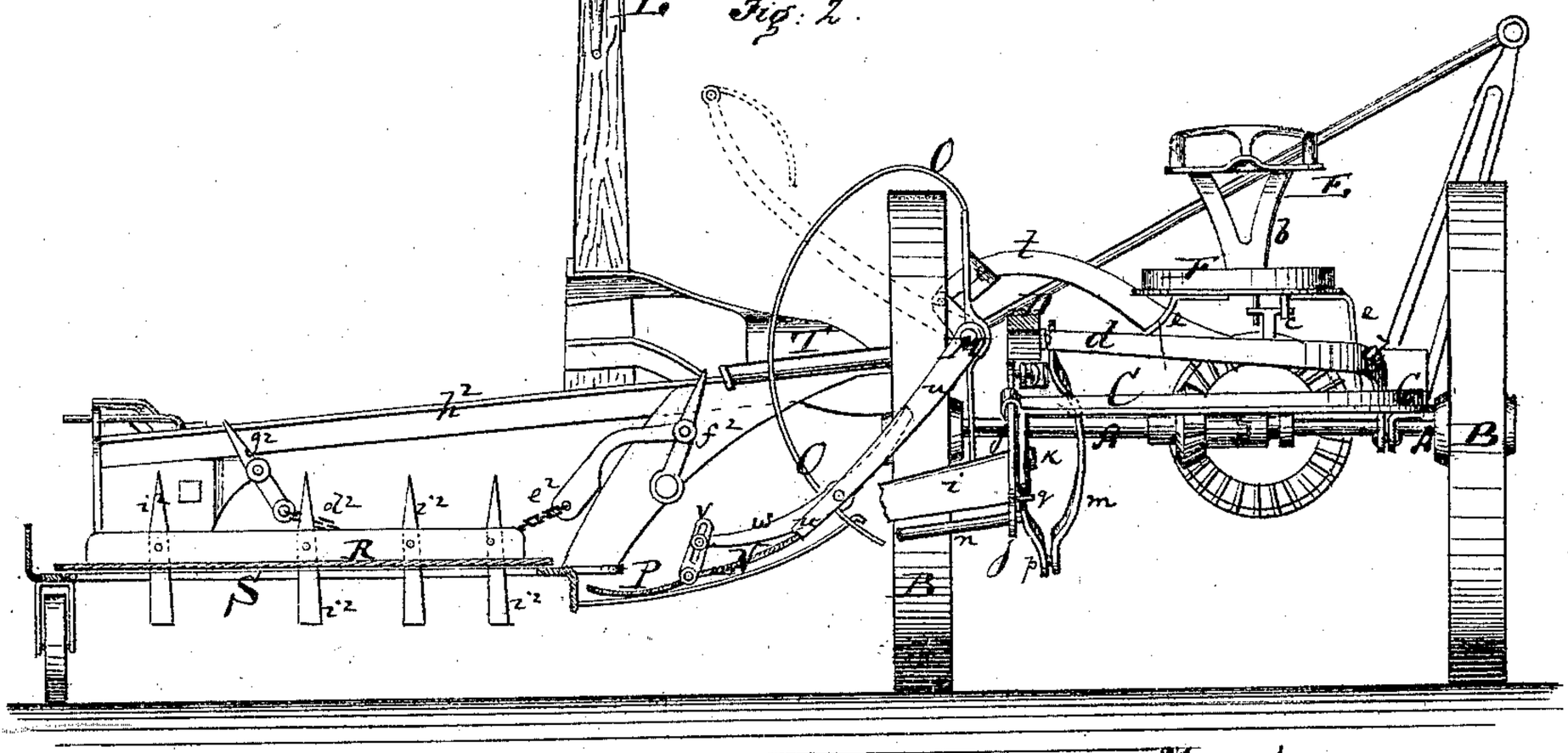


Fig. 2.



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2 Sheets--Sheet 2.

C. LIDREN.

Improvement in Harvesters.

No. 127,252. Patented May 28, 1872.

Fig: 3.

