

No. 848,443.

PATENTED MAR. 26, 1907.

F. CONRATH.  
LAMP JACK.

APPLICATION FILED JULY 12, 1906.

2 SHEETS—SHEET 1.

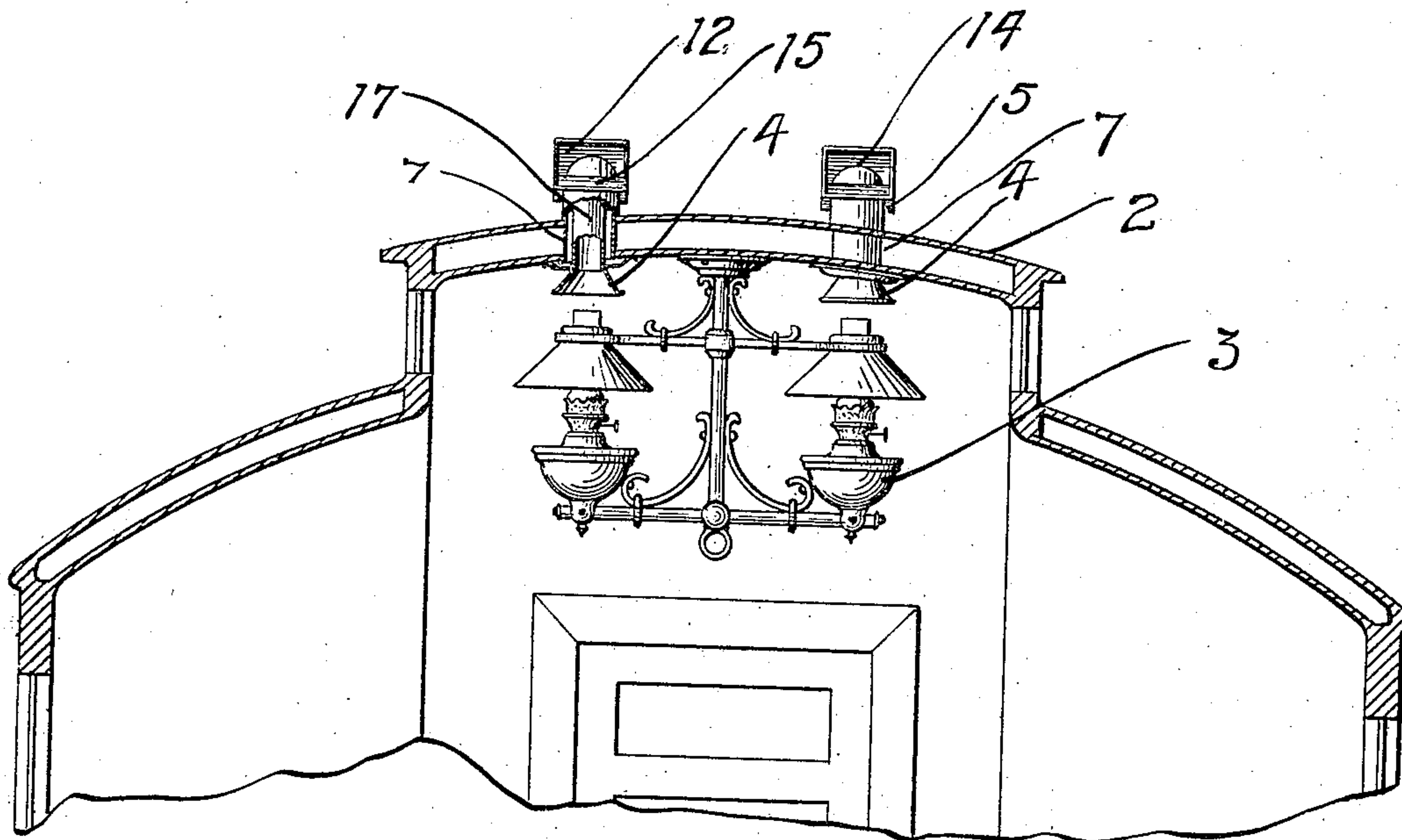


Fig 1.

