

(No Model.)

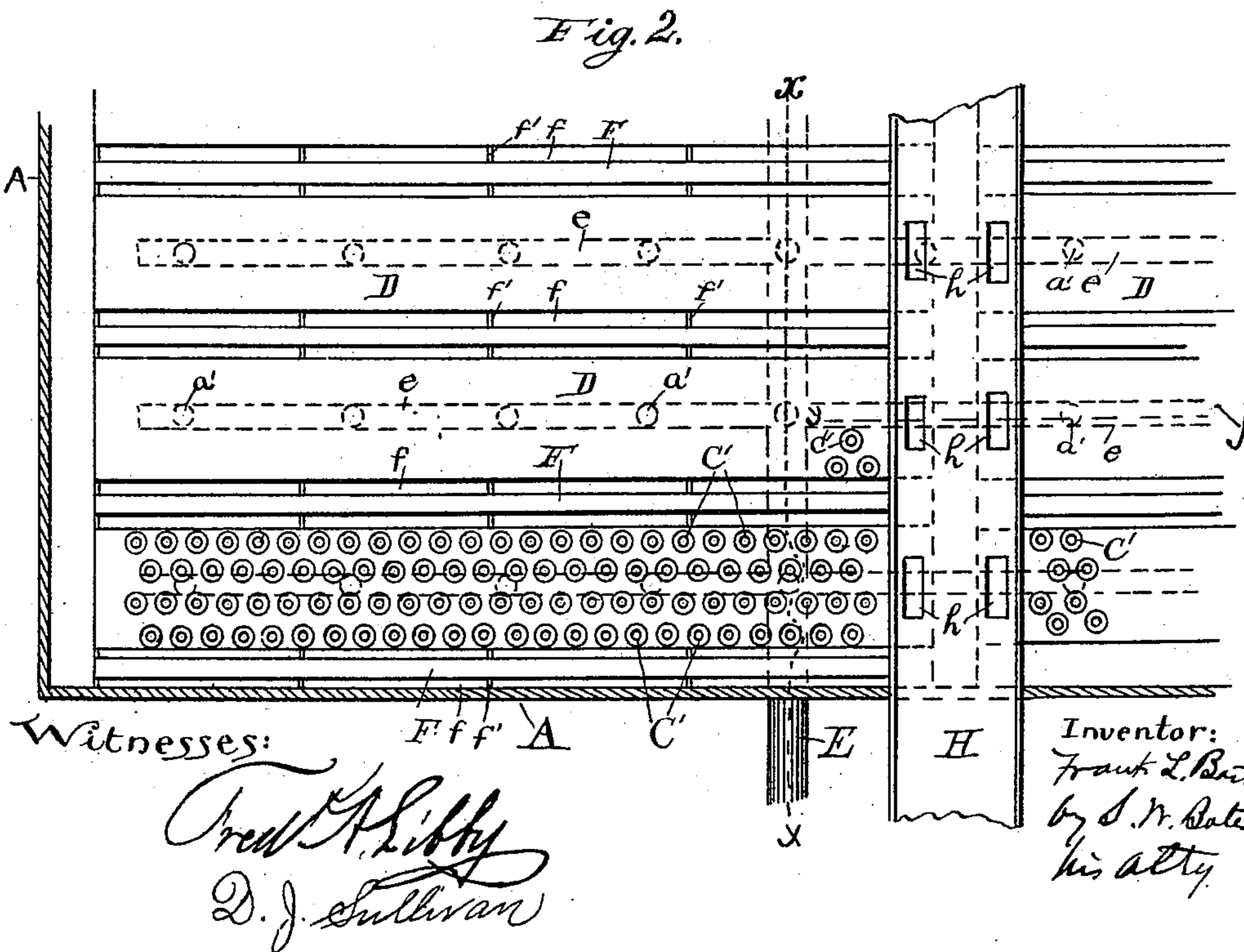
