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AIR SCREEN PRODUCING MECHANISM

Filed Sept. 27, 1961

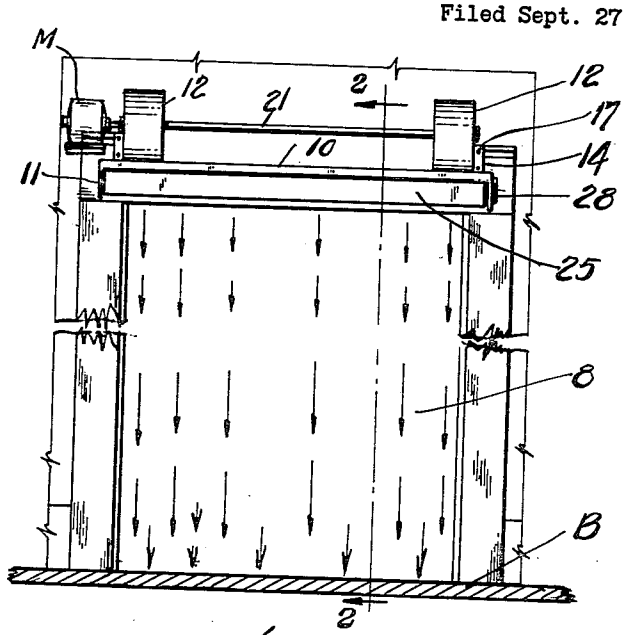


Fig. 1

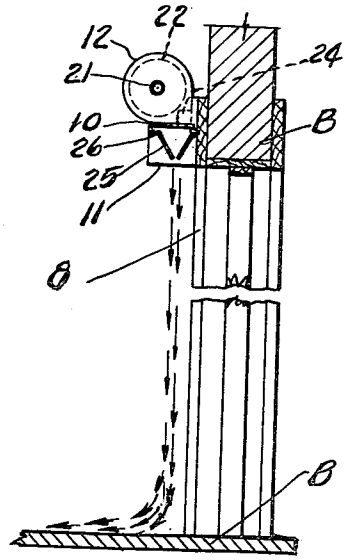


Fig. 2

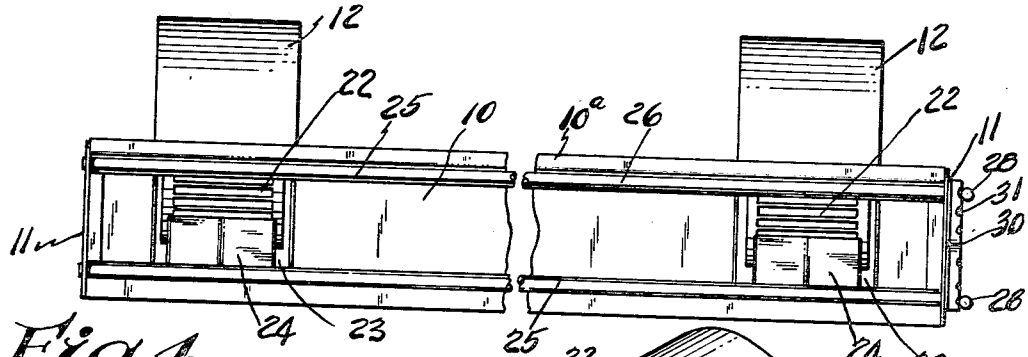


Fig. 4

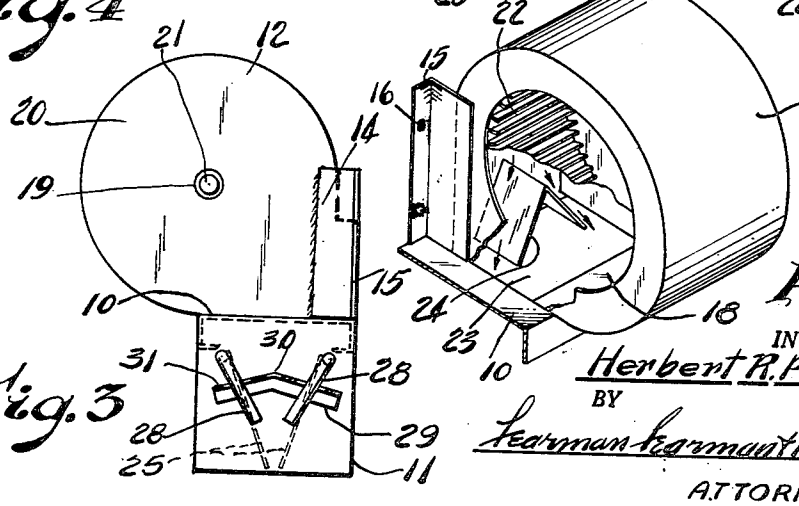


Fig. 3

Fig. 5

INVENTOR.

Herbert R. Peterson.

