

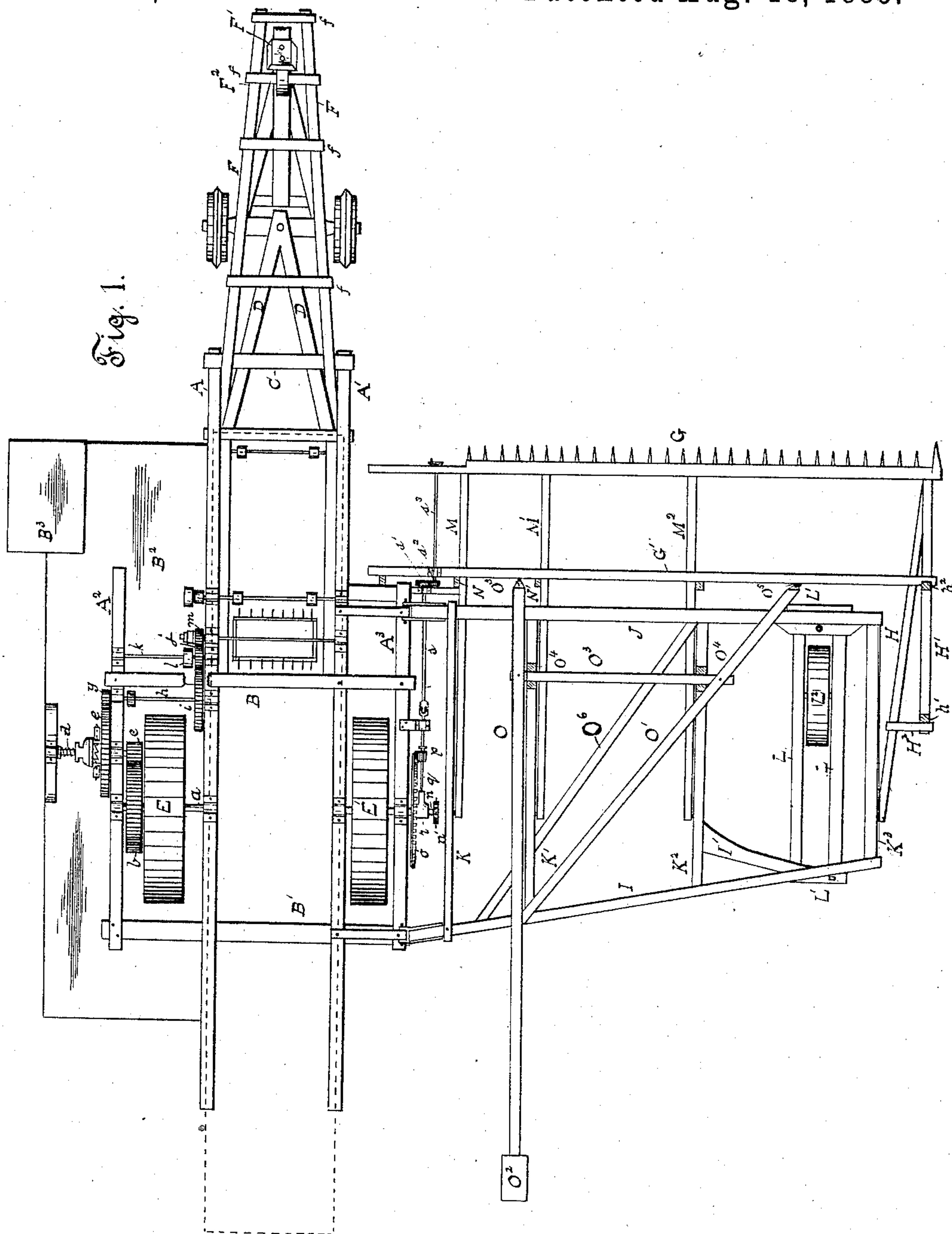
(No Model.)

4 Sheets—Sheet 1.

D. HOUSER.
HARVESTER.

No. 324,697.

Patented Aug. 18, 1885.



Witnesses.
Elihu B. Howe
Alfred B. Madwell

Inventor.
Daniel Houser.
By Joshua P. Webster
Attorney.

