PROBLEM 50.

The Pattern for a Pyramidal Flange to Fit Against the Sides of a Round Pipe Which Passes Through Its Apex.

A pictorial illustration of the flange fitting against the sides of the pipe, as stated above, is shown in Fig. 332. In Fig. 333 K L M represents the elevation of

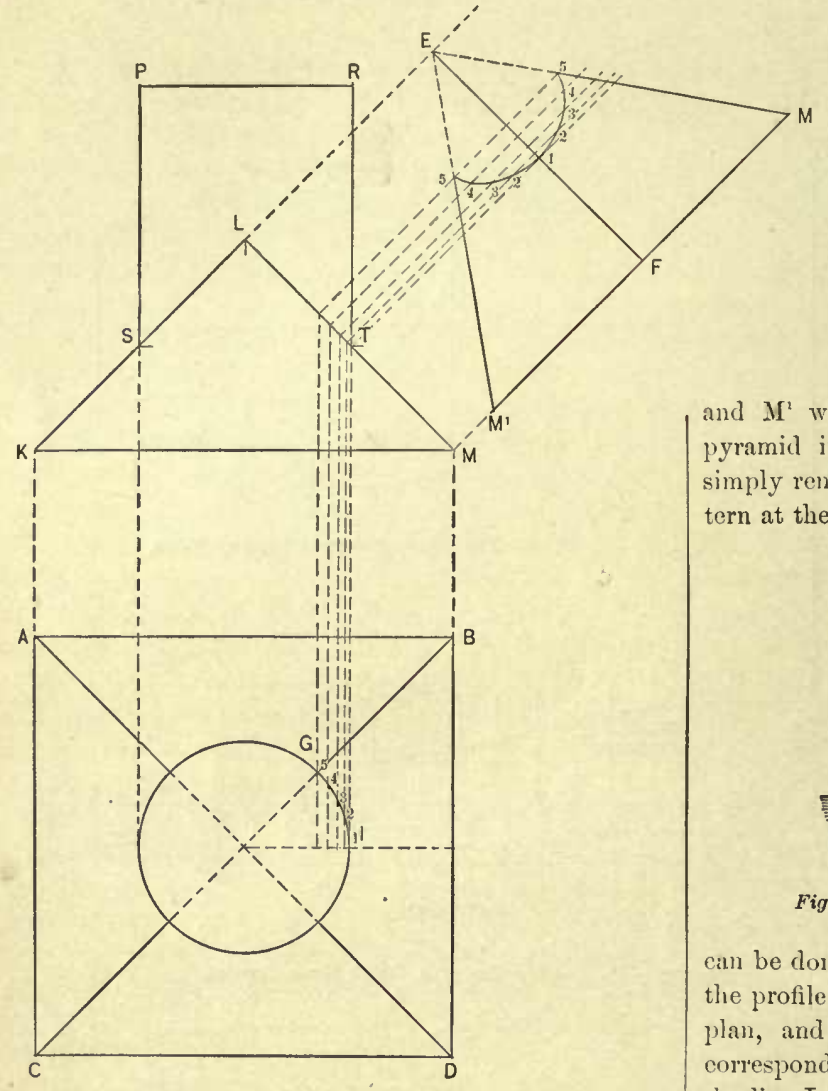

Fig. 333.—Pattern for a Pyramidal Flange to Fit Against a Round Pipe.

pyramid, and P R T S elevation of the pipe that is to pass through it, A B D C being plan of pipe and pyramid. As the pyramid has four sides, each side will miter or fit against one-quarter of the profile of the pipe, as will be seen by reference to the plan. Again, as each side consists of two symmetrical halves, as shown by the dotted line dividing the side B D, one-eighth of the profile of the pipe (as G I) is all that need be used in obtaining the pattern. Therefore, divide G I into any convenient number of parts and carry vertical lines to L M, which represents one side of the pyramid, and then, from these points and the points L and M carry lines at right angles to it indefinitely, as shown. L M in the elevation represents the complete length of one side of the pyramid, as it would be if not cut by the pipe. Lay off on the line from M the length of one side of the base of the pyramid, as B D in the plan, as shown by M M'. Bisect M M' at F, from which point draw F E parallel to L M, cutting the line from point L at E. The lines from E to the points M and M' would give the pattern of one side of the pyramid if it were not to be cut by the pipe. It simply remains now to measure the width of the pattern at the various points of the curved portion, which

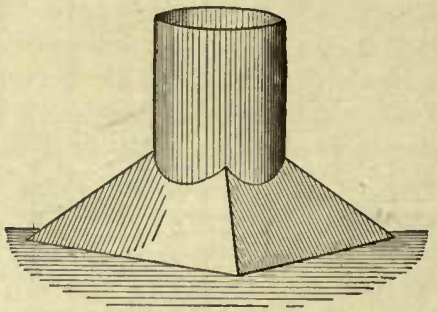

Fig. 332.—Perspective View of Pyramidal Flange.

can be done by measuring the distance of each point in the profile G I, from the center line of the side B D in plan, and setting off these distances upon lines of corresponding number drawn through the pattern from the line L M, measuring each time from the center line E F. Thus the distance of point 4 from the center line in plan is set off from the center line of the pattern each way upon line 4, and coincides with this point as previously established by the lines drawn from E to M and M'. The distance of the point 3 from the center line in the plan is set off from the center line of pattern each way upon line 3 of the pattern. Point 2 is established in the same manner. A line traced through the points 4 3 2 1 2 3 4 completes the pattern.