J. O. BROWN.

HARVESTING-MACHINE.

No. 170,231. Patented Nov. 23, 1875.

Fig. 1.

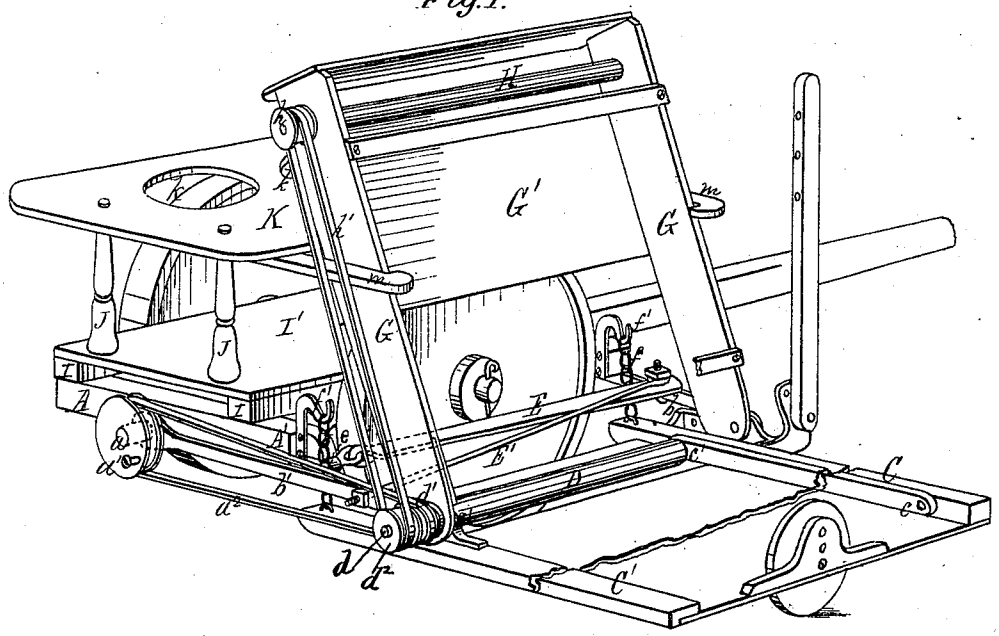
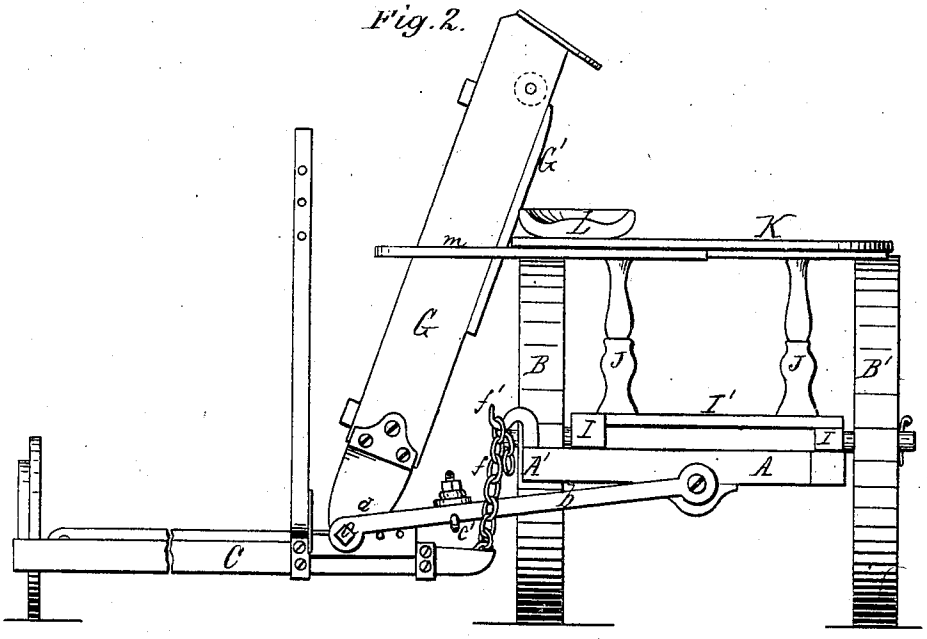


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES O. BROWN, OF MASSILLON, OHIO, ASSIGNOR OF PART OF HIS RIGHT TO EDWIN BAYLISS, PLINY F. HODGES, AND FRANÇOIS T. LOMONT, OF SAME PLACE.

IMPROVEMENT IN HARVESTING-MACHINES.

Specification forming part of Letters Patent No. **170,231**, dated November 23, 1875; application filed August 9, 1875.

No. 1.

To all whom it may concern:

Be it known that I, JAMES O. BROWN, of Massillon, county of Stark and State of Ohio, have invented certain new and useful Improvements in Harvesting-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is a perspective view of a harvesting-machine embracing my improvements, and Fig. 2 is a front elevation of the same.

Similar letters of reference denote corresponding parts in both figures.

My invention relates to that class of machines in which the grain is bound by hand by men riding on the machine, and more particularly to machines employing two main carrying and driving wheels, and in which the platform-frame is hinged to the main frame for adapting it to follow the undulations in the surface of the ground within certain limits independently of the main frame; and

The invention consists, first, in hinging the front and rear coupling-braces, which attach the platform-frame to the main frame, at one end upon or in line with the inner roller of the platform, canvas, or endless apron, and at the other end upon or in line with the crank-shaft, which also carries the driving-pulley, through which motion is imparted to the platform-apron; second, in hinging the elevator-frame at its lower end, for permitting it to vibrate, to accommodate itself to the varying relations of the platform and main frames consequent upon the hinging of said frames together, and in hinging said elevator-frame upon or in line with the axis of the inner platform apron-roller; third, in a novel manner of bracing the front and rear coupling-rods from the main frame, and the one from the other, for removing the strain from the joints of said coupling-rods, as hereinafter explained; fourth, in a novel construction and arrangement of binders' stand or platform and table; and, lastly, to certain details of construction and arrangement hereinafter fully described.

