

On some old Russian cylindrical and circular slide rules

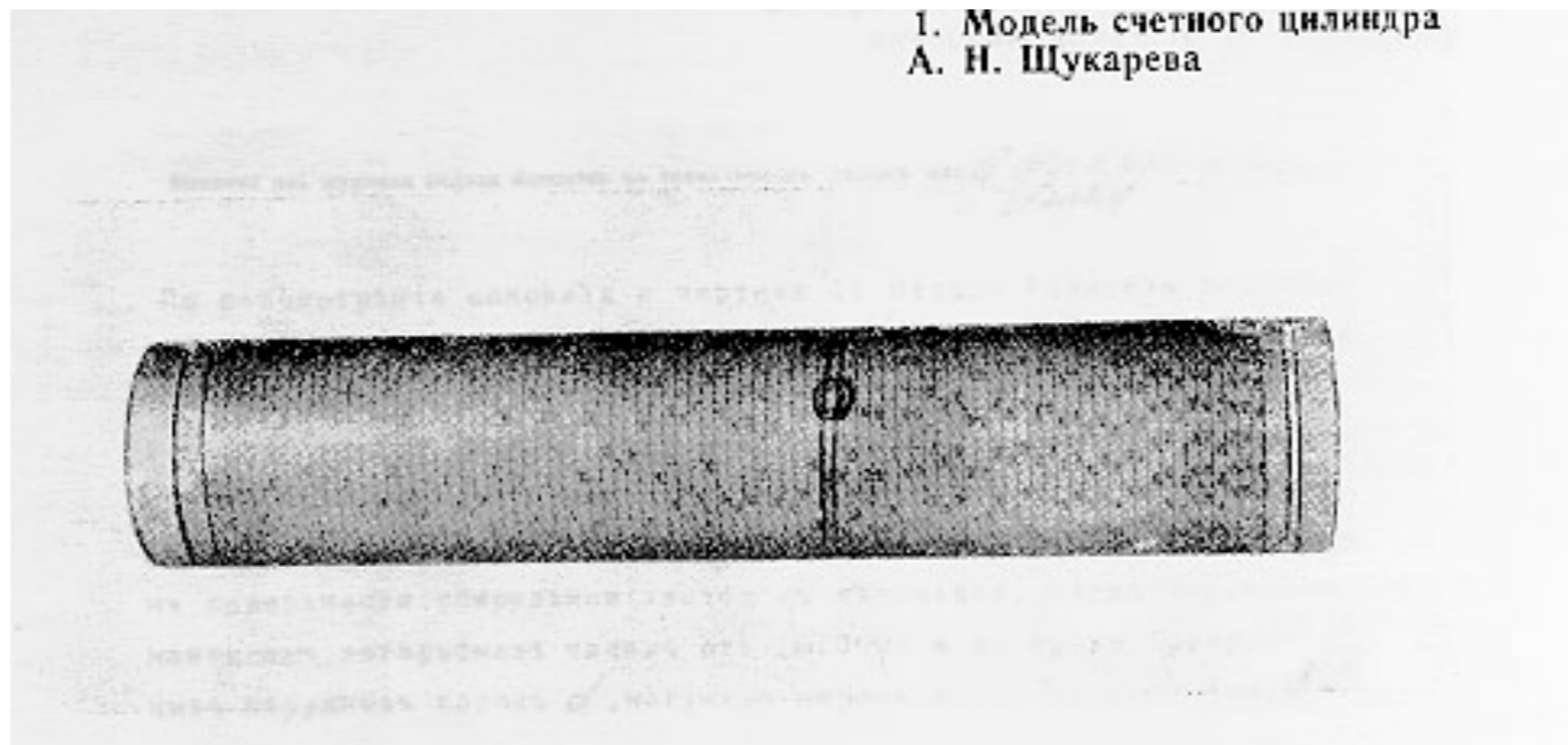
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1. Cylindrical slide rule of Aleksandr Shchukarev (Александр Щукарев)

