

RULES

FOR

CALCULATING THE PITCHES OF SCREWS TO BE CUT, ETC.

1st—Ascertain the ratio of any series of wheels thus: Multiply the whole of the driven wheels together, which will give the total number of teeth in the series. Then divide the result by the driving wheels multiplied into each other. The quotient will be the number of times the first wheel will revolve to the last. Suppose a wheel of 20 teeth to be driving a wheel of 100 teeth, to which is attached a wheel of 30 teeth driving a wheel of 150 teeth, and the ratio of the series be required,

$$\frac{100 \times 150}{20 \times 30} = 25 \text{ revolutions, the ratio of the series.}$$

This rule applies to single as well as compound gear.

2nd—To find the number of threads a series of wheels will cut: Multiply the ratio of wheels by the pitch of the leading screw.

A difficulty frequently arises in finding the number of threads to the inch or foot when a particular pitch or fractional number has to be matched. This can be easily ascertained by applying a scale to the screw, and by counting onward find what number of threads corresponds with an exact number of inches. Suppose 15 threads on the screw match 4 inches on the scale, consequently if 15 be divided by 4 it gives 3.75, the number of threads per inch; against that number on our screw-cutting tables will be found the wheels to cut it.