Dec. 31, 1929. J. L. REYMILLER 1,741,954

OUTSIDE SPRAY BOOTH

Filed Feb. 18, 1928

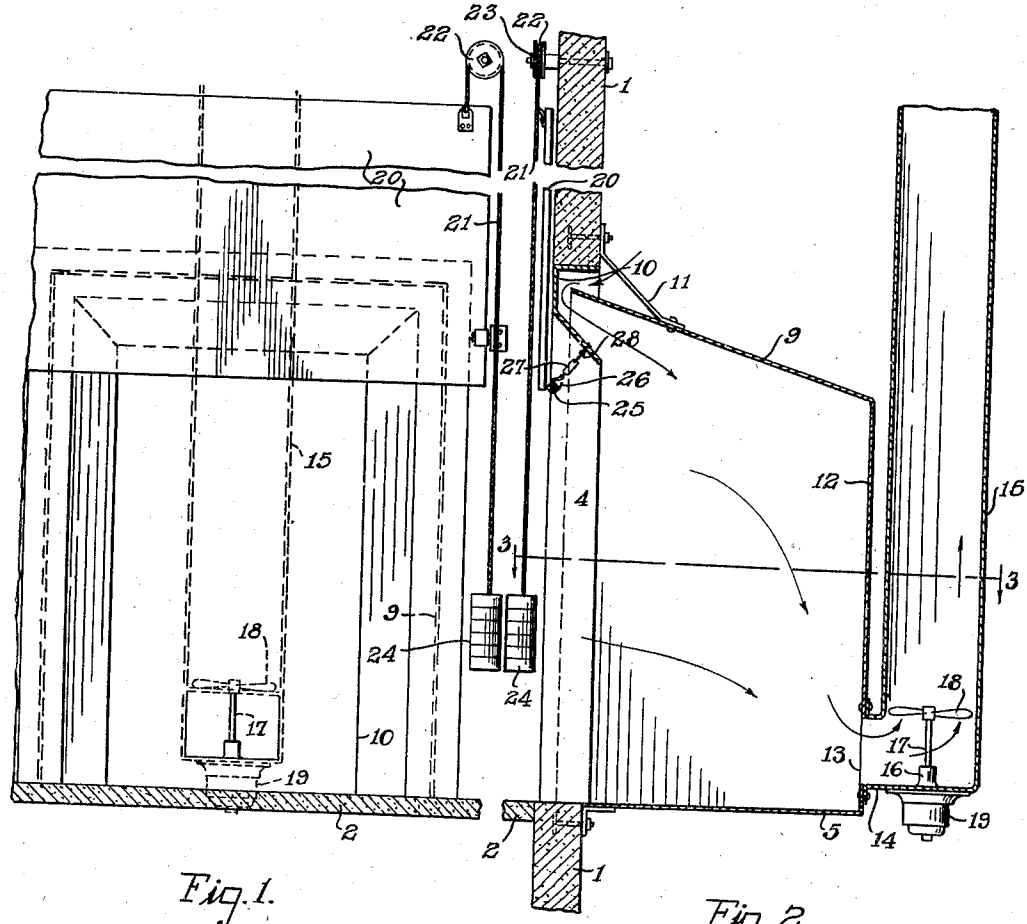


Fig. 1.

Fig. 2.

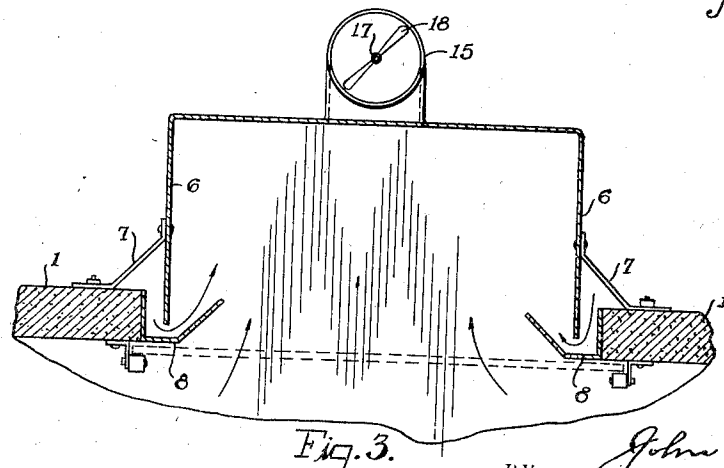


Fig. 3.

INVENTOR

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Patented Dec. 31, 1929

1,741,954

UNITED STATES PATENT OFFICE

JOHN L. REYMILLER, OF PIQUA, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO HARTZELL INDUSTRIES, INC., OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE

OUTSIDE SPRAY BOOTH

Application filed February 18, 1928. Serial No. 255,388.

This invention relates to new and useful improvements in outside spray booths.

Spray booths which are located in buildings not only take much of the heated air from it, but increase the fire hazard.

It is therefore one of the principal objects of my invention to provide one or more spray booths which are located outside the building and separated from it by fire doors.

