CLAIMS

1. A refrigeration unit (20) for conditioning air within a refrigerated chamber (11) for housing perishable goods, the refrigeration unit (20) comprising:
an evaporator heat exchanger (32) disposed in operative association with the refrigerated chamber (11);
an evaporator fan (34) for circulating a flow of air drawn from the refrigerated chamber (11) through the evaporator heat exchanger (30) and back into the refrigerated chamber, the evaporator fan (34) having a suction side and a discharge side;
an air exchange device (26) including a tubular member (40) having a first chamber (42) and a second chamber (44) isolated from first chamber, the first chamber (42) having an inlet (48) in flow communication with a fresh air source and an outlet opening (50) in flow communication with the refrigerated chamber (11) on a suction side of the evaporator fan (34), and the second chamber (44) having an inlet (52) in flow communication with the refrigerated chamber (11) in a discharge side of the evaporator fan (34) and an outlet opening (54) in flow communication with a space exterior of the refrigerated chamber (11); and
characterised in that
the air exchange device (26) further includes a housing (60) disposed about the tubular member (40), the housing (60) having a first outlet (62) communicating with the suction side of the refrigerated chamber (11) and a second outlet (64) communicating to the space exterior of the refrigerated chamber (11).

2. The refrigeration unit (20) as set forth in claim 1 wherein the outlet (50) of the first chamber (42) has a flow area that may be selectively adjusted from fully open to fully closed.

3. The refrigeration unit (20) as set forth in claim 1 wherein the outlet (54) of the second chamber (44) has a flow area that may be selectively adjusted from fully open to fully closed.

4. The refrigeration unit (20) as set forth in claim 1 wherein:
the outlet (50) of the first chamber (42) has a flow area that may be selectively adjusted from fully open to fully closed;

the outlet (54) of the second chamber (44) has a flow area that may be selectively adjusted from fully open to fully closed; and

the adjustment of the flow area of the outlet (50) of the first chamber (42) and the adjustment of the flow area of the outlet (54) of the second chamber (44) are co-ordinated whereby the flow area of the outlet (50) of the first chamber (42) and the flow area of the outlet (54) of the second chamber (44) are simultaneously open and simultaneously closed.

5. The refrigeration unit (20) as set forth in claim 1 wherein the tubular member (40) comprises a tubular member disposed for rotation within and relative to the housing.

6. The refrigeration unit (20) as set forth in claim 5 wherein the tubular member (40) is selectively rotatable within the housing (60) between a first position relative to the housing (60) whereat the outlet (50) of the first chamber (42) of the tubular member (40) is juxtaposed in full registration with the first opening (62) of the housing (60) and the outlet (54) of the second chamber (44) of the tubular member (40) is juxtaposed in full registration with the second opening (64) of the housing (60), and a second position relative to the housing (60) whereat the outlet (50) of the first chamber (42) of the tubular member (40) is juxtaposed out of registration with the first opening (62) of the housing (60) and the outlet (54) of the second chamber (44) of the tubular member (40) is juxtaposed out of registration with the second opening (64) of the housing (60).

7. The refrigeration unit (20) as set forth in claim 6 wherein the tubular member (40) is selectively rotatable within the housing (60) to be positioned at at least one position between the first position and the second position whereat the outlet (50) of the first chamber (42) of the tubular member (40) is juxtaposed in partial registration with the first opening (62) of the housing (60) and the outlet (54) of the second chamber (44) of the tubular member (40) is juxtaposed in partial registration with the second opening (64) of the housing (60).

8. The refrigeration unit (20) as set forth in claim 1 further comprising a seal member (66) disposed intermediate the tubular member (40) and the housing (60).

9. The refrigeration unit (20) as set forth in claim 8 wherein the sealing member (66) also comprises a bearing member.

10. The refrigeration unit (20) as set forth in claim 1 further comprising a drive motor (70) operatively associated with the tubular member (40) for rotating the tubular member (40) relative to the housing (60).

11. The refrigeration unit (20) as set forth in claim 1 wherein the outlet (54) of the second chamber (44) of the tubular member (40) is disposed generally orthogonally to the inlet (48) of the first chamber (42) of the tubular member (40).