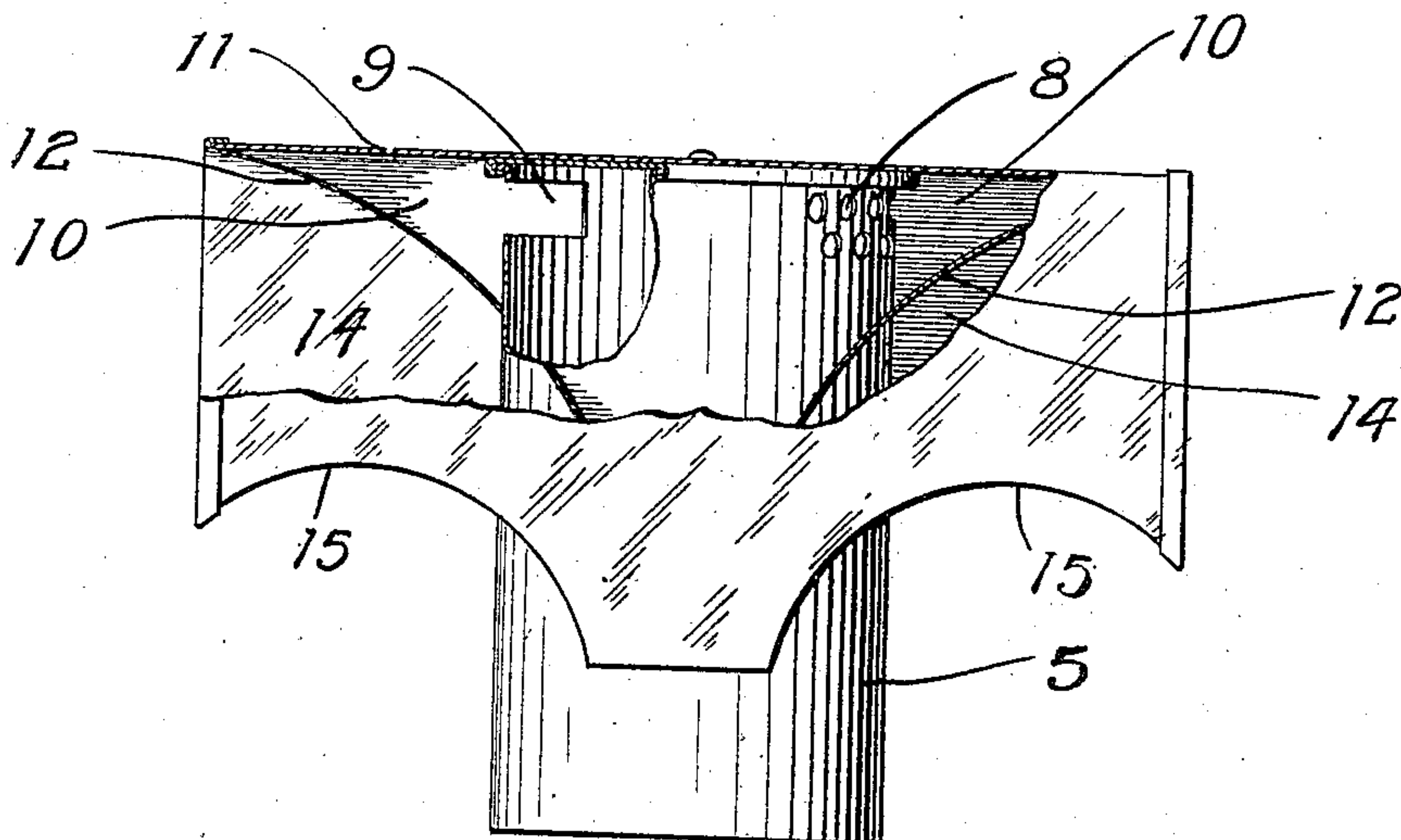


Fig 2.

