April 24, 1956 H. H. LACEY 2,742,926

VENTILATING DUCTS

Filed Feb. 25, 1953

FIG. 1

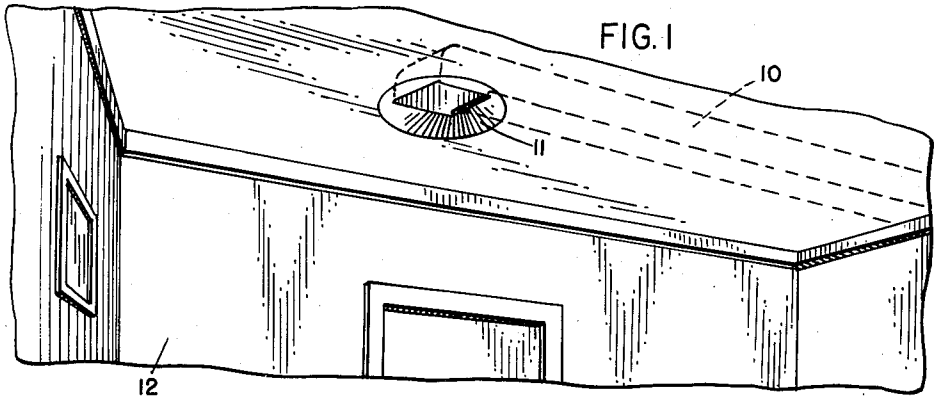


FIG. 2

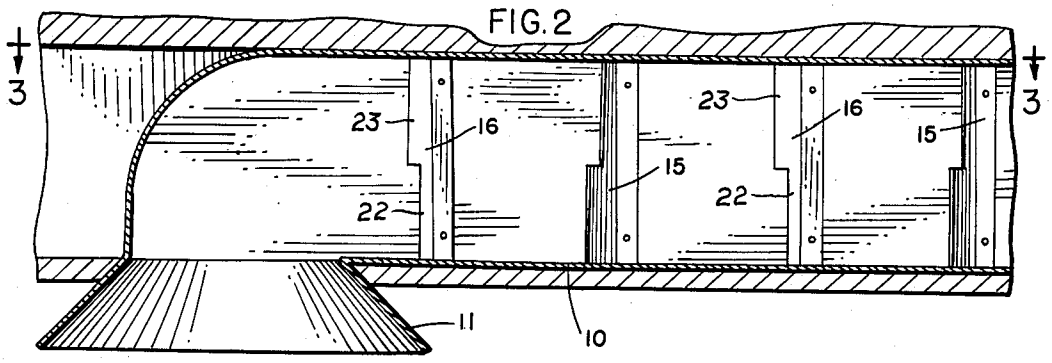


FIG. 3

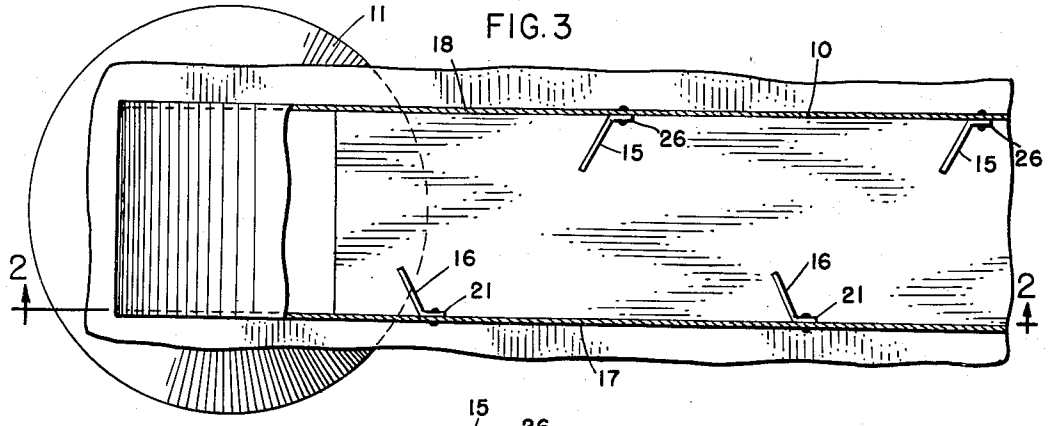
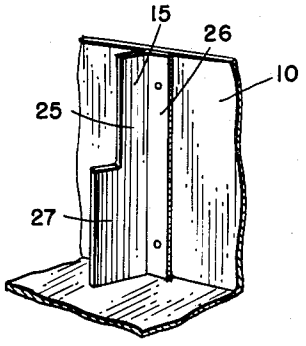


FIG. 4



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VENTILATING DUCTS

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Application February 25, 1953, Serial No. 338,704

4 Claims. (Cl. 138—38)

This invention relates to ventilating ducts, and more particularly to ventilating ducts for supplying swirling air to areas being ventilated.

