

In order to reduce yards length, inches width and pound weight of the material to weight in grams per square meter or ounces per square yard, the length number on scale E is set immediately under the cursor-line C and the width-number in inches on the scale D is set above and coinciding with the arrow G on the scale E. The scale D is retained in that position and the scale E is moved until the weight-number on such scale is immediately under the cursor-line C. The result in grams per square meter is then indicated on scale E by arrow F and in ounces per square yard indicated on scale E by arrow H.

In order to reduce ounces per yard and inches in width of material to weight in grams per square meter, the width-number on scale D is set so that it coincides with the arrow G on the scale E and the grams per square meter read off on scale E immediately under the given number of ounces per yard on scale D.

In order to reduce yards length and pounds weight of the material to ounces per yard, the weight-number on scale E is set immediately under the cursor-line C. Then keeping the scale E in that position, move the scale D until the arrow F thereon coincides with the length-number on scale E and read the result on the ounces-graduations on scale D immediately under the cursor-line C. In order to reduce the price in shillings per yard of the material to a price per meter in any Foreign currency at any rate of exchange, the arrow P on scale D is set to coincide with the number representing the price in shillings and decimals of a shilling per yard on scale E and the figures on the scale immediately under the number representing the required rate of exchange on scale D will give the required price per meter in the required Foreign currency."

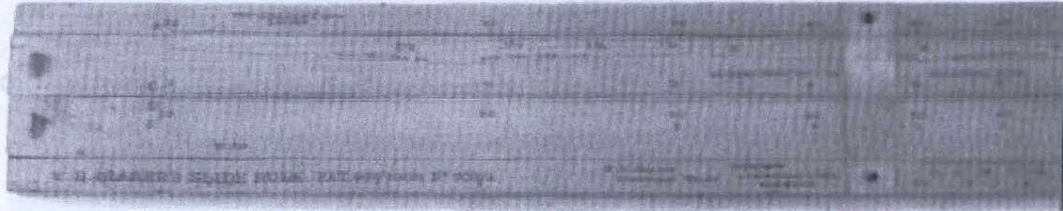


Figure 29: Glaser's rule. Courtesy of the Science Museum INV 1970-341

Barth, Gantt & Taylor, US Patent 753,840 of March 1904

These three men - Carl Barth²³, Henry Gantt and Frederick Taylor²⁴ - were giants of the American development of Scientific Management. They worked together at the Bethlehem Steel Company on this set of slide rules. Their US Patent 753,840 of March 8, 1904 has fifteen figures and ten pages of text. It covers a complete suite of instruments:

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| 1. | Spring calculator | Linear F-S-F-SS-F |
| 2. | Cutting speeds | Linear F-SS-F-SSS-F |
| 3. | Equations with 3 variables | Linear F-S-F-S-F-S-F |
| 4. | Deflection of springs | Three circular plates on a circular base |
| 5. | Cutting speeds | Two multi plate circular calculators on one base |
| 6. | Equation solver | Linear F-S-F-S-F-S-F |

Ten Barth rules are preserved in the F.W.Taylor collection and appear to include examples of each of the above. I will only describe here the most complex one - surely one of the most elaborate slide rules ever made.