WITNESSES  
*A. M. Walstrom*  
*J. B. Era*

INVENTOR  
FREDERICK CONRATH  
BY *Paul Paul*  
HIS ATTORNEYS

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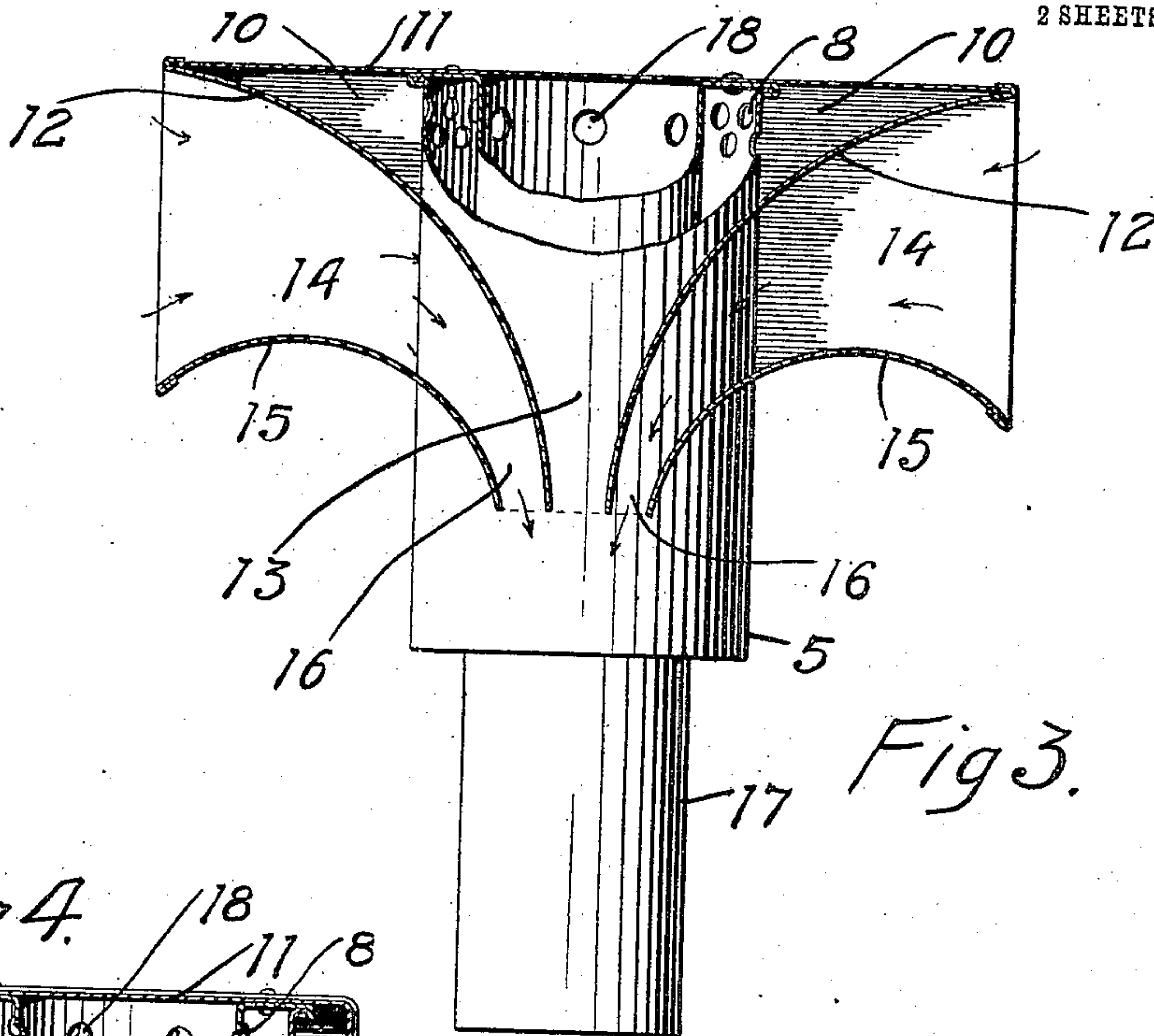


Fig 3.

