

(No Model.)

2 Sheets—Sheet 1.

P. JARVIS.
CORN HARVESTER.

No. 556,269.

Patented Mar. 10, 1896.

Fig. 1.

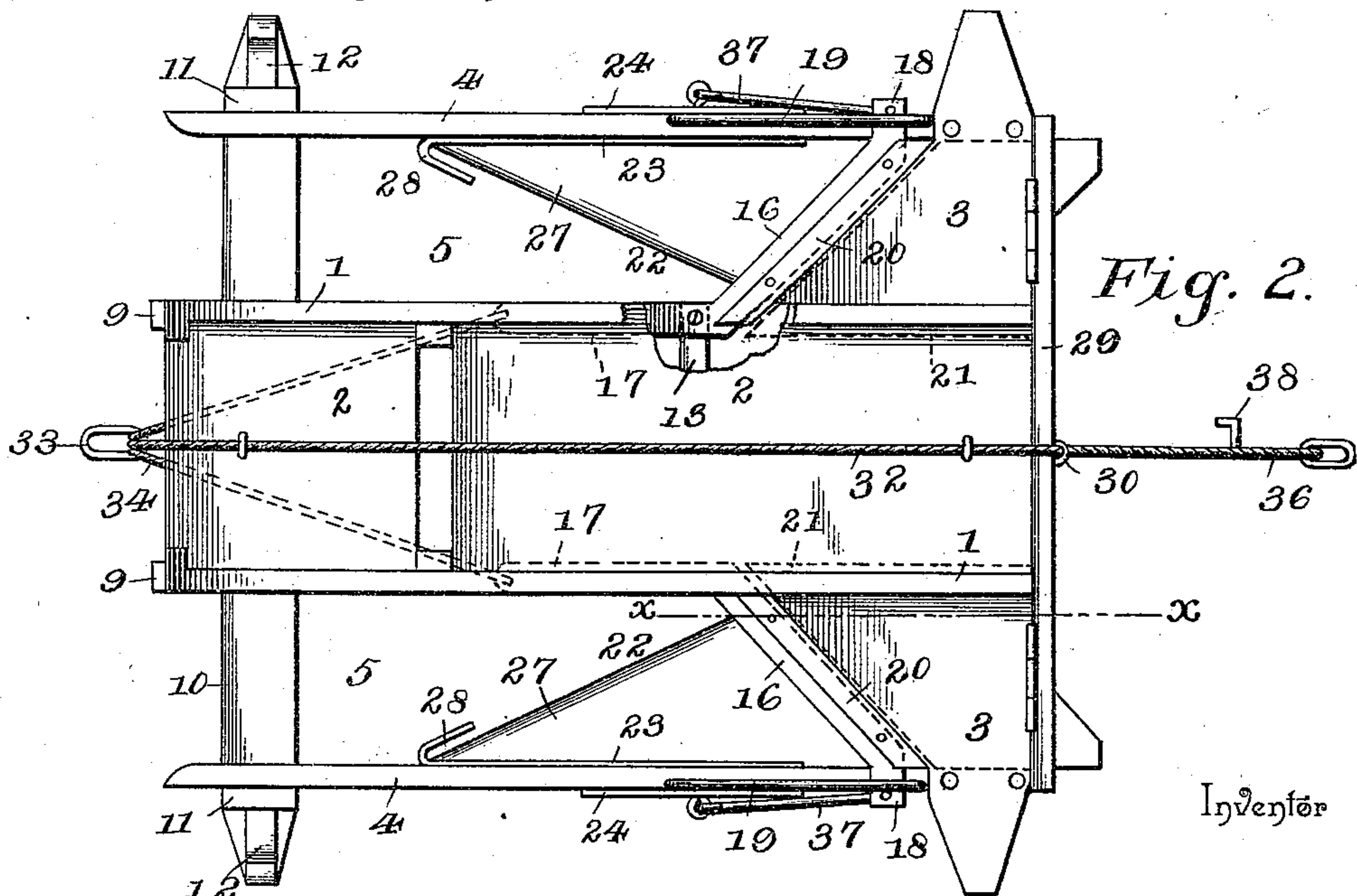
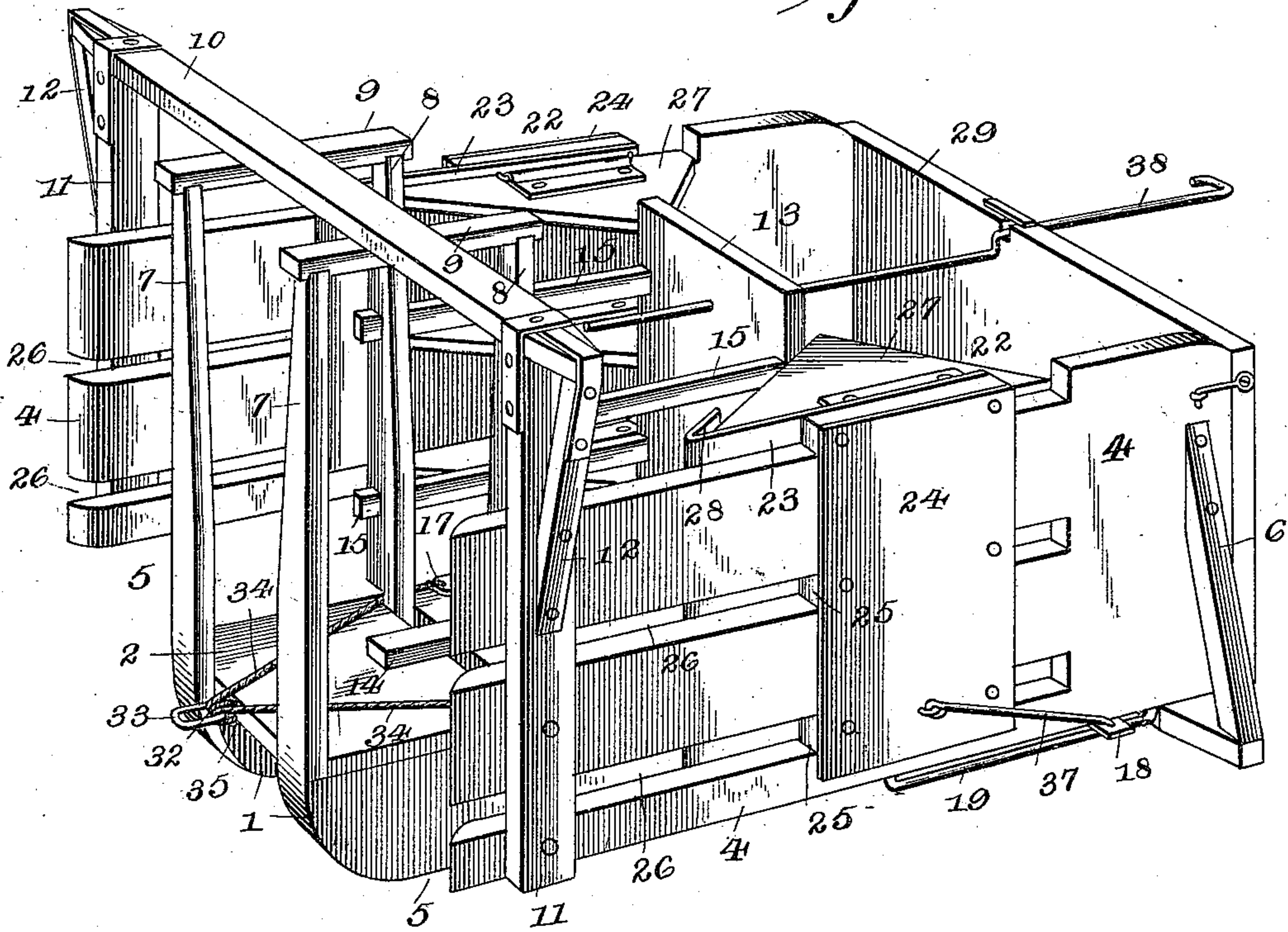


