4. Therefore because the triangle AEK is equal to the triangle AHK, and the triangle KGC equal to the triangle KFC.

5. The triangles AEK, KGC, are equal to the triangles AHK, KFC. (*Axiom* 2.)

6. But the whole triangle ABC was proved equal to the whole triangle ADC. (*Demonstration* 1.)

7. Therefore the remaining complement BK (*of the whole triangle ABC*), is equal to the remaining complement KD (*of the whole triangle ADC.*)

Conclusion.—Wherefore, the complements, &c. (*See Enunciation.*) *Which was to be shewn.*

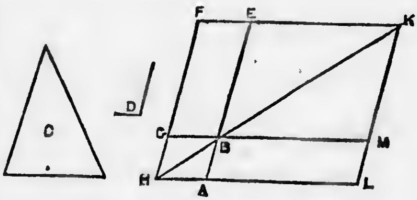
PROPOSITION 44.—PROBLEM.

To a given straight line to apply a parallelogram, which shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

Given.—Let AB be the given straight line, C the given triangle, and D the given rectilineal angle.

Sought.—It is required to apply to the straight line AB, a parallelogram equal to the triangle C, and having an angle equal to D.

Construction.—(I.) 1. Make the parallelogram BEFG equal to the triangle C, and having the angle EBG equal to D. (*Prop.* 42, *Book* I.)



2. And let the parallelogram BEFG be made so that BE may be in the same straight line with AB.

3. Produce FG to H.

4. Through A draw AH parallel to BG or EF. (*Prop.* 31, *Book* I.)

5. Join HB.

Proof.—(I.) 1. Because the straight line HF falls upon the parallels AH, EF, the angles AHF, HFE are together equal to two right angles. (*Prop.* 29, *Book* I.)