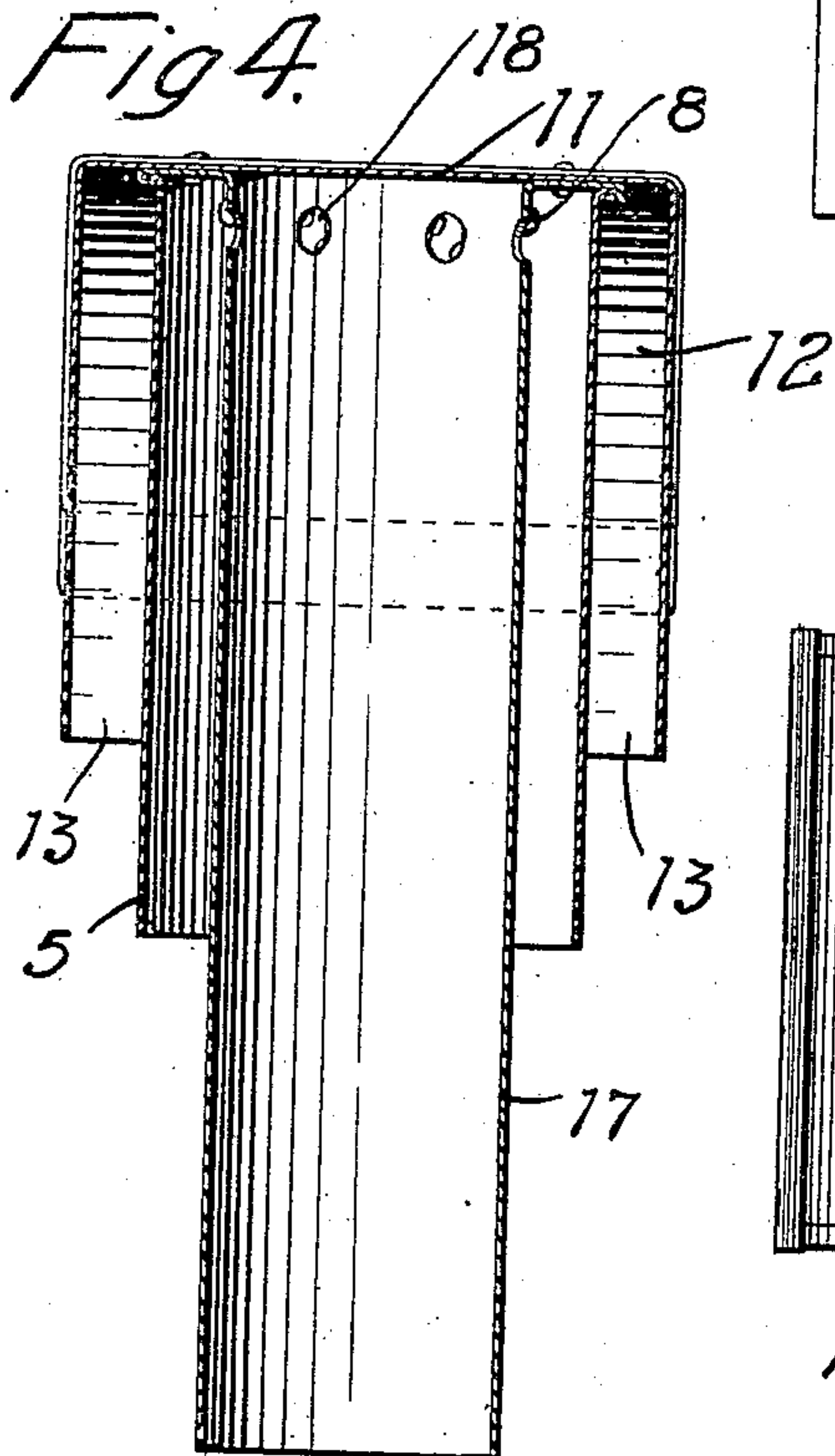


Fig 4.