In the use of ventilating systems, such as, for example, air conditioning systems or systems for supplying fresh air, it is highly advantageous to mix the air thoroughly before it is supplied to an area to be ventilated. Past known apparatus for effecting this has been complicated in construction and has substantially reduced the flow of air.

An object of the invention is to provide new and improved ventilating ducts.

Another object of the invention is to provide ventilating ducts for supplying swirling air to areas being ventilated.

Another object of the invention is to provide simple, inexpensive air ducts for supplying swirling air to areas being ventilated.

A further object of the invention is to provide air ducts for swirling air offering minimum resistance to passage of air therethrough.

A ventilating duct illustrating certain features of the invention may include a passageway for air and baffles secured to the walls of passageways and extending roughly helically therealong for swirling air forced through the passageway.

A complete understanding of the invention may be obtained from the following detailed description of a ventilating duct forming a specific embodiment of the invention, when read in conjunction with the appended drawings, in which:

Fig. 1 is a vertical section of a ventilating duct forming one embodiment of the invention;

Fig. 2 is a top plan view of a portion of the duct shown in Fig. 1;

Fig. 3 is a vertical section taken along line 3—3 of Fig. 1, and

Fig. 4 is a perspective view of a portion of the duct.

Referring now in detail to the drawings, there is shown therein a duct **10** for supplying air forced therethrough to an annular outlet **11** of well known construction to a room **12** to be ventilated. The duct **10** is rectangular in cross-section, and baffles **15** and **16** are secured in staggered positions to side walls **17** and **18**, respectively, of the duct. Each of the baffles **16** includes a base strip **21** and a roughly L-shaped deflecting portion **22** including a projection **23** positioned at the upper portion of the duct. The baffles **15** are of identical construction with that of the baffles **16**, and projections **27** of deflecting portions **25** of the baffles **15** are located at the bottom portion of the duct while base strips **26** are provided to secure the baffles to the wall of the duct by screws, rivets or the like. Deflecting portions **22** and **25** of the baffles **16** and **15**, respectively, project into the duct and generally in the direction in which air is forced through the duct, the deflecting portions and the side walls of the duct forming angles in the order of 60°.

The baffles **15** and **16** form a path for the air roughly helical in shape, and direct the air in a helix so that it is thoroughly mixed and swirling as it passes through the outlet, whereby an enhanced cooling effect is obtained. Each baffle projects into the duct only sufficiently to turn the air without unduly blocking off or obstructing the duct, the portion of the cross-section of the duct being obstructed by each baffle being not greater than twenty-five per cent. Each deflecting portion of the baffles forms roughly a portion of a helix along the walls of the duct, and air forced along the duct by suitable means (not shown) is swirled with a minimum obstruction to the passage thereof.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of the invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. A ventilating system, which comprises a duct through which air is forced in one direction, a plurality of baffles each including a base and a deflecting portion extending at an oblique angle from the base, said deflecting portions having substantially a quadrant thereof removed at the end thereof most remote from the base, and means securing the bases of the baffles to opposed sides of the duct in staggered positions with the removed quadrants of successive baffles in staggered relationship such that the deflecting portions deflect the air in a helical path.

2. A ventilating system, which comprises a duct rectangular in cross-section through which air is forced in one direction, a plurality of baffles each including a base and an L-shaped deflecting portion extending at an oblique angle from the base, and means securing the bases of the baffles to two opposed walls of the duct in staggered positions with the L-shaped deflecting portions of successive baffles in reversed relationship such that the L-shaped deflecting portions deflect the air in a helical path.

3. A ventilating system, which comprises a duct rectangular in cross-section through which air is forced in one direction, a plurality of baffles each including a base and an L-shaped deflecting portion extending at an oblique angle of substantially 120° from the base, and means securing the bases of the baffles to two opposed walls of the duct in staggered positions with the L-shaped deflecting portions of successive baffles in reversed relationship such that the L-shaped deflecting portions deflect the air in a helical path.

4. A ventilating system, which comprises a duct rectangular in cross-section through which air is forced in one direction, a plurality of baffles each including a base and an L-shaped deflecting portion extending at an oblique angle from the base, and means securing the bases of the baffles to two opposed walls of the duct in staggered positions with the L-shaped deflecting portions of successive baffles in reversed relationship such that the L-shaped deflecting portions deflect the air in a helical path, each of said deflecting portions extending across the duct not over about one quarter of the distance across the duct.

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