CHAPTER XXV.

On the Two Pronged Fitting When It Is Required That the Prongs Radiate at a Given Angle to the Main Stem.

Attention will be here directed to methods which may be pursued to secure the patterns for a two pronged fitting whose prongs are required to radiate at a specified

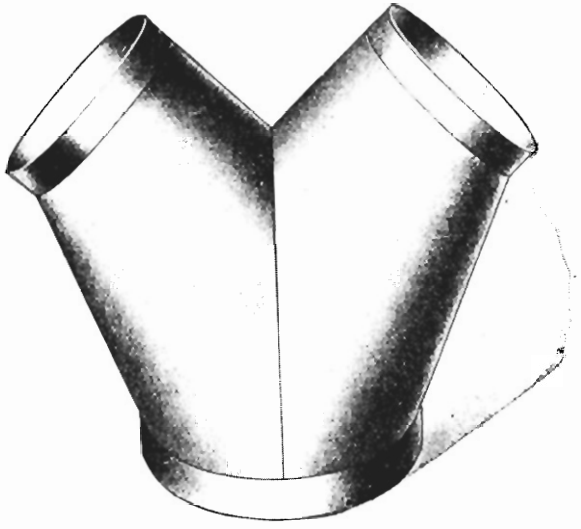

Fig. 106. *Photographic View of the Fitting.*

angle to the main stem. Fig. 106 illustrates a fitting which conforms to the above specification, and has been presumed to have been constructed by utilizing two prongs whose patterns were discussed in the twenty-fourth chapter.

This mode of procedure will produce very satisfactory results, although we are dependent upon our ability to establish a suitable form at the junction of the prongs. This can be accomplished by pursuing methods as explained in the twenty-fourth chapter. However, that course is not to be recommended in every instance, therefore methods which differ to some extent will be here discussed.

If called upon for the pattern for a fitting as illus-

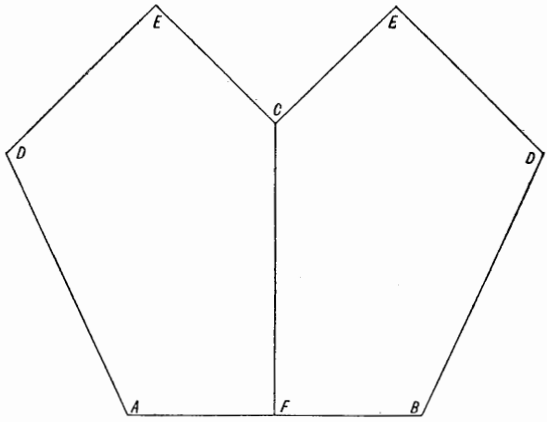

Fig. 107. An Elevation, or a Section of a Two Pronged Fitting.

trated at Fig. 106, or one in which the prongs are required to radiate at a specified angle, we may first draw an elevation as shown at Fig. 107, which is a simple diagram and in reality a section of the object. Upon examination of Fig. 107, we note that the line *A B* represents the base of the fitting, or the edge view of a circle whose diameter is equal to the length of that line. In like manner, the lines *D E* are looked upon as representing the diameter of the small collars, while the lines *C E* indicate the angle at which the branches are to

radiate from the main stem. The line *C F* represents the length of the fitting at the junction of its prongs.

Since Fig. 107 may be looked upon as an elevation of a fitting whose prongs are equal and "on center," the pattern can be developed for one-half and duplicated for the remaining portion as will be hereinafter discussed. Upon referring to Fig. 108 it will be noted that the diagram *1 9 E E 1* is a duplicate of one-half of Fig. 107, or an elevation of one prong of the fitting shown in elevation or section at that Fig. Since the author is convinced that in the majority of cases it is far better to determine a form for the object at the junction of its prongs from some portion of it, than to establish an arbitrary one, it will be here shown how this may be accomplished if thought more satisfactory by the operator. From the above it is not to be inferred that an arbitrary form cannot be established and results secured by those who have given the subject some attention.

Presuming we have before us an elevation of one prong of the fitting as shown at *1 9 E E 1*, Fig. 108, we note that the line *1 9* represents the diameter of the small collar, and that the line *1 E* represents one-half the diameter of the large collar.

