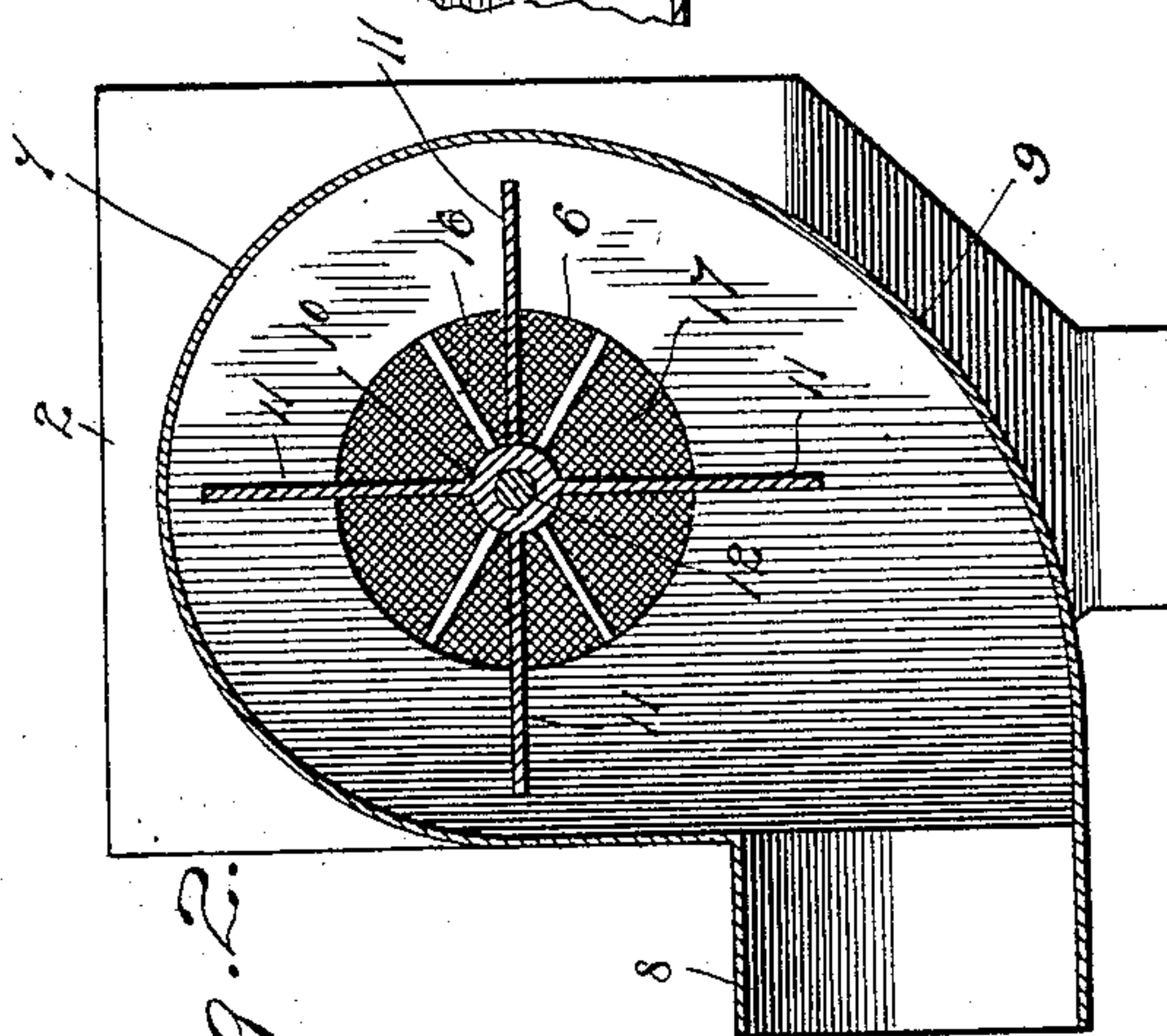
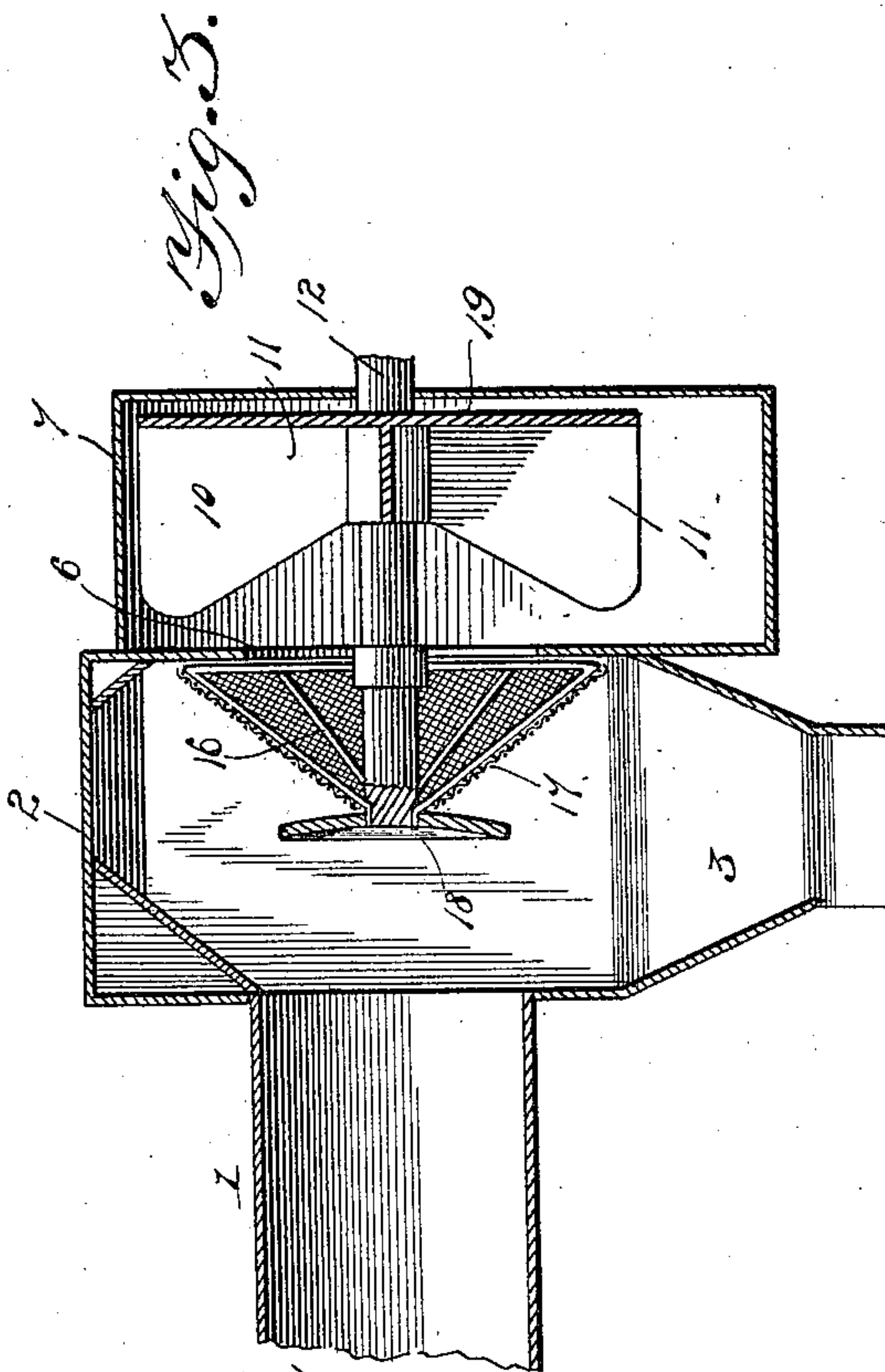