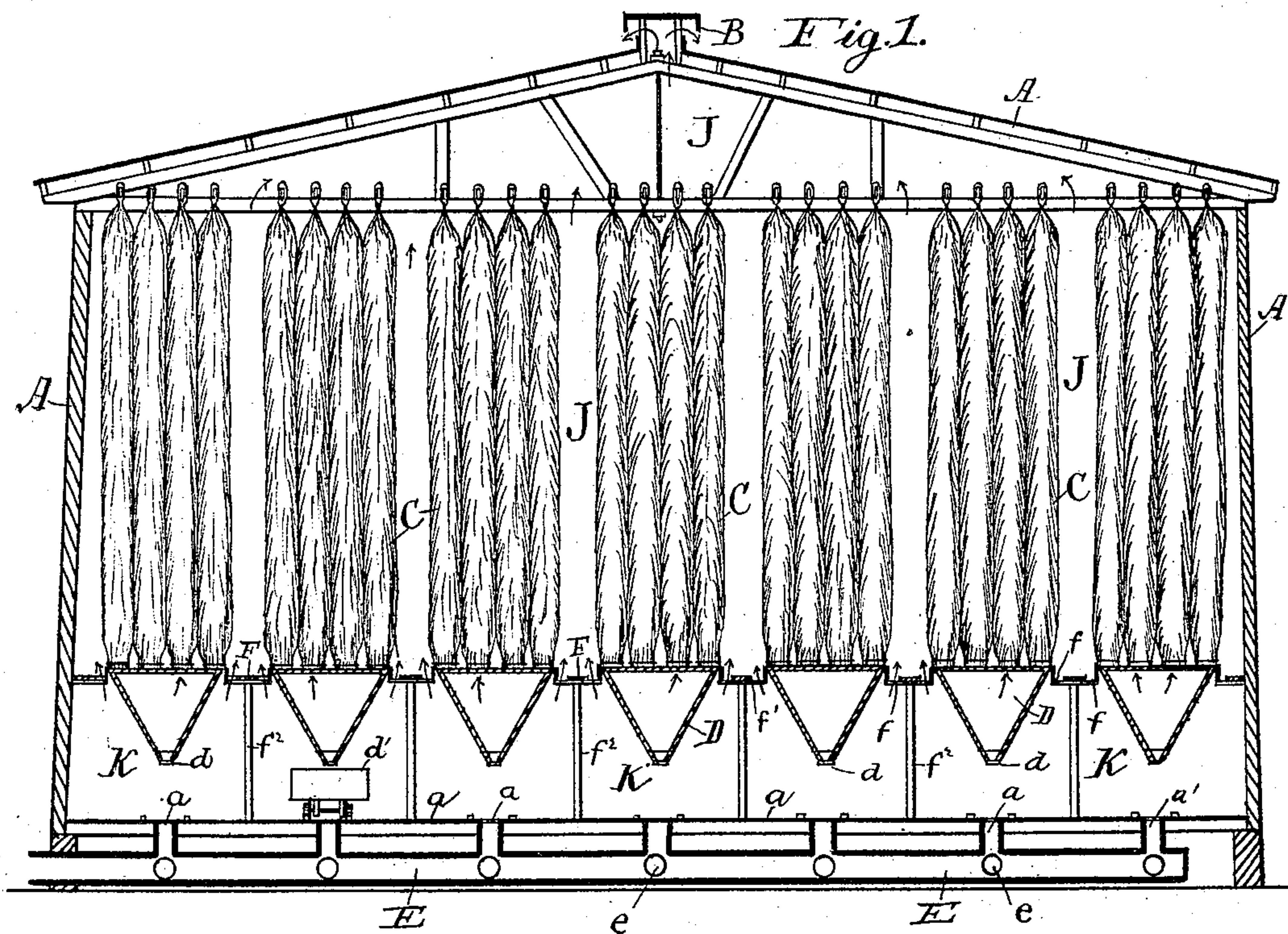
2 Sheets—Sheet 1.

