

No. 747,397.

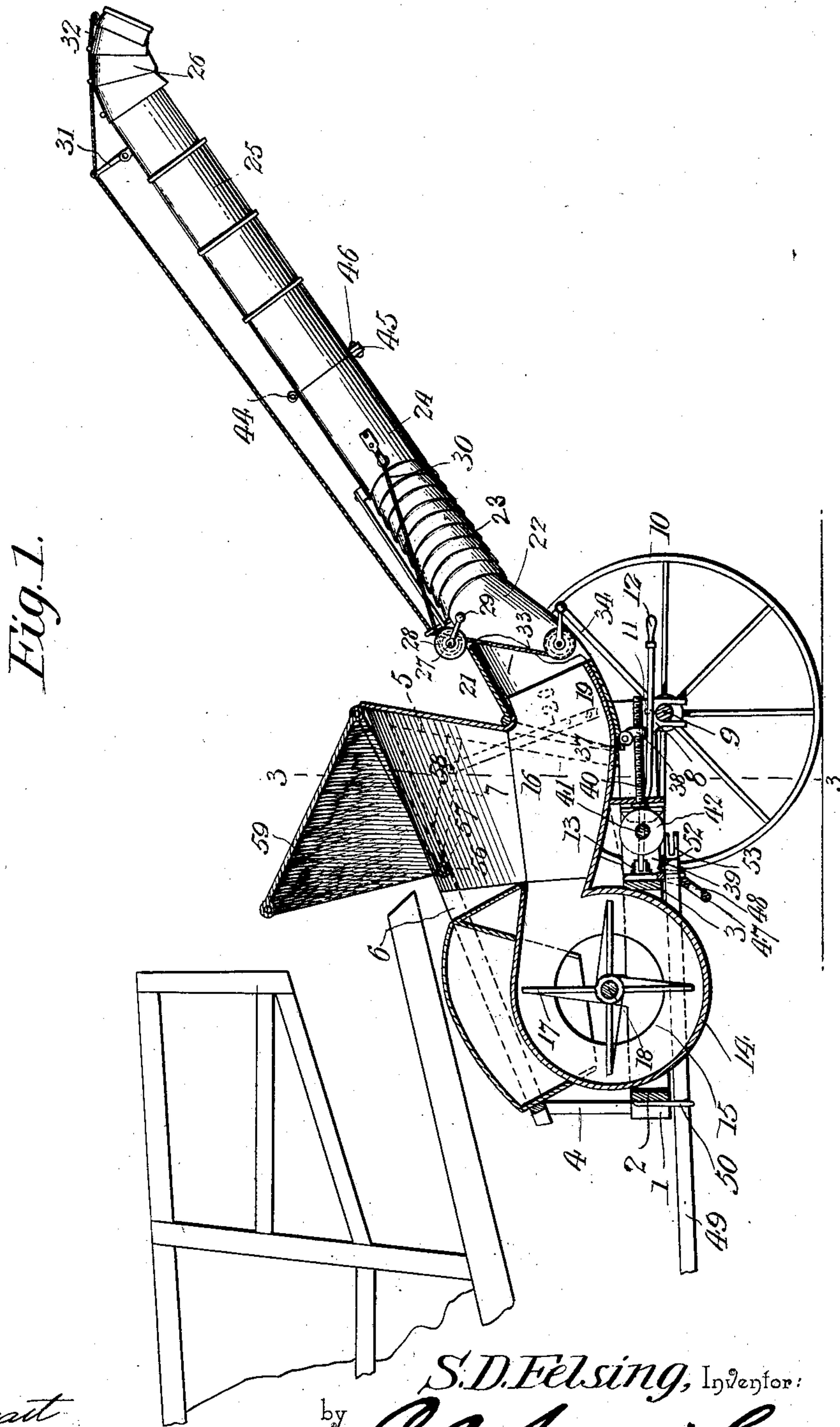
PATENTED DEC. 22, 1903.

S. D. FELSING.
PNEUMATIC STRAW STACKER.

APPLICATION FILED MAR. 5, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
E. H. Stewart
Wm. Baggett

by

S. D. Felsing, Inventor:
C. A. Snow & Co.
Attorneys

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2 SHEETS—SHEET 2.

Fig. 2.