Fig. 2.

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Witnesses

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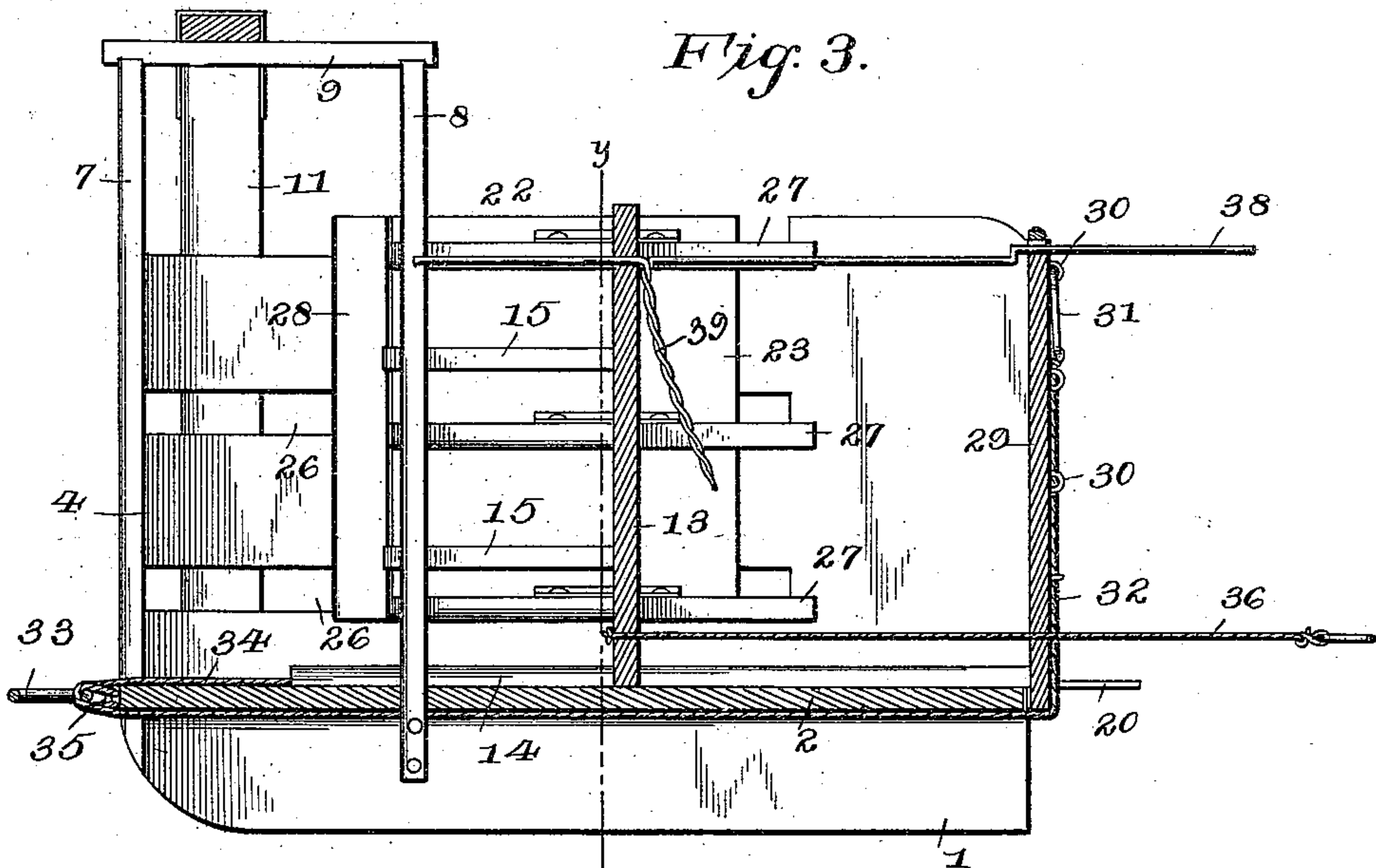


Fig. 4.

Fig. 7.