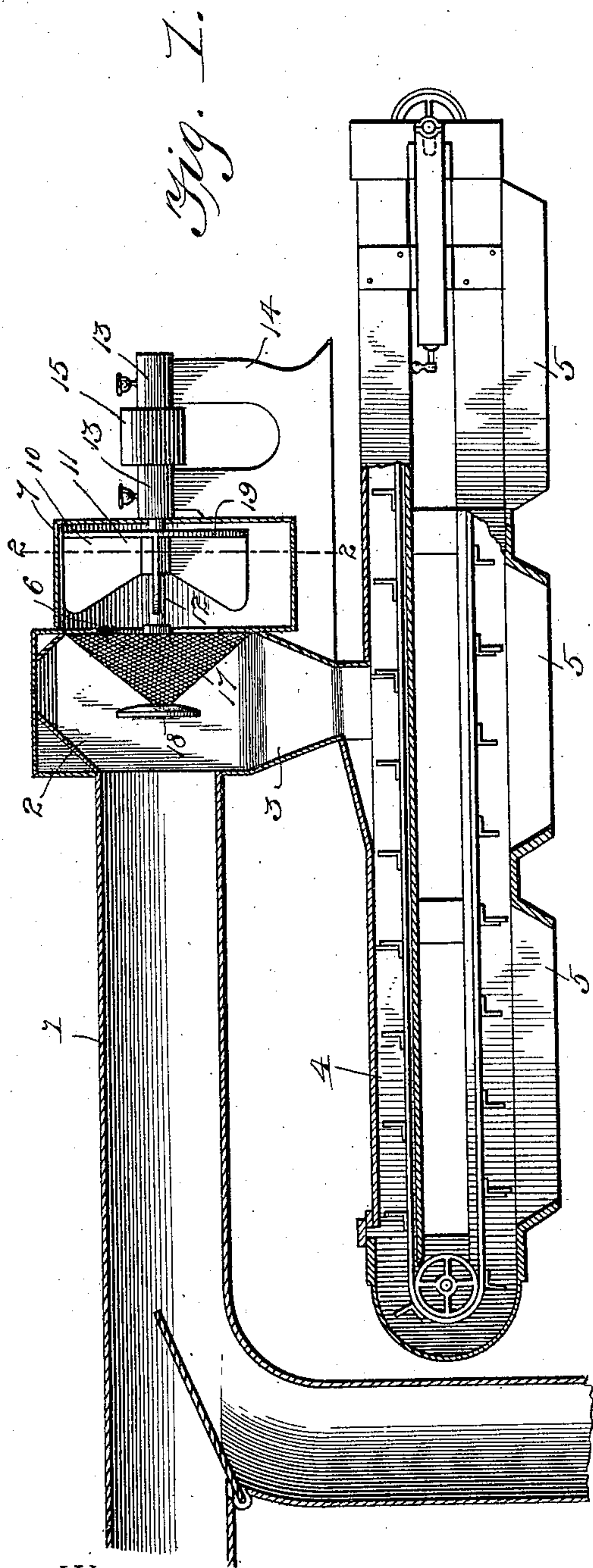


