

vanes. This type of ventilator must be very carefully designed if it is to be leak-proof, and if the noises and impact forces, due to ice accumulating on the vanes in the winter are to be eliminated.

The *continuous type of roof ventilator* is illustrated in Fig. 11. It furnishes a continuous opening in the roof throughout the length of the building, and is in effect a ridge louvre or monitor. It is stated that the high temperature of the air immediately beneath the sheathing, resulting

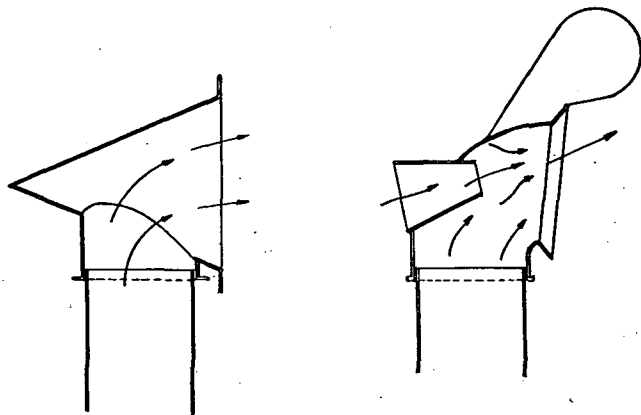


FIG. 8

FIG. 9

ROTARY VENTILATORS

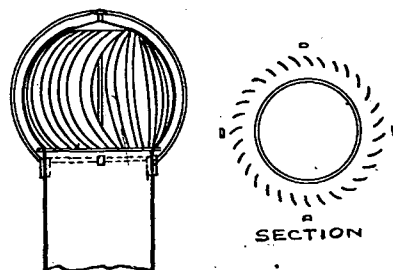


FIG. 10

AIR-TURBINE VENTILATOR

from exposure of the roof to the sun's rays, induces a powerful convective effect along the pitched roof toward the opening which offers a direct avenue of escape, whereas in the unit type of ventilator, the free egress of the air is confined to definite points along the roof, and the natural upward flow is diverted with some loss, to a longitudinal movement. These ventilators are expected to function by the force of temperature difference alone, and have no external features designed to generate a suction by the action of the wind. The absence of a conspicuous external structure makes this type of ventilator particularly suitable for certain types of buildings.

Selection of Roof Ventilators

While the average efficiency of one class of roof ventilators will be higher or lower than the average efficiency of another class, this does not in any way determine the capacity of individual ventilators, as ventilators of the same class and, which from a casual observation appear to be the same, may have entirely different characteristics, due to the fact that some of the fundamentals have been overlooked or changed in one or the other.

The principles which should be followed in the selection of roof ventilators are:

A—Stationary Ventilators.

1. A head sufficiently large to produce a large low-pressure area on the side opposite the wind, and to give an area of outlet for the air leaving the head large enough to obviate undue resistance to flow.

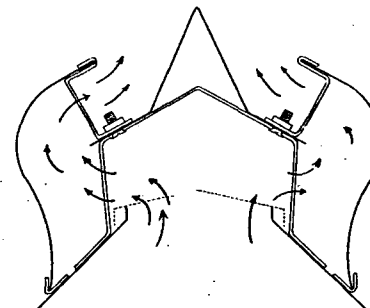


FIG. 11. CONTINUOUS TYPE ROOF VENTILATOR

At the same time the head should not be so large as to be unwieldy in handling or to be structurally weak when erected.

2. A storm band on stationary non-siphoning ventilators should be sufficiently wide and so placed as to prevent the entrance of external air into the ventilator head.
3. If the ventilator is a siphoning type, additional outlet air space must be provided in the head in order not to restrict the air passage from the exhaust pipe.

B—Rotary Ventilators.

1. A flaring outlet from a rotary ventilator will give a better exhaust than a straight outlet.
2. Practically frictionless and noiseless turning of the ventilator head, when the wind direction changes. The head should turn at very low wind velocities.
3. Smallest possible change of direction of the air ascending from the building and least possible resistance to its egress by louvres or other obstructions at the outlet opening.