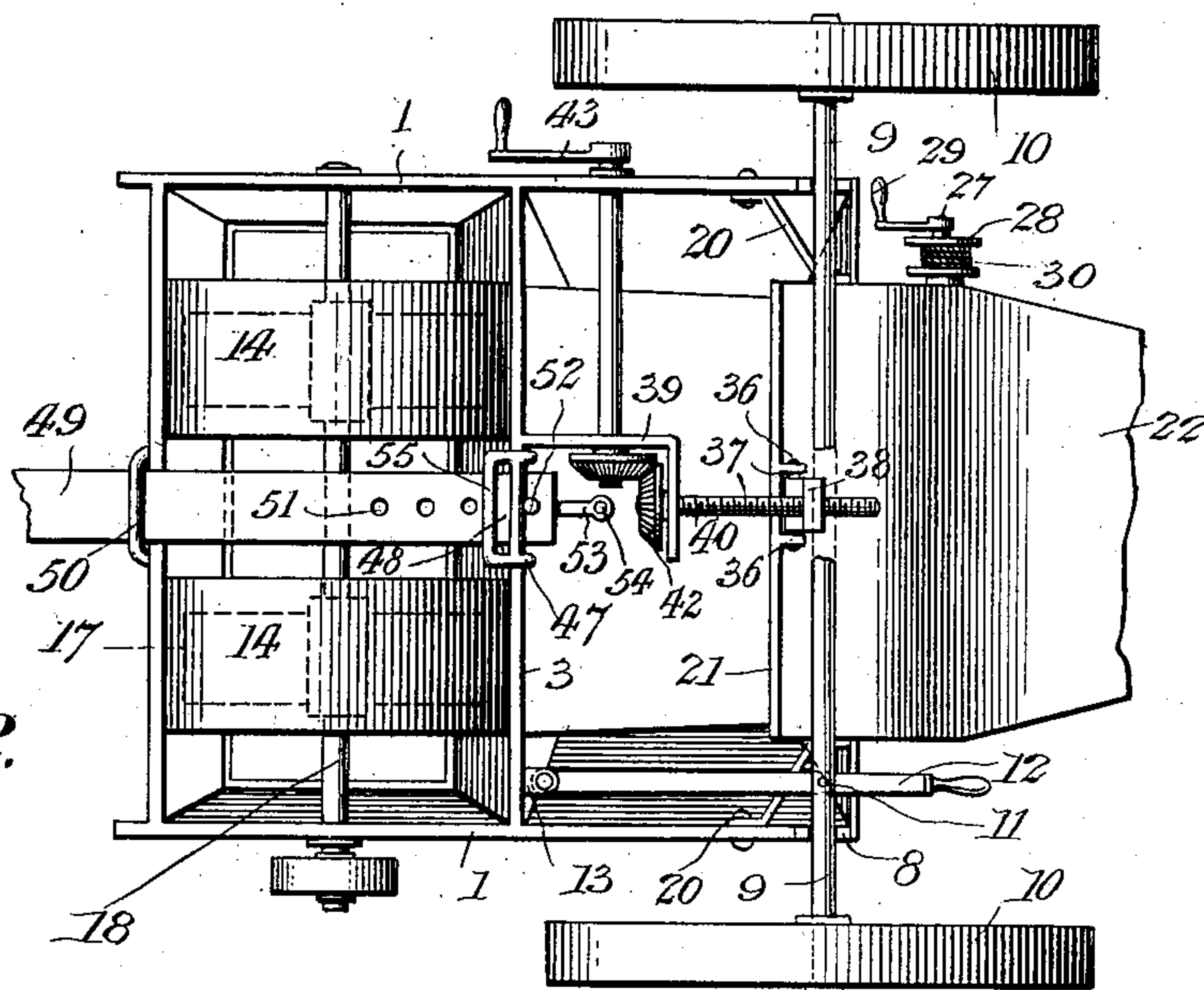
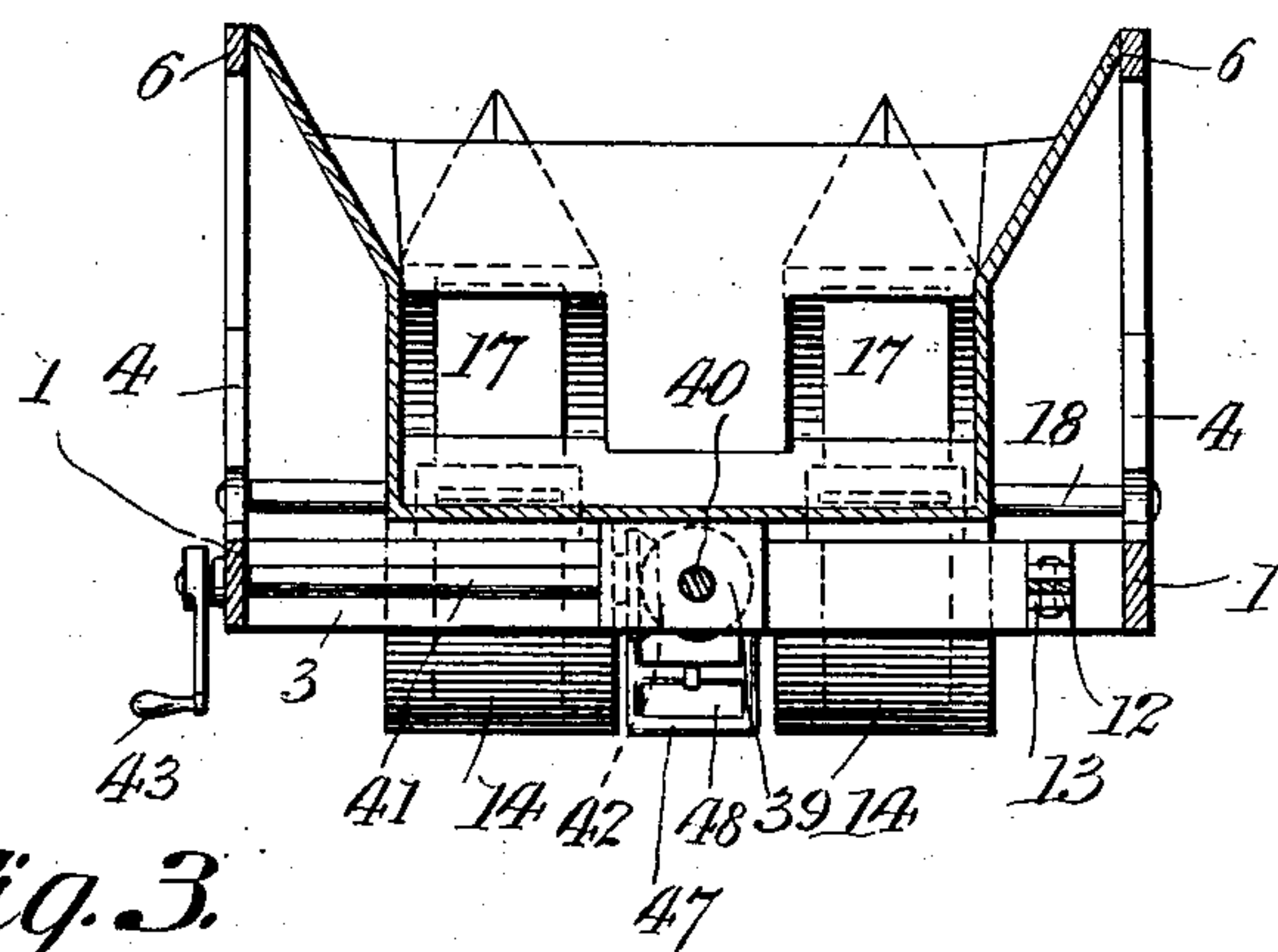


