



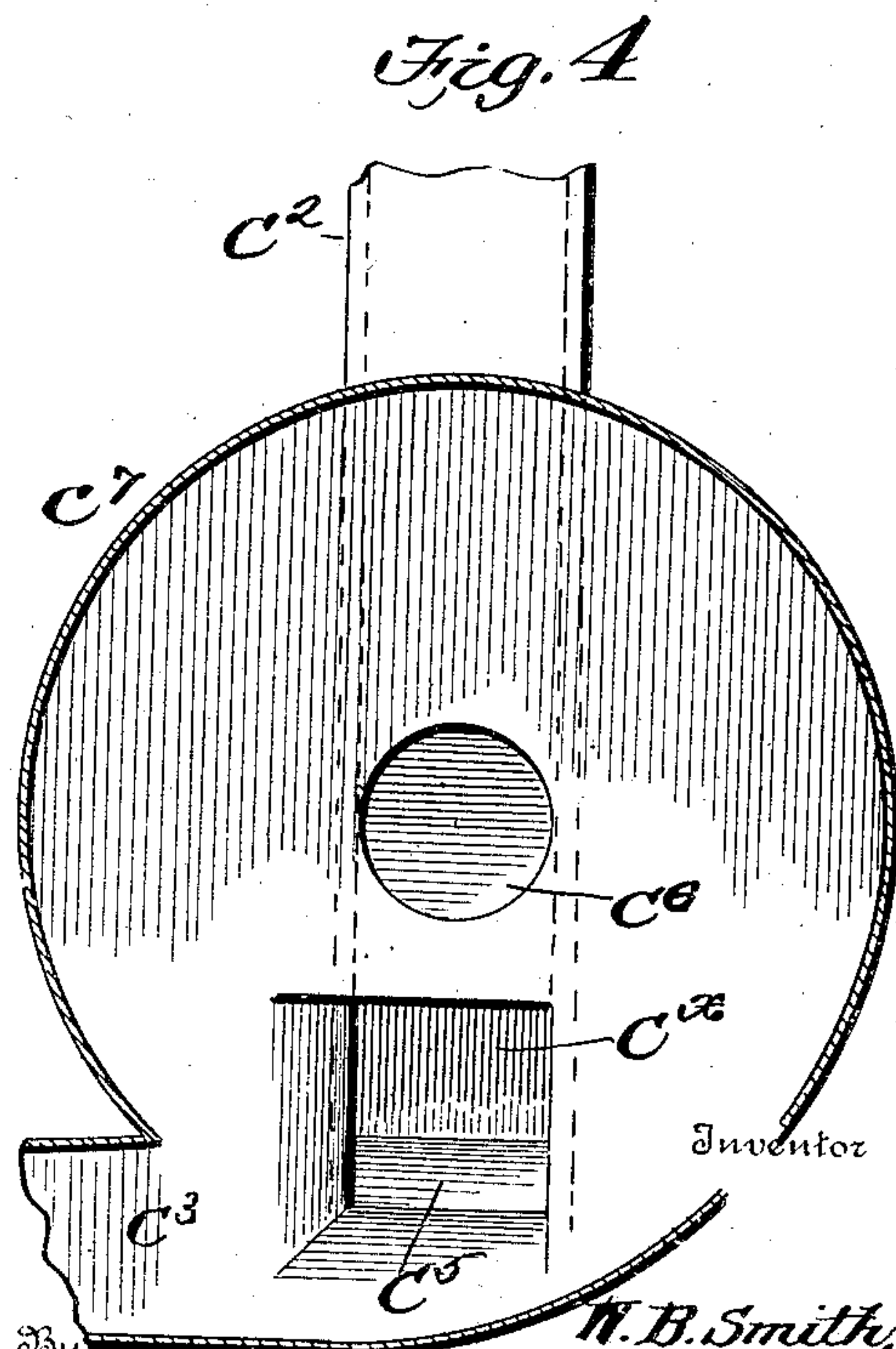