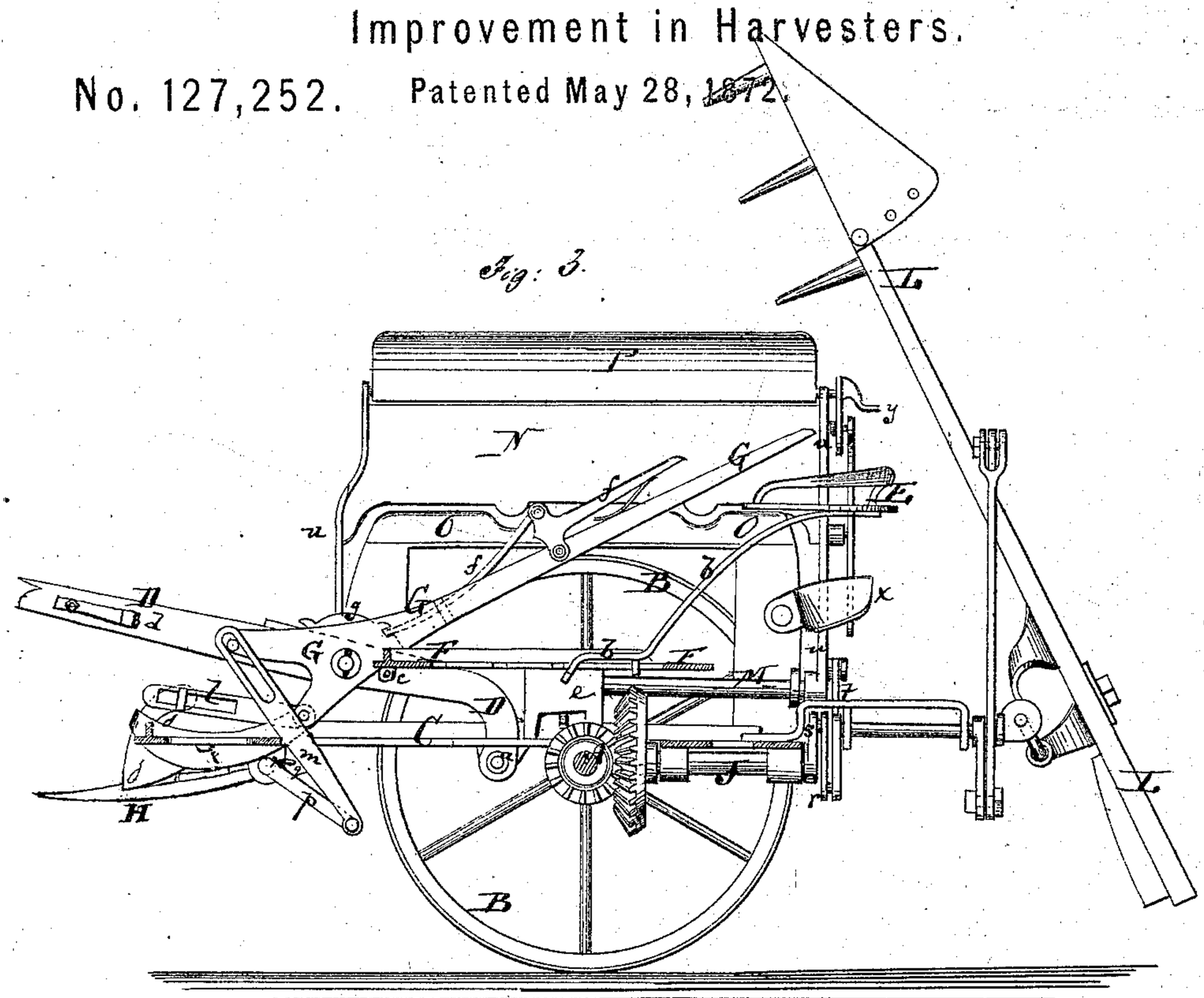
