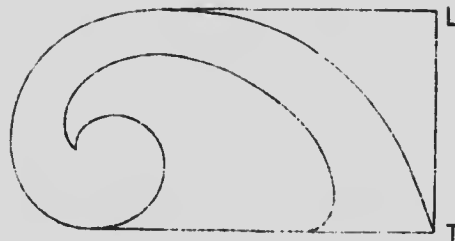


E

F



PROBLEM 12.—To enlarge or reduce any given drawing by a series of squares. Make a copy of the given curve so that the size *LT* may be represented by the given line *EF*.

1.—Divide *LT* into any convenient number of parts, say 5 (Problem 8), on these divisions form lines of squares (using set-squares) sufficiently long to cover the given drawing. Number the lines both ways.

2.—Divide *EF* into the same number of equal parts as *LT* and on these equal divisions, draw with set-squares, a series of squares corresponding with those on *LT* and number them as before.

3.—The required drawing on *EF* may then be sketched over these squares. First notice where the curve crosses the straight lines over the example to be copied, and mark the corresponding points lightly on the lines for the drawing you are making. Sketch the curve through these points

lightly at first, then finish with a finer line as in ordinary freehand.

NOTE.—When, instead of a line being given as *EF* on which the drawing is to be enlarged, it is to be copied to any size stated in words, say two and five-sevenths larger, proceed as follows:—Cover the given figure with squares, thereby enclosing it in a rectangle *ABCD*. Divide either side of the enclosing rectangle, say *AB*, into seven equal parts. On any line mark off five of these sevenths together with twice the length of *AB*. We then divide this length (which is of course two and five-sevenths longer than *AB*) into the same number of equal parts as there are squares on *AB*, and on these equal divisions draw a series of squares corresponding with those covering the drawing, to be enlarged. The required enlargement may then be sketched as already described.