Fig. 3.



Witnesses
E. J. Stewart
Wm. Bagger

S. D. Felsing, Inventor;
by *C. A. Snow & Co.* Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL D. FELSING, OF CROOKSTON, MINNESOTA.

PNEUMATIC STRAW-STACKER.

SPECIFICATION forming part of Letters Patent No. 747,397, dated December 22, 1903.

Application filed March 5, 1903. Serial No. 146,373. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL D. FELSING, a citizen of the United States, residing at Crookston, in the county of Polk and State of Minnesota, have invented a new and useful Pneumatic Straw-Stacker, of which the following is a specification.

This invention relates to pneumatic straw-stacking devices; and it has for its object to provide a device of this class adapted to be used in connection with threshing and separating machines for conveying the straw therefrom and delivering the same upon a stack and which may be supported upon a separate or independent pair of wheels or upon the frame of the stacker, as may be desired.

A further object of my invention is to provide a device of this class having in connection with a flexible delivery-tube a two-part or flexible air-trunk or hopper and means for adjusting the same whereby the flexible conducting-tube may be conveniently raised or lowered.

A further object of my invention is to so connect the pneumatic stacking device with the supporting means for the same that the stacking apparatus may be moved laterally independently of the separator in connection with which it is used, so that when the position of the separator is changed the stacking mechanism may be adjusted independently thereof.

With these and other objects in view, as will appear in the further description of my invention, the latter consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of a pneumatic straw-stacker constructed in accordance with the principles of my invention. Fig. 2 is a bottom plan view of the same. Fig. 3 is a sectional view taken on the line 3-3 in Fig. 1.