In the drawings, A represents the main or truck frame of the machine, mounted upon two driving and carrying wheels, B B′, and provided underneath with suitable bearings for the longitudinal crank-shaft *a*, to which motion is communicated from the driving-wheels by any usual or preferred arrangement of gearing. Upon this shaft, or in line therewith, the front and rear coupling rods or braces *b b′* are hinged to the main frame. C C′ represent the front and rear bars of the platform-frame, which, except in particulars hereinafter named, may be of the usual construction, said bars being provided at *c c′* with bearings for the platform-apron rollers, the inner roller of said apron being shown at D, and upon the shaft *d* of this roller, or in line therewith, the coupling rods or braces are hinged to the platform-frame, as shown, in such a manner that the platform, being connected with the main frame by means of said double-hinged braces, is free to rise and fall at either end independently of the main frame, while with the pulleys a^1 d^1 for driving the platform-apron, arranged the one upon the crank-shaft and the other upon the roller-shaft, in line with the joints of braces *b b′*, as explained, the tension of the driving-belt a^2, passing around said pulleys, will remain always the same. The front and rear transverse bars of the main frame extend to the outer face of the inner drive-wheel, and the rear one is provided with a bracket, *e*, in which the rear end of a thrust-brace, E, is swiveled, the forward end being coupled rigidly to the forward brace *b* near its platform end, by a hook-bolt, *e′*, and this same bolt, passing through the brace E, also passes through an eye on the forward end of a drum, E′, which, at its rear end, is united to the rear coupling-bar *b′* near its platform end.

By this arrangement of thrust and draw braces the backward thrust or strain upon the braces *b b′* is removed from the hinges or joints connecting said braces with the main frame, and is transferred to the main frame itself without interfering with the freedom of movement of the platform, as described.

The platform-frame bars C C′ extend beyond the pivotal roller-shaft *d*, and have chains *f* attached to their inner ends, by means of which they are suspended from hooks *f′*, attached to the inner projecting ends A′ of the transverse main-frame bars referred to.

By this arrangement the inner end of the platform can be adjusted to conform to the adjustment of the outer end upon its carrying-wheel, and while it is prevented from falling below the point at which it is adjusted, relatively to the main frame, it is free to rise, in conforming to the surface of the ground, or for passing.

The center of motion of the outer end of the platform in rising also is transferred from the pivotal shaft *d* to the chains *f*, and the platform thus moving upon a longer radius its movements, as also those of the elevator-frame hinged thereto, are less abrupt.

G G represent the end uprights of the elevator-frame, pivoted at their lower ends upon or in line with the roller-shaft *d*, and provided at top and bottom with suitable bearings for the elevator-rollers, the upper one of which is shown at H. To the inner faces or edges of the standards G is secured a separating-board, G′, the office or function of which will be presently explained.

Upon the main frame A is placed a binders' platform-frame, I I, provided with a flooring, I′, forming the binders' stand, and covering the main frame. Upon this frame or flooring are secured four posts, J, one at each corner, those in front, as also those in rear, being united by transverse bars, upon which is secured a table, K, said table overhanging the driving-wheels B B′, as shown in Fig. 2, and forming a binders' grain receptacle and table, upon which the grain is received and bound.

This table, near its outer side, where it overhangs the wheel B′, is perforated at *k* to receive the legs of the binders, standing between the driving-wheels upon the platform I′, or sitting upon the table K, as preferred. The table K, in front, overhangs or projects in advance of the main frame, and accommodates the driver's seat L in advance of the elevator and grain-table, and a suitable foot-rest for the driver may be connected with the tongue A^2, which may be either jointed to or rigidly connected with the main frame.

The separating-board G′, referred to, at the back of the elevator-frame bars G, rests against the inner edge of the table K, and, owing to the hinged connection of the elevator-frame, as described, is permitted to slide up and down, remaining always in contact therewith, under the varying relations of the platform and main frames, thereby serving to hold the grain discharged by the elevator upon the table.

To prevent accidental displacement, pivoted hook-bars *m* are attached to the lower face of the table K, which hold the elevator-frame against the table K without interfering with the vertically-sliding movements or vibrations of the elevator-frame, in adapting itself to the varying relations of the hinged platform to the main frame.

The elevator roller-shaft H has a pulley, *h*, which is driven by a belt, *h′*, from a pulley, d^2, on the pivotal shaft *d*, operated as above described, and consequently the tension of said belt remains alway the same under the varying relations of the platform and elevator frames.

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

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

1. The platform-frame, united to the main frame by means of the braces *b b′*, hinged to the main frame, in line with the crank-shaft, and to the platform in line with the shaft of the inner-platform apron-roller, as described.

2. The thrust and draw braces E E′, applied to and operating in combination with the main frame and the coupling-bars *b b′*, substantially as described.

3. The pivoted elevator-frame, provided with the separating-board G′, applied and operating in combination with the table K, as described.

4. The platform and elevator frames, hinged to each other on the line of the inner-platform apron-roller, and to the main frame, as described, in combination with the driving-pulleys a^1 d^1 d^2, arranged upon the centers, coincident with the pivotal centers of said frames, substantially as and for the purpose set forth.

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Witnesses:

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