

No. 709,699.

W. T. COTTIER.
VENTILATOR.

Patented Sept. 23, 1902.

(Application filed Apr. 5, 1902.)

(No Model.)

Fig. 1.

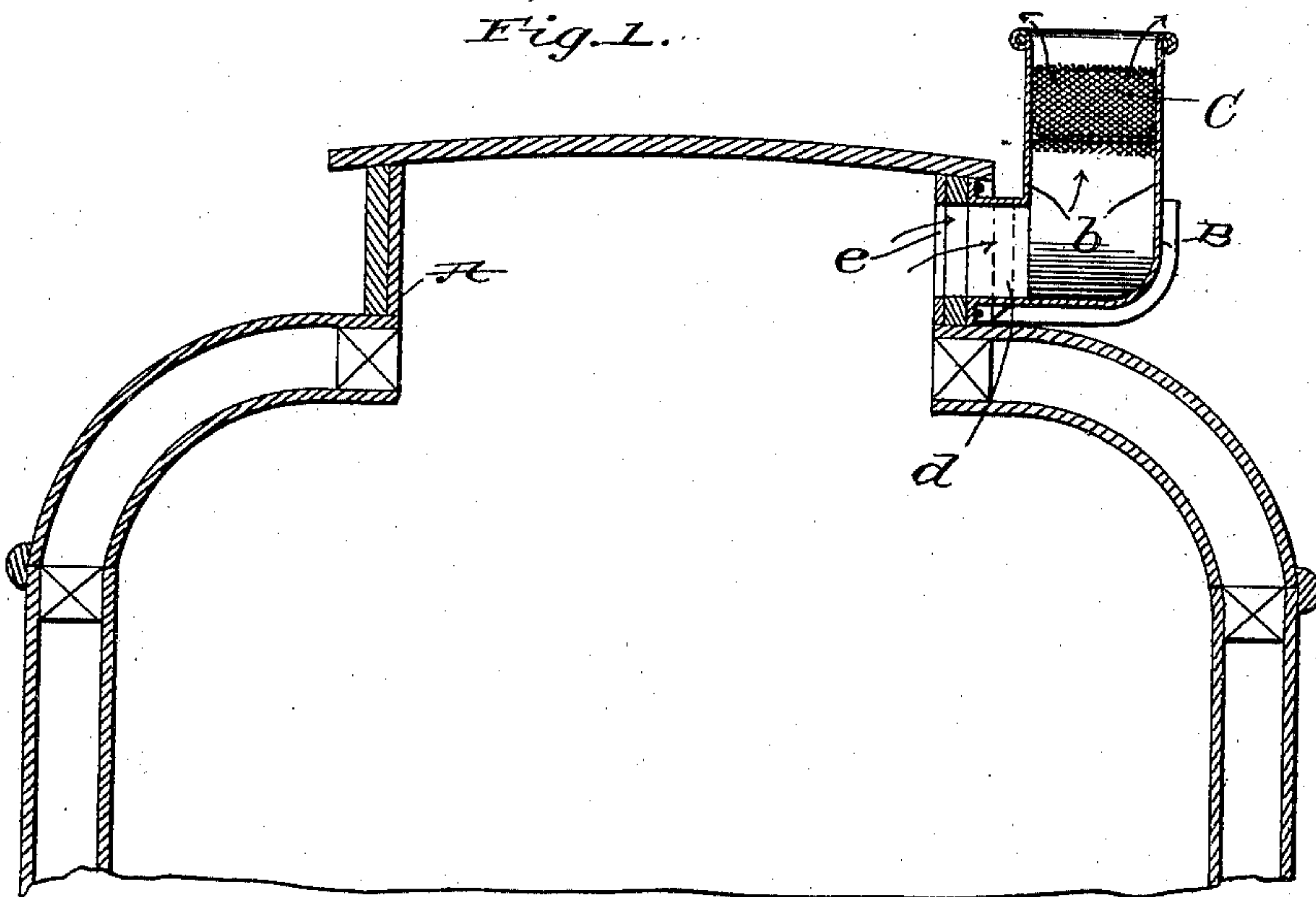


Fig. 2.