Corresponding parts in the several figures are indicated by similar numerals of reference.

In the embodiment of the present form of my invention I employ a frame consisting of

side pieces 11, front connecting-pieces 2, and an intermediate brace or connecting-piece 3. The side pieces are each provided with a front upright 4 and with a rear upright 5, which latter is of a height considerably exceeding that of the front upright, with which it is connected by means of an inclined side piece 6, the latter being connected with the rear upright by means of a brace 7. The rear end of each of the side frame-pieces 1 is provided with a boxing 8 for the axle 9, having the transporting-wheels 10, which revolve loosely upon said axle. The latter is provided with an upwardly-extending pin 11, engaging a lever 12, the front end of which is fulcrumed to brackets 13, extending from the rear side of the cross-brace 3. The rear end of the said lever forms a handle, by means of which the frame may be shifted laterally upon the axle 9 or upon such means as are used for supporting the frame of the machine when in operation.

It is obvious that when this improved device is permanently connected with or supported upon the frame of a threshing-machine a supporting-rod is provided to take the place of the axle 9, such supporting device being provided with a pin, which is the equivalent of the pin 11 herein shown.

The herein-described frame supports a pair of fan-casings 14, provided at the sides thereof with the usual air-intakes 15. The fan-casings are disposed to discharge rearwardly into a hopper or air-trunk 16, which is suitably connected with said fan-casings and which is likewise suitably connected with and supported by the frame. The upper sides of the fan-casings are inverted-V-shaped in cross-section, this construction being preferred for the reason that it is found that thereby the air will be deflected more certainly and powerfully into the hopper or air-trunk. The fans 17 are supported upon a shaft 18, having its bearings upon the side pieces 1 of the frame.

The air-trunk 16 is provided with an extension 19, which is provided with arms or brackets 20, which are pivotally connected with the braces 7 of the frame at a point with which the rounded delivery end of the hopper 16 and the correspondingly-rounded receiving

end of the extension 19 are practically concentric. It is thus evident that the extension 19 may be swung upward and downward, so as to place its discharge end at any desired elevation within the limits of its movement. It is obvious that this extension air-trunk or hopper is so constructed with relation to the hopper 16 as to form a close joint with the latter in order that the passage of the straw over said eye may not be interfered with, the rear end of the hopper 16 overlapping the front end of the extension 19, as will be clearly seen in the drawings. The said extension 19 terminates at its rear end in the throat 21, with which the delivery-spout 22 of the device is flexibly connected by means of the telescopically-disposed semi-elliptical pivotally-connected sections 23. The discharge-spout 22 is composed of two separate horizontally-connected members 24 and 25, the upper one of which is provided at its upper end with a flexible hood 26, by means of which the blast may be directed in a downward direction, while the flexible connection at the lower end of the spout admits of the discharge end of said spout being laterally adjusted, as will be readily understood. A shaft 27 is provided, having winding-drums 28 and a crank or handle 29. The drums 28 are connected by ropes 30, wound in opposite directions upon said drums with the sides of the lower member of the stacking-spout, which may thus be laterally adjusted, as will readily be understood. The upper member 25 of the spout has a bracket 31 hingedly connected therewith, and to said bracket is connected a rope, one end of which, 32, is connected with the flexible hood and the other end of which, 33, is guided to a winding-drum 34, which may be operated to adjust the said flexible hood and also when it is desired to fold the stacking-tube to exert a draft upon the upper member of the latter, whereby it will be swung over in the direction of the hopper, upon which it may be supported in transit.

The construction of the flexible connection and of the discharge-hood is not materially different from that exhibited in Letters Patent to Felsing and Gustafson, No. 696,954, granted April 8, 1902, and the adjusting means are also practically identical with those shown in said patent.

The under side of the extension-trunk 19 is provided with bearings 36 for a short shaft 37, carrying a nut 38, which is thus hingedly connected with said extension. The under side of the hopper 16 and the cross-brace 3 of the frame support an L-shaped bracket 39, the arms of which afford bearings for shafts 40 and 41, connected by miter-gearing 42. The shaft 40 is screw-threaded and engages the nut 38, whereby it is supported. The outer end of the shaft 41 has an additional bearing in one of the bars 1, and it is provided with a crank 43, whereby it may be manipulated to rotate the shaft 40 in its bear-

ings, thus increasing or diminishing the distance between the nut 38 and the bracket 39, in which the shaft 40 is supported, according to the direction in which said shaft is rotated. It follows that by this means the forward bottom edge of the extension-trunk 19 may be adjusted, thereby swinging the said trunk upon its pivotal supports and elevating or lowering its discharge end, as may be desired. It is obvious that when the discharge end of the extension-trunk is thus adjusted it carries with it the discharge-spout, which may in this manner be elevated or lowered.

