(No Model.)

2 Sheets—Sheet 1.

# S. D. MURRAY.

## COTTON ELEVATOR AND GIN FEEDER.

No. 560,914. Patented May 26, 1896.

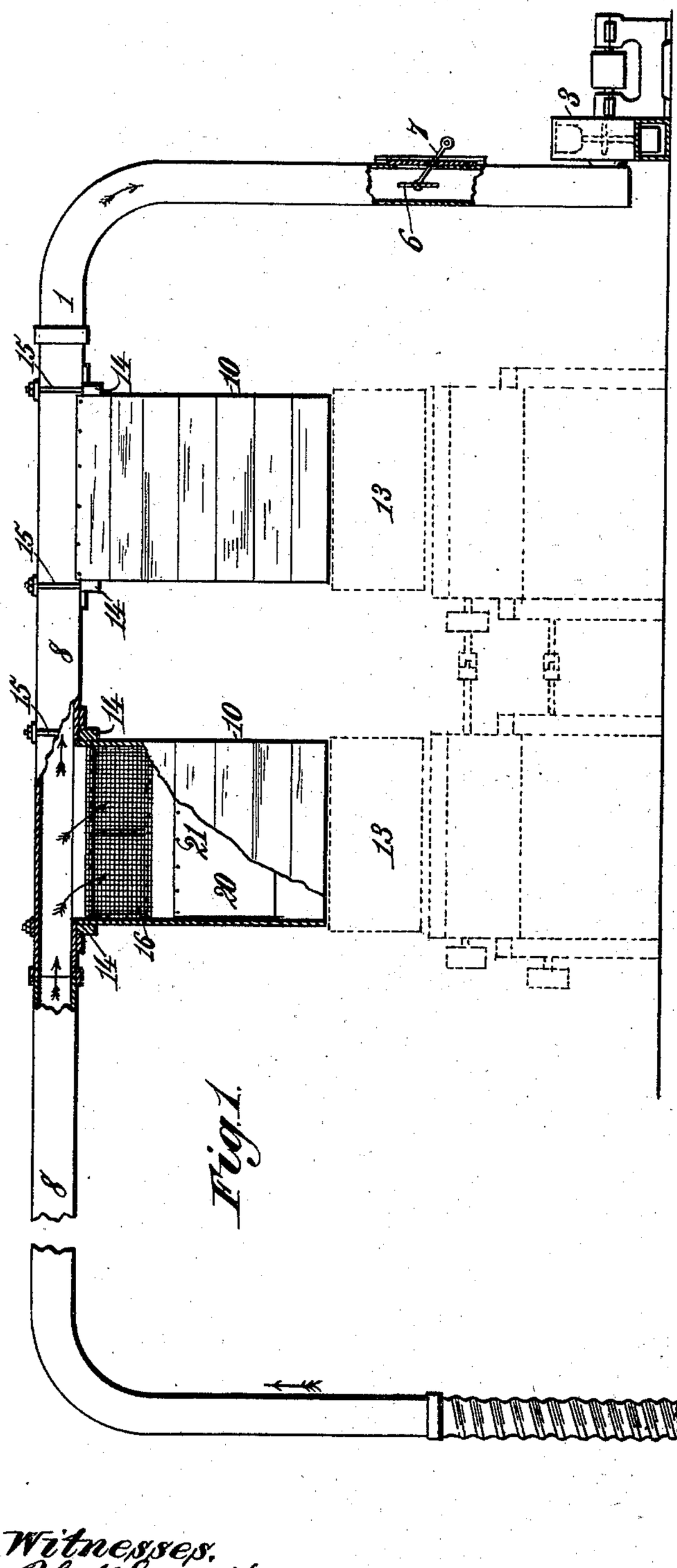


Fig. 1.

