N 10.

The arrangement L 1 might also be used in the manufacture of screws of small dimensions, thus: let M G in the figure represent a portion of an axis or spindle, comprized between the two supporting pieces or puppets r and p, and on which it is required to cut a screw, and let the portion Λ G of its prolongation be supposed to have a screw already cut upon it; this portion is supported by the puppet q; the screw Λ G passes into the nut s, and is not at liberty to turn. The bar A B is carried by the nut s, and has a free rotation on the point A; a longitudinal groove or opening n m admits the fixed cylindrical stud c.

The bar CD slides between the apertures of the three puppets r, p and q; it carries the cutting tool K, and the perpendicular arm E F. From a part of this arm, there projects the cylindrical stud a, which passes through the groove n m of the arm A B. If the axis Λ M be made to revolve, the nut s will advance towards G, and will carry with it the bar C D; the cutting tool K will consequently move with a velocity which may be varied at pleasure.

An application of this arrangement to a machine for cutting fusees is shewn in Thiout's Traité d'horlogerie, vol. i, page 70.

SECTION XI.

To convert direct circular motion, of uniform velocity, or which is variable according to a given law, into alternate motion in a given curve, of velocity similar to that of the original motion, either equable, or variable according to a given law, and in the same or in different planes of direction.

We are not acquainted with any direct method of solution of this problem; but if the given direct circular motion, be converted into alternate circular motion, by means of any of the methods exhibited in the examples of Section 9, these may be again converted into alternate motion in a given curve, by any of the methods shewn in Section 10, and by the arrangement A 20.