The hinge 44, which connects the upper and lower members of the stacking-spout, is disposed upon the front side of said spout. The rear meeting edges of said spout members are provided with perforated lugs 45, which may be connected by means of a pin 46 or other connecting means when the machine is in operation.

Depending from the cross-bar 3 of the frame is a link or clevis 47, having a plurality of openings 48, of which two have been shown in the drawings. The lower end of said clevis is forwardly curved to adapt it to receive the rear end of a tongue or traction-bar 49, the front end of which is supported in a clevis 50, depending from the front cross-bar 2 of the frame. The tongue or draft-bar is provided with a plurality of vertical perforations 51, through any one of which a key or pin 52 may be inserted in rear of the clevis 47, with relation to which the said tongue is thus made adjustable. Said tongue is also provided at its rear end with a pair of rearwardly-extending arms 53, disposed one above the other and provided at their rear ends with loops or eyes 54, which will be adapted to receive the fastening pin or key 52 when said arms are placed in engagement with one of the cross-bars 55 of the clevis 47, with which a loose connection may thus be established, which is frequently desirable when the machine is being transported over rough roads.

The side bar 6 at each side of the frame is provided with an outwardly-extending stud 56, adapted to be engaged by a loop or eye 57, formed at the lower end of each side of the folding-frame 58 of a hood 59, which may thus be mounted or supported above the hopper in order to prevent any possibility of any part of the straw being blown out of said hopper, no matter how rapid may be the feed or how strong the blast. When not in use, the hood may be conveniently folded, as will be readily understood, so as to be out of the way.

The operation and advantages of this invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. The construction of the device is extremely simple, and it is adapted to be supported for operation either upon the axle of the transporting-wheels, or it may be detached from said axle and supported upon the frame of any make

of threshing-machine or grain-separator which is in ordinary use.

I desire it to be understood that while I have herein described a simple and preferred construction of my invention I do not regard myself as limited to the precise structural details herein set forth, but reserve the right to any changes, alterations, and modifications which may be resorted to within the scope of my invention and without departing from the spirit or sacrificing the utility of the same.

Having thus described my invention, I claim—

1. In a pneumatic straw-stacker, the combination of a hopper, means for forcing a blast of air into said hopper, and an extension forming an air-trunk connected flexibly with said hopper, the latter and the air-trunk having segmental, overlapping parts concentric with the pivot whereby said parts are connected.

2. In a pneumatic straw-stacker, a hopper, means for directing a blast of air into said hopper, an extension forming an air-trunk, arms extending from the latter and having pivotal connection with the frame of the hopper, and segmental overlapping portions upon the hopper and air-trunk.

3. In a pneumatic straw-stacker, a frame, a hopper, means for directing a blast of air into said hopper, an extension forming an air-trunk flexibly engaging said hopper and having arms pivotally connected with the frame, a discharge-spout flexibly connected with the air-trunk, and means for adjusting the latter and for retaining it in adjusted position.

4. In a device of the class described, a hopper, an extension forming an air-trunk flexibly connected with said hopper, a nut hingedly connected with said extension, a screw-threaded shaft engaging said nut, an operat-

ing-shaft, supporting means for said shafts, and miter-gearing connecting said shafts.

5. In a device of the class described, a frame supporting a hopper, means for producing a blast of air, and a straw-exit, said frame being provided with depending supporting-boxes, in combination with a supporting rod or axle having an upwardly-extending pin, and a shifting lever connected with the frame and pivotally engaging the said pin.

6. In a device of the class described, a hopper, an extension forming an air-trunk flexibly connected therewith, a discharge-spout comprising two members hingedly connected, the lower member of said spout being flexibly connected with the air-trunk and the upper member of said spout being provided with a flexible hood, means for adjusting the said spout, a hinged bracket upon the upper member of the latter, a winding-drum, and a rope connected with said bracket and having one of its ends connected with the winding-drum and the other end with the flexible hood.

7. In a device of the class described, a frame, a hopper, fan-casings supported in front of said hopper and discharging into the front end of the latter, said fan-casings having upper inverted-V-shaped portions and air-intakes in the sides thereof, a shaft journaled upon the sides of the frame and extending through the fan-casings, and fans upon said shaft, within the fan-casings.

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

SAMUEL D. FELSING.

Witnesses:

O. DU CAMP,
ANTH PAULSBERG.