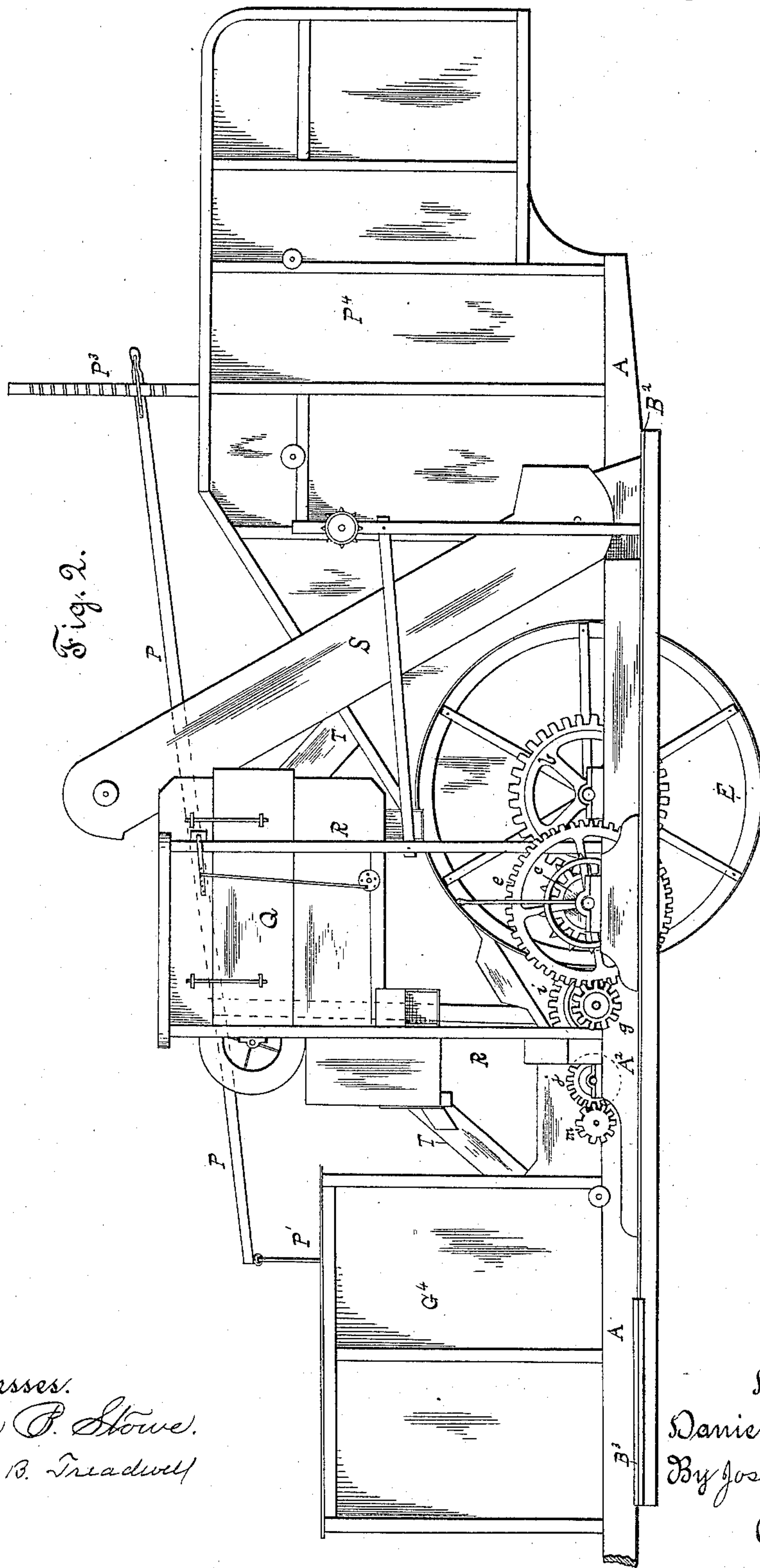
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