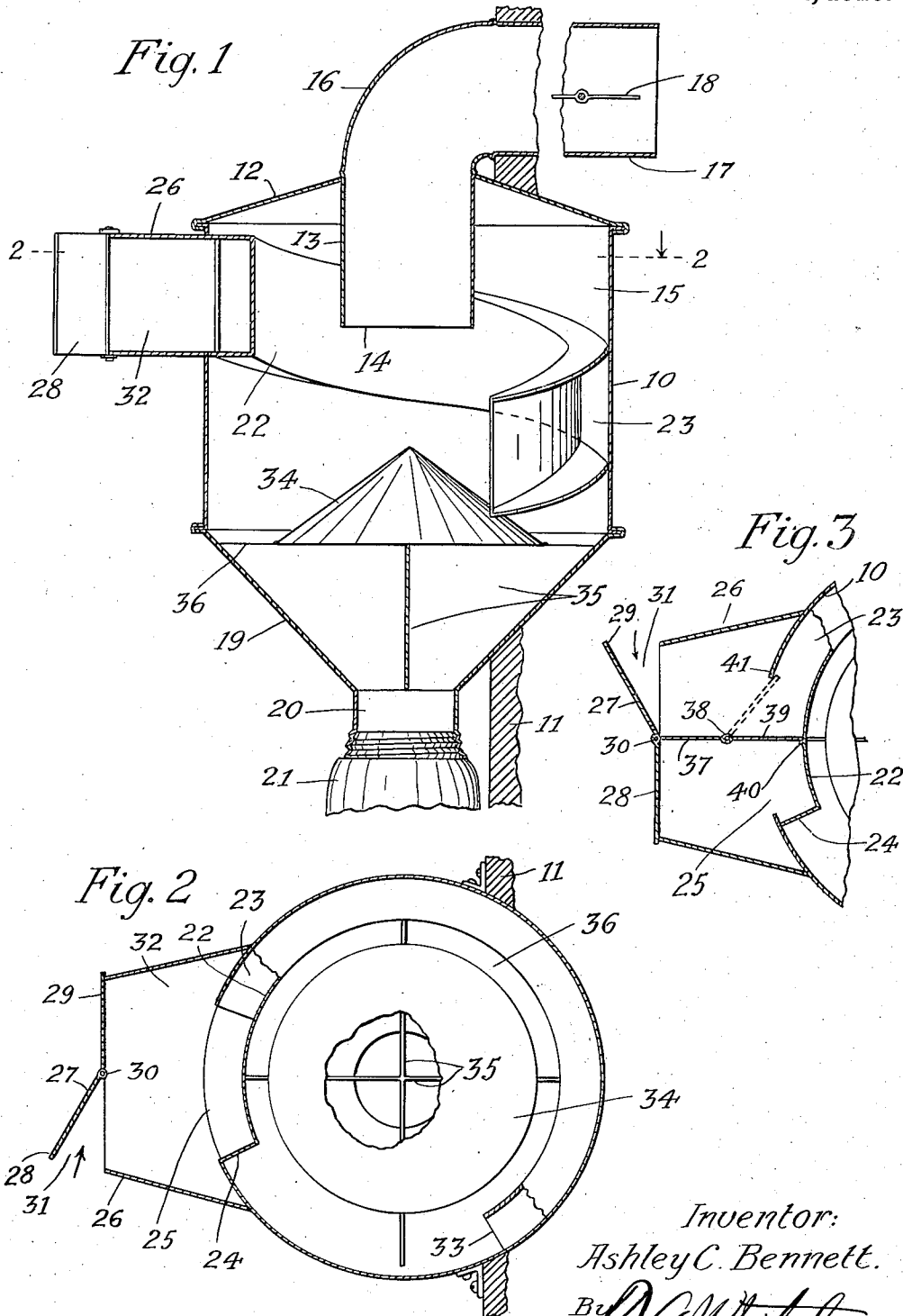


A. C. BENNETT.
AIR CLEANING VENTILATOR.
APPLICATION FILED SEPT. 4, 1917.

1,342,152.

Patented June 1, 1920.



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UNITED STATES PATENT OFFICE.

ASHLEY C. BENNETT, OF MINNEAPOLIS, MINNESOTA.

AIR-CLEANING VENTILATOR.

1,342,152.

Specification of Letters Patent.

Patented June 1, 1920.

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To all whom it may concern:

Be it known that I, ASHLEY C. BENNETT, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Air-Cleaning Ventilators, of which the following is a specification.

My invention relates to air cleaning ventilators for street cars, railroad cars and other types of closed carriers of passengers wherein it is desirable to introduce fresh air freed from dust, cinders, soot and the like. It is the object of my invention to provide a device which may be readily attached to any exposed portion of a passenger carriage such as a street car or railroad car and will operate to cause currents of air to travel through the same and into the car, the currents of air in traveling through the device being caused to move in a certain manner in reference to dead air spaces within the device so as to separate the dust or other solid impurities from the air and collect the same within the device, delivering pure dust-free air into the car.

