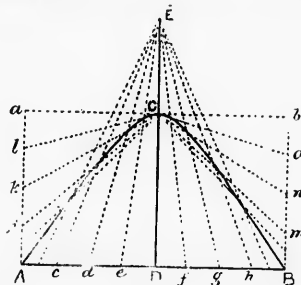
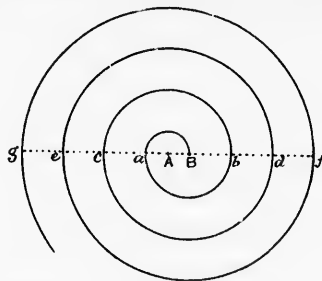


PROBLEM 72.—TO DRAW AN HYPERBOLA HAVING GIVEN THE DOUBLE ORDINATE AB , THE HEIGHT OR ABSCISSA DC , AND THE VERTEX E .



Construct the rectangular figure $ABba$. Divide AB into any number of equal parts in c, d , etc. Divide Aa and Bb into the same number of equal parts in m, n, o and j, k, l . Join the points in AB to E and those in Aa and Bb to C . The points of intersection of these lines will be in the required hyperbola.

PROBLEM 73.—TO CONSTRUCT A SPIRAL OF ARCS OF CIRCLES HAVING RADII INCREASING BY UNIFORM INCREMENTS AB .

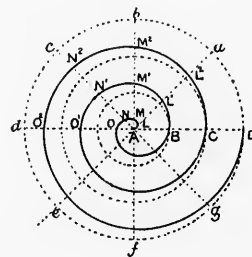


Produce AB both ways.

With A as centre and AB as radius, describe a semicircle meeting BA produced in a .

With B as centre and Ba as radius, describe the semicircle meeting the line in b . Again, with centre A and radius Ab , describe another semicircle and so on, alternately using A and B as centres, with radii increasing at each change of centre, by a distance AB .

PROBLEM 74.—TO DRAW A SPIRAL OF ANY NUMBER OF REVOLUTIONS AND HAVING A GIVEN PITCH.



Produce AB and measure off as many parts equal to the pitch AB as the required number of revolutions (in this case three),

Describe circles with centre A and radii AB, AC .

Divide the outer circle into any number of equal parts and draw the radii Aa, Ab , etc.

Divide AB and BC each into the same number of equal parts as the circle.

Measure along Aa a distance from A equal to one of these parts; along Ab a distance equal to two of the parts, and so on, obtaining the points L, M, N , etc., in the required spiral.

For the second revolution measure along Aa from A a distance equal to AB and one of the parts, along Ab a distance equal to AB and two of the parts, and so on, obtaining points in the second revolution in L', M', N' , etc.

The third revolution L'', M'', N'' , etc., will be obtained in a similar manner.