and infiltration calculations cannot be based with great certainty on this curve.

Fig. 2 gives the leakage around the sash of a double hung window with various clearances.

Fig. 3 gives similar data on the same type of window fitted with an interlocking weather-strip.

Fig. 4 and 5 give the results of test upon other windows.

Table 1 gives the leakage in cubic feet per minute for the whole window and per linear foot of cracks for wind velocities of 14.4 and 24.9 miles per hour. It is of interest to note that for a plain window with crack varying from 1/16 to ¼ in. the leakage is 46 cu. ft. per min., while, for the two types of weather-stripping tested, it varies from 9 to 18, and 7 to 10 cu. ft. per min. respectively. The heat loss is given for two temperature differences. Radiation required to supply this heat loss is given for the larger temperature difference. The saving in coal based upon certain conditions is given in the last columns of the table.

Table 2 gives the leakage between the frame and the brick, the elsewhere leakage (leakage which cannot be stopped by perfect weather-strip), the leakage for a plain window not weather-stripped, the leakage for the same window fitted with a rib strip, and with interlocking strip for various wind velocities.

Table 3 gives the leakage in cubic feet per hour per foot of crack per mile wind velocity for a plain frame window and also for frame window fitted with the two types of weather-stripping. The leakage is given for various cracks around the sash perimeter and also for various clearances between the sash and the stop and parting bead.

In determining the heat loss from buildings, infiltration is expressed either as so many air changes per hour, or, more scientifically speaking, as so many cubic feet per minute per linear foot of crack. When the infiltration is estimated as so many air changes per hour the heat loss in B.t.u. per hour is given by,

$$H = NCh\,(T_i - T_o)$$

where

H = heat loss in B.t.u. per hour.
N = number of air changes per hour.
C = cubical contents of the space to be heated.
h = number of B.t.u. required to raise the temperature of 1 cu. ft. of air 1 deg. fahr. This may be taken as 0.02.
T_i = inside temperature.
T_o = outside temperature.

Where the heat loss by infiltration is to be based upon the leakage per linear foot of crack the heat loss for each window and door is given by,

$$H = I\,60\,W_p\,h\,(T_i - T_o)$$

where

I = infiltration in cubic feet per minute per linear foot of crack
W_p = total length of crack.

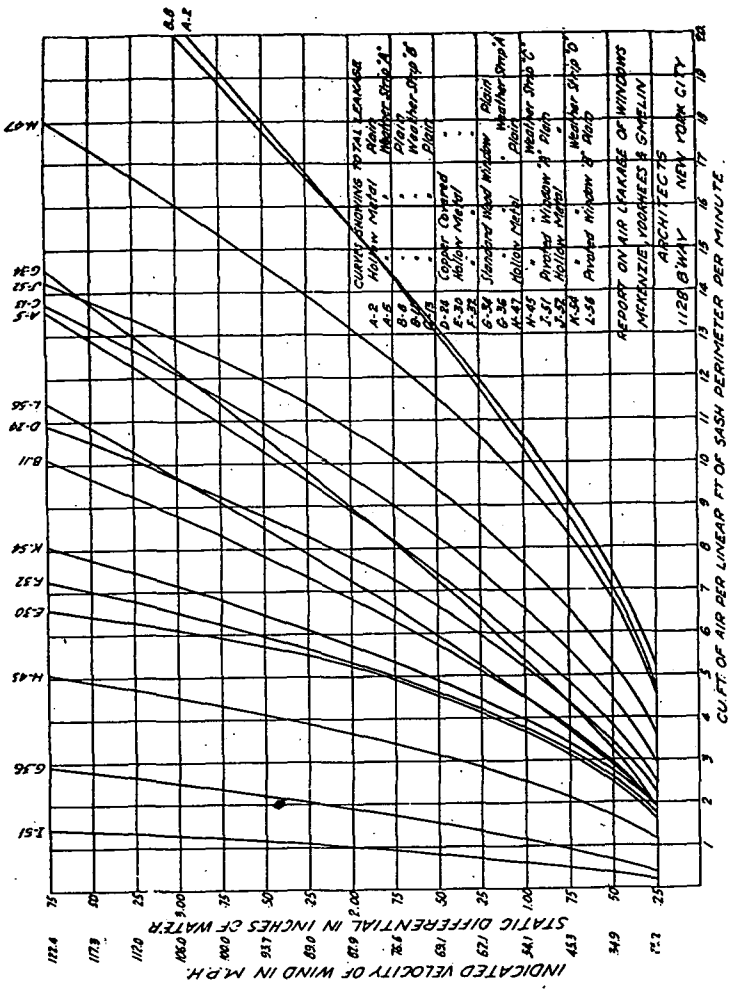

FIG. 5. INFILTRATION LEAKAGE THROUGH THE PERIMETER OF THE SASH ONLY

The other factors have the same significance as in the formula based upon cubical contents.

Substituting the value 0.02 for h this formula becomes

$$H = 1.2\,I\,W_p\,(T_i - T_o)$$

Infiltration of air into a building or room is always accompanied by an equal out-leakage. The heat loss is that required to heat the incoming