

Pencil Slide Rules: Part 4 – The Nicolet and the Monroe in Context

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Introduction

At the time that I prepared Part 1 of this series of articles, my access to a Nicolet pencil slide rule was limited to a picture in an on-line catalog¹. On the basis of this picture, I suspected that the Nicolet and the Monroe pencil slide rules were essentially identical, and I suggested that the Nicolet should be viewed as an early issue or precursor of the Monroe that appeared on the market around 1953-54.

Since the publication of Part 1 in 2014, I have acquired more information about these two pencil slide rules. As a result of this additional information, I can now confirm my initial impressions, and I have discovered an intriguing story.

Background

First, let me remind the reader that the Nicolet and the Monroe are both examples of the piston type of pencil slide rule (See Figure 1). The piston is the slide, and the barrel of the pencil serves as the stator. The scale configuration is A/K B CI C/D. The piston is rotated to display one of the four scales on the slide through a long narrow window in the stator. A ring of clear plastic with a hairline serves as a cursor. The typical color scheme is white markings on black background, but other combinations are seen.

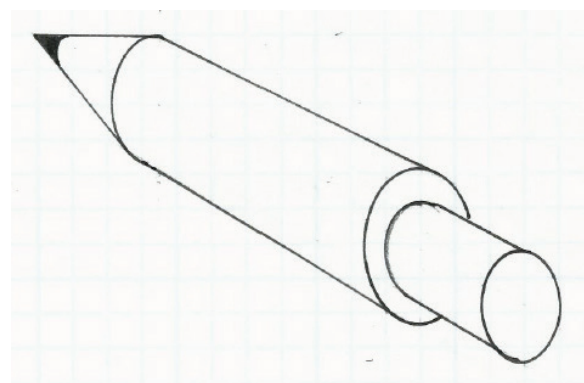


FIGURE 1. Piston Design, Schematic Representation

Since 2014 I have acquired one Nicolet pencil slide rule and several Monroes, and I have been able to compare my Nicolet and my Monroes side-by-side. This comparison leaves no doubt in my mind that they

are identical in all respects except the name printed on the barrel and pocket clip (See Figures 2 and 3).

At least one of the Nicolets that I have seen has some advertising on the barrel. About half of the Monroes are overprinted with advertising, typically the name of the advertiser, an address, and a phone number. This suggests that some of the Nicolets and some of the Monroes were sold and some were given away for business promotion purposes.

All this is evident from examining specimens. However, this approach leaves several questions unanswered. For example, who or what were Nicolet and Monroe? Who made these pencil slide rules? Where were they made? When were they made? Finally, why was the same pencil slide rule issued under two different names? In this article, I seek to answer these questions.

Who Was Nicolet?

The Nicolet that is of interest to us is the Nicholas E. Nicolet who designed the pencil slide rule that is known to us as the Nicolet and the Monroe. This man's three patents for novelty pencils^{2,3,4} become our reference points for locating him in time and space.

His first patent² was filed October 8, 1931 in New York, NY. This patent was for a mechanical pencil adapted for scoring the card game Bridge. The basic design involved a sleeve that rotated around the barrel of the pencil. A table of scores was printed on the barrel. A line of scores could be selected and viewed through a long narrow window in the sleeve. This patent was subsequently cited by other inventors of similar designs based on pencils with sleeves.

His second patent³ was filed October 24, 1950 in New York, NY. As will be seen below, this patent was for a pencil slide rule that resembled the Nicolet/Monroe in some but not all respects (See Figure 4).

Nicolet's third patent⁴ was filed November 6, 1953. The applicants were "co-inventors" Nicholas E. Nicolet (then of the Bronx, NY) and Herman Neiges (of Brooklyn, NY). This patent defined the final form of the Nicolet/Monroe (See Figure 5).