In carrying out my invention I provide a dust collector embodying a substantially cylindrical chamber with dead air dust collecting spaces at the lower portion of the same and a dust receptacle below said spaces. This receptacle is attached to the side of the car and has an air passageway which passes through the wall of the car and is adapted to deliver air into the car. These ventilators may be made relatively small and a separate ventilator applied to each berth thereby insuring an abundance of fresh and perfectly clean air. The air cleaner itself is provided with a projection which forms a mouth extended in the direction of movement of the train so that movement of the device through the air by the train will cause the air to enter the cleaner and circulate through the same, there discharging its contents and dust and solid impurities and going from the cleaner into the car in a purified condition.

The full objects and advantages of my invention will appear in connection with the detailed description thereof and are particularly pointed out in the claims.

In the drawings, illustrating the application of my invention in one form,—

Figure 1 is a sectional elevation view of my invention showing the same in position at

the side of a car wall. Fig. 2 is a section on line 2—2 of Fig. 1. Fig. 3 is a part sectional plan view showing a modification of the structure illustrated in Fig. 2.

As illustrated, a casing 10 preferably cylindrical in form, is secured in any desired manner upon the side of a wall 11 of a car. This casing is provided with a top 12 through the center of which extends a pipe 13 reaching to a point indicated at 14 well within the chamber 15 formed by casing 10. The pipe 13 is curved, as indicated at 16 passing through the wall of the car as indicated at 17 where it is provided with a damper 18 by means of which the flow of air can be regulated.

To the bottom portion of casing 10 is secured a conical extension 19 having a mouth 20 at its center to which is secured a removable receptacle 21. A trough-like member 22 extends spirally within the casing 10 forming a spiral passageway 23. The upper end of the trough is closed at 24 adjacent an opening 25 through the casing 10. A projecting casing 26 is formed over the opening 25, as shown in Figs. 1 and 2. The end of the casing 26 is closed by a door 27 having portions 28 and 29 angularly connected at the pivot point 30 so that the door will take a position according to the direction which the car and the cleaner is traveling through the air to provide an open mouth 31 turned toward the direction of travel, through which the air is forced by the movement of the device through the air causing it to enter the chamber 32 formed by the projection 26 and pass through spiral passageway 23 discharging in a spiral direction within chamber 15 in casing 10 at a point near the bottom of said casing, as indicated at 33. At this point a cone 34 extends upwardly within the casing above vertical partitions 35 below the cone and so that the lower edge of the cone is spaced, as indicated at 36, from the walls of casing 19.

In the modified form shown in Fig. 3 a vertical partition 37 extends from a hinge point 30 of the double door 27 toward the opening 25 into spiral passageway 23. At a point 38 on said partition 37 a swinging door 39 is pivoted, which door is adapted in one position to engage a stop 40 on the inside of trough 22. The door 39 is also adapted to engage the casing 10 as indicated at 41. The interior of extension 26 is thus divided into two passageways which

receive air from the mouth 31 formed by door 29 or 28 according to the direction in which the car is moving and conducts the air into the spiral passageway 23.

5 The advantages of my invention will be apparent. The apparatus may be made relatively small and therefore adapted for use in connection with each of a series of berths at various parts along the car. The
10 currents of air induced by the moving of the projecting mouth formed by doors 28 or 29 are caused to travel in a spiral direction within the casing 22 and this spiral travel results in producing a centrifugal
15 action which causes any dust or solid impurities in the air ultimately to settle through annular opening 36 and into dead air spaces below cone 34 and finally gravitate to the removable receptacle 21. A
20 stream of pure air regulated by damper 18 will be forced through the pipe 17 within the berth or other part of the car, as may be desired. Substantially all impurities will be removed from the air.

25 I claim:

1. In combination with a car and the wall thereof, a casing secured to said wall embodying a gravity dust collector, a pipe leading from within said casing through
30 the wall to the interior of the car, means carried by the casing for causing currents of air to travel into the same by reason of the movement of the car through the air, and a trough-like member extending spirally within the inclosure formed by said
35 casing to form an inclosed spiral passage-

way for conducting air from said means to the bottom of said casing.

2. In combination with a car and the wall thereof, a cylindrical casing secured to said wall and extending outside of the limits thereof, a pipe leading from the top of said casing through the wall into the interior of the car, a mouth extending outwardly from the casing for engaging the air by reason of the movement of the car through the air to cause currents of air to travel into the same, and a trough-like member extending spirally within the inclosure formed by said casing to form an inclosed spiral passageway for conducting air from said mouth to the bottom part of said casing.

3. In combination with a car and the wall thereof, a cylindrical casing secured to said wall, a pipe leading from the central portion of the top of said casing through the wall into the interior of the car, means carried by said casing for causing currents of air to travel into the same by reason of the movement of the car through the air, a trough like member extending spirally within the inclosure formed by said casing to form an inclosed spiral passageway for conducting air from said means to the bottom part of said casing, and means at the bottom of said casing for providing a dead air space for the reception of dust which passes with the air through said inclosed spiral passageway.

In testimony whereof I hereunto affix my signature.

ASHLEY C. BENNETT.