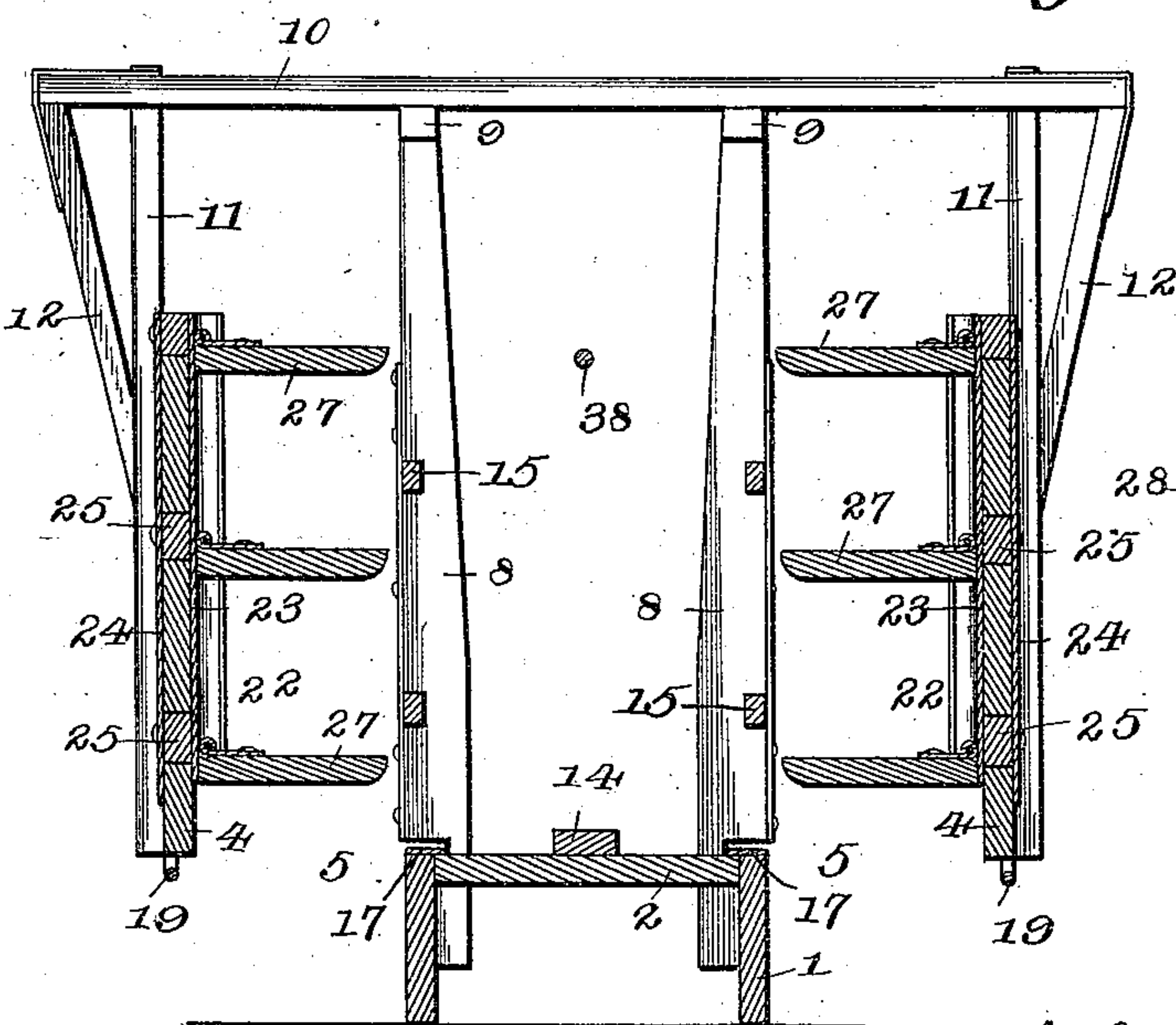
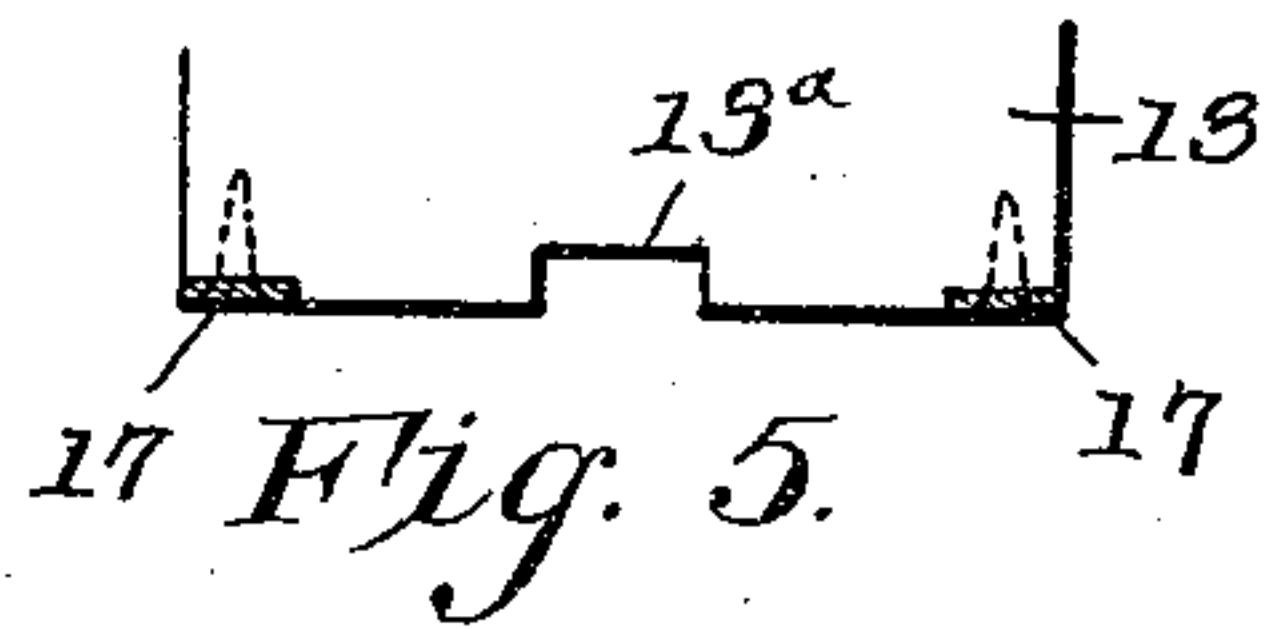