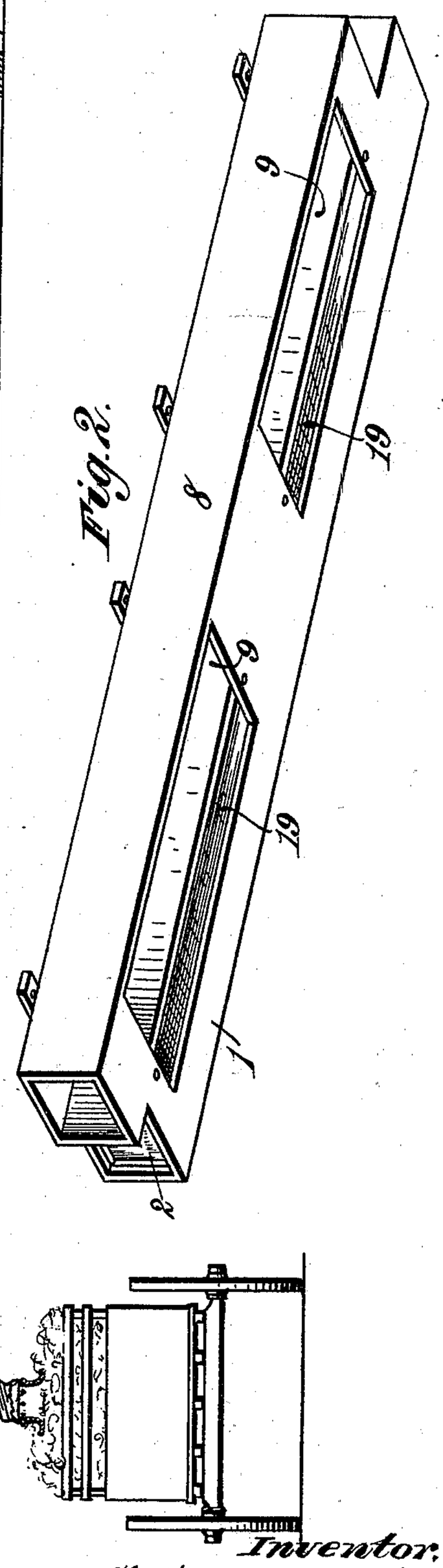


Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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## COTTON ELEVATOR AND GIN FEEDER.

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Fig. 3.

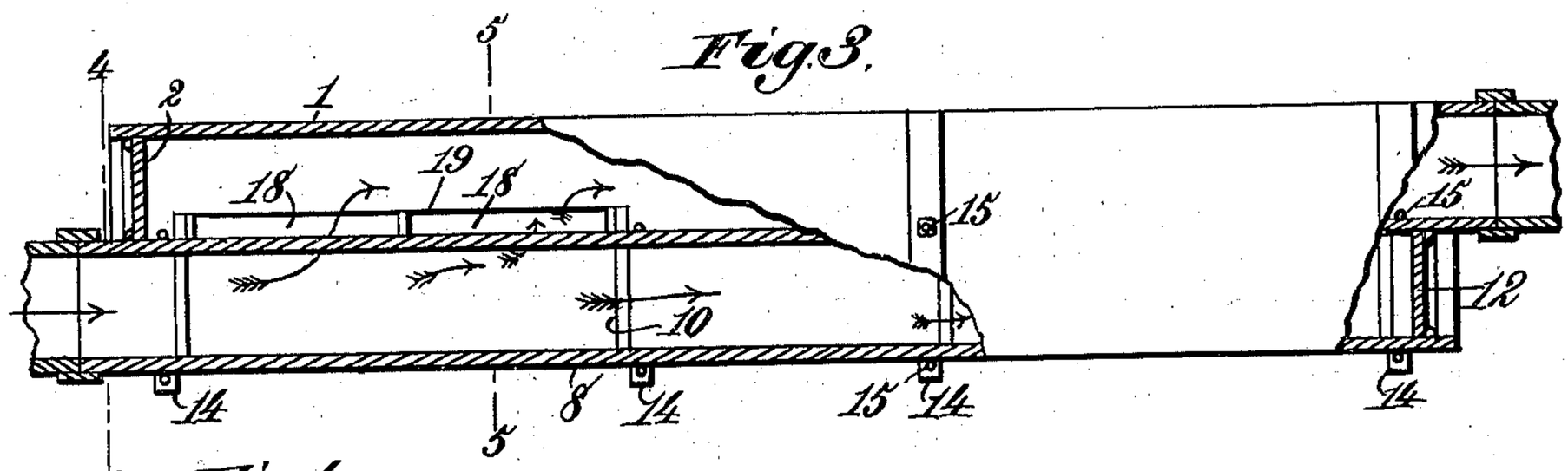



Fig. 4.