(No Model.)

T. J. GRIFFIN.
COTTON ELEVATOR AND DISTRIBUTER.

No. 574,990.

Patented Jan. 12, 1897.



Witnesses

E. N. Monroe
L. P. Hallam

By *his* Attorneys,

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Inventor
Thomas J. Griffin.

UNITED STATES PATENT OFFICE.

THOMAS J. GRIFFIN, OF GALVESTON, TEXAS, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF FOUR-FIFTHS TO H. RIEDEL, ED MCCARTHY, AND N. WEEKS, OF SAME PLACE.

COTTON ELEVATOR AND DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 574,990, dated January 12, 1897.

Application filed January 20, 1896. Serial No. 576,216. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. GRIFFIN, a citizen of the United States, residing at Galveston, in the county of Galveston and State of Texas, have invented a new and useful Cotton Elevator and Distributer, of which the following is a specification.

This invention relates to cotton elevators and distributers; and it has for its object to effect certain improvements in cotton-elevators of this character whereby the cotton and air shall be separated in a simple and efficient manner and the air discharged from the suction-fan with the least possible degree of friction and back pressure.

With these and other objects in view, which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the drawings, Figure 1 is a longitudinal sectional view of a cotton elevator and distributer embodying the improvements contemplated by this invention. Fig. 2 is a detail sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged detail sectional view of the separator and fan part of the apparatus.

Referring to the accompanying drawings, 1 designates an ordinary suction-pipe leading from a point of supply to the separating-box 2, fitted to one end of said pipe and provided at its lower end or side with a contracted discharge-chute 3, which provides for the delivery of the cotton separated from the air into the upper side of an ordinary belt distributor 4, arranged below the separating-box over a battery of gins and provided with a series of bottom-discharge hoppers 5, which provide for the discharge of the cotton into the feeders of the gins arranged below the distributor.

The separating-box 2, connected with one end of the suction-pipe 1, is provided in one side directly opposite the connection of the suction-pipe therewith with an air-discharge or fan inlet opening 6, over which opening is arranged the fan-casing 7, mounted at one side of the box 2. The fan-casing 7 is provided at one lower side with a discharge-opening 8, and the lower side of the shell of

the casing 7 (designated by the numeral 9) is curved on the arc of a larger circle than the top portion of the shell of the casing and is also curved gradually from a point in the same horizontal plane as the horizontal center of the fan-casing downwardly and outwardly to the discharge-opening 8 of the casing to provide for the free and natural discharge of the air from the casing under the influence of the rotary suction-fan 10, mounted to rotate within the fan-casing.

The rotary suction-fan 10 comprises a circular group of radially-disposed fan-blades 11, which have their outer ends project in reasonably close proximity to the shell of the fan-casing to provide for creating as powerful a suction as desired, and the said rotary fan is mounted fast on a horizontal fan-shaft 12. The horizontal fan-shaft 12 projects through one side of the fan-casing and is mounted in suitable bearings 13, supported by a suitable bracket 14, and between the bearings 13 the fan-shaft 12 has mounted thereon a band-pulley 15 to receive the belt which provides for communicating motion to the fan.