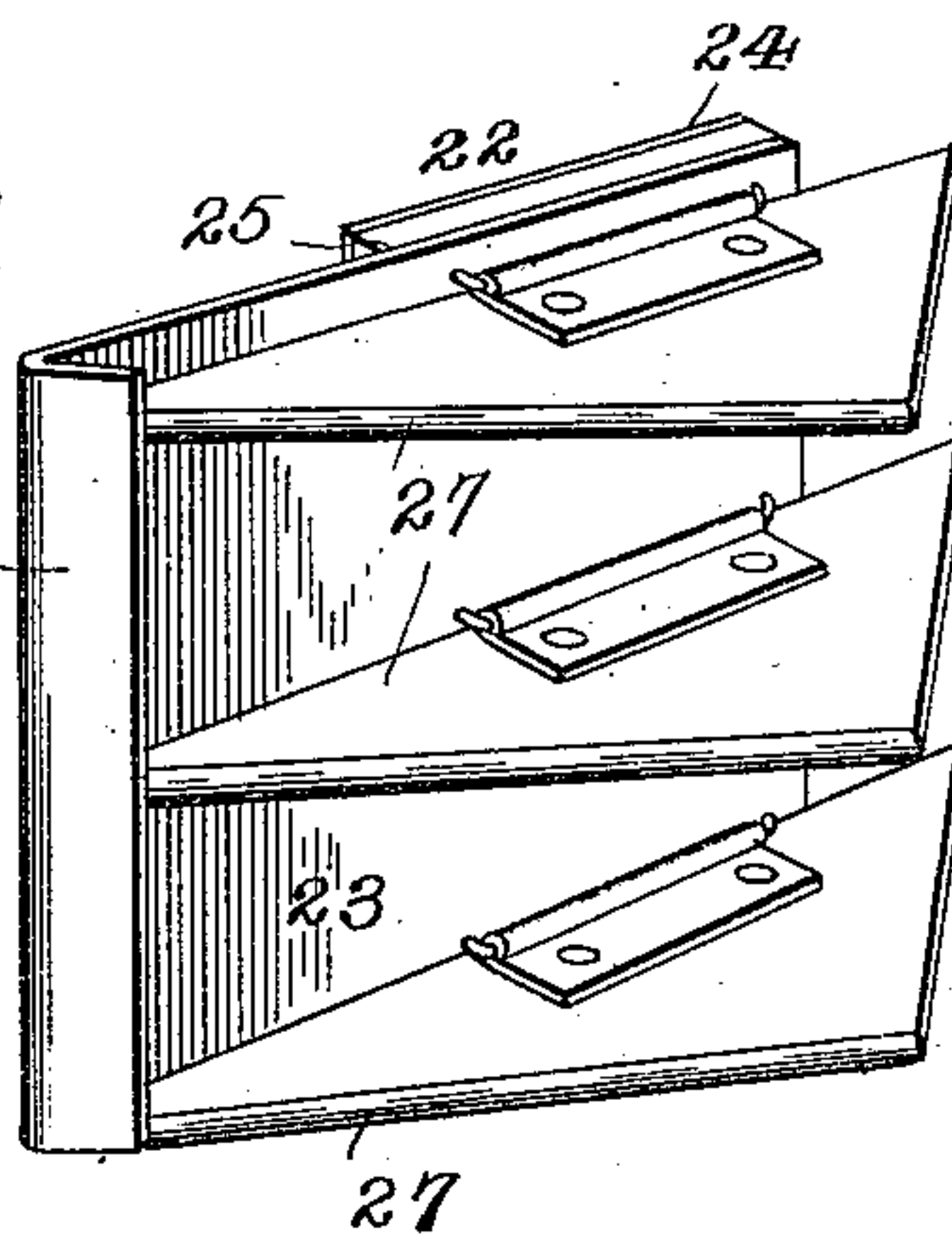