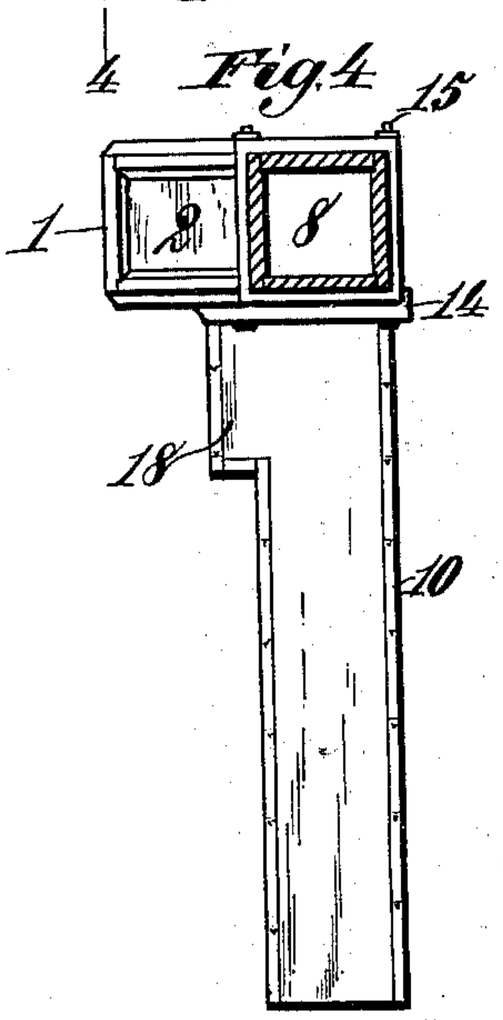



Fig. 5.

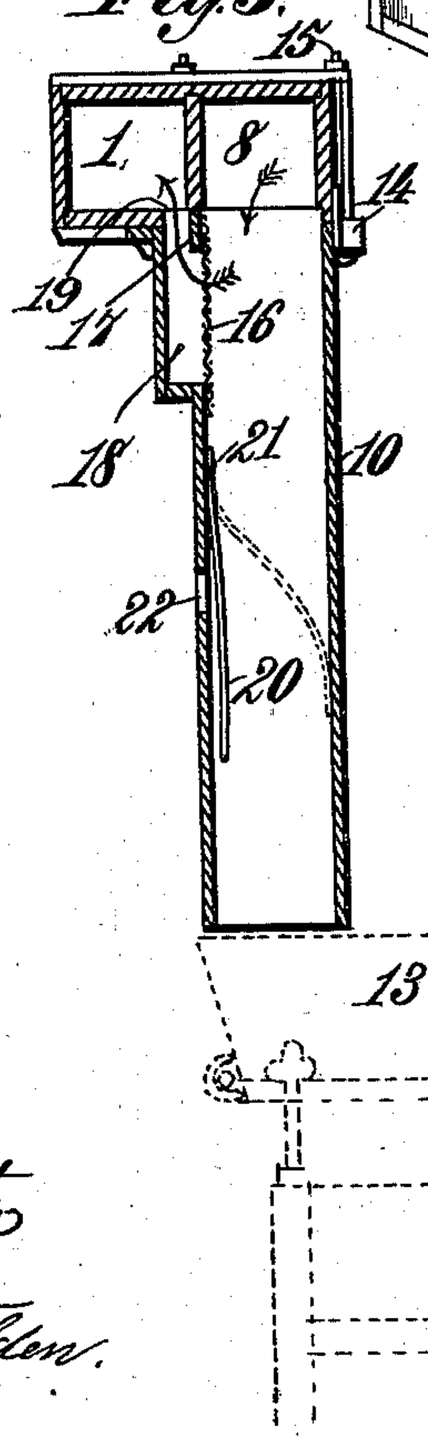
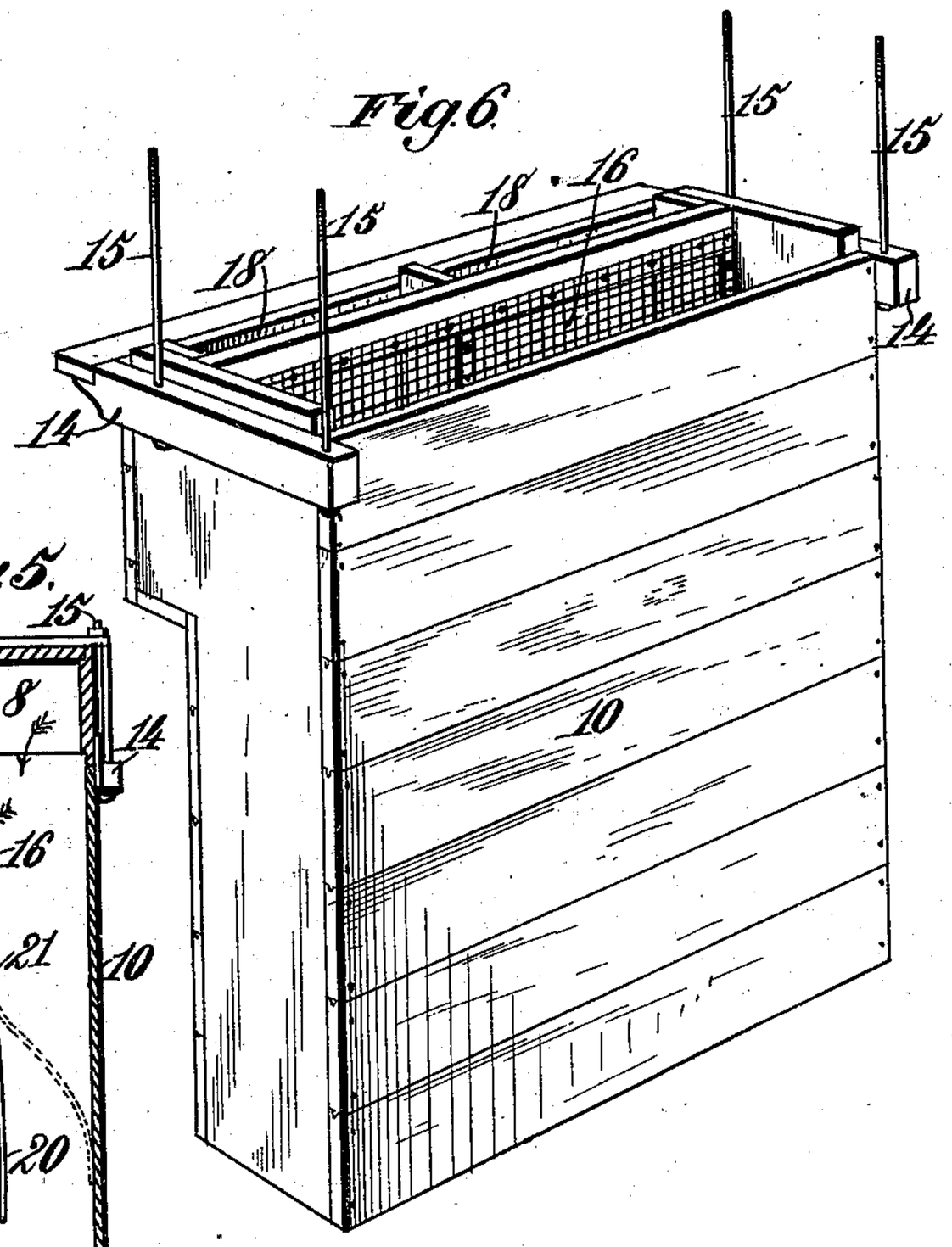