E. Chamberlain [1] gives the internet address of a photo of this rule and time ca. 1910 but no other information.



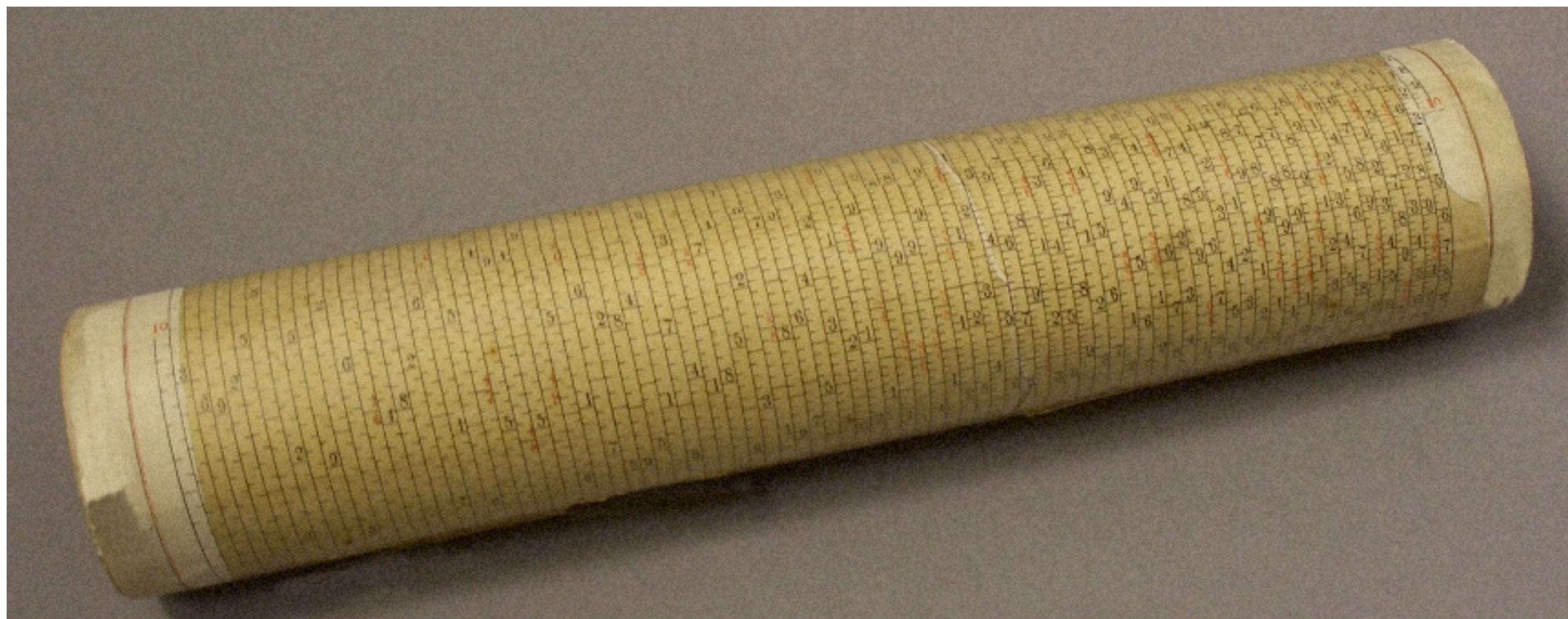


Aleksandr Shchukarev
1864–1936

However there exists the article of G. Povarov [6] describing this rule

- Aleksandr Shchukarev (1864–1936) was private-docent in Moscow and from 1911 professor of physical chemistry at Kharkov, Ukraine
- most well known for his logic machine
- he built himself the cylindrical slide rule in 1909 and obtained patent 1910
- only one rule was made, but instructions were printed
- the cylinder now belongs to the collections of Polytechnical Museum in Moscow
- the rule is somewhat damaged