Fig. 6.



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UNITED STATES PATENT OFFICE.

PHILIP JARVIS, OF CEDAR RAPIDS, NEBRASKA.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 556,269, dated March 10, 1896.

Application filed March 28, 1895. Serial No. 543,480. (No model.)

To all whom it may concern:

Be it known that I, PHILIP JARVIS, a citizen of the United States, residing at Cedar Rapids, in the county of Boone and State of Nebraska, have invented a new and useful Corn-Harvester, of which the following is a specification.

The present invention relates to corn-harvesters, and has for its object to provide a machine which will automatically form the stalks as cut into a shock, which latter may be deposited upon the ground at required intervals, the stalks being received into a compartment and held in vertical relation and from outward displacement by guards, the capacity of the shock-forming compartment being adjustable to adapt it to the increasing bulk of the shock during the formation of the latter.

The improvement consists of the novel features and the peculiar construction and combination of the parts, which hereinafter will be more fully set forth and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a corn-harvesting machine embodying the essence of the invention. Fig. 2 is a bottom plan view of the invention, parts being broken away to show more clearly the connection of the inner ends of the knives with the movable wall. Fig. 3 is a central longitudinal section thereof. Fig. 4 is a cross-section of the complete machine on the line Y Y of Fig. 3. Fig. 5 is a detail view of one of the side guards. Fig. 6 is a detail section on the line X X of Fig. 2, showing the relative disposition of the wing, the covering-plate therefor, and the slide-plate movable with the knife. Fig. 7 is a detail view showing the notch in the lower edge of the vertical wall and the cleat fitting therein.

The machine may be mounted upon suitable supports as ordinarily provided for implements of the character to which the present invention belongs, and is shown supported upon runners 1, which are the most frequently employed provisions. The platform 2 is secured upon the runners, and its rear portion is expanded laterally to form wings 3, which incline in opposite directions on their front edges outwardly and rearwardly

from the sides of the runners 1. Side pieces 4 are attached to the outer end portions of the wings 3 and extend parallel with the runners 1 to a point corresponding with the front ends of the latter, leaving spaces 5 between their inner sides and the opposing sides of the runners, which serve as passages for the entrance of the stalks into the shock-forming compartment. Braces 6 extend from the ends of the wings 3 to the side pieces 4, so as to hold the latter from outward displacement when subjected to pressure from within. Posts 7 rise vertically from the front ends of the runners 1 and are connected at their upper ends to corresponding posts 8 by means of cross-bars 9, the posts 8 being located a short distance in the rear of the posts 7 and secured at their lower ends to the runners 1. A cross-beam 10 is supported upon the cross-bars 9 and has bars 11 pendent from its extremities and attached to the outer sides of the parts 4 to brace and strengthen the latter. These pendent bars 11 are strengthened by braces 12, which are attached at their upper ends to the outer extremities of the cross-beam 10. The cross-beam 10 and the pendent bars 11 constitute an arch beneath which the stalks pass into the shock-forming compartment.

The vertical wall 13 is movable and forms a closure for the front side of the shock-forming compartment, and is adapted to be moved in and out to vary the capacity of the said shock-forming compartment to accommodate the bulk of the stalks located in the said compartment. The lower edge of the wall 13 is notched at 13^a to receive a cleat 14, by means of which the vertical wall is guided in its movements and prevented from lateral displacement at its lower end. Parallel rods or bars 15 extend forwardly from the sides of the wall 13 and operate in suitable openings provided in the vertical posts 8, and serve as a further means to guide the wall 13 in its movements and retain it in proper position. Knives 16 extend obliquely across the passages 5 to operate upon the stalks by a shear action, and are attached at their inner ends to the lower edge of the wall 13, whereby the said wall and knives will move in unison, so that the knives may at all times occupy a position at the front end of the

shock-forming compartment and conform to the various positions of the said wall 13. An arm 17 extends forwardly from the inner end of each knife, and may be attached to the latter or form an integral part thereof. These arms operate in notches or openings formed in the posts 8. The outer ends of the knives 16 have lateral extensions 18, which project a short distance beyond the side pieces 4 and operate in suitable guideways provided between rods 19 and the lower edges of the side pieces 4. Slides or movable plates 20 are attached to the rear edge portions of the knives 16 and move with the latter, and serve to close and prevent the formation of an opening in the rear of the said knives 16 when the latter are moved forward, said slides operating over the wings 3 and beneath a plate 21, placed over each of the said wings. These plates 21 prevent the lodgment of foreign matter in the rear of the slides 20, which would result if the said plates 21 were dispensed with.

Guards 22 are disposed at the front end of the shock-forming compartment, one on each side of the vertical wall 13, to prevent the escape of the stalks which have already been received into the shock-forming compartment. These guards comprise inner and outer plates 23 and 24, which are disposed to operate upon opposite faces of the side pieces 4, and which are suitably connected by short bars 25, located between the plates and attached thereto by any desired fastening means. These bars 25 are slightly wider than the thickness of the side pieces 4, and operate in longitudinal grooves 26, formed in the side pieces 4, the number and position of the longitudinal grooves 26 corresponding with the relative location and number of the short bars 25. Approximately triangular-shaped wings 27 are hinged to the plates 23 so as to swing upward, and are limited in their downward movement and supported in substantially a horizontal position by means of their inner edges abutting squarely against the sides of the plates 23.

