

The method of using the slide-rule is as follows:—

Place the index arrow f on the slide b opposite the known lineal speed on the scale d (feet per minute) against the figure of the scale c on the slide b , indicating the width of the paper machine deckle, thus shewing on the left-hand scale e the number of reams "demy" produced in an hour, and on the right-hand scale h the weight in pounds per hour produced in 10 lb. "demy," according to the particular lineal speed and varying width of web or deckle.

The calculation of heavier "weight" or thicker substance paper is made by placing the index arrow j at the bottom of the slide b against the number of reams previously ascertained, which will enable the weight of the product made from 10 to 27 pounds "demy" to be read on the right-hand scale h opposite the particular weight per ream.

Where the reading is impossible by reason of the slide b projecting beyond the rule a , either divide or multiply the speed, reams or deckle, by 2, and multiply or divide the result by 2.

This in no way impairs the accuracy of the rule.

The divisions on the instrument illustrated are:—

Scale d feet per minute, in tens, 120 to 650 feet.

Scale e in units, 45 to 370 reams.

Deckle width slide scale c in inches 56 inches to 160 inches.

Pounds per ream slide scale g in divisions of units 10 to 27 pounds, subdivided into quarters.

Scale b in tens, 450 to 3700 pounds per hour.

These, however, may be varied according to circumstances, and in order to utilise the instrument to its full extent such instructions as to its use may be printed on the back of the rule and other scales may be engraved thereon, such as the metric or inches and fractions that can be used for ordinary measurements as may be desired.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An instrument for determining the capacity or output of paper-making machines, comprising a rule provided with comparative graduated scales indicative of the ratio between lineal speed in feet per minute, number of reams (480 sheets "demy" for example) and corresponding weight of product (in pounds per hour) with a slidable member the upper portion of which is provided with a graduated scale indicative of the width of the web or deckle of the machine, and the lower portion provided with another graduated scale indicative of the "weight" or substance of paper manufactured, said slidable member being read in conjunction with the scales on the said rule, substantially as and for the purpose specified.

2. A slide-rule in accordance with the preceding claiming clause hereof, comprising a rule a with graduated scales d , e and h , and a slide b with graduated scales c and g which read in conjunction with one another automatically determine the output of paper-making machines according to the particular lineal speed and varying widths of the web or deckle employed, substantially as described and illustrated in the drawings.

3. The improved slide-rule for determining the capacity or output of paper-making machines having its several parts constructed, arranged and operating substantially as described and illustrated in the drawings hereto annexed.

Dated this 22nd day of February, 1918.

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