The inner end of the fan-shaft 12 projects centrally through the fan inlet-opening 6, and into the separating-box 2, and suitably fitted on the inner projecting end of the said shaft within the separating-box 2 is a conical screen-frame 16, on which frame is arranged a conical separating screen-disk 17, the apex of which is disposed in a line with the longitudinal center of the suction-pipe 1, and the base of which screen is of a greater diameter than the fan inlet-opening 6 and entirely covers said opening at one side of the wall between the separating-box and the fan-casing 7.

On the extreme inner end of the fan-shaft 12 and at the apex of the separating-screen 17 is mounted a concaved shield-disk 18, which is arranged directly opposite the end of the suction-pipe 1, connected with the separating-box 2, and receives thereagainst the direct impact of some of the cotton as it passes from the said suction-pipe into the separating-box 2.

In connection with the rotary suction-fan 10 is employed a circular shield-plate 19, which

is fitted to the outer side of the fan to close in the spaces between the blades thereof and provide a break for the air as it rushes into the fan-casing through the inlet 6 thereof, and thereby insure an easy discharge of the air through the discharge-opening 8 and prevent undue friction within the fan-casing by holding the air between the blades of the fan until discharged out through the opening 8.

10 In the operation of the apparatus the rapid revolution of the rotary fan creates a suction within the pipe 1 and draws the cotton from a point of supply through such pipe into the separating-box 2. As the cotton is drawn
15 within the separating-box 2 the same impacts itself against the conical separating-screen 17, while the air passes through said screen and into and out of the fan-casing, and at this point it will be noted that the disk 18 at the
20 apex of the separating-screen prevents any of the cotton from lodging on said apex of the screen and clinging thereto. The cotton which impacts itself on the separating-screen 17 is thrown off of said screen by centrifugal force
25 against the sides of the separating-box 2, and falls of its own weight through the discharge-chute 3 and into the distributor 4, which then distributes the cotton to the several gins employed in connection with the apparatus. As
30 already stated, the air which passes through the separating-screen into the fan-casing is caught by the blades of the fan and held within the fan by the shield-plate 19 until it reaches the point where it follows the curva-
35 ture of the air-deflecting portion 9 of the shell of the fan-casing, and by following the lines of said deflecting portion 9 of the fan-casing the air meets the least possible resistance to the free discharge thereof out of the dis-
40 charge-opening 8, and therefore creates no material back pressure on the fan, as will be readily understood by those skilled in the art.

Changes in the form, proportion, and the minor details of construction may be resorted
45 to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Let-
50 ters Patent, is—

1. In a cotton elevator and distributor, the combination with a suction supply-pipe, and a distributor; of a separating-box connected with said supply-pipe and said distributor,
55 and provided in one side with an air-discharge opening, a suitable suction-fan connection with said air-discharge opening, a rotary separating-screen arranged wholly within the sep-

arating-box at one side of said air-discharge opening with its axis of rotation in lineal 60 alinement with the portion of the supply-pipe opening into the separating-box, whereby the screen will be disposed in a position for relieving itself of the cotton by centrifugal force, and means for rotating said screen, substan- 65 tially as described.

2. In a cotton-handling apparatus, a separating-box having suitable air-suction connections therewith and provided at the bot- 70 tom with a cotton-discharge opening, a rotary conical separating-screen arranged within the separating-box with its axis of rotation disposed in line with the cotton-inlet, and means for rotating said screen, substantially as de- 75 scribed.

3. In a cotton elevator and distributor, the combination with a suction supply-pipe, and a distributor; of a separating-box connected with the supply-pipe and said distributor and provided in one side with a fan inlet-opening, 80 a fan-casing mounted at one side of said box over said opening, a suction-fan rotating in said casing with its shaft in line with the supply-pipe connection with the separating-box, a rotary separating-screen mounted on the 85 fan-shaft so as to have its axis of rotation disposed in line with the cotton-inlet and arranged to work wholly within the separating-box at the side of the fan inlet-opening opposite the location of the fan, and means for 90 rotating said screen, substantially as set forth.

4. In a cotton elevator and distributor, the combination with a suction supply-pipe and a distributor; of a separating-box connected with said pipe and said distributor and pro- 95 vided in one side with a fan inlet-opening, a fan-casing mounted at one side of said box over said inlet-opening, a horizontal fan-shaft arranged centrally within the fan-casing and projecting through said inlet-opening into 100 said separating-box, a rotary fan mounted on the shaft within the fan-casing and provided at its outer side with a circular shield-plate, a conical separating-screen mounted on the 105 inner projecting end of the fan-shaft and within the separating-box, and a concaved shield-disk fitted on the inner extremity of the fan-shaft at the apex of said screen, sub- 110 stantially as set forth.

In testimony that I claim the foregoing as 115 my own I have hereto affixed my signature in the presence of two witnesses.

THOMAS J. GRIFFIN.

Witnesses:

JOHN H. SIGGERS,
HAROLD H. SIMMS.