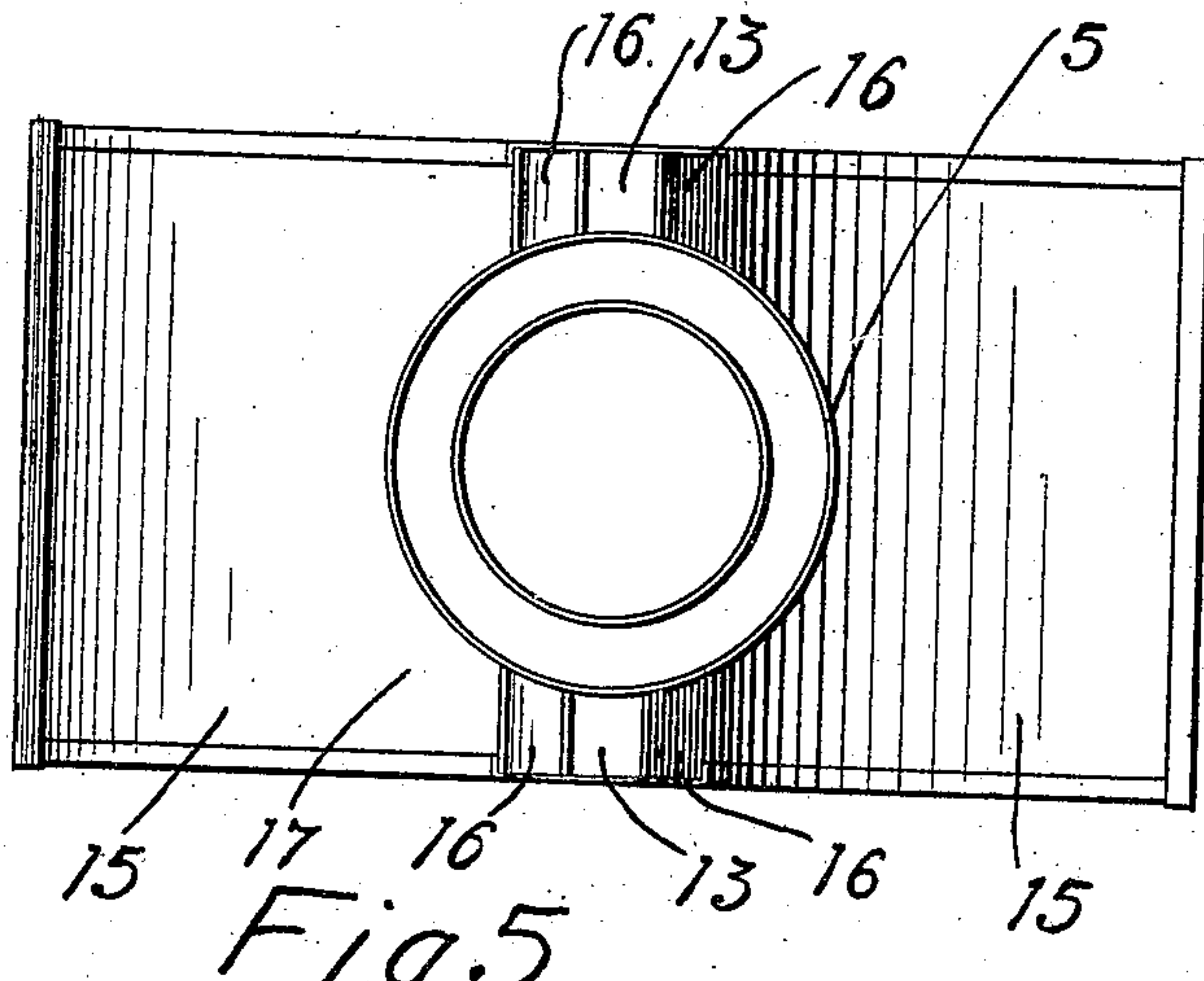


Fig 5.

WITNESSES  
*M. Walstrom*  
*J. B. Era*

INVENTOR  
FREDERICK CONRATH.  
BY *Paul Paul*  
HIS ATTORNEYS



# UNITED STATES PATENT OFFICE.

FREDERICK CONRATH, OF ST. PAUL, MINNESOTA.

## LAMP-JACK.

No. 848,443.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed July 12, 1906. Serial No. 325,798.

*To all whom it may concern:*

Be it known that I, FREDERICK CONRATH, of St. Paul, Ramsey county, Minnesota, have invented certain new and useful Improvements in Lamp-Jacks, of which the following is a specification.

The object of my invention is to provide a lamp-jack for railway-cars or locomotive-headlights which will positively prevent cinders, dust, or dirt from entering the car or the lamp.

A further object is to provide means for inducing a current of cold air to suck or draw the warm air and products of combustion from the lamp out of the car or headlight to the end that the air in the car will not become foul and the lamps in the car or headlight will burn with a steady flame.

The invention consists generally in various constructions and combinations, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a transverse sectional view of the upper portion of a passenger-coach, showing my invention applied thereto. Fig. 2 is a sectional view of a lamp-jack adapted particularly for use where oil-burning lamps are used. Fig. 3 is a sectional view illustrating a form of jack designed for use with gas-burning lamps. Fig. 4 is a sectional view of the jack shown in Fig. 3 on a line substantially at right angles to the section-line of Fig. 3. Fig. 5 is a bottom view looking up into the jack.