Fig. 6.

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# UNITED STATES PATENT OFFICE.

STEPHEN D. MURRAY, OF DALLAS, TEXAS.

## COTTON-ELEVATOR AND GIN-FEEDER.

SPECIFICATION forming part of Letters Patent No. 560,914, dated May 26, 1896.

Application filed January 3, 1896. Serial No. 574,261. (No model.)

*To all whom it may concern:*

Be it known that I, STEPHEN D. MURRAY, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented new and useful Improvements in Cotton-Elevators and Gin-Feeders, of which the following is a specification.

This invention relates to that class of apparatus designed to elevate and distribute seed-cotton to cotton-gins wherein an air conduit or tube is arranged longitudinally along and communicates with a cotton-distributing casing or trunk having wire or similar screens arranged vertically therein at points directly above or over suspended chutes or feeders in such manner that the seed-cotton is drawn by suction through the cotton-distributing casing or trunk, and at the points where the wire or other screens are located is caused to fall by gravity into the suspended chutes or feeders for delivery to the cotton-gins or cotton-gin feeders, as in my Letters Patent Nos. 472,607 and 488,446, dated, respectively, April 12 and December 20, 1892.

The objects of my present invention are to simplify and improve the prior constructions, render the same more economical of manufacture, and facilitate the assemblage of the parts, and to provide an apparatus of the character alluded to wherein the wire or other screens are located in and are removable with the suspended chutes or feeders.