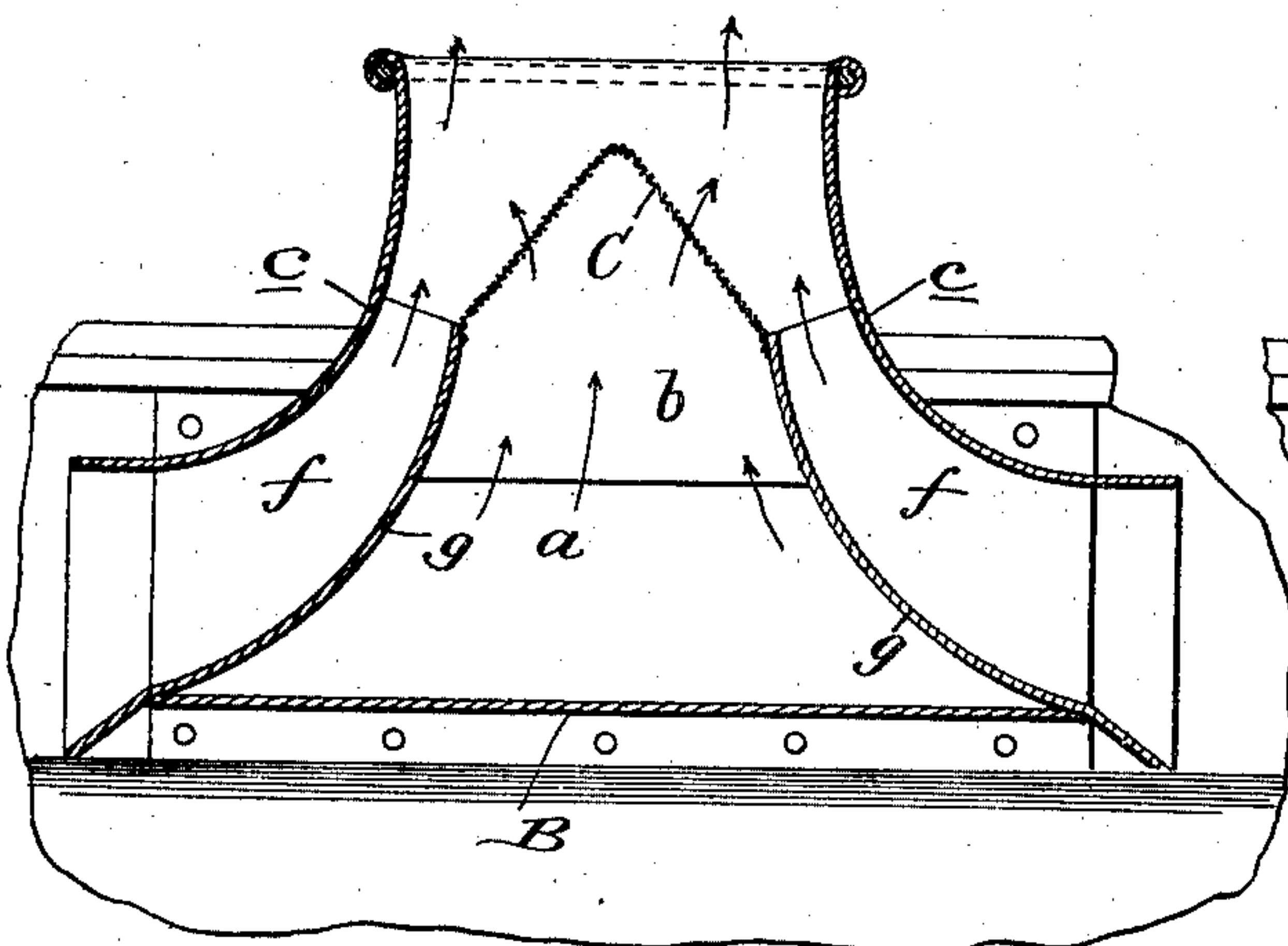


Fig. 3.