It is another object of the invention to draw from the outside approximately seventy-five per cent of the air used in the booth. The remainder, which is drawn from the inside, will not seriously interfere with the heating of the adjacent room as at present.

Cold air from the outside, due to its contracted condition, will descend, having a greater density. Therefore the fan, located at the bottom of the stack, will move more cold air than heated air, and while some of the latter will be taken from the room, the greater amount of air will be that drawn from the outside atmosphere.

In the accompanying drawings, Figure 1 is a front elevational view of my improved spray booth. Figure 2 is a vertical, sectional view taken through the spray booth and stack, and Figure 3 is a horizontal, sectional view taken on the line 3—3 of Figure 2.

Referring to the accompanying drawings for a detailed description of my invention, the numeral 1 designates a side wall, and 2 the floor, of a building. This wall is provided with an opening 4 through which entrance is had to a metal spray booth 5.

The sides 6, 6 of the spray booth 5 are secured by bracket arms 7, 7 to the wall 1 near the opening 4 therein. Vertical channel members 8, 8 are secured to the end portions of the wall defining the opening 4, to receive the front edge portions of the side walls 6, 6. These edges of the side members do not touch the channel members, but are positioned within them as shown in Figure 3 to permit outside air to enter the booth around them as indicated by the arrows in said figure. The inner walls of the channel members are inclined inwardly as shown in order to deflect that air rearwardly.

The top 9 of the spray booth is inclined downwardly from front to rear, its front edge projecting into a top channel member 10 similar to the channel members 8. The top 9 is secured to the building wall 1 by a bracket arm 11, so that the front edge of said top need not touch the channel member 10 that is also secured to that wall. Therefore, outside air may also enter the booth through this channel, as indicated by the arrows in Figure 2. In the lower rear portion of the rear wall 12 of the booth 5 there is an outlet opening 13 through which air and gas laden with paint are drawn into a horizontal bend 14 at the bottom of a vertical discharge stack 15. (See Figure 2).

Mounted on the bottom of the stack 15 is a bearing 16 for a vertical fan shaft 17. Secured to the top of the latter is a horizontal fan 18 which is preferably of aerofoil section. The shaft 17 is rotated by an electric motor 19 secured to the outer portion of the bottom of the stack. The motor is located outside the stack, since it is too great a fire hazard to place it within the gas laden air stream.

When the fan 18 is rotated by the motor, it will draw the air and obnoxious gases through the outlet 14 into the stack 15. If it were not for the outside openings provided by the channel members 8 and 10, all of the air used in the spray booth 5 would be drawn from the adjoining room. In this instance much heat would be taken from the building.

The channel members 8 and 10 on the other hand permit about 75% of the air used to spray the work in the booth to be pulled in through these channels by the fan, from the outside atmosphere. This air, being cooler than that within the room into which the booth opens, will descend to the bottom of the latter. The fan will therefore move more outside air than heated air from the adjacent room, with the result that the temperature of the latter will not be materially reduced by the operation of the fan. Of course, some air will be taken from the room, but the greater portion will be drawn in through the channels from the outside.

For the purpose of automatically closing the open end of the booth in case of fire, I

have provided a fire door 20 which is attached at its upper part to one end of a flexible cable 21 that passes over a pulley wheel 22. The latter is mounted on a pin 23 secured to the wall 1 above the door. To the other end of the cable a weight 24 is secured. (See Figures 1 and 2).

Attached to the lower end of the fire door 20 is an eye 25 which is engaged by a hook 26 that is connected by a fusible link 27 having a hook extension, to an eye 28 secured to the channel member 10. By means of this fusible link structure, the fire door 20 will be held above the opening 4. However, should a fire occur, the link will be melted to release the door, which will fall to the bottom of the booth to confine the fire within it and away from the adjacent building.

Having described my invention, I claim:

1. The combination with a building, of a spray booth outside the latter and opening into it, means for admitting air from the outside atmosphere to said booth, and fan means arranged to draw a large proportion of the air employed in the booth, from the outside atmosphere to conserve the heat in the building.

2. The combination with a building, of a spray booth outside the latter and opening into it, means for admitting air from the outside atmosphere into said booth, a discharge outlet at the lower portion of said booth, and a fan in said outlet for moving air through the booth.

3. The combination with a building, of an outside spray booth opening therein, channel means for admitting air from the outside atmosphere to said booth, and means at the bottom of the booth for drawing said outside air through the channel means into it for the purpose specified.

4. The combination with a building, of a spray booth outside the latter and opening into it, channel means for admitting air from the outside atmosphere into said booth, an air and gas discharge stack communicating with the lower portion of said booth, and a fan in the lower part of the stack for the purpose specified.

5. The combination with a building, of a spray booth outside the latter and opening into it, channel members in the adjacent wall of said building into which the sides and top of the booth project, an air and gas outlet at the bottom of said booth, and a fan in said outlet for drawing air from outside into said booth through said channel members.

In witness whereof I have hereunto set my hand this 11th day of February, 1928.

JOHN L. REYMILLER.