4. Therefore the base AC, is equal to the base BD. (*Prop.* 4, *Book* I.)

5. And the triangle ABC, is equal to the triangle BCD. (*Prop.* 4, *Book* I.)

6. And the other angles are equal to the other angles, each to each, to which the equal sides are opposite.

7. Therefore the angle ACB is equal to the angle CBD.

8. And because the straight line BC meets the two straight lines AC, BD, and makes the alternate angles ACB, CBD, equal to one another.

9. Therefore the straight line AC is parallel to BD. (*Prop.* 27, *Book* I.) And AC has been shewn to be equal to BD. (*Demonstration* 4.)

CONCLUSION.—Therefore, straight lines, &c. (*See Enunciation.*) *Which was to be done.*

PROPOSITION 34.—THEOREM.

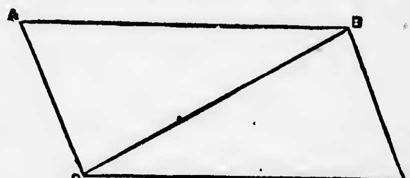
The opposite sides and angles of parallelograms, are equal to one another, and the diameter bisects them, that is, divides them into two equal parts.

HYPOTHESIS.—Let ABCD be a parallelogram, of which BC is a diameter.

SEQUENCE.—1. The opposite sides and angles of the figure shall be equal to one another.

2. And the diameter BC shall bisect it.

DEMONSTRATION.—1. Because AB is parallel to CD, and BC meets them, the alternate angles, ABC, BCD, are equal to one another. (*Prop.* 29, *Book* I.)



2. Because AC is parallel to BD, and BC meets them, the alternate angles ACB, CBD, are equal to one another. (*Prop.* 29, *Book* I.)

3. Wherefore the two triangles ABC, CBD, have two angles, ABC, BCA, in the one equal to two angles, BCD, CBD, in the other each to each.

4. And they have one side, BC, common to both triangles, adjacent to the equal angles in each.