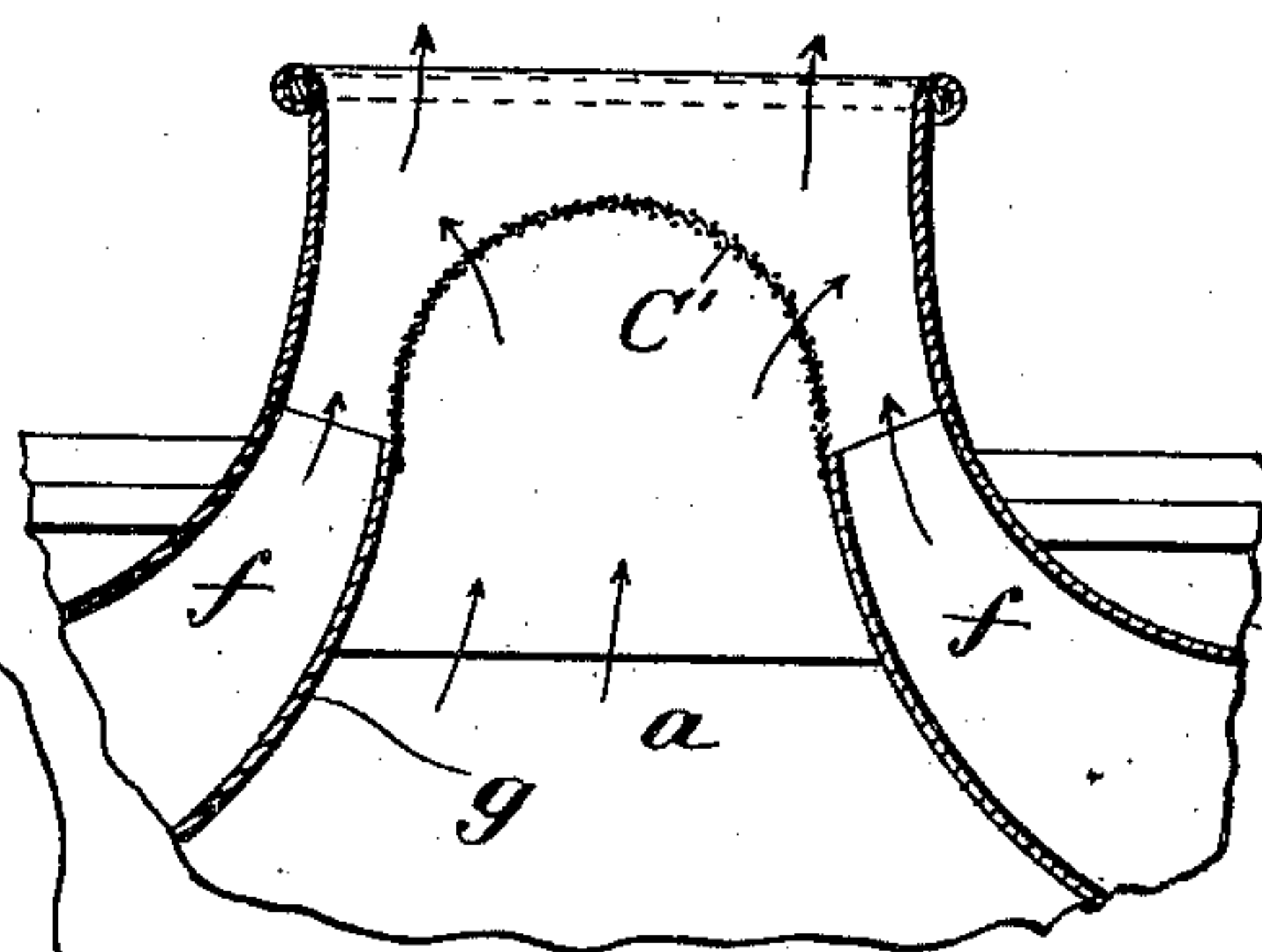