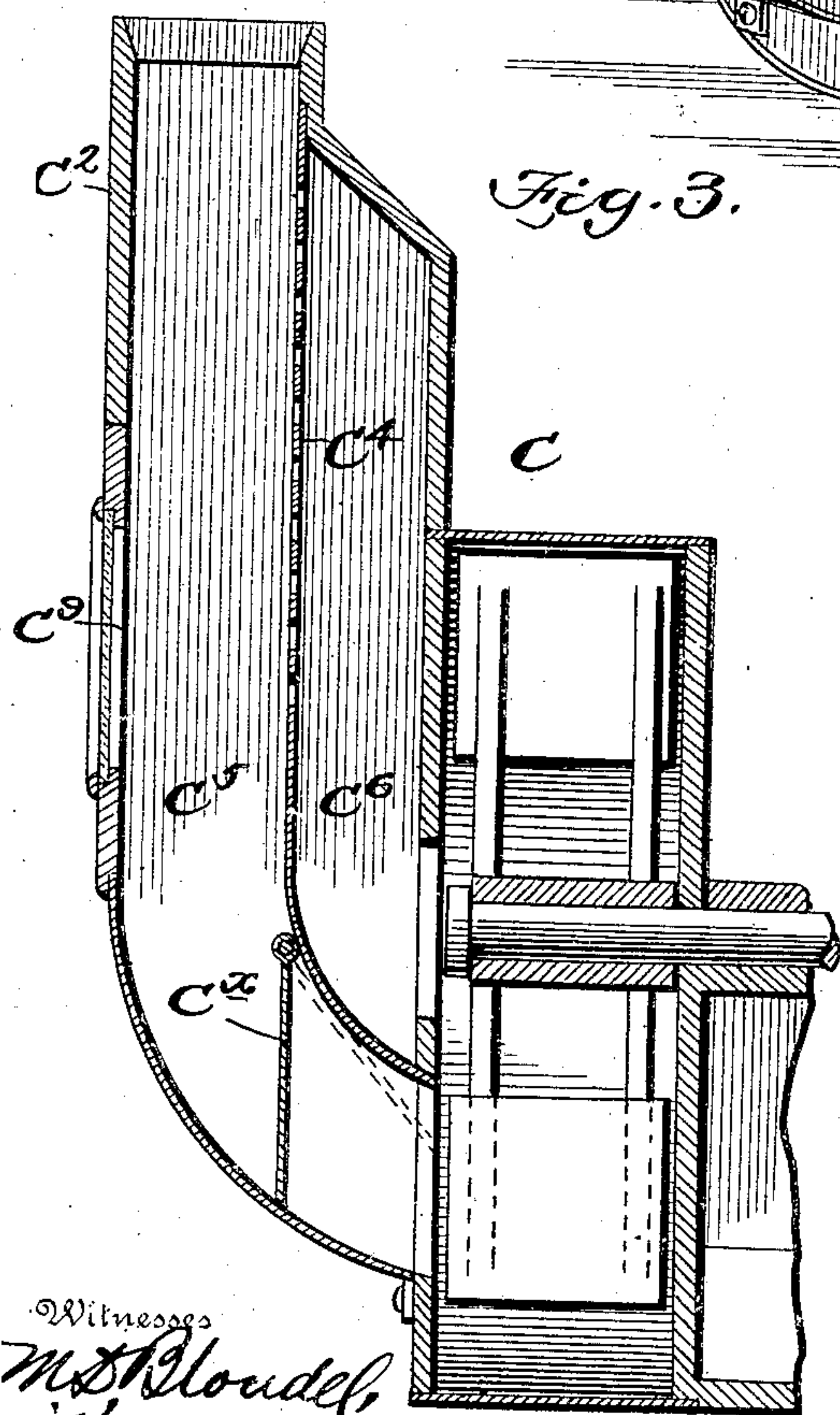