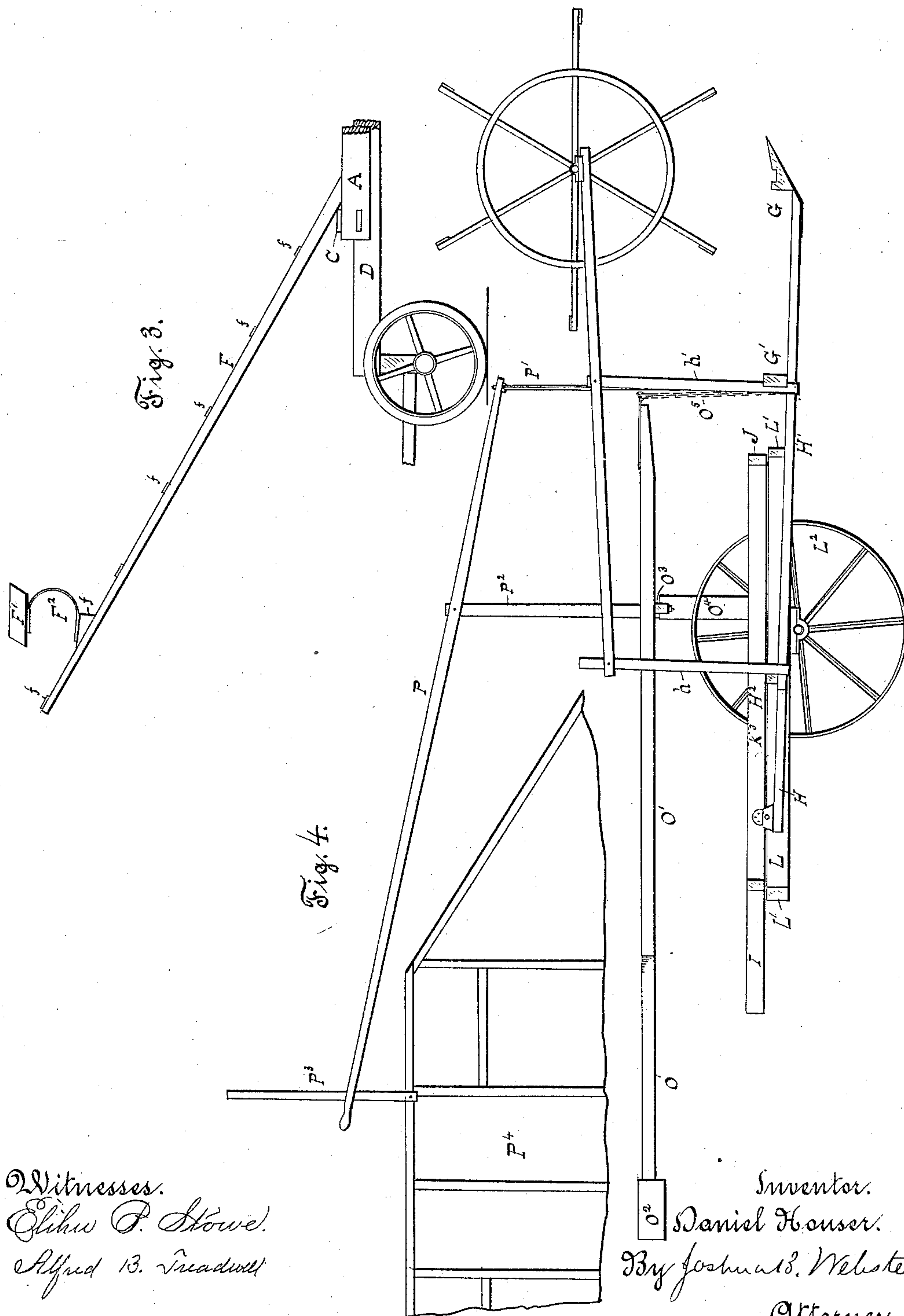
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