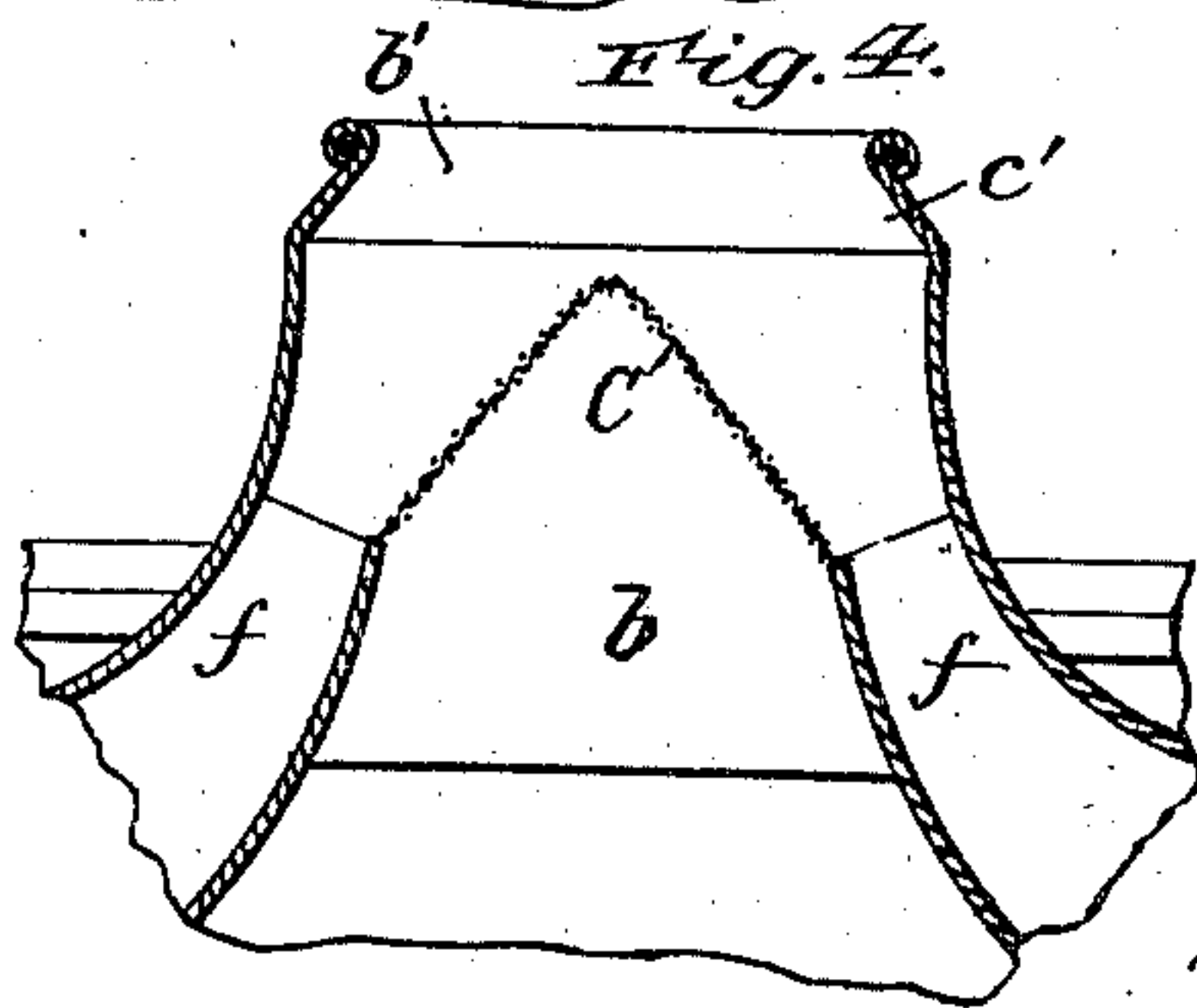