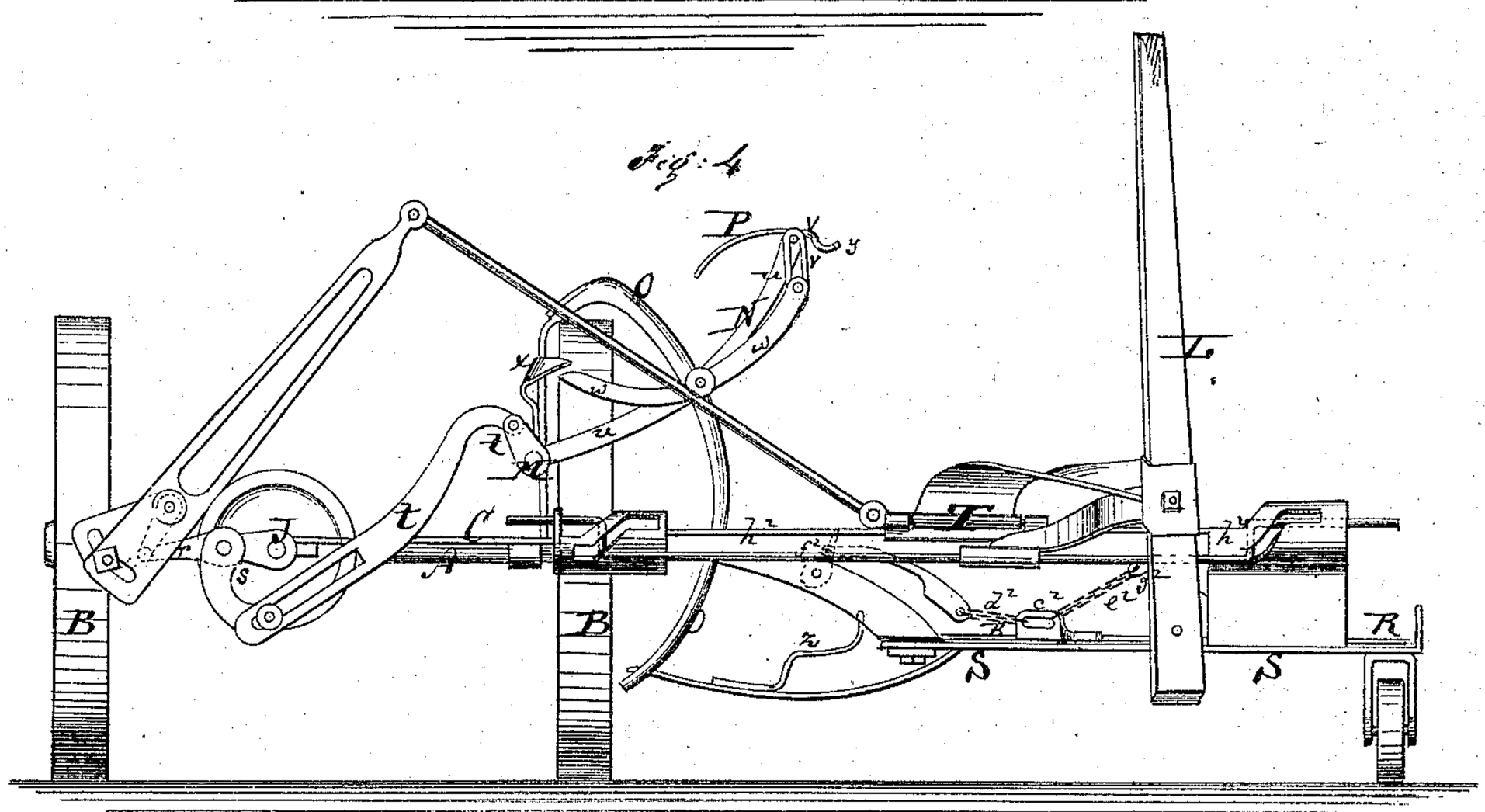