F. L. BARTLETT.

BAG ROOM FOR THE COLLECTION OF FUMES.

No. 470,970.

Patented Mar. 15, 1892.



Witnesses:

Frederick A. Libby
D. J. Sullivan

Inventor:
Frank L. Bartlett
by *S. N. Bate*
his atty

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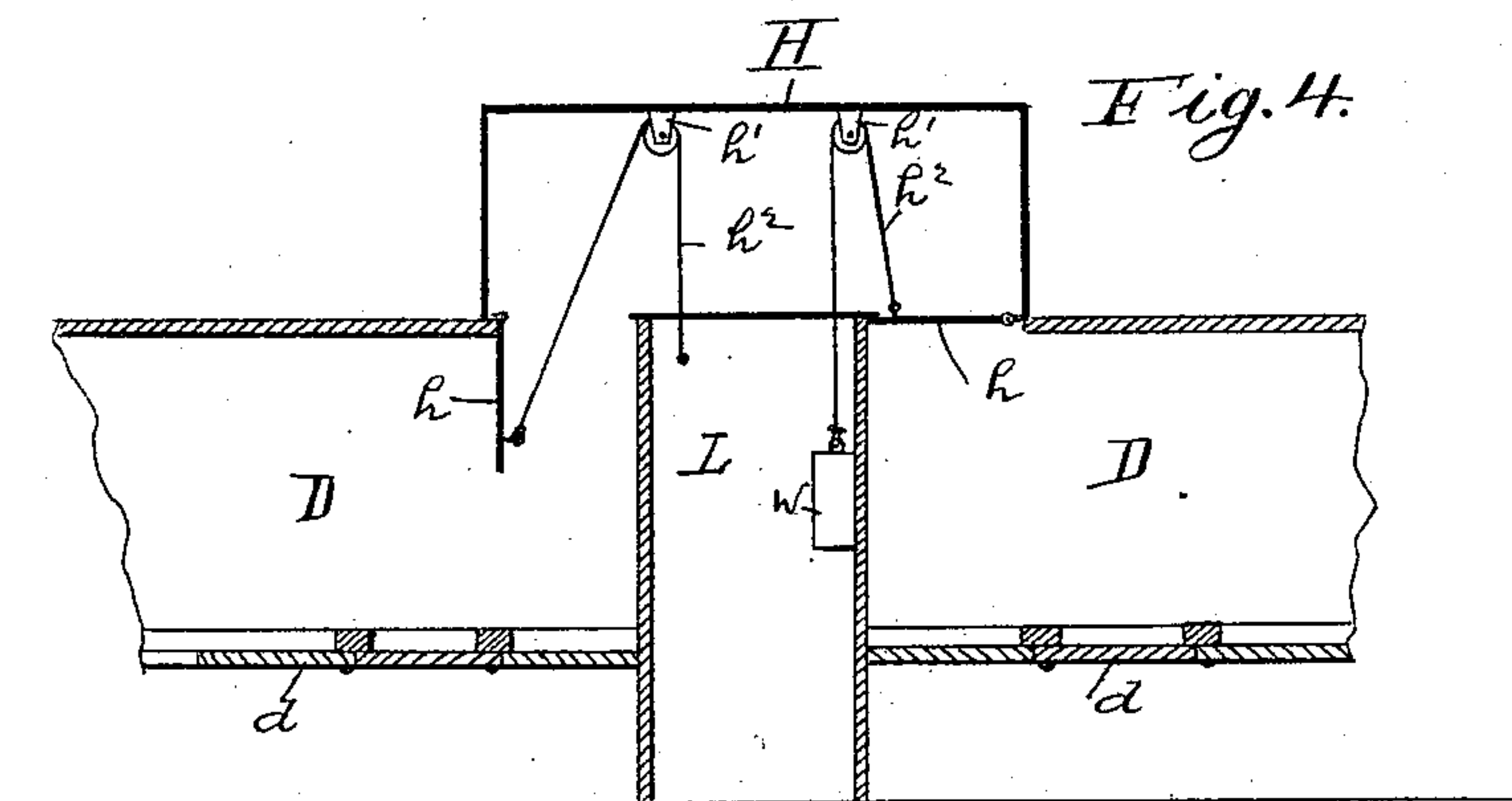
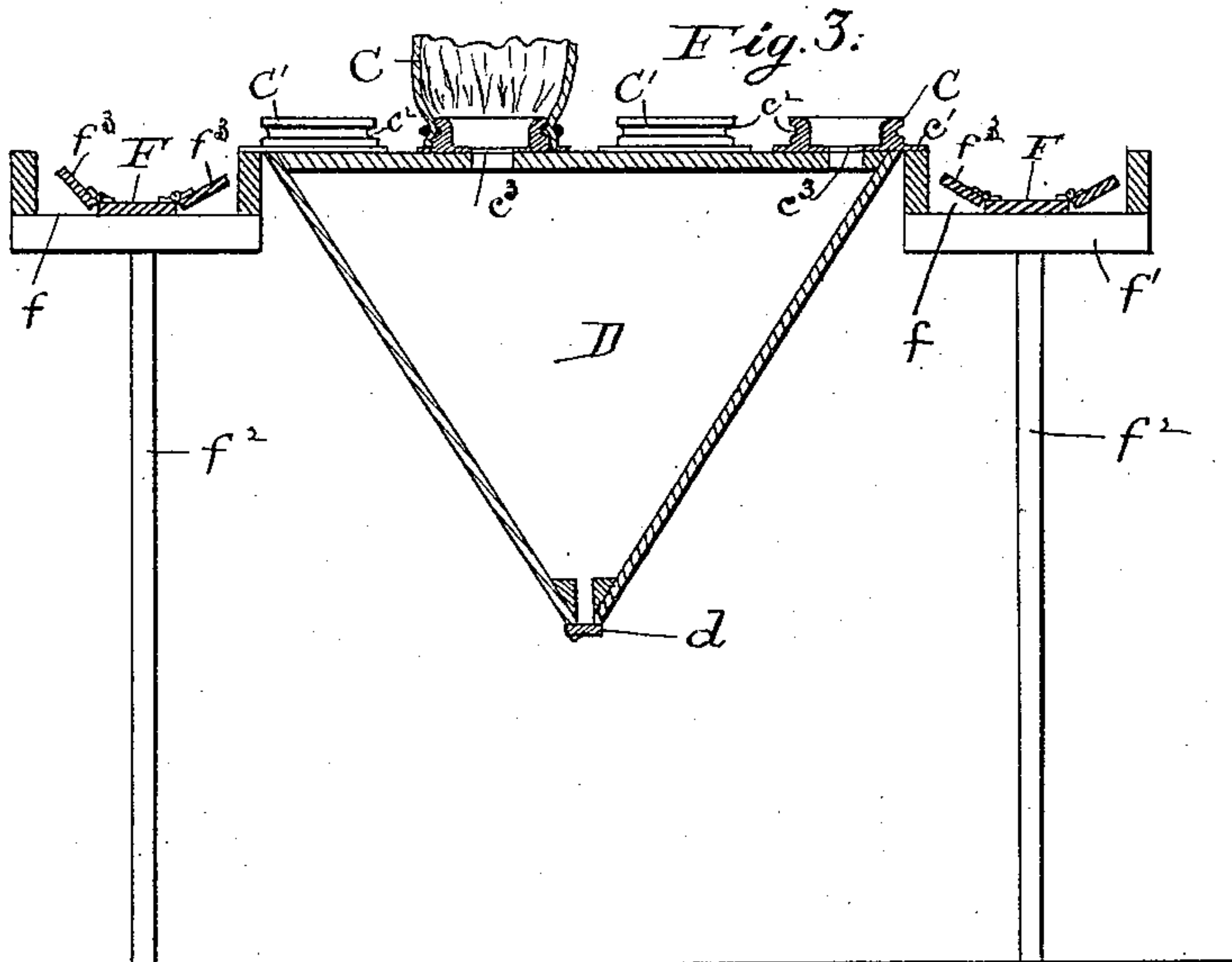
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UNITED STATES PATENT OFFICE.