Fig. 4.



Witnesses
[Signature]
N. C. Healy

Inventor
William T. Cottier
By *[Signature]* Attorney

UNITED STATES PATENT OFFICE.

WILLIAM T. COTTIER, OF CHICAGO, ILLINOIS.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 709,699, dated September 23, 1902.

Application filed April 5, 1902. Serial No. 101,494. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. COTTIER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Ventilators, of which the following is a specification.

My invention relates to car ventilation, and more particularly to suction devices—i. e., devices for exhausting air from passenger, freight, and other cars with a view of maintaining a wholesome atmosphere in the same.

It is designed more particularly as an improvement upon the suction device disclosed in my Letters Patent No. 682,176, of September 10, 1901; and it consists in the peculiar and advantageous construction hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a transverse section of the upper portion of a passenger-car equipped with a suction device or ventilator constituting the preferred embodiment of my invention; Fig. 2, an enlarged longitudinal vertical section of the suction device or ventilator removed, and Figs. 3 and 4 longitudinal vertical sections of the upper portions of modified suction devices.

Referring by letter to said drawings, and more particularly to Figs. 1 and 2 thereof, A is a passenger-car body, which in general may be and preferably is of the ordinary well-known construction, and B is my improved suction device or ventilator. Any suitable number of the suction devices may be employed on the car-body, although I prefer to use six of them and connect three to each deck-sash of the body at intervals in the length thereof. When the car is of the passenger type, as shown, the frequent opening of the doors may be depended on to supply the interior of the car with fresh air; but when the car is a freight-car I prefer to equip it, in addition to the suction devices, with one or more of the air-induction devices disclosed in my aforesaid patent. These induction devices form no part of my present invention, and I have therefore deemed it unnecessary to illustrate the same.

The suction devices B are similar in construction, and therefore a detailed description of the one shown in Figs. 1 and 2 will suffice to impart an understanding of all. Said device

B comprises an upright longitudinally-disposed hollow body *a*, arranged parallel to the deck-sash of the car-body, open at its upper end and having side walls *b* and end walls *c*, an arm *d*, which extends laterally from the lower portion of the body and is connected to the deck-sash over an opening *e* therein, so as to effect communication between the interior of the body *a* and that of the car-body, and air-inductors *f*. The end walls *c* of body *a* are curved upwardly and inwardly, as shown, and serve, in conjunction with the side walls *b* and interior curved walls *g*, to form the said inductors *f*, which are preferably provided with flared mouths and are gradually reduced in size toward their inner ends, as shown, with a view of increasing the draft.

In operation it will be observed that when the car is standing still, as well as when it is in motion, air passing through the inductors *f* and thence out through the upper end of the upright body *a* will create a strong suction, which will draw air from the interior of the car through the arm *d* and body *a* and result in the maintenance of a wholesome atmosphere in the car at all times.

In order to prevent cinders, dirt, and the like from gaining access to the interior of the car through the body *a* and arm *d* without preventing the free passage of air from the car through said arm *d* and body *a*, I provide the upwardly-bulged screen *C*, of wire-gauze or other suitable material, arranged in the body over the uptake-passage formed between the walls *b g* and connected to said walls. This screen effectually prevents cinders, dirt, and the like from passing through the suction device into the car, and it also serves by virtue of it being bulged upwardly, as described, to shed the cinders, dirt, and the like through the inductors *f*. From this it follows that cinders, dirt, and the like will be effectually prevented from collecting on and closing the interstices or openings of the screen; also, that by reason of the arrangement of the screen with respect to the inductors *f* the currents of air passing up through the said inductors will prevent the collection of dust on the screen, and hence the screen will at no time offer a serious obstruction to the upward passage of the air drawn from the car.

The bulged screen C is of angular form in cross-section, with its apex disposed midway between and about the proportional distance illustrated above the upper ends of the inductor-walls *g*. This form of bulged screen is advantageous, because it has no part on which cinders and dirt can lodge, and I therefore prefer to employ it. I do not desire, however, to be understood as confining myself to the employment of an angular bulged screen, as when desirable upwardly-bulged screens of other forms—such, for instance, as the rounded screen C' shown in Fig. 3—may be employed without departing from the scope of my invention.

When my improved suction device is used on a freight or box car, the arm *d* may be dispensed with and the body *a* arranged in an upright position on and connected to the top of the car, if desired, without departing from the scope of my claim.

I have entered into a detailed description of the construction and relative arrangement of parts embraced in the present and preferred embodiment of my invention in order to impart a full, clear, and exact understanding of the same. I do not desire, however, to be understood as confining myself to such specific construction and arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my claim.

In lieu of having the upper portions of the side walls and end walls disposed vertically the upper portions of said side walls and end walls may be deflected or inclined inwardly, as indicated by *b'* and *c'* in Fig. 4, without departing from the scope of my claim.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

In a suction device or ventilator for cars and the like, the combination with an upright, hollow body open at its upper end, and having lateral, inwardly and upwardly extending air-inductors, the upper ends of the inner walls of which are disposed in the same horizontal plane; of an upwardly-bulged screen arranged in the body over the space between the inner walls of the inductors and connected at its edge to the upper ends of said inner walls, whereby it is adapted to shed cinders, dirt and the like into the air-inductors, and the currents of air passing upwardly through said inductors are enabled to prevent the collection of dust on the screen.

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

WILLIAM T. COTTIER.

Witnesses:

C. J. YATES,
GEO. B. OGDEN.