and the leakage for the same window fitted with a good weather-strip for various wind velocities.

Table 15 gives the leakage in cubic feet per hour per foot of crack per mile wind velocity for a plain frame window and also for a frame window fitted with weather-stripping. The leakage is given for various cracks around the sash perimeter and also for various clearances (Fig. 5) between the sash and the stop and parting bead.

Tables 14 and 15 are both divided into two parts, the first part containing values based upon the original Research Laboratory test data, and the second part containing the same values reduced by 20 per cent in accordance with the suggestion from the authors. In these tables both the best laboratory results and the average of all laboratory results on weather-stripped windows are given.

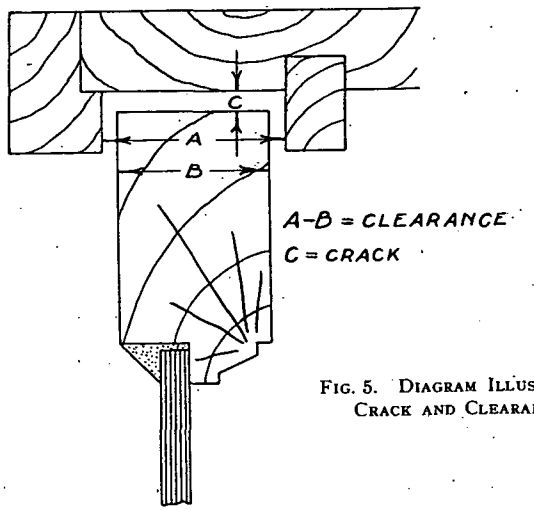


FIG. 5. DIAGRAM ILLUSTRATING CRACK AND CLEARANCE

Table 15 gives the leakage per mile wind velocity. This is based on the assumption that the leakage is proportional to the wind velocity, while this is practically true for a non weather-stripped window it is not so accurate for a weather-stripped window as indicated by the value for different velocities in Table 14. This accounts for the discrepancies in certain parts of the two tables. The two tables are, however, practically in agreement for a thirty mile wind velocity.

According to the authors of the paper: "The values given in the table are from the tests as made and are probably somewhat higher than those actually found in practice. They represent the leakage when the pressure drop through the window is a certain value which represents a definite wind velocity at right angles to the window. If the wind strikes the window at an oblique angle the component of the velocity at right angles to the window must be considered. Pressure difference between the outside and the inside surfaces of the window for an actual wind will





be slightly less for a given velocity because of a building up of pressure within the room before the air leaks out the opposite side of the building. Attention is called to the fact that air leaks in on the windward side of the building and out on the leeward side and, since wind will blow from various directions at different times, heating for any room having only one exposure must be based on the maximum loss. The heating plant, however, need not be figured on the sum of all maximum leakages, but in general only half of the total. However, the table gives accurate comparative figures which are probably not much too high for actual practice. In order to apply these values, a further study of the overall results as found in practice should be made, and the figures modified, if necessary, to fit practical conditions."

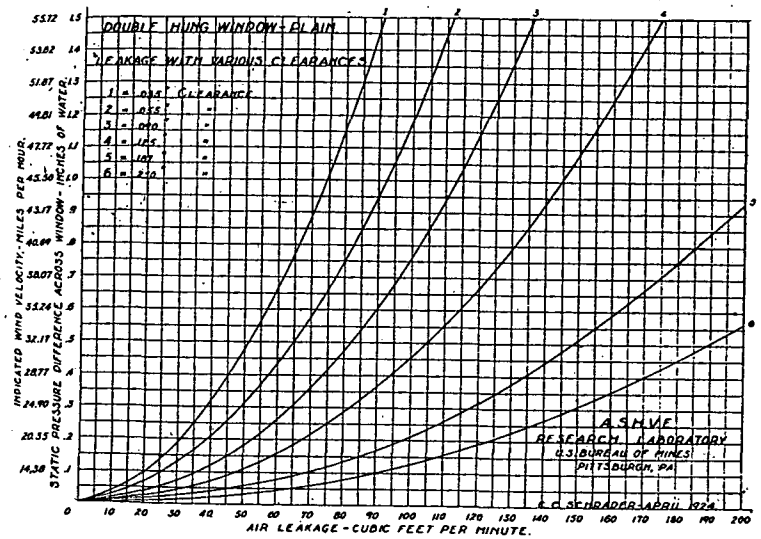


FIG. 6. LEAKAGE THROUGH PLAIN WINDOW WITH VARIOUS CLEARANCES

In their discussion of results as presented in the June, 1924 issue of the JOURNAL, the authors state:

"The principal facts brought out in the first report were that increasing the crack around the perimeter of a plain sash did not materially increase the leakage, and that weather-stripped sash, while permitting much less leakage, showed a small increase in leakage with increase in crack. These facts were established by making several hundred tests. The present report deals with the effect of increasing the width of the stile, that is, increasing the clearance.

"Fig. 5 illustrates what is meant by crack and clearance. The crack around the sash perimeter is equal to one half the difference between the width of the frame and the width of the sash, that is, the crack is the same on each side of the sash. The clearance is the difference between the width of the stile and the thickness of the sash. These terms are chosen arbi-