In the drawings, 2 represents the roof of a passenger-coach, and 3 the oil-lamps suspended thereon in the usual manner. Above the chimneys of these lamps hoods 4 of ordinary construction are provided, extending through the ceiling and roof of the car. These hoods are, as is well known, for the purpose of allowing the escape of the products of combustion from the lamp and to prevent the heat of the lamp from burning or scorching the ceiling or decorations of the car. Great difficulty has been experienced, however, in providing such an opening or exhaust and at the same time preventing cinders from the locomotive and dust and dirt from entering the opening and passing on down into the lamp and the car. Various devices have been provided, but have been found objectionable on account of a tendency to clog, thereby preventing the escape of the heated air and products of combustion. To

obviate all these objections to the ordinary lamp-jack, I provide for an oil-burning lamp a tube 5, having an open lower end adapted to fit down over a tube 7, which forms a continuation of the hood up through the roof of the car. The lower end of the tube 5 may rest on the car, and its upper end has a series of holes 8 on one side and a slot 9 on the opposite side, communicating with a chamber 10, which has a closed top 11 and extends entirely around the upper end of the tube 5. Below the chamber 10, on each side of the tube 5, I provide curved walls 12, joined at their upper ends to the top 11 and having their lower ends recessed to fit the curved surface of the tube 5, a space being provided between the lower ends of said walls, forming warm-air passages 13 on each side of the tube 5, leading to the open air and communicating with the chamber 10.

On each side of the warm-air passages 13 are cold-air passages 14, formed by the walls 12 and 15, the latter being curved and drawing in toward the walls 12 and fitting the curved surface of the tube at their lower ends, leaving contracted throats or passages 16 at the inner lower ends of the passages 14. The outer ends of the passages 14 are considerably larger and are open toward the ends of the car, or toward the direction in which the train is running. When the train is in motion, currents of cold air entering the open forward end of a passage 14 will flow down through the throat 16 of that passage and create a suction or draft past the open end of the passage 13, and consequently will draw the smoke and gases and hot air of the lamp from the chamber 10, and thus out of the car. At the same time any cinders which may have been gathered up by the passage 14 will be carried down past the passage 13 without being allowed to enter the chamber 10 or the tube leading to the lamp. In this way the lamp and the interior of the car are thoroughly protected from the entrance of cinders and dust, and at the same time the hot air and smoke of the lamp are drawn out of the tube and chamber above the lamp, and the car is thereby freed of all noxious odors, and the lamp will burn with a clear steady flame.

When the device is used on a headlight, the tube 5 is mounted on an opening over the lamp, with one of the passages 14 pointing ahead of the train in the same manner as the jack is mounted on the car. An induced



current of cold air will be established across the throat of the passage 13, and all foreign material will be prevented from entering the tube leading to the lamp-chimney.

5 In some systems of lighting, where acetylene or other gas is employed, it has been found necessary to provide some means for protecting the ceiling and decorations of the car from the extreme heat generated by such  
10 lights. I therefore provide an inner tube 17, concentric with the tube 5 and spaced therefrom and depending at its lower end a suitable distance below the tube 5. The upper end of the tube 7 is secured to the top 11 and  
15 is provided with a series of holes 18, leading into the space between the tubes. The operation of drawing the smoke and gases away from the lights and preventing the dust and cinders from entering them is substantially  
20 the same as above described with reference to the single jack.

Where the double-tube construction is used, a current of cool air is established between the tubes, thereby preventing the heat  
25 of the gas from damaging the decorations of the car. The single-tube jack is adapted for use in connection with a locomotive-headlight, being placed over an opening above the light, with the cold-air passages arranged to  
30 direct the cinders and dirt past the throat of the passage leading to the flue above the lamp.

I do not illustrate the use of the device to a headlight, as the manner of so using the  
35 jack will be thoroughly understood from the foregoing description.

I do not wish to confine myself to any particular size of the jack or the length of the cold-air and other flues or passages, as the  
40 same may be varied according to the character of the lamp and its arrangement in the car or headlight.

I claim as my invention—

1. A lamp-jack comprising a tube having  
45 an open lower end and adapted to be placed above an illuminating-flame, said tube being closed at the top and having perforations in its vertical upper walls and a chamber inclosing said perforations below the upper end of  
50 said tube and having a warm-air passage leading downwardly to the open air, and a cold-air passage having one end extending forward horizontally and open to the entrance of cold air and its opposite end also open and  
55 near the outlet of said warm-air passage, whereby a draft or suction will be established across the outlet of said warm-air passage and the hot air and products of combustion will be drawn from said chamber and tube,  
60 substantially as described.