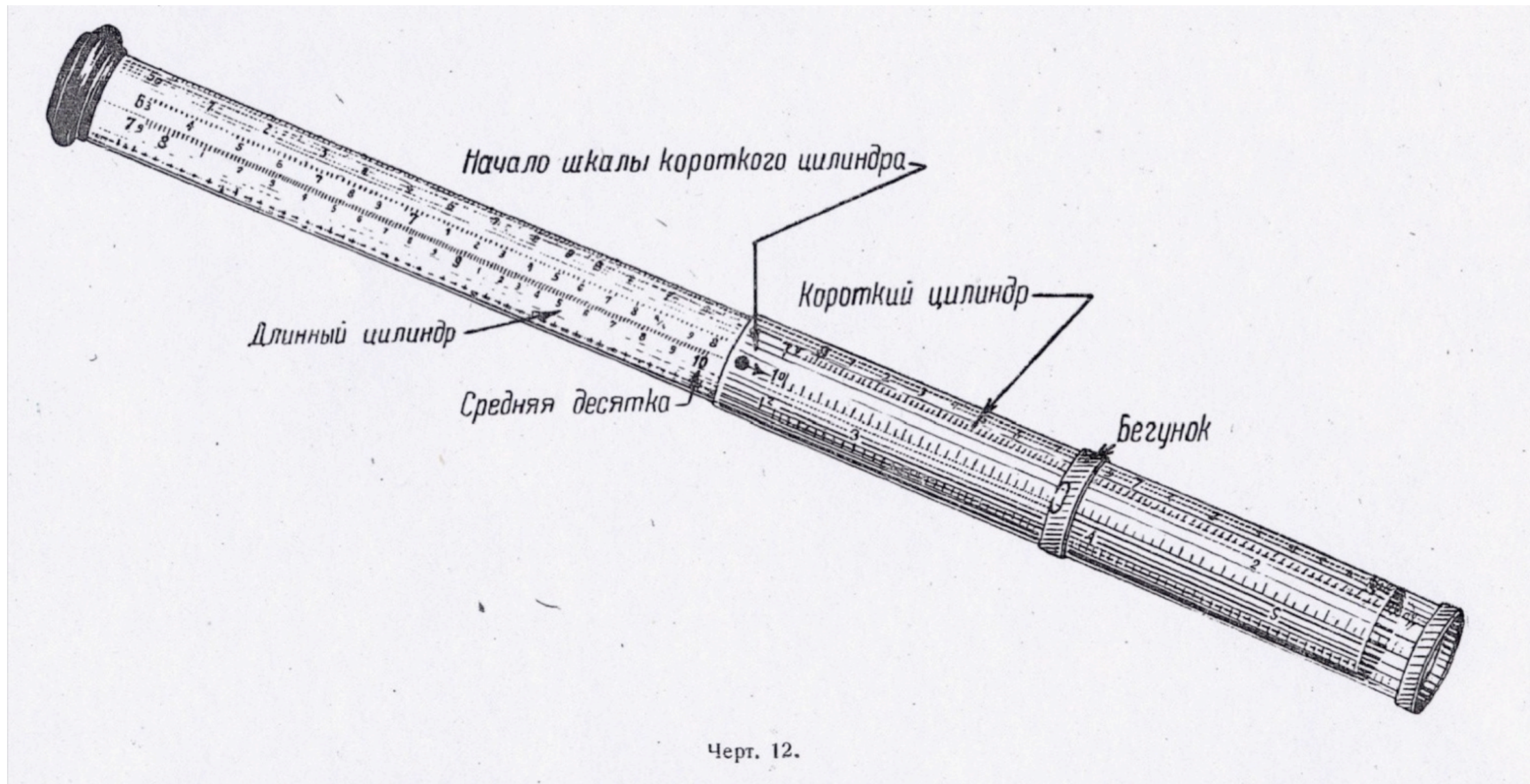
- Shchukarev's cylinder was patented in Russia 5.7.1910, but for some reason the patent was not officially registered
- the length of the inner cylinder is 17 cm, diameter 3.5 cm and it has a logarithmic scale of length 10 m
- on this cylinder there is a transparent celluloid tube moving freely
- on this celluloid tube there are 3 (only 1 of them existing now) moving "cursors" of ring form
- Polytechnical Museum has the patent documents and printed instructions written by Shchukarev