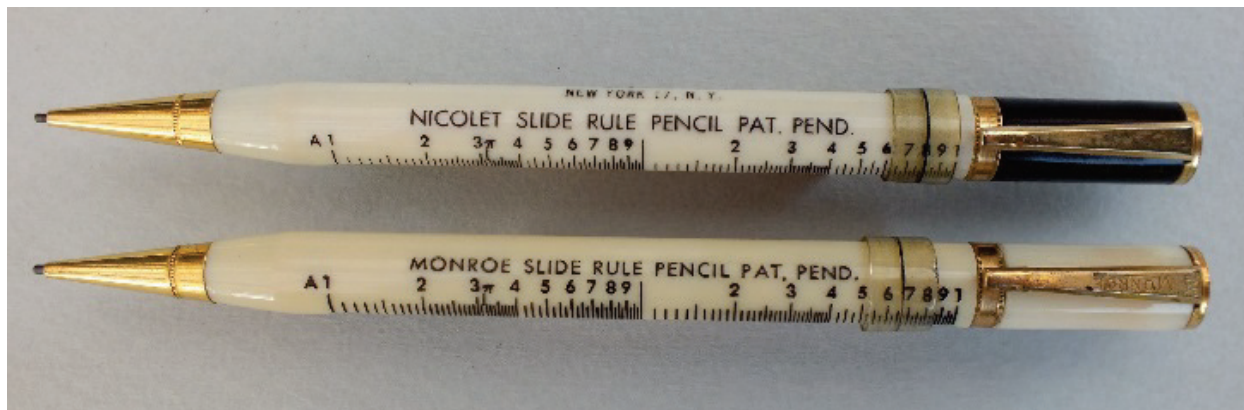


FIGURE 2a. Examples of the Nicolet Pencil Slide Rule (above) and the Monroe (below), Front

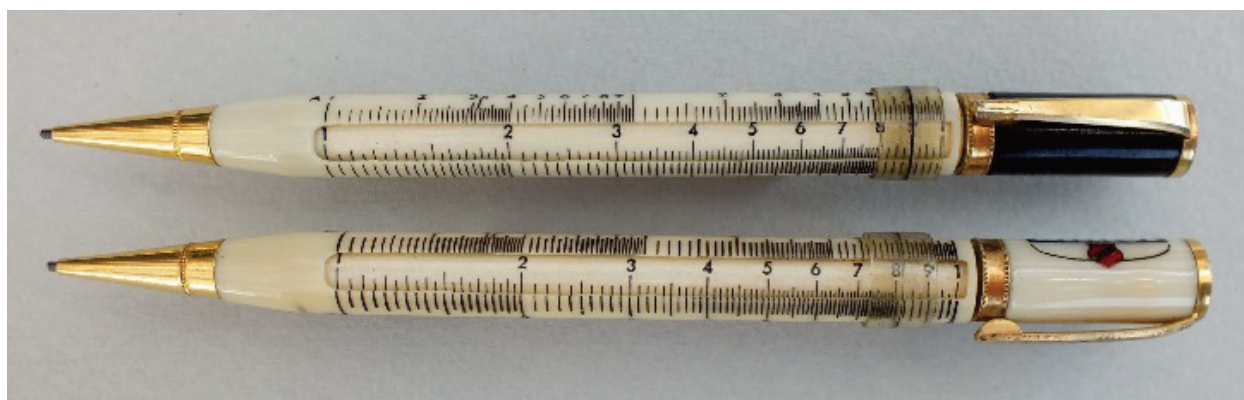


FIGURE 2b. Examples of the Nicolet Pencil Slide Rule (above) and the Monroe (below), Back
The two slide rules are essentially identical.



FIGURE 3. Pocket Clips from a Monroe and a Nicolet Pocket Slide Rule
The Nicolet clips were typically unmarked.

From these patents one can infer: that Nicholas Nicolet was probably an adult in 1931; that he was still an active inventor in 1953; and that he was a New Yorker.

A Nicholas Nicolet who matched these requirements appears in the US Census records of 1930 and 1940. We learn from these sources that he was born in Italy around 1895. In 1930 he was single and in Manhattan. In 1940 he was still single and still living in Manhattan. We also learn that he had 3 years of college education and was employed “in civil engineering” as a “draftsman”. Later during 1950-61 (the period of special relevance to his role as inventor of the Nicolet pencil slide rule) he appeared in the residential listings in New York City phone book⁵. He probably died⁶ in November 1964 at age 70.

Co-Inventor Neiges?