FRANK L. BARTLETT, OF PORTLAND, MAINE.

BAG-ROOM FOR THE COLLECTION OF FUME.

SPECIFICATION forming part of Letters Patent No. 470,970, dated March 15, 1892.

Application filed December 18, 1890. Serial No. 375,062. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. BARTLETT, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Bag-Rooms for the Collection of Fume; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to bag-rooms for the collection of fume; and the particular object of the invention is the construction of a bag-room where the fume can be easily and safely collected without disconnecting the entire bag-room.

Hitherto, so far as I am aware, bag-rooms have been made with a closed chamber in which the bags were hung, so that in order to shake the bags and collect the product it was necessary to cut off the supply of fume from the entire bag-room in order to allow the room to cool and the gases to escape, so far as to render it safe for a man to go inside to do the necessary work. The heat and the sulphurous gas which pass through the bags render it impossible for workmen to venture in while the bag-room is in operation without special means for supplying them with air; and it is to this end that my invention is chiefly directed.

In the construction of my improved bag-room, I divide it into two chambers by a horizontal partition formed by the tops of the bins, and between the bins and at each side of each section of bags I provide air-openings, by which a powerful draft of air passes from the lower chamber, so that the operator as he goes along stands always in an atmosphere of fresh air. Means are provided for cutting off each section separately while the bags are being shaken. By means of this arrangement a man is enabled to enter the bag-room while it is in full operation and to shake row after row of the bags.

Another feature of my invention relates to means for preventing the destruction of the lower ends of the bags caused by the hot fume as it comes in at the lower end. As the bags have been heretofore connected with the bin the fume was allowed to enter the lower end

of the bag by an opening which was the full diameter of the bag at its point of attachment. As a result, the hot fume striking full on the sides of the bag at its lower end soon destroyed it. I avoid the difficulty by making the opening in the lower end of the bag of much smaller diameter than the lower end of the bag, so that the hot gases strike the bag at a point higher up and have a chance to expand and circulate before coming into contact with the fabric of the walls.

In the accompanying drawings I have illustrated a bag-room constructed according to my invention.

In the drawings, Figure 1 is a general cross-section on the line xx of Fig. 2. Fig. 2 is a plan taken above the tops of the bins and showing the top of the main inlet-flue removed. Fig. 3 is an enlarged section of a portion on xx of Fig. 2 with modifications. Fig. 4 is a section across the main inlet-flue on yy of Fig. 2.

A represents the building which constitutes the bag-room. It is divided into an upper chamber J and a lower chamber K by means of the bins D, which are placed side by side with a space between them. The bags C are suspended in the chamber J, with their lower ends connected with the tops of the bins. On each bin are four rows of bags, as here shown. The bins have flat tops and tapering sides, and at the bottom is an opening for the escape of the collected fume, closed by means of a slide or valve d . The connection between the lower end of the bag and the top of the bin is made by means of a collar C' , which is secured to the top of the bin by a flange c' . The collar has a groove C^2 , by which the bag is fastened about the outside of it, and a central opening C^3 , which is of smaller diameter than the collar or the lower end of the bag. Between the adjacent bins there is a space left of sufficient width for a man to walk comfortably, and in this space, as herein shown, is secured a plank F by means of cross-timbers f' and uprights f^2 , on which plank the workman walks while shaking the bags. The plank F is of less width than the opening, so that at each side of it there is formed an open space f , Fig. 1, connecting the lower chamber K and the upper chamber J and forming an opening for the passage of air.