To accomplish these objects, my invention consists, essentially, in the combination, with an air conduit or tube and a cotton-distributing casing or trunk arranged in juxtaposition to one another, of a detachably-suspended gin chute or feeder having therein a screen and communicating at opposite sides of said screen, respectively, with the air conduit or tube and the cotton-distributing casing or trunk.

The invention also consists in the combination, with an air conduit or tube and a cotton-distributing casing or trunk arranged in juxtaposition to one another, of a suspended chute or feeder, one or more, having a screen mounted therein and constructed with an air-box at one side of the screen, said chute or feeder having its upper end portion in open communication with the cotton-distributing casing or trunk at one side of the screen and said air-box communicating with the air conduit or tube at the opposite side of the screen.

The invention also consists in certain other features of construction and combination or arrangement of parts, hereinafter described, and specifically pointed out in the claims, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional side elevation showing sufficient of a cotton elevating and distributing apparatus to illustrate my present invention. Fig. 2 is a detail perspective view looking at the bottom portions of the air conduit or tube and the cotton-distributing casing or trunk. Fig. 3 is a sectional top plan view of the same. Fig. 4 is a vertical transverse sectional view taken on the line 4 4, Fig. 3. Fig. 5 is a similar view taken on the line 5 5, Fig. 3; and Fig. 6 is a detail perspective view of one of the chutes or feeders, showing also the clamp or tie bolts by which it is clamped to the under side of the cotton-distributing casing or trunk.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates a horizontally-arranged air conduit or tube having one end portion closed air-tight through the medium of a filling-section 2, Fig. 3, and the other end portion extending downward and connected with an air-suction apparatus, such as a suction-fan 3. The vertical end of the air conduit or tube is provided with a valve, as at 6, having an attached handle or lever 7, by which the valve may be opened and closed at regular or other intervals in any suitable manner. The air conduit or tube 1 is arranged longitudinally along a cotton-distributing casing or trunk 8, having its bottom wall constructed with rectangular or other suitable openings, as at 9, Fig. 2, for placing this casing or trunk in communication with the upper ends of the chutes or feeders 10, as will more fully hereinafter appear.

The cotton-distributing casing or trunk 8 is closed air-tight at one end through the medium of the filling-piece 12, Fig. 3, and its other end portion is designed to communicate with the chamber, receptacle, or vehicle con-

taining the seed-cotton which is to be distributed and fed to the cotton-gins. The cotton may be delivered from the chutes or feeders 10 to the ordinary cotton-gin feeders 13, which are indicated by dotted lines in Figs. 1 and 5.

The chutes or feeders 10 are preferably composed of boards or planks and are made in the form of a box-like structure, as best seen in Fig. 6. The ends of each chute or feeder, at the extreme top portion thereof, are provided with cross-beams 14, through which extend clamp or tie bolts 15, which extend vertically through portions of the conduit or tube 1 and the casing or trunk 8 and are secured in place by nuts applied to the upper ends of the bolts, for the purpose of clamping the upper end of the chute or feeder in engagement with the under side of the conduit or tube and the casing or trunk. The chutes or feeders are each provided with a wire or other similar screen 16, (best seen in Fig. 5,) which, as here shown, extends continuously from one end wall to the opposite end wall of the chute or feeder 10. The upper end of the screen is secured to a longitudinal bar 17, suitably supported in the upper end of the chute or feeder, while the lower edge of the screen is secured to the rear side wall of the chute or feeder. The chute or feeder is constructed at its upper end portion with a lateral or offset air-box 18 of a length substantially the length of the screen and having its upper open portion placed in communication with the interior of the air conduit or tube 1 through the medium of a longitudinal orifice 19, Figs. 5 and 6, formed in the bottom wall of the conduit or tube, all in such manner that when suction is created in the conduit or tube 1 the air will be drawn through the casing or trunk 8 and screen 16 into the conduit or tube, as will be clearly understood by reference to Fig. 5.

By clamping the upper end of each chute or feeder 10 in engagement with the bottom wall of the cotton-distributing casing or trunk 8 through the medium of the vertical clamp or tie bolts 15, as hereinbefore explained, it is possible to conveniently and quickly detach or remove a chute or feeder whenever occasion demands, and inasmuch as the wire or other screen 16 is mounted in and carried by the chute or feeder itself the screen is detachable with the chute or feeder and is readily accessible through the upper open end thereof, so that cleaning or repairing of the screen is greatly facilitated if occasion therefor should arise. The arrangement of the screen in the chute or feeder and the attachment of the latter to the casing or trunk through the medium of the clamp or tie bolts also materially simplifies the construction of the apparatus, enables me to more economically manufacture the same, and facilitates the assemblage of the parts. It will be observed that through the medium of the lateral or offset air-box 18 each chute or feeder is placed in communication with the suction conduit or tube at one side of the vertically-arranged screen 16, while the chute or feeder is in open communication at the other side of the screen with the cotton-distributing casing or trunk.