BY

Fearman Fearman & McCulloch

ATTORNEYS

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# 3,112,686
# AIR SCREEN PRODUCING MECHANISM

Herbert R. Peterson, Beaverton, Mich.

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3 Claims. (Cl. 98—36)

This invention relates to air screens for doors and openings in buildings in general which serves as a barrier for the opening.

One of the prime objects of the invention is to design a mechanism for projecting a stream of air downwardly across the opening in a building, thereby insulating the air inside the building from the outside air.

Another object of the invention is to design a mechanism for regulating the thickness of the sheet of projected air.

A still further object is to design a simple, practical and inexpensive mechanism for controlling and distributing the air as it is blown from the blower members.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawing and more praticularly pointed out in the appended claims; it being understood that changes may be made in the form, size, proportion and details of construction, without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

FIGURE 1 is a fragmentary, elevational view of a building structure showing a door opening with my air screen projecting means mounted thereabove, the arrows indicating the direction of travel of the air.

FIGURE 2 is a sectional, edge elevational view taken on the line 2—2 of FIGURE 1, the arrows show the thickness of the air screen.

FIGURE 3 is an enlarged, part sectional, end elevational view of one of the blower housings, parts being broken away to show the air deflectors.

FIGURE 4 is an enlarged, inverted plan view of the blower mounting and assembly.

FIGURE 5 is a fragmentary, perspective view of the blower assembly showing the adjustable louver.

In building and business establishments in general where many people come and go, and where various products and articles of merchandise are carried through the doorways, the continuous opening and closing of the doors becomes a tedious, awkward, yet necessary operation. It hampers persons using hands and arms to carry or transport products and merchandise; it acts as a suction to pul warm air from the room; it permits bugs and insects to enter the building during the opening and closing operation, and has other disadvantages which will later be referred to, and I have, therefore, devised a means and mechanism whereby the door can be either entirely eliminated or it can be secured in open position for use only when the mechanism is not in operation.

The letter B indicates a conventional building provided with the usual door opening 8 in which a door (not shown), can be hung for use when my air screen is not in operation.

The mechanism includes a preferably sheet metal channel shaped header member 10 which extends beyond the width of the door opening and which is formed with depending end walls 11 as usual, the edges of the member 10 being outwardly flanged as at 10*a* and for a purpose to be hereinafter described.

A pair of horizontal, spaced apart blower housings 12 are mounted on the upper face of the header 10, and vertically disposed, angularly shaped flanges 14 are welded to the side walls of said housings, the free leg 15



being provided openings 16 to permit the device to be mounted and secured in position over a doorway by means of screws or bolts 17 in the usual manner.

One wall of each blower housing 12 is open as at 18 and bearings 19 are provided on the opposite closed walls 20 to accommodate a drive shaft 21 on which the blowers 22 are mounted as usual, said shaft being driven by means of an electric motor M which is connected to any suitable source of electric supply.

Openings 23 are provided in the header member 10 in alignment with the blowers 22, and an inverted substantially V-shaped baffle 24 is welded to the back wall of each housing to divert and spread the air stream across the width of the door opening as it comes from the blowers.

Adjustable louver members 25 form the side walls of the header and are mounted on horizontally disposed shafts 26 which are revolvably mounted in suitable openings provided in the end walls 11, one end of each shaft being downwardly bent as shown, to form an adjusting lever 28, which engages a V-shaped stop strip 29 provided on one of the end walls, said strip having a projecting lip 30 in which a plurality of notches 31 are formed for engagement by the levers 28 to hold the louvers in set position, and it will be obvious that these levers can be readily adjusted to swing the lower ends of these louvers towards or away from each other to regulate the thickness of the air stream downwardly across the doorway. The force of the air is regulated by the r.p.m. of the blowers.

From the foregoing description, it will be understood that I have perfected a very simple, practical and inexpensive means and mechanism for projecting an air screen or curtain across a door opening.

What I claim is:

1. An apparatus for producing a variable thickness air screen comprising; an elongated panel member having a downwardly extending end wall at each end thereof; said panel member having at least one opening therein; an air blower means mounted on said panel member and communicating with said opening to deliver air therethrough; a pair of elongated, spaced apart louver members spanning the end walls and rockably supported thereby; said end walls forming a closure for the ends of the louver members; said panel member and end walls forming a header having an opening through which air may be discharged, means connected with each of said louver members for rocking the said louvers relatively to one another for varying the size of the bottom opening, and means on at least one of said end walls for securing said louvers in adjusted position.

2. The combination defined in claim 1 in which each louver is journaled in said end walls; a stop strip on one end wall, and a handle section on each louver and engagable with said stop strip to hold said louvers in adjusted positions.

3. The combination defined in claim 2 in which a V-shaped baffle member is secured to the back wall of each air blower to spread the width of the air stream as it comes from the blower.

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