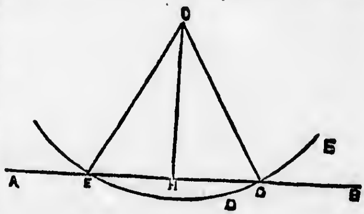
SOUGHT.—It is required to draw from the point C, a straight line perpendicular to AB.

CONSTRUCTION.—1. Take any point D upon the other side of AB.

2. From the centre C, at the distance CD, describe the circle EGF. (*Postulate* 3.)



3. Let the circle EGF meet the straight line AB in the points F and G.

4. Bisect FG in H. (*Prop.* 10, *Book* I.)

5. Join CH:—the straight line CH, drawn from the given point C, shall be perpendicular to the given straight line AB

6. Join CF, CG.

DEMONSTRATION.—1. Because FH is equal to HG, (*Construction* 4,) and HC common to the two triangles FHC GHC.

2. The two sides FH, HC, are equal to the two sides GH, HC, each to each.

3. And the base CF is equal to the base CG. (*Definition* 15.)

4. Therefore the angle CHF is equal to the angle CHG, (*Prop.* 8, *Book* I.) and they are adjacent angles.

5. But when a straight line, standing on another straight line, makes the adjacent angles equal to one another, each of them is a right angle, and the straight line which stands upon the other is called a perpendicular to it. (*Definition* 10.)

CONCLUSION.—Therefore, from the given point C, a perpendicular has been drawn to the given straight line AB. *Which was to be done.*

PROPOSITION 13.—THEOREM.

The angles which one straight line makes with another upon one side of it, are either two right angles, or are together equal to two right angles.

HYPOTHESIS.—Let the straight line AB make with CD, upon one side of it, the angles CBA, ABD.

SEQUENCE.—These angles shall either be two right angles, or shall together be equal to two right angles.