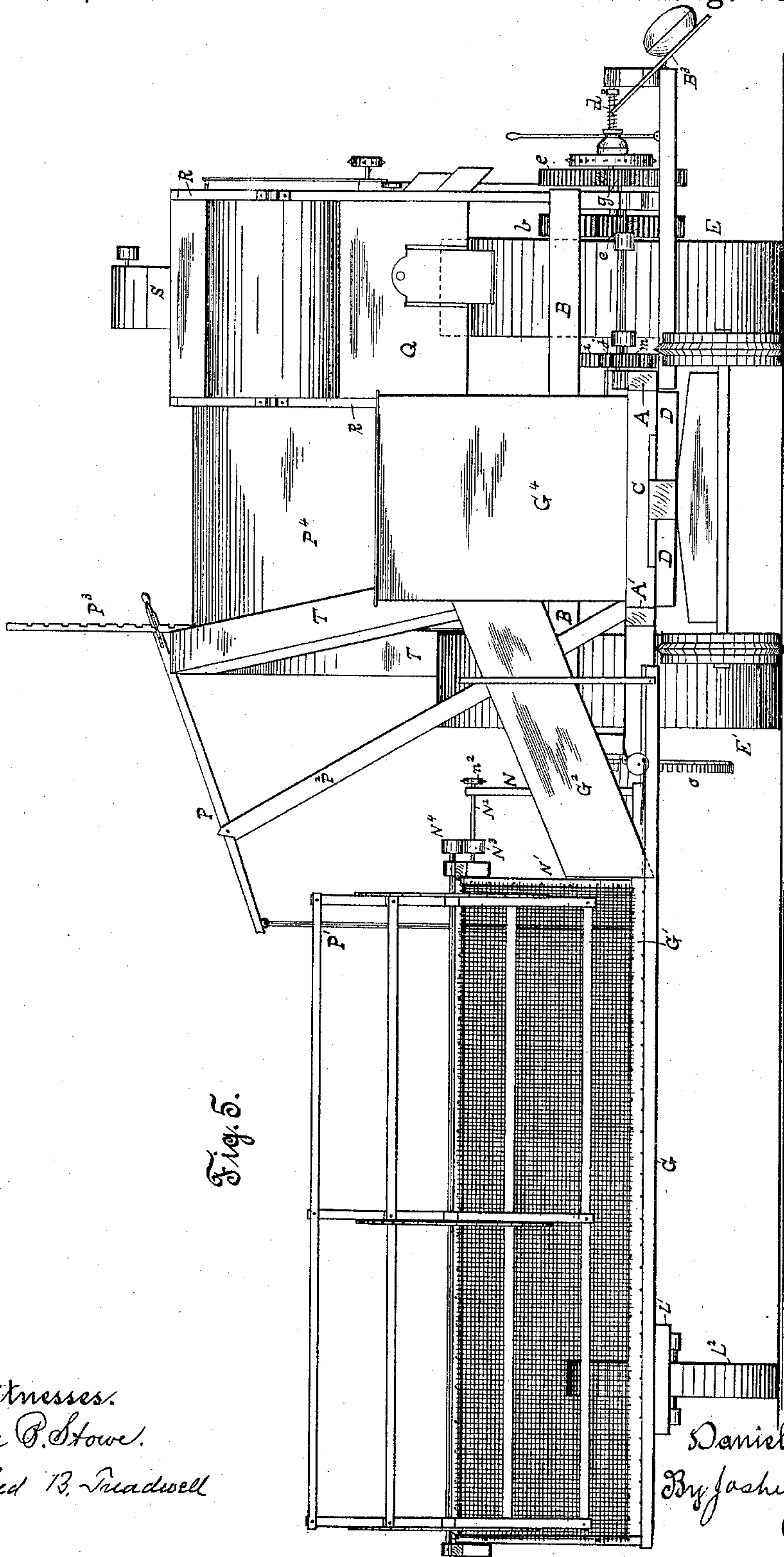
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UNITED STATES PATENT OFFICE.