As noted above, Nicolet’s third patent mentions a Herman Neiges as co-inventor. I turned up two interesting clippings that refer to a Herman Neiges^{7,8}. Briefly, he was born around 1922. He studied drafting in Brooklyn. During World War II he worked as a draftsman. Sometime after the war he turned to the insurance business. By 1982 he had become a

successful insurance company executive. He was also a very accomplished amateur magician. He died in 2004.

Neiges' role in the development of Nicolet's definitive patent is unclear. That Neiges merely executed the patent drawings seems unlikely because Nicolet himself was a professional draftsman and he had already arranged for the drawings that accompanied his first two patents. In Nicolet's third patent "co-inventor" Neiges is also described as "assignor to said Nicolet". This suggests a role significant enough that the patent required explicit acknowledgement and surrender of certain implied rights. This is a puzzle that remains to be solved.

What Was Monroe?

The short answer to this question is that Monroe was a maker and supplier of "trick" pencils, i.e., dual-

purpose mechanical pencils that served as vehicles for advertising.

The instructions for the Monroe pencil slide rule state that the pencil was made by The Monroe Manufacturing Co. In 1953, this firm claimed "55 years of manufacturing experience"⁹. Sometime during 1956 the firm changed their name to Monroe Universal and moved from Manhattan¹⁰ to Brooklyn¹¹. This name change quite clearly reflected a merger with the Universal Fountain Pen & Pencil Co. Telephone book listings for 1956-7 show both Monroe-Universal and Universal Fountain Pen & Pencil Co. moving from separate locations to the same address and adopting the same phone number. Around 1967, both firms relocated to the same new address¹².

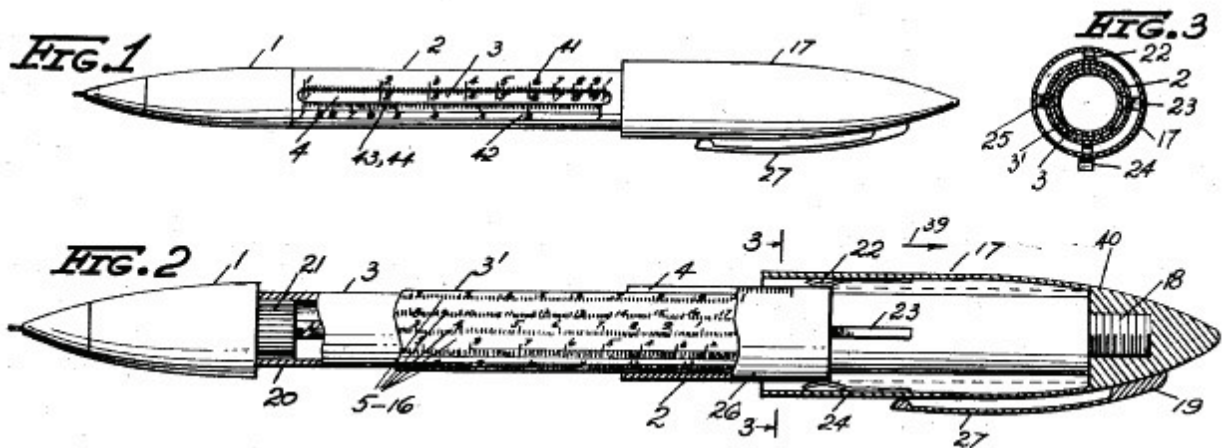


FIGURE 4. Figures from Nicolet's Second Patent
Note that the cap slides over the barrel and moves the piston.