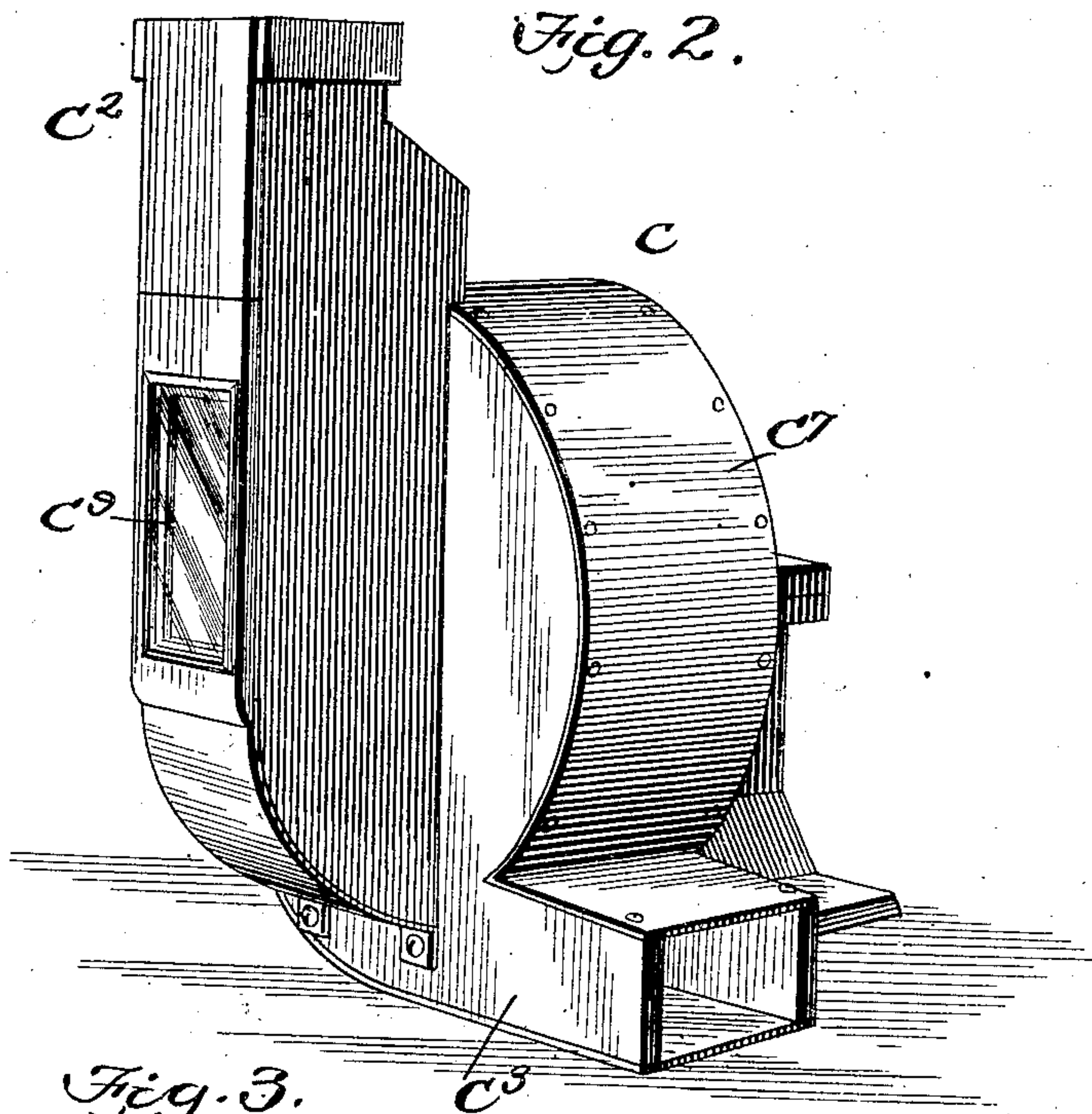
No. 880,172.