Shchukarev's cylinder. The damaged outer cylinder (tube) is not shown. Photo ©Polytechnical Museum, Moscow

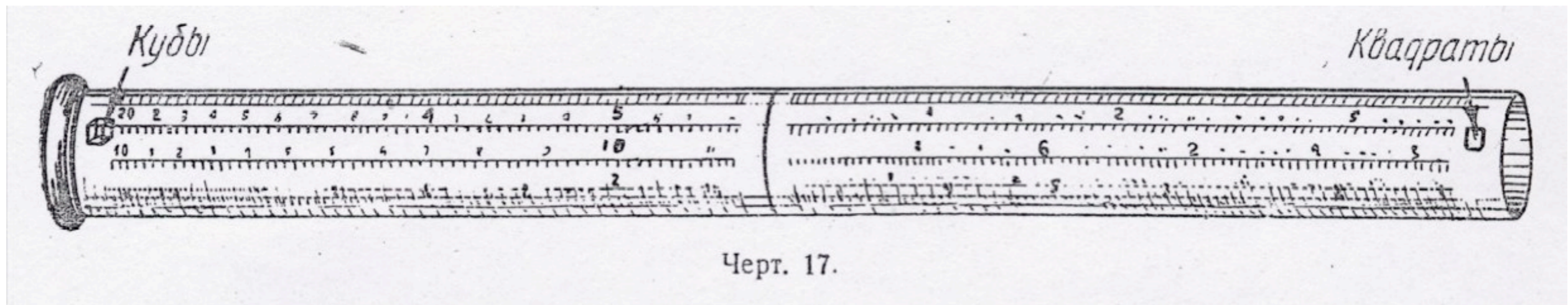
2. Cylindrical slide rule of Mikhail Podtiagin (Михаил Подтягин)

- The slide rule of Podtiagin (1889–?) was patented in Soviet Union (No. 9921), France (No. 639371) and England (No. 314371, 1928). The English patent can be studied at
- [http://v3.espacenet.com/publicationDetails/
biblio?
DB=EPODOC&adjacent=true&locale=en_V3&FT=D
&date=19290704&CC=GB&NR=314609A&KC=A](http://v3.espacenet.com/publicationDetails/biblio?DB=EPODOC&adjacent=true&locale=en_V3&FT=D&date=19290704&CC=GB&NR=314609A&KC=A)
- The official instruction manual [4] that came with the slide rule contains no pictures, but luckily the book [7] does.