2. A lamp-jack having a chamber provided with a warm-air passage leading to the open air, and a flue leading from the space  
65 above the illuminating-flame to said chamber and cold-air passages provided on each side

of said warm-air passage and projecting out horizontally in front and in the rear of said passage, and having intake-openings in substantially vertical planes, the inner ends of said cold-air passages being near the outlet  
70 of said warm-air passage and adapted to establish a draft or suction across said passage, for the purpose specified.

3. A lamp-jack comprising a tube having an open lower end and adapted to be fitted  
75 over an illuminating-flame, said tube having a closed upper end and perforations in its walls, and said jack having a chamber inclosing the upper portion of said tube and said chamber having downwardly-extending  
80 warm-air passages on each side of said tube leading to the open air and forming exits from said chamber, and cold-air passages open at each end and located in front and in the rear of said chamber and near the exits  
85 of said warm-air passages, whereby drafts of air will be established across the said exits and the entrance of cinders and dirt therein will be prevented, substantially as described.

4. The combination, with a railway-car, of  
90 a lamp-jack mounted on the roof thereof, and comprising a tube having an open lower end and perforations in its upper walls and a chamber inclosing the upper portion of said tube and having downwardly-extending  
95 warm-air passages communicating with the open air and forming exits from said chamber, and cold-air passages having open ends extending outwardly from said tube the openings leading into said passages being in  
100 substantially vertical planes and into which the cinders and dirt pass when the car is in motion, and the lower ends of said cold-air passages being also open and near the outlet of said warm-air passages to direct the cin-  
105 ders and dirt collected in said cold-air passages past the outlet of said warm-air passages, substantially as described.

5. A lamp-jack comprising a tube having an open lower end and perforations in its  
110 upper walls, a plate closing the top of said tube, curved walls secured to said plate and having recesses in their ends to fit the curved surface of the tube, spaces being formed between the walls at their lower ends leading  
115 to the open air, and forming exits from said chamber, and cold-air passages also curved and located below the said walls and forming therewith cold-air passages on each side of said tube, said cold-air passages gradually  
120 decreasing in area and having open ends opposite the exits between said walls, whereby drafts of air will be established across said exits to prevent the entrance of cinders and dust therein, and to draw the hot air and  
125 products of combustion from said tube, substantially as described.

6. The combination, with a railway-car roof, of a lamp-jack mounted thereon and comprising a tube having an open lower end  
130



within the car, and perforations in its upper walls and a chamber inclosing the upper portion of said tube and having a downwardly-extending warm-air passage leading to the  
5 open air above the roof, and a cold-air-intake passage having an outer end opening in the direction in which the car is moving and its inner or discharge end being near the discharge end of said warm-air passage whereby a strong  
10 current of air will be formed across the mouth of said warm-air passage and the hot air withdrawn from said tube, and the entrance of cinders and dirt therein prevented and a second tube inclosed by said first-  
15 named tube and spaced therefrom and extending to the top thereof and having perforated upper walls and the lower end of said second tube depending below the corresponding end of said first-named tube.

20 7. A lamp-jack comprising a tube having an open lower end adapted to be placed over an illuminating-flame, said tube being closed at the top and having a series of perforations and a chamber inclosing the perforated portion of said tube, and said chamber having a

warm-air flue leading downwardly therefrom and open at its lower end, and a cold-air passage extending forwardly and having an inlet-opening adapted to receive horizontal currents of air, the discharge end of said cold-air  
30 passage being contiguous to the outlet of said warm-air passage and adapted to direct the cold-air currents transversely with respect to said outlet, whereby a downdraft will be established in said warm-air passage and the hot  
35 air and products of combustion will be withdrawn therefrom and the entrance of cinders and dust therein prevented and a second tube inclosed by said first-named tube and spaced therefrom and extending to the top thereof, 40  
and having perforated upper walls and the lower end of said second tube depending below the corresponding end of said first-named tube.

In witness whereof I have hereunto set my  
45 hand this 28th day of June, 1906.

FREDERICK CONRATH.

Witnesses:

W. L. CLIFT,

G. WILLINS, Jr.