PATENTED FEB. 25, 1908.

W. B. SMITH.  
COTTON AND COTTON SEED CONVEYER.

APPLICATION FILED OCT. 28, 1903.

2 SHEETS—SHEET 2.



Witnesses  
*M. S. Clouder,*  
*Harner Shaw*

By *W. B. Smith,*  
*Charles Brock*  
Attorneys



# UNITED STATES PATENT OFFICE.

WILLIAM BUNYAN SMITH, OF HARTSELLS, ALABAMA.

## COTTON AND COTTON-SEED CONVEYER.

No. 880,172.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed October 28, 1903. Serial No. 178,930.

*To all whom it may concern:*

Be it known that I, WILLIAM BUNYAN SMITH, a citizen of the United States, residing at Hartsells, in the county of Morgan and State of Alabama, have invented a new and useful Cotton and Cotton-Seed Conveyer, of which the following is a specification.

My invention relates to a suction system for conveying cotton or cotton-seed from place to place whereby the cotton and cotton-seed may be handled from wagons or cars to gins and warehouses and back to the cars without the necessity of handling same by manual labor.

A further object is to provide switches and cut-offs so that the cotton may be passed directly to the gins from the wagons or cars, or the seed may be conveyed to a delinter, or both seed or cotton may be conveyed first to a warehouse for storage and subsequently brought back to the gin or delinter.

My invention consists of the novel features of construction and arrangement of parts hereinafter described, particularly pointed out in the claims and shown in the accompanying drawings, in which,

Figure 1 is a diagrammatic view of my system. Fig. 2 is a perspective view of the fan-blower casing. Fig. 3 is a vertical section through same, the fan being shown in elevation. Fig. 4 is a section through the fan casing taken at a right angle to the section in Fig. 3, the fan being removed. Fig. 5 is a perspective view of a portion of the pipe showing a slide valve and dust screen, the pipe being partly broken away. Fig. 6 is a transverse section through the pipe shown in Fig. 5, the section being taken through the screen and slide valve. Fig. 7 is a longitudinal section through another portion of the pipe showing, in section, a sand screen. Fig. 8 is a longitudinal section through a portion of the pipe showing cut-off valves. Fig. 9 is a longitudinal section through the pipe, intervening portions being broken away, showing valves controlling branches to gins or delinters, and deflectors arranged above the valves. Fig. 10 is a transverse section on the line 10—10 of Fig. 9.

In these views A represents a car, A' a wagon, B a cotton or cotton-seed warehouse and B' a ginning or delinting house. Arranged in the gin-house is a fan blower C, which will be described in detail hereafter, and a suitable engine C' furnishes power to drive the fan. Extending from the car A is a

pipe D which pipe passes through and along the floor of the warehouse and from the warehouse to the gin-house where it communicates with a branch D', which leads into the gin-house from a point where wagons are unloaded, and after its juncture with the pipe D' the pipe D leads into the fan blower casing, and thence above the gins or delinters, back to and through the upper portion of the warehouse, to the car. Above the gins or delinters, indicated at E, valve-controlled branches D<sup>2</sup> lead from the pipe D to the gins or delinters.

The details of the construction of my system are as follows: At its outer ends the pipe D has swinging, hinged sections D<sup>3</sup> and D<sup>4</sup>, to facilitate introduction into the car. A slide valve D<sup>5</sup> is arranged in the pipe, and transverse to it, between the car and the warehouse. In the warehouse the portion of the pipe running along the floor has openings cut in its upper wall, which openings are closed by slide valves D<sup>6</sup> actuated by the rod D<sup>7</sup>, which rod may be operated from without the warehouse, or from some room other than that in which the cotton is stored. The pipes D<sup>2</sup> have hinged valves D<sup>8</sup>, and in the pipe D slightly in advance of the pipes D<sup>2</sup> are arranged downwardly curved deflectors D<sup>9</sup>, the deflectors being carried by the upper wall of the pipe and curving inwardly and rearwardly. These deflectors direct the cotton toward the entrance of the pipes D<sup>2</sup> and when the valves D<sup>8</sup> are opened the cotton will pass into the pipes D<sup>2</sup> and thus to the gins.