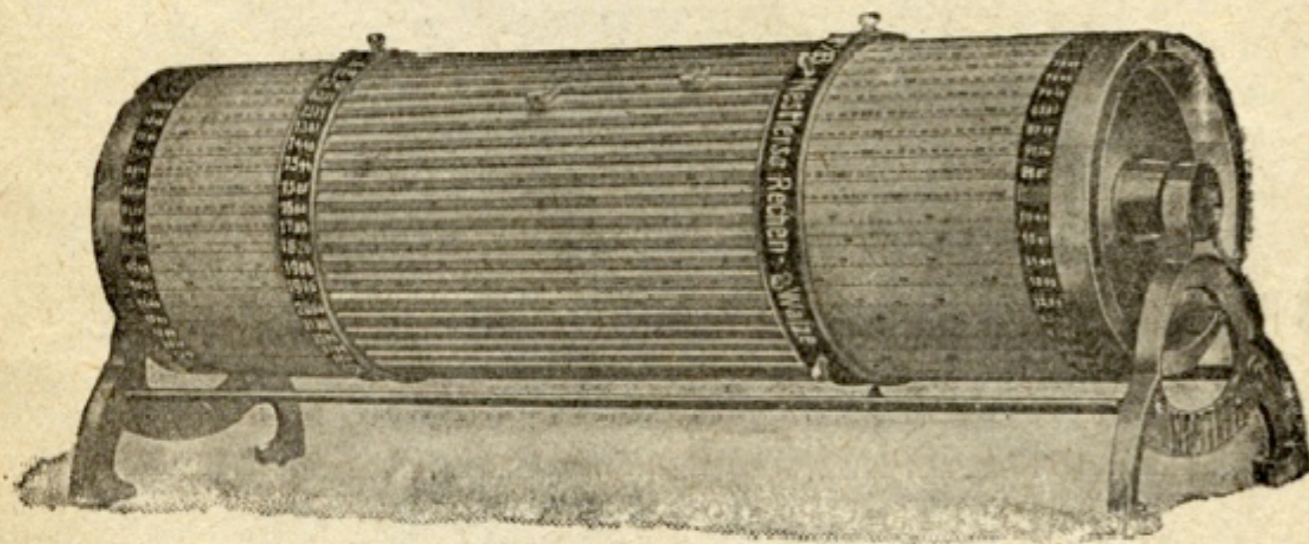
This actual production version of Podtiagin's cylinder is much smaller than the device in the patent description

- The serial production of the device was performed by the MOSKHIM (МОСХИМ) company in Moscow.
- The instruction booklet [4] was published in 1931 and 3000 copies were printed. Thus the amount of Podtiagin rules made is probably at most 3000.
- The length of the scale on the inner surface of the transparent freely moving outer cylinder (tube) is 106 cm divided in 10 parts of 10.6 cm scales (in patent 760 cm divided in 20 parts). The scales are black and the numbers appear above the scales.
- The cursor moves freely on the outer cylinder.
- On the inner cylinder each of the 10 the blue scales with numbers below them has 20 cm length, redundancy being thus 100%.



- the transparent case of the rule has on the inner surface 2 logarithmic scales in 10 parts identical with the ones on the basic cylinder, printed in blue and numbers below the scales
- on the outer surface at exactly same places there is cubic scale on the left side and quadratic scale on the right side, both printed in black and numbers above the scales
- manual [4] suggests the possibility to attach logarithmic and trigonometric scales in future models