Since the base line of the object is here presumed to be in the line *I L* we may continue the line *9 E* until it intersects the line *I L* as shown at *9 E 9*. In this manner we secure a diagram which may be looked upon as an elevation of an object which has an oblong base and a round top. The major diameter of its base then becomes the length of line *1 9 E 9*, with a minor diameter equal to that of the large collar at the base. A semi-plan of the base is then drawn as shown. A plan of the top is drawn as also shown, and was explained in the last chapter.

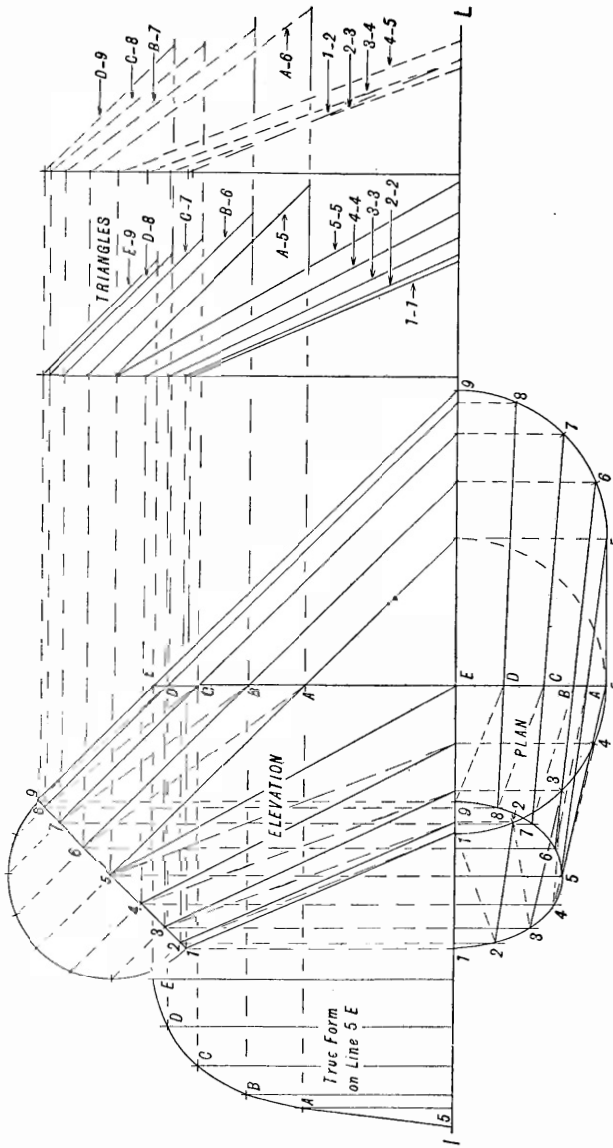

Fig. 108. Diagram Which May Be Employed to Secure the Patterns for a Two Pronged Fitting Whose Prongs Radiate at a Given Angle.

Having drawn the semi-ellipse in plan, which is a plan of the round collar at the top, we have located a number of points in said semi-ellipse which may be looked upon as points of division of the top. We may now divide the arcs in plan which represent the base of the object as shown, and draw lines as *2 2, 3 3, 4 4,* etc. In this manner we complete a semi-plan and elevation of an object, a portion of which will supply one prong of the required fitting when cut away as shown at line *E 5* of the plan, and line *E E* of the elevation. Upon a moment's reflection, we are convinced that there are at least two courses open to us in developing the pattern. One is to develop the semi-pattern for the whole object as shown in elevation and cut away that portion to the right of line *E E,* as was explained in the twenty-second chapter. The second, which is here suggested and explained, is to determine the true form of the object upon line *E E,* and utilize that as the true form of the branch at the junction of its prongs.

The construction lines in Fig. 108 clearly show the method of locating lines in plan and elevation which are the plans and elevations of lines presumed to be upon the surface of the object. Presuming the object to be cut by a plane whose plan and elevation is line *E E 5,* said plane then cuts elements as shown in points *A B C D* and *E.* The plan then supplies in points *5 A B C D* and *E,* distances from each other at which we may draw vertical lines in a convenient position as shown at the true form on line *5 E.* The elevation supplies in points *A B C D* and *E* the distance above the base of the object at which these lines terminate, as at points *A B C D* and *E* of the true form on line *5 E,* thereby establishing the true form of the object on line *5 E E,* Fig. 108.

Having now established the true form of one prong