
The Molter Slide Rule

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Introduction

The Molter slide rule is relatively rare example of a “watch pocket” slide rule. We are aware of four specimens. Two were found in Germany and two in the USA. Until a few months ago it was not known when the slide rule was made or by whom.

Description

The Molter is a circular slide rule with an external diameter of 6.5 cm. The thickness at the rim is approximately 0.55 cm. The housing is nickel plated and has a rim that is 0.5 cm wide. The edge of the rim is milled like a coin. The device weighs 60 grams. We have the opportunity to examine four specimens and have concluded that there are at least three versions of this slide rule. In all three versions the front (Figure 1) has three scales: A (two cycle), C (single cycle), and D (single cycle). The effective length of the C and D scales is about 13.4 cm (5.3 inches). The inner (D) scale is mounted on a movable disk that is flush with the C scale. The inner disk is operated by turning a knurled control knob in the center. There is a similar knob on the back, and the two control knobs are most conveniently operated by squeezing them with the thumb and index finger in the same manner as a Halden Calculex. The cursor is a celluloid disk that can be rotated over the scales. The front cursor has two short hairlines on the same diameter. On the cursor adjacent to one of these hairlines there are two shorter marks. When the hairline is set on the index of the A scale, the two short marks overlie 78 and at 1.36 on the A scale. According to the product information one of these short marks is used when determining the

area of circle and the other is used for converting watts to horse power

The scales on the back do not move. The earliest model has the following, unmarked scales on the back: K, C, and L. The two later models have the following, labeled scales: n^1 , n^3 , tg, sin, and log. (See Figure 2.) A cursor (similar to that on the front) facilitates reading corresponding values on the five scales.

In addition to the scales on the back, the three versions differ in certain other details. (See Table below) The progression from “early” to “late” is inferred from assuming that (1) the market forced the retooling and addition of scales on the back, (2) users found the original center knobs too small, and (3) the trim tape and fine milling were found to add unnecessary costs.

The case consists of a simple pouch made of oil cloth.

History

A set of instructions has been found. It identifies the maker as Wilhelm Molter, engineer, of 51 Karolinenstrasse, Nuremberg. The Molter slide rule was assigned the model number “8406”.

A surviving nephew of Wilhelm Molter’s has been located and reports that the Molter slide rule was available around 1923. Wilhelm’s brother Otto emigrated to the United States in 1925. This may account for specimens being found in the USA. A Schacht & Westerich catalog from 1925 shows a late Molter.

Acknowledgement

The authors are grateful to Conrad Schure for the opportunity to examine his “early” and “mid” Molters.

**The Molter Slide Rule
Distinguishing Features of the Three Variations**

	<i>Variant Designation</i>		
	“Early”	“Mid”	“Late”
Scales on Back	K,C,L	n^1 , n^3 , tg, sin, log	n^1 , n^3 , tg, sin, log
Hairline on Back	Crosses from edge to edge	Crosses from edge to edge	Crosses scales only once
Grips on Cursors	Opaque	Opaque	Clear
Milling along Outer Rim	“Fine” (19/cm)	“Fine” (19/cm)	“Coarse” (10/cm)
Groove between Outer rims	Trimmed with black tape	No tape	No tape
Diameter of Center Knob	10.8 mm	10.8 mm	15 mm front, 16 mm back
Screw in Center Knob	Not slotted	Not slotted	Slotted

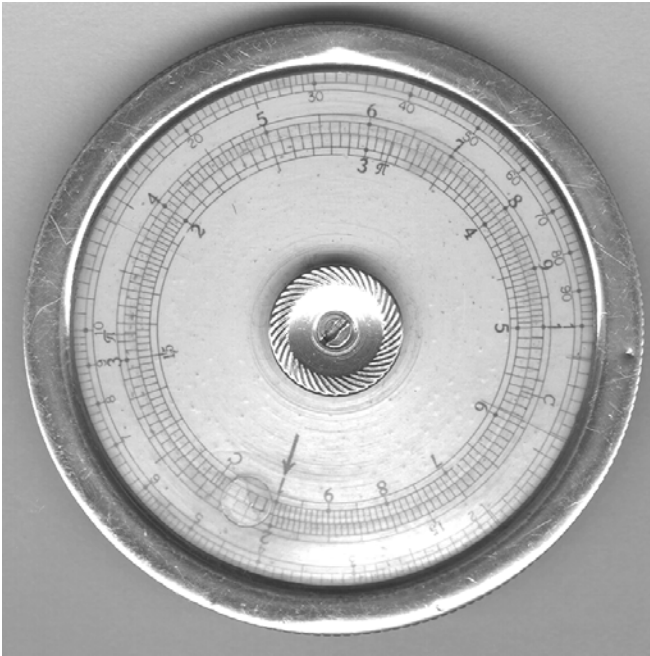


Figure 1. The front of a “late” Molter slide rule. The small faint circle near the index arrow is a tiny disk of celluloid glued to the outer surface of the cursor. “Grips” like this make it easier to turn the cursor.

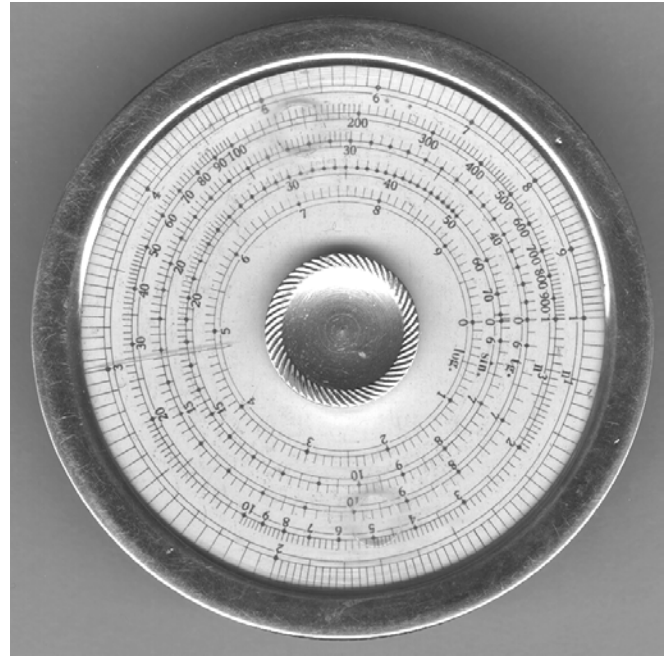


Figure 2. The back of a “late” model Molter. Note that the center knob is slightly larger than the knob on the front.