Fig: 4.



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127,252

UNITED STATES PATENT OFFICE.

CHRISTOPHER LIDREN, OF LA FAYETTE, INDIANA, ASSIGNOR TO HIMSELF AND R. JACKSON, OF SAME PLACE.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 127,252, dated May 28, 1872.

Specification describing certain Improvements in Mowing and Reaping Machines, invented by CHRISTOPHER LIDREN, of La Fayette, in the county of Tippecanoe and State of Indiana.

The invention will first be fully described in connection with all that is necessary to a full understanding thereof, and will be then clearly pointed out in the claims. The improvements of the present invention are applicable to the improved reaper for which Letters Patent No. 88,394 were granted to the present inventor on the 30th day of March, 1869, and to the improved mowing-machine for which Letters Patent No. 82,535 were granted the same inventor September 29, 1868; and also to reaping and mowing machines of other construction.

In the accompanying drawing, Figure 1 represents a plan or top view of the improved reaper. Fig. 2 is a front elevation, partly in section, of the same. Fig. 3 is a side elevation, partly in section, of the same. Fig. 4 is rear elevation of the same.

Similar letters of reference indicate corresponding parts.

A represents the main axle of the machine. B B are the driving-wheels; C, the main frame. The axle has its bearings in the frame, which is of metal or wood, of suitable form and size. D is the tongue. Its rear end is, by a pin, *a*, pivoted to the frame in front of the axle A, so that the draft-animals will be relieved from undue pressure by making the frame self-balancing. The weight of the cutter and finger-bars will be counteracted by the adjustable driver's seat E. This seat rests on the foot-board F, which is slotted to receive the back-and-forwardly-adjustable standard *b* of the seat. The front end of the foot-board is at *c* pivoted to the tongue-brace *d*. Its rear end is, by downwardly-projecting ears *e e*, supported on the frame C, directly above the axle A. By this arrangement the entire frame and appendages can be properly balanced, at the same time leaving the bar perfectly free and flexible. To the side of the tongue D is pivoted a lever, G, which is forked at the lower end, and is provided with a spring-catch or pawl, *f*, whereby it is locked in suitable position to a notched plate, *g*, projecting from the frame C. The shoe H, carrying the finger-bar I, is, by transverse pins that fit through ears *h h*, pivoted to the ends of two arms, *i i*, which project from a plate, *j*. This plate *j* is pivoted by a pin, *k*, to the side of the frame C. The back prong of the forked lever G is, by a slotted rod or link, *l*, connected with an arm that projects from the forward end of the plate *j*. The front prong of the forked lever is, by a slotted rod or link, *m*, connected with a crank, *p*, on a pin, *n*, that has its bearings under the back arm *i* of the plate *j*. The outer end of the pin *n* carries a crank, *o*, which bears upon a projecting ear of the shoe H, as indicated in Fig. 1. When the lever G is swung forward it will, by means of the link *l*, swing the plates *j* and appendages so as to vibrate the cutter on the pin *k* and raise the cutting-edges, thereby allowing it to cut on a higher plane. By swinging the lever backward the pin *n* will be vibrated so as to bear with the crank *o* on the shoe and depress the inner and elevate the outer end of the finger-bar. Further backward motion of the lever G will, as soon as the crank *p* strikes a stop, *q*, of the plate *j*, cause the bodily elevation of the entire finger-bar. Thus the latter can be tipped in either direction, or raised or lowered at will by means of the lever G, and held in any desired position by means of the catch *f*, all without the use of chains or other unreliable mechanism, the motion being positive in every degree. By means of bevel-gear wheels, or otherwise, the shaft A transmits motion to a crank-shaft, J, which is hung in the back part of the frame C. By means of a connecting-rod, *r*, and intermediate devices of suitable kind, the shaft J imparts motion automatically to the rake L, the rake mechanism shown in the drawing being substantially like that described in the aforementioned patent of March 30, 1869, though it may be of other suitable construction. The same crank *s* of the shaft J, which moves the rake, is also, by a slotted pitman, *t*, connected with a crank-shaft, M, which is hung on the side of the frame C. A pair of arms, *u*, of the shaft M, projects back and forward of the right-hand wheel B, and one attached to the ends of the elevator N, which is a curved plate. A fixed convex guard, O, is secured to the frame C over the said wheel B, projecting and covering the same, as is shown in Fig. 2. By the oscilla-

tions of the shaft M, imparted to it by the shaft J, the elevator N is alternately let down into the position shown in Fig. 2, and swung up clear over the guard O. To the outer edge of the elevator is hinged a concave plate, P, which constitutes the clamp for clutching the gavels. One end of the plate P is, by means of a slotted bell-crank, *v*, connected with a lever, *w*, pivoted to one of the arms *u*. When the elevator is let down the plate P is in line with or somewhat under the inner edge of the harvester-platform R. The rake sweeps the grain upon the plate P and elevator N, whereupon the latter is immediately carried up, the clamp P being suddenly turned up, in order to confine the gavel on the elevator during the motion of the latter. A projecting pin, *y*, on the bell-crank *v*, striking a stationary cam, *z*, causes the overturn of the clamp. The latter retains the gavel until the elevator has arrived over the guard O, when the lever *w* strikes another stop, and thereby swings the plate P up, and releasing the grain, which falls upon a platform, not shown, within convenient reach of the binders. The elevator then drops back into position for receiving another gavel from the rake. The oscillating harvester-platform R is in front pivoted at a^2 to a supporting platform, S, and is at the diagonally-opposite corner connected by a link or strap, b^2, with a bell-crank, c^2, pivoted to S. The bell-crank is, by two chains, d^2 and e^2, connected with two fingers, f^2 and g^2, respectively, which are pivoted to the rake-guide h^2 in such manner that the rake-slide T will vibrate them alternately during its reciprocating motion. By these means the platform R receives a slight oscillating or shifting motion from the rake-slide. The object of this is to draw the gavel that is being raked off back from the front a few inches, to prevent it from becoming entangled with the standing grain.

Experience has shown that in raking the grain parallel with the front of the platform the gavel, after having completed part of its motion, would shove forward and become entangled with the uncut grain. This would cause the rake to swing it around entirely and move on without taking the gavel. This is obviated by the use of the shifting platform R. In order to insure the proper taking of the grain, the platform R may be provided with a series of pendulous teeth, i^2 i^2, in such manner that they will hold the gavel from slipping, but allow it to pass when swung down by the rake.

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

1. The tongue D, pivoted forward of the axle A, and combined with the pivoted foot-board F and adjustable seat E, substantially as and for the purpose herein shown and described.

2. The combination, with finger-bar I, of the plate *j*, having arm *i i* and stop *q*, the pivoted shoe H, having projecting ear, and the lever mechanism G *l m n o p*, as and for the purpose described.

3. The oscillating platform R and supporting platform S, combined with the rake, as described, to enable the gavel to be transferred by the latter, as set forth.

4. The elevator, provided with clamp P, as and for the purpose described.

5. The lever *w*, slotted crank *v*, and stops *x z*, combined with the elevator N and clamp P, as and for the purpose set forth.

6. The combination of the crank c^2, chains d^2 e^2, and pivoted fingers f^2 g^2, with the rake-slide T, platform R, and pendulous teeth i^2, for conveying motion from said slide to the platform, as set forth.

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Witnesses:

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