The chutes or feeders 10 are each provided internally with a valve 20, secured at its upper end, as at 21, and composed of canvas or any other flexible material. This canvas or other flexible valve 20 normally hangs suspended, as shown in Fig. 5; but when suction is created in the conduit or tube 1 the valve is thrown to its closed position, as indicated by dotted lines, Fig. 5, to cut off communication between the top portion of the chute or feeder and the bottom portion thereof. The rear wall of the chute or feeder is provided with an air-inlet 22, which may be controlled by a gate or valve, as in my Patent No. 488,446, although in the drawings I do not illustrate a gate or valve for this purpose.

In the practical operation of my improved cotton elevating and distributing mechanism the suction created by the suction apparatus 3 causes the flexible valve 20 to close to the position shown in dotted lines, Fig. 5, and air to be exhausted from the conduit or tube and the casing or trunk 8, thereby inducing the cotton to enter into the casing or trunk and fall by gravity into the chutes or feeders, substantially in the manner disclosed in my patents before mentioned. During the action of the mechanism the valve 6 is caused to open and close at regular or other intervals, and consequently whenever the valve is closed the suction apparatus 3 is cut off from communication with the suction conduit or tube 1, thereby permitting the flexible valve 20 to relax and drop down or open, so that the cotton accumulated in the chute or feeder above the valve 20 will descend to the gin-feeder 13 or to any other point at which the cotton is to be deposited or delivered.

As regards the lateral or offset air-box 18, it may be constructed and arranged in any manner suitable for the purpose of placing the upper end of the chute or feeder in communication with the suction conduit or tube, in such manner that while the greater portion of the chute or feeder is in direct communication with the cotton-distributing casing or trunk the air must flow from the latter through the screen into the air-box and thence to the suction conduit or tube.

In practice the flexible valve 20, of canvas or other suitable material, should be so secured within the feeder that while this valve is susceptible of readily opening and closing it will not completely collapse upwardly in the feeder when closed or drawn inward to the position indicated by dotted lines, Fig. 5, by the suction of the air-exhaust apparatus or fan 3. This result can be accomplished in any manner suitable for the purpose; but preferably I provide the vertical side portions of the valve with extensions secured to the

side walls of the feeder, so that the valve opens and closes somewhat similar to a bellows; but the attached side extensions prevent the valve from collapsing upwardly within the feeder.

Having thus described my invention, what I claim is—

1. The combination with an air-suction conduit or tube, and a cotton-distributing casing or trunk arranged in juxtaposition to one another, of a detachably-suspended chute or feeder having a screen mounted therein and communicating at opposite sides of said screen, respectively, with the air-suction conduit or tube and the cotton-distributing casing or trunk, substantially as described.

2. The combination with an air-suction conduit or tube, and a cotton-distributing casing or trunk arranged in juxtaposition to one another, of a detachably-suspended chute or feeder having a screen mounted therein and constructed with an air-box at one side of said screen, whereby the chute or feeder communicates, respectively, at opposite sides of said screen with the conduit or tube and the casing or trunk, substantially as described.

3. The combination with an air conduit or tube, and a cotton-distributing casing or trunk arranged in juxtaposition to one another, of a removable and replaceable chute or feeder having a screen mounted therein and constructed with an air-box at one side of said screen which communicates with the air-suction conduit or tube, and clamp or tie bolts detachably clamping the chute or feeder to the casing or trunk, substantially as described.

4. The combination with an air conduit or tube having a valve provided with means by which it may be opened and closed at intervals, an air-suction apparatus connected with the said conduit or tube below said valve, and a cotton-distributing casing or trunk having a portion extending along the air-suction conduit or tube, of a detachably-suspended chute or feeder provided internally with a valve and a screen above the valve, said chute or feeder communicating at opposite sides of said screen, respectively, with the air-suction conduit or tube and the cotton-distributing casing or trunk, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

STEPHEN D. MURRAY.

Witnesses:
R. C. McQueen,
H. P. May.