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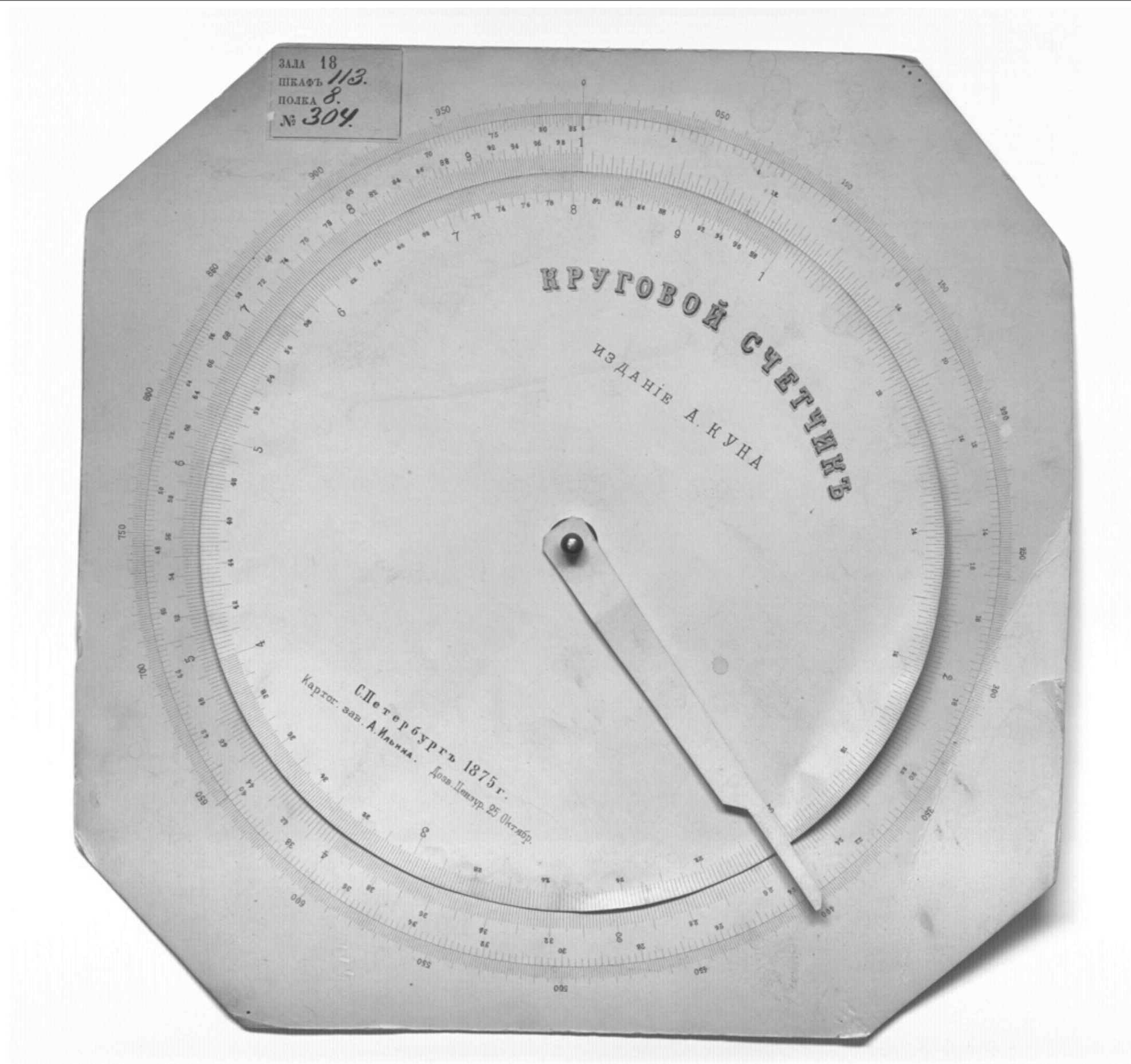
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каждом бюро.

Podtiagin's cylinder was not a commercial success. One reason might be Nestler's cylindrical slide rule available simultaneously in Soviet Union [3]. All three Nestler models were more precise and perhaps not much more expensive.

3. Circular 1875 slide rule of A. Kun (A. Кун)

- Kun is not a Russian name, so the transliteration is not quite straightforward. If the inventor/publisher was German, the original form of the name could have been Kuhn, Kuehn or even Kühn.
- The rule is made of carboard and the National Library of Russia in St. Petersburg has one example and of course the instruction booklet [5]

- cardboard
- diameters of the scales c. 23.9 and 20.3 cm
- scale lengths c. 75.0 and 63.6 cm
- scales from outside: L, S, C, D



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I express my thanks to

- Ol'ga Gurbanova at The National Library of Russia, St. Petersburg
- Ol'ga Anan'eva at Polytechnical Museum, Moscow

The transliteration standard of US library of congress has been used throughout

Literature

- [1] Chamberlain Edwin J.: Long-Scale Slide Rules Revisited, Journal of the Oughtred Society, Vol. 13, No. 1, 2004, p. 23–43
- [2] Trogemann Georg, Nitussov Alexander & Ernst Wolfgang (eds.): Computing in Russia. The history of Computer Devices and Information Technology revealed, 2001, 350 p.
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- [5] Кун А.: Об употреблении круговаго счетчика с таблицею объемов и весов тел, 1875, 17 с.
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