The rear edges of the wings 27 conform to the inclination of the knives 16, and border upon a plane passing vertically and touching the cutting-edge of the respective knife 16. The front edges of the wings are about twice the length of the rear edges, so as to provide a long inclined edge, and the lower corner of each wing is beveled off in such a manner as to cause an upward movement of the wings when the stalks pass by the same. The wings of each guard are disposed in vertical relation. Hence the front edges engage with the stalks at practically the same instant, and the latter being slightly deflected will have a tendency to wedge under the lowermost wing, and as a consequence the latter will yield and swing upward. The same action will occur with the second wing, which in turn will yield, and the other wings of the series will operate in precisely the same manner. Hence the stalks

will pass by the wings and enter the shock-forming compartment. The front edge portions of the plates 23 are bent inwardly, so as to extend over the front ends of the wings 27, thereby preventing the stalks from entering the space between the plates 23 and the inner edges of the wings when the latter are turned upon their hinged or pivotal connections. A sufficient distance is provided between the bent portions 28 of the plate 23 and the opposing edges of the wings 27 to admit of the free movement of the latter when tilting to provide for the entrance of the stalks into the shock-forming compartment.

The rear portion of the shock-forming compartment is closed by an end-gate 29, which is hinged at its lower edge to the rear end of the platform 2 and is adapted to swing downward and outward to facilitate the discharge of the shock from the machine. This end-gate has a series of staples or eyes 30 disposed in vertical relation on its rear side to be engaged by a hook or fastening 31 on the end of a rope or chain 32, which extends beneath the platform 2 and is attached at its front end to the advance end of the said platform. This rope or chain 32 can be lengthened or shortened by securing its rear end to one or the other of the staples or eyes 30, being the shortest when secured to the topmost staple or eye and the longest when fastened to the lowest staple or eye of the series. A draft-ring 33 is applied to the front end portion of the rope or chain 32 for attachment of the team thereto, and the rope 32 is rove through the ring 33 and is attached to a staple at the front end of the frame. A rope or chain 34 is secured at its end to the arms 17 and passes through the draft-ring 33 and through a staple 35 at the front end of the platform 2.

When the draft is applied to the ring 33, the rope or chain 34 will be drawn upon and move the vertical wall 13 outward, the limit of movement being dependent upon the length of the rope or chain 32, which controls the same. As the shock-forming compartment fills and requires enlarging, the rear end of the controlling rope or chain 32 is lowered to lengthen the latter, thereby permitting a forward movement of the draft-ring and a consequent advance of the vertical wall 13, in the manner set forth. Thus it will be seen that advantage is taken of the draft to move the wall 13 and the guards 22 forward when it is required to increase the capacity of the shock-forming compartment to accommodate the increasing size of the growing shock. A rope or cord 36 passes through an opening in the end-gate 29 and is attached to the vertical wall 13, and is designed to be drawn upon to return the vertical wall and the parts attached thereto to a normal or required position. The guards 22 are attached to the knives 16 by means of rods 37, the latter being secured at their rear ends to the lateral extensions 18 of the said knives and at their front ends to the outer plates 24 of the guards 22. By this

means positive connection is had between the vertical wall and the said guards to cause these parts to move together.

A rod 38 is adapted to operate in the vertical wall 13 and the end-gate 29 and has a lateral extension 39. The purpose of this rod is to engage with tangled stalks and enable the latter to be forced to the rear portion or within the body of the shock-forming compartment. Another use of the same is to provide a means for attaching the shock to the ground when it is required to discharge the same from the machine. In this use of the rod it is engaged with the band which encompasses the shock and is forced into the ground a sufficient distance to obtain a firm anchorage, the shock resting upon the end-gate, which latter is lowered for the purpose.

The parts being arranged as just described, the machine is drawn forward, which will result in sliding the shock from off the end-gate, after which the rod can be detached and placed in operative position across the shock-forming compartment to move the tangled stalks toward the rear end of the machine, as herein set forth.

When starting in the field to harvest the corn, the vertical wall 13 and the parts connected therewith occupy a position as near the end-gate as possible, and as the same is drawn over the field adjacent rows of corn enter the passages 5 and are cut by the knives 16, passing by the wings 27 in the manner hereinbefore described. As the shock-forming compartment fills to its utmost capacity, the controlling-rope 32 is lengthened, which permits a forward movement of the wall 13 and the guards 22, in the manner previously set forth, thereby increasing the capacity of the shock-forming compartment. This operation is repeated until the greatest limit and capacity of the shock-forming compartment is attained. After the shock has been formed the machine is brought to a standstill and the end-gate lowered, the shock being bound in any of the usual ways and anchored to the ground substantially in the manner disclosed, after which the team is started and the shock deposited upon the ground.