DANIEL HOUSER, OF STOCKTON, CALIFORNIA.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 324,697, dated August 18, 1885.

Application filed July 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, DANIEL HOUSER, of Stockton, San Joaquin county, State of California, have invented an Improvement in Combined Harvester and Thrasher; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to certain improvements in apparatus which is designed to cut, thrash, separate, and clean the grain at a single continuous operation, the machine being drawn about the field by a team or other suitable power.

It consists of a frame having the thrashing, cleaning, and sacking mechanism supported upon it, and suitable bearing-wheels therefor, a second frame hinged to and projecting from one side of the thrashing apparatus and supporting the cutting and conveying mechanism, in the construction of this frame and the manner of supporting its outer end, and in the means for raising and lowering the sickle.

It also consists in certain details of construction, all of which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a plan view of the machine. Fig. 2 is a side elevation of the separator, taken from the side opposite the header. Fig. 3 is the front portion of the frame-timbers, showing the seat and its supports. Fig. 4 is a side elevation of the header portion of the apparatus. Fig. 5 is a front end elevation of the apparatus.

A is the frame-work of the separator, having mounted upon it the usual casing containing the thrashing-cylinder, grain and straw carrying belts, and separating and cleaning mechanism, which does not differ materially from that employed in ordinary thrashers. This portion of the apparatus is supported upon two main bearing-wheels, E E', the front end being supported by smaller guide-wheels, from the axle of which the tongue extends for the purpose of attaching a team for drawing it about the field. From the front portion of the frame A an inclined frame-work, F, extends upward and forward, and has the seat F' supported upon a spring, F², which is fixed to the upper front end of the frame-work F.

f are transverse strips or cleats extending between the two inclined timbers F, and these serve to hold them together, and also as steps by which the driver may reach his seat. By this construction the driver is situated well forward over the team, and in a position forward of the cutting mechanism, so that he may easily see the formation of the ground over which he is driving, and also the work which the header is doing. Upon the side of the machine which is opposite to the header a platform, B², extends, and this serves for the sack-tender to ride upon. At one corner of this platform is a table, B³, which is hinged to the platform and projects from the edge thereof, as shown, this table, supporting the sacks, being of such size ordinarily as to hold as many as five at one time. As soon as a number of sacks have been filled they may be dumped upon the ground by tilting the table. The dumping is performed by the sack-tender.

The interior mechanism of the thrashing-machine is driven by gearing b, c, e, g, i, j, and m, which are actuated directly from the main bearing-wheel E, as shown, and the self-feeder, of ordinary construction, (not shown,) in front of the cylinder, may be driven by a belt from the pulley l. When the machine has been once started, the thrashing-cylinder gradually attains a high rate of speed, and being of considerable weight it would break the gearing or cause other damage if it were stopped abruptly, as would be the case when the machine is stopped for any purpose. A suitable clutch mechanism is therefore fixed upon the end of the shaft, upon which the gear-wheel e is secured, and a spiral spring surrounds this shaft at d, between the clutch and outer journal-box, as shown in Figs. 1 and 5.

When the apparatus is stopped for any purpose, the shaft will also be stopped, and by reason of the clutch and the spring d the gear-wheel e and the mechanism between it and the thrashing-cylinder will continue its motion and stop more gradually. This not only relieves the machinery of the strain which would result from sudden stoppage of the cylinder, but also allows the cylinder to clear itself of straw which may have reached

it before the stoppage of the machine, as it will run long enough by its own momentum for this purpose.

After the grain has been thrashed it passes through the usual cleaning mechanism within the thrashing-machine, and instead of being taken directly to the sacker from this cleaning-shoe it is delivered into an elevator-spout, S, by which it is carried up and discharged into the secondary cleaner Q, which is supported at the side of the main separator-case and in a position above and slightly in front of the bearing wheel E. This cleaner contains a series of shaking riddles and sieves of any usual construction, and is supplied with a blast of air from a fan-blower shown just in front of it in Fig. 2. From the lower part of this cleaner the grain passes out through the spout into the sacks, which are hung thereon by the operator upon a platform, B².

The header portion of the apparatus consists of a frame-work, I J K' K² K³, framed together as shown, and having the inner end hinged to the side of the separator frame or beam A³, so that the outer end of this header-frame may move up or down about the hinges, to accommodate itself to the irregularities in the surface of the ground over which it passes.

The outer end of the header-frame is supported upon a wheel, L², which is journaled in a frame, L L. This frame-work L has its front end pivoted to the beam J of the header-frame, and its rear end has friction-rollers, upon which the arc or bar I' rests. The wheel L² is situated some distance forward of the main bearing-wheels E E' of the separator for the purpose of more perfectly balancing the header-frame, as the greater portion of the weight of the latter is situated at the front portion. It will therefore be seen that when the machine turns around the corner the tendency of the wheel of the frame L will be to swing on its pivot at the forward end, thus allowing the rear end to move inwardly beneath the arc I, and this relieves the wheel and the frame from the strain which would otherwise take place when such turns were made.