In that portion of the pipe leading from the gins to the warehouse, and between the two houses, are arranged sand and dust screens D<sup>10</sup>, the screens covering openings formed in the bottom wall of the pipe. In the portion of the pipe in the upper part of the warehouse an opening is formed in the bottom of the pipe, and a slide valve D<sup>11</sup> is adapted to close said opening. Above this valve is an opening in the upper wall of the pipe closed by a screen and forming a vent for dust, which can escape through a ventilator arranged on the top of the warehouse. The lower end of the pipe D' carries the usual sliding section D<sup>12</sup>.

My fan blower is constructed as follows: Referring now particularly to Figs. 2, 3 and 4 the pipe D leading from the warehouse is connected to the upper end of the casing C<sup>2</sup>, and the section of the pipe leading to the



gins and back to the warehouse is fastened to the lower, discharge end of the casing C<sup>3</sup>. It will be obvious therefore that these two casings are interposed in the pipe D. Below its upper end the casing C<sup>2</sup> is laterally enlarged, and the lower portion of the casing is curved toward the enlarged side, a vertical partition C<sup>4</sup>—curved laterally at its lower end—is arranged parallel to the non-enlarged side of the casing, and divides the casing into two vertically elongated compartments C<sup>5</sup>, and C<sup>6</sup>.

A cylindrical fan casing is secured to the casing C<sup>2</sup> on the side of the compartment C<sup>6</sup>, and owing to the curvature given the lower portion of the casing C<sup>2</sup> both of the compartments open at their lower ends into this fan casing, the compartment C<sup>5</sup>, however, opening into the fan casing below the compartment C<sup>6</sup>. The discharge spout C<sup>3</sup> is a horizontal extension of the lower portion of the fan casing C<sup>7</sup>. In the partition C<sup>4</sup> is arranged in any desired manner a screen, or net work of any kind, the object of the said net work being to permit air to pass through the compartment C<sup>6</sup> to the fan casing and to exclude cotton or cotton seed. Where cotton is handled exclusively the net work need not be as fine as where the seed is also handled. In the side of the casing C<sup>2</sup> opposite the side on which the fan casing is located is arranged a glass-covered sight opening C<sup>9</sup> the purpose of which is obvious.

Within the fan casing is mounted in any suitable manner a fan of any desired construction, driven in any desired manner from any convenient source of power.

I do not claim any special construction of valve nor screen, nor do I claim the construction of nor the use of a fan. The operation of my system will be readily understood and may be briefly explained. When it is desired to run cotton from the car A to the gins E, the valve D<sup>5</sup> is opened and the valves D<sup>6</sup> are closed. The valves D<sup>8</sup> in the pipes D<sup>2</sup> are opened, and the valve D<sup>11</sup> in the upper portion of the pipe D closed. The cotton would therefore be drawn by suction from the car through the compartment C<sup>5</sup> of the casing, and on to the gins. By closing the valves D<sup>8</sup> and opening that at D<sup>11</sup>, the cotton would be transferred on to the warehouse where it could be held for any desired length of time, and then conveyed to the gins by closing the valves D<sup>11</sup> and D<sup>5</sup> and opening the valves D<sup>6</sup> and D<sup>8</sup>. Cotton can also be passed direct from the wagon A' to the car A by closing valves D<sup>8</sup> and D<sup>11</sup>, to prevent the cotton or cotton seed passing to the gins or into the warehouse or it can be passed from the warehouse to the car by opening the valves D<sup>6</sup> and closing the others, with the exception of course of the valve C<sup>x</sup> which is always open when cotton is being moved from one place to another, unless the pipe

should become clogged at some point when the feed of cotton through the pipe can be stopped by closing the valve C<sup>x</sup> in the casing C, and by continuing the rotation of the fan in the casing C<sup>3</sup> the air pressure will be continued and the lodged mass forced onward and finally discharged. When the pipe has been cleared the valve C<sup>x</sup> is again opened and the feed of cotton through the pipe resumed.