In providing different patterns and styles of machines embodying the essential points of the invention it is clear that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. A corn-harvester having a shock-forming compartment provided with a vertically-disposed wall which has direct connection with the draft devices so as to be positively moved thereby when it is required to increase the capacity of the said shock-forming compartment, substantially in the manner set forth.

2. A corn-harvester having a shock-forming compartment provided with an adjustable wall whereby the capacity can be varied, and having the cutter attached to and movable with the said adjustable wall, whereby the said cutter may occupy the front position of the shock-forming compartment, substantially as described for the purpose set forth.

3. In a corn-harvester having a shock-forming compartment, the combination of an adjustable wall, a passage on one side of the said wall, a knife attached to and movable with the wall, and a plate attached to and movable with the knife to prevent the formation of an opening in the rear of the knife when the latter is moved forward, substantially as set forth.

4. In a corn-harvester having a shock-forming compartment, and having a passage leading thereto, a guard extending across the said passage in a substantially horizontal direction and hinged at one end so as to open upwardly and admit of the free movement of the stalks through the said passage, and adapted to close behind the said stalks and prevent outward displacement thereof, substantially as set forth.

5. In a corn-harvester having a shock-forming compartment provided with an entrance-passage, a horizontally-disposed guard extending across the said passage and hinged at one end so as to open upwardly to admit of the free passage of the stalks into the compartment, and closing so as to prevent their outward displacement, the front edge of the said guard being rearwardly inclined and beveled, substantially in the manner set forth for the purpose described.

6. In a corn-harvester having a shock-forming compartment, the combination with a plate arranged to one side of the passage leading to the shock-forming compartment, of a wing hinged to the said plate and supported in an approximately horizontal position, and having its front edge inclined and beveled downwardly and rearwardly, substantially as described for the purpose set forth.

7. In a corn-harvester having a shock-forming compartment, the combination with a plate located to one side of the passage leading to the said compartment and having its front edge portion bent rearwardly, of a wing hinged to the said plate and having its front edge inclined and beveled, its front end entering the space provided between the bent portion of the plate and the main body thereof, substantially as described for the purpose set forth.

8. In a corn-harvester, the combination of a vertical wall, a passage to one side thereof, a knife disposed at an angle to the line of draft, and wings extending across the said passage and hinged to a support so as to yield in an upward direction, the rear edges of the wings inclining to correspond with the inclination of the said knife and the front edges

inclining in an opposite direction and beveled, substantially as described for the purpose set forth.

9. In combination, a harvester comprising
5 a shock-forming compartment, a vertical wall forming a closure of the said compartment and movable to regulate the capacity thereof, side guards movable with the said wall and having hinged wings to project across the
10 passages leading into the shock-forming compartment, inclined knives movable with the guards and the said wall, and plates attached to the knives and adapted to prevent the formation of an opening in the rear thereof
15 when the said knives are moved forward, substantially as set forth.

10. In a harvester having a shock-forming compartment, the combination of a movable
20 wall for regulating the capacity of the said compartment, a flexible connection between the platform of the machine and the said adjustable wall, a draft-ring having the said connection fastened thereto, and a controlling-rope operatively connected with the
25 draft-ring, whereby the movement of the said wall can be controlled, substantially as described for the purpose set forth.

11. In a harvester having a shock-forming compartment, the combination of a movable
30 wall, a flexible connection operatively connected with a portion of the frame and with the said wall, a draft-ring having the said flexible connection rove therethrough, a controlling-rope secured at one end to the frame
35 and rove through the draft-ring, and having

its opposite end adjustably connected with the frame of the machine, whereby the adjustment of the said wall can be effected by means of the draft, substantially as set forth.

12. In combination, a platform having lat- 40
eral wings, side pieces rigidly connected with the platform and having longitudinal grooves, plates embracing the side pieces and having bars secured between them to operate in the
45 said longitudinal grooves, wings of substantially a triangular shape hinged to the inner plates and having their front edges beveled rearwardly from their upper faces, a vertical
50 wall movable on the platform, oppositely-inclined knives secured to the said wall and plates, slides attached to and movable with the knives, a flexible connection having attachment at one end with the knives and at
55 the opposite end with the frame of the machine, a draft-ring, and a controlling-cord rove through the draft-ring and having connection at its ends with the frame and adapted to be lengthened and shortened, whereby
60 the adjustment of the movable wall and the parts attached thereto can be regulated, substantially as described for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

PHILIP JARVIS.

Witnesses:

A. B. BINHAM,
SILAS PETTIT.