In order to relieve the header-frame of the side strain which the draft upon it would naturally cause, I employ diagonal braces O⁶, which extend from the front bearing-wheel of the timber J to the rear timber, I, to which they are fixed at points nearer to the thrashing-machine than their forward ends. The sickle or cutter is supported from the front beam, G, and the draper or conveyer, which carries the cut straw to the thrashing-machine, moves between the timbers G G' of this frame. These timbers G G' are fixed transversely upon timbers M M' M², which extend backward alongside the timbers K K' K², and have pivot pins or journals passing through them, so as to pivot them to these bars K in line with the axis of the wheels E E' of the separator.

As the bar G extends somewhat outside of

the main wheel of the frame, it is connected with the outer bar, H, properly braced, as shown, and pivoted to the bar K³ in the same line with the pivots of the timbers M, before described. The front portion of this supplemental hinged frame, which carries the cutters and the conveying belt or draper, is raised and lowered by means of a lever, P, the rear end of which engages a rack, P³, upon the top of the separator-case, as shown in Fig. 4. The fulcrum of this lever is supported upon a post, P², which projects from the side of the separator-frame, and the front end is connected by a bar, P', with the hinged supplemental frame, so that when the rear end of the lever is pressed down the cutting apparatus in front will be raised, and when the rear end of the lever is raised the cutting apparatus will be depressed.

O and O' is a balance-lever, having a weight-box, O², at its rear end, and its front ends connected by chains O⁵ with the hinged supplemental frame. This lever has its fulcrum upon the timber O³, which is supported by the vertical posts O⁴ from the main frame of the header.

I do not claim, broadly, the combination of a heading and thrashing machine which is adapted to travel about the field while at work, as I am aware such machines have been heretofore constructed; but

What I do claim as new, and desire to secure by Letters Patent, is—

1. In a combined header and thrasher, the thrashing-machine mounted upon bearing-wheels, the header-frame hinged to one side of the separator, in combination with a wheel having its shaft journaled in a frame-work which is pivoted to the outer end of the header-frame, so that it may swing about a vertical pivot, substantially as herein described.

2. In a combined header and thrasher, the thrashing-machine mounted upon bearing-wheels having the header-frame hinged to and projecting from one side, in combination with a bearing-wheel for the outer end of the header-frame, having its shaft journaled in a supplemental frame swinging about a vertical pivot in front and at a point forward of the axis of the wheels of the thrashing-machine, substantially as herein described.

3. In a combined header and thrasher, the thrashing-machine mounted upon wheels upon which it may be drawn about the field, in combination with a header-frame hinged to and projecting from one side of the thrasher, and having an exterior pivot-wheel upon which its outer end is supported, said frame having diagonal braces O⁶ extending between its front and rear timbers, substantially as herein described.

4. In a header and thrasher, the thrashing-machine mounted upon bearing-wheels having the header-frame hinged to and projecting from one side, with its outer end supported upon a single pivoted bearing-wheel, in combination with a supplemental frame, the rear

end of which is journaled or pivoted to the main wheel-frame in line with the wheel-axis of the thrashing-machine, while the front end has the cutting and conveying mechanism attached to it, substantially as herein described.

5 5. In a combined header and thrasher, the thrashing-machine supported upon bearing-wheels having the header-frame hinged to and projecting from one side, with its outer end supported upon a single wheel journaled in a swinging frame, a supplemental frame pivoted to the main header-frame, so that its front may be elevated and depressed, in combination with a lever fulcrumed upon the thrashing-machine, having its front end connected with the hinged supplemental frame and its rear end extending backward to a rack upon the thrashing-machine, substantially as herein described.

6. In a combined header and thrasher, the thrashing-machine mounted upon bearing-wheels, having the header hinged to and projecting from one side, with a single outer supporting-wheel, an adjustable supplemental frame pivoted to the main frame, and a seat support extending upward and forward from the front end of the separator, and having a seat attached to its upper forward end, substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL HOUSER.

Witnesses:

JOSHUA B. WEBSTER,
ELIHU B. STOWE.