Having thus fully described my invention what I claim is new and desire to secure by Letters Patent is:—

1. A cotton conveying system comprising a pipe returning substantially to its starting point, a fan casing arranged in the said pipe, a fan in the casing, a branch having a hinged section, valve controlled branches, dust screens arranged in the pipe, the said pipe having a plurality of openings, and valves controlling said openings.

2. A system of the kind described comprising a cotton conveying pipe extending from a warehouse to a gin house and adapted to receive cotton from a car, the said pipe extending through the lower portion of the warehouse, through the gin house above the gins and back through the upper portion of the warehouse and thence to the car, the said pipe having valve controlled outlets adapted to discharge cotton from the pipe into the warehouse, branch pipes leading from the said conveyer pipe, and means for creating a current of air in the said conveyer and branch pipes.

3. A system of the kind described comprising a main pipe starting from and returning substantially to the same point and adapted to convey unginned cotton and cotton seed, casings interposed in said pipe, a fan in one of the casings, a valve in the other casing, a screen between the casings, a branch receiving pipe leading into the main pipe in advance of the fan casing, branch discharge pipes carried by the main pipe to the rear of the fan casing, valves arranged in the said pipes, deflectors arranged in the main pipe and adapted to throw cotton into the branch discharge pipes, the said main pipe having a plurality of openings formed therein, dust screens arranged in a portion of said openings, and valves adapted to close the remainder of said openings.

4. A conveyer system of the kind described comprising a conveyer pipe, means for creating a suction of air through the said pipe, said pipe being arranged adjacent the floor of a warehouse, a hinged section connected to the outer end portion of said pipe, said pipe having openings formed in its upper wall within the warehouse, slides adapted to close said openings, and rods operable from without the warehouse for the purpose of closing or opening said slides.

5. A cotton or cotton-seed conveyer com-



prising a conveyer pipe having its ends at approximately a common place, means for creating an air suction in said pipe, delinters or gins adapted to receive cotton or cotton-  
 5 seed from said pipe, and means for diverting cotton from said pipe to the said gins or delinters.

6. Cotton-handling apparatus comprising a cotton-passage having an inlet and an  
 10 outlet approximately at a common place, pneumatic means for causing cotton to traverse the passage from the inlet, a cotton-receiver, and means for diverting cotton from the passage to the receiver.

15 7. Cotton-handling apparatus comprising a cotton-receiver, and means for continuously and pneumatically passing cotton to and through said receiver and returning the overflow therefrom to a source of cotton-  
 20 supply.

8. Cotton-handling apparatus comprising separating and distributing devices, and means for continuously and pneumatically passing cotton to and through said devices  
 25 and returning the overflow therefrom to a source of cotton-supply.

9. Cotton-handling apparatus comprising

a cotton-passage beginning and ending at the source of cotton-supply, a cotton-receiver interposed in said passage, and pneumatic  
 30 means for causing a continuous movement of cotton through said passage.

10. Cotton-handling apparatus affording a continuous circuit for the passage of cotton, said circuit beginning and ending at the  
 35 source of cotton-supply, cotton separating and distributing devices interposed in said circuit, and pneumatic means for causing a continuous movement of cotton through said circuit.  
 40

11. Cotton-handling apparatus comprising a cotton-passage having an inlet and an outlet approximately at a common place, pneumatic means for causing the cotton to  
 45 traverse the passage from the inlet, cotton-distributing devices interposed in said passage, and means for diverting cotton from said passage to said distributing devices.

WILLIAM BUNYAN <sup>his</sup> X SMITH.  
 mark

Witnesses:

A. T. TAPSCOTT,  
 M. D. WIGGINS.