VENTILATION OPTION

How the Subject of Heating and Ventilation Has Progressed.

By PROF. S. H. WOODBRIDGE.

A conservative estimate of the costs of heating and ventilating equipment annually installed in the United States is $18,000,000.00. Previous to the time when the course of study in heating and ventilating was made a part of the curriculum of the Institute, the character of the systems for which such sums were expended was determined largely by rule-of-thumb methods of contractors and shop "engineers." The natural results of their work were matters of history. The prevailing methods were based on courses of approximation involving large factors of safety stated in terms of a more or less erratic personal equation. The resulting products were more like a big Indian blanket wrapped around the user than like a civilized garment, cut and made to closely fit the body to be flexibly adapted to the requirements and motions of the wearer. All that meant waste, clumsy and cost-

The Institute took the matter into its own hands. Since early in the eighties, the Institute was engaged upon the last-named work, in connection with the construction of the U. S. Capitol, whose charge the Library of Congress was being obtained in modern machine drawing, and consisted very largely of the solution of engineering problems by graphical methods. Much importance is placed on this work, because the problems are of a practical nature, such as problems in bending and quick-return motions, the design of steam-gear, and slowly and suddenly valves for steam engines, and the Stephenson link, etc. The study of valve-gear design the student becomes acquainted with the practical construction of a cylinder, and established them on a sound engineering basis. One of the purposes of the courses of study is to give the student ability to make accurate solution of engineering problems by graphical methods, facility in clear expression of his thoughts and constructive ideas by means of curves, and to acquire skill in graphical design by graphical methods.

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