

CHAPTER V.

ARTICLE 74.

RULES AND CALCULATIONS.

THE fundamental principle, on which are founded all rules for calculating the motion produced by a combination of wheels, and for calculating the number of cogs to be put in them, to produce any motion that is required, has been given in Art. 20; and is as follows:—

If the revolutions that the first moving wheel makes in a minute be multiplied by the number of cogs in all the driving wheels successively, and the product noted; and the revolutions of the last leading wheel be multiplied by the number of cogs in all the leading wheels successively, and the product noted; these products will be equal in all possible cases. Hence, we deduce the following simple rules:—

1st. For finding the motion of the mill-stone; the revolutions of the water-wheel, and the cogs in the wheels, being given:—

RULE.

Multiply the revolutions of the water-wheel per minute, by the number of cogs in all the driving wheels successively, and note the product; and multiply the number of cogs or rounds in all the leading wheels successively, and note the product; then divide the first product by the last, and the quotient is the number of revolutions of the stone per minute.

EXAMPLE.

Given, the revolutions of the water-wheel			
per minute, - - - - -			10,4
No. of cogs in the master cog-wheel -	78	} Drivers.	
No. of do. in the counter cog-wheel -	48		
No. of rounds in the wallower -	23	} Leaders.	
No. of do. in the trundle -	17		