A ventilator B is fixed to the top of the bag-room to carry off the gases, and means are provided for admitting a plentiful supply of fresh air into the lower chamber K. The means here shown consist of a series of air-ducts *e* beneath the floor and directly beneath the bins connecting with a main supply-pipe E and openings *a'* through the floor at suitable intervals. Under each bin is a track on which runs a car *d'* for collecting the fume as it comes from the bins.

I provide means for connecting the different bins with the main inlet-flue in such a way that each can be shut off independently of the others.

The room is divided into two parts by means of the main flue, which runs transversely across from one side to the other. The ends of the rows of bins on each side of the center are separated by a space L, large enough to permit a man to walk between them. (See Fig. 4.) The main inlet-flue H extends across the ends of the bins, and openings are provided from the under side of the flue into the ends of the bins. These openings are controlled by gates or valves *h*, which are hinged so as to swing downward and inward, so that they are usually open. When it is desired to shake the bags in any section, the gate is closed and the fume shut off from that particular section. The gate is closed by means of a cord or chain *h*², which is secured to the gate and passes over a pulley *h'*. A detached weight W is provided, which can be attached to any one of the cords when it is desired to close a gate. The weight is sufficient to lift the gate against the force of the current of fume.

As already explained, when it is desired to shake the bags in any given section the gate leading to the bin is closed and the operator passes along on the plank F and shakes the bags. The draft of cold air which comes up between the sections and on each side of the plank blows upward the fume and gas and maintains an atmosphere of cold air in the space occupied by the operator. A man is thus enabled to shake one section after another without any danger or discomfort while the bag-room is in full operation. It may in certain cases be desirable to regulate the amount of air admitted from the lower to the upper chamber, and in this case I make use of a modification shown in Fig. 3. On each side of the plank F is hinged a cover, which closes the space *f* or opens it, as desired. By being partly raised, as shown in the figure, the size of the opening may be exactly controlled. The use of the arrangement herein shown for

securing the bag to the top of the bin protects the lower end of the bag from injury, as has been pointed out. The current of hot fume passing upward through the small opening *c*³ ascends for a considerable distance in the center of the bag before coming in contact with its walls. A counter-current of cold air is formed near the bottom by the cold air which is circulating about the lower ends of the bags. The hot gases thus have time to cool off to a very considerable extent and to become dissipated before they can come in contact with the fabric of the bag.

I do not wish to be understood as limiting myself to the exact construction shown in the drawings and particularly described, as many modifications may be made while keeping within the limits of my invention.

I claim—

1. The herein-described bag-room for collecting fume, having an upper chamber within which the bags are suspended in rows or sections and a lower chamber beneath said upper chamber, fume-conduits immediately below the floor of said upper chamber and connected with the lower ends of said bags, a ventilating-opening in the upper chamber for the escape of gas, openings for the admission of cold air into said lower chamber, and ventilating-openings at the side of each section of bags, connecting the lower with the upper chamber, substantially as described.

2. The herein-described bag-room for the collection of fume, having an upper chamber in which the bags are suspended in rows or sections and a lower chamber beneath said upper chamber, fume-conduits immediately below the floor of said upper chamber and connected with the lower ends of said bags, a ventilating-opening in the upper chamber for the escape of gas, openings for the admission of cold air into said lower chamber, ventilating-openings connecting the lower with the upper at the side of each section of bags, and means for closing or controlling the size of said openings, substantially as described.

3. A bag-room having suspended bags, the lower ends of which connect with the fume-conduit by means of a collar around which the bag is fastened, and a diaphragm partially closing the opening through said collar, said diaphragm having a central opening through it, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK L. BARTLETT.

Witnesses:

S. W. BATES,

D. J. SULLIVAN.