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PROVISIONAL SPECIFICATION.

Improvements in Calculating Rules and the like.

I, WILLIAM JOHN GOUDIE, Engineer, of 92, Albert Drive, Crosshill, Glasgow, in the County of Lanark, do hereby declare the nature of this invention to be as follows:—

5 My invention relates to calculating instruments such as slide rules, and has for its object to enable the calculations required in the designing or adjusting the proportions of compound or multiple-expansion engines to be rapidly and accurately made, so that many calculations may be made on different assumptions, till the desired results be obtained.

10 My invention consists in an improved form of calculating rule, adapted to this purpose, and in improved arrangements and combinations of scales.

My improved calculating rule has two main parts, which may each be used separately or may be combined in one rule, each forming one face of the rule.

One of these parts I call the "synthetic," and the other I call the "analytic" part; each part is complete in itself.

15 The synthetic part consists essentially of a combination of scales each representing a series of values of one of the various factors from which the total indicated horse power of a multiple expansion engine can be computed, arranged and adapted to be moved relatively so that different values of the factors can be chosen at will and dealt with, and the resulting horsepower, for the chosen
20 cylinder proportions, read off.

The analytic part of the rule consists essentially of a combination of scales, each representing a series of values of one of the indicated horsepower factors or its constituent elements, or the constituent elements of the factors of cylinder proportions, arranged and adapted to be relatively moved so that the more
25 complex factors can be separated into their constituent elements; and by taking different values for the factors themselves the necessary elements can be determined and an analysis of the conditions made, for any chosen distribution of the total power in the various cylinders.

30 Constructionally the two parts of the rule are alike, the only difference being in the scales placed on each.

The synthetic part consists of a fixed rule carrying two sliders; these slide against one another, edge to edge, at the centre of the rule and are provided with suitable scales as described below. The outside edges of these sliders are provided with certain scales, and they move edge to edge with and read against
35 suitable scales provided on the fixed parts of the rule. The analytic part of the rule is of the same construction, but its scales are different. The scales on both the synthetic and the analytic parts are partly logarithmic and partly equal division scales.

[Price 8d.]