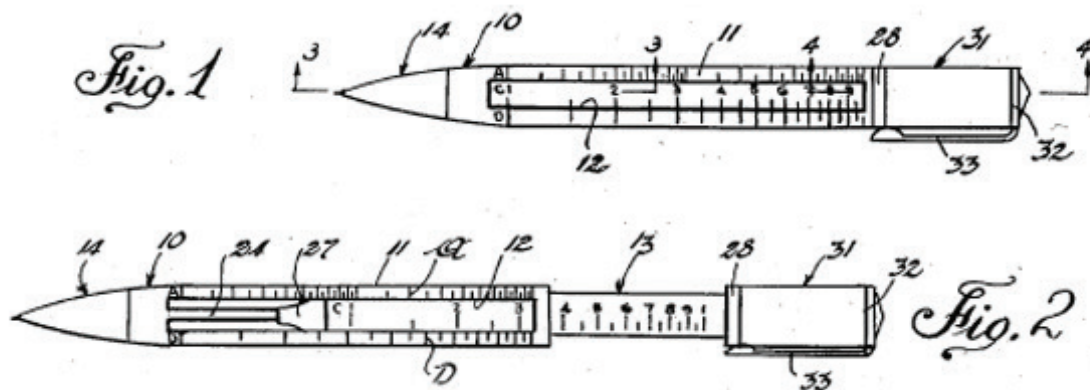


FIGURE 5. Figures from Nicolet's Third Patent
Note resemblance to production models.

Although Monroe claimed precision manufacturing experience dating back to 1898, the firm's line of novelty pencils appears to have been a more recent focus. I can find no conclusive evidence that Monroe was marketing novelty pencils before 1950¹³.

I was fortunate to obtain copies of the 1953 catalog for Monroe and the 1958 catalog for Monroe-Universal. The 1953 catalog describes Monroe as a source of "novelty" pencils and offers pages full of such devices. By 1958 the successor, Monroe-Universal, had added other novelty and promotional items such as pens and cigarette lighters to its offerings. However, the major product line was still novelty pencils. Advertising could be added to every pencil, pen, and lighter.

The range of novelty pencils was marvelous. Mechanical pencils were adapted to incorporate pocket knife blades, small screwdrivers, bar magnifiers, perpetual calendars, spirit levels, flash lights, circuit testers, magnets, dice, microscopes, thermometers, spark plug testers, cigarette lighters, and postage scales.

Of special relevance to the Nicolet/Monroe pencil slide rule was a line of so-called "chart pencils". The basic design of these pencils was almost identical to the Nicolet/Monroe, except that the "piston" could not be pulled out (See Figure 6). The piston simply rotated and provided the surface for a chart, each line of which could be read through the long narrow window in the barrel. Essentially column headings appeared on the barrel along the window, and up to 12 chart rows could be printed on the piston. This arrangement was exploited to yield tables for: costs per unit and lot, cocktail recipes, bible verses, fraction-decimal equivalents, wire gauge equivalents, twist drill equivalents, canasta rules, bridge game scoring, lumber square-foot conversion, and paper stock

weights. In 1953 these chart pencils were available wholesale for \$1.08 per piece in lots of 50 and for as low as \$0.73 in lots of 5000. As I will explain below, I am convinced that Nicolet was very much aware of and influenced by these "chart pencils"¹⁴.

The Evolution of the Nicolet

Nicolet's second and third patent applications provide some insight into the evolution of the Nicolet pencil slide rule. His second patent was for a pencil slide rule that resembles the Nicolet/Monroe in some respects (See Figure 4). For example, the basic design was piston within cylinder, and the scales on the cylinder were viewed (one at a time) through a long narrow window in the barrel. However, the "right" end of the piston was attached deep inside a cap that slid over the upper third of the barrel.

The specified purpose of this arrangement was to stabilize the protruding end of the piston. This effect was augmented by four leaf springs inside the cap. Unfortunately this design reduced the proportion of the barrel that could display scale, and the effective scale length was limited to 36% of the overall length of the pencil. Also, attaching the tiny leaf springs inside the cap certainly would have complicated manufacture.

Of interest, Nicolet appeared to be aware of the key problem with the piston design, i.e., the inability to move the slide to the left of neutral, and his second patent specified that inverted scales would be needed to compensate for that limitation.

Nicolet's third and final patent shows a design virtually identical to the Nicolet/Monroe that was manufactured (See Figure 5 center). The main design changes were:



FIGURE 6. A Monroe Pencil Slide Rule (center) and Two "Chart Pencils"
Note the similarity.

- (1) To replace the “cap” with a short (and wide) extension of the piston and
- (2) To add an inner cylindrical strut to support and stabilize the piston.

Thus, the slide became a tube sliding between two other concentric tubes. This design change permitted an effective scale length that was 54% of the overall length of the pencil – a distinct improvement. This design also provided space for an eraser.

In the text of the third and final patent Nicolet indicates a new concern for the problems of manufacturing a pencil slide rule. He notes that his new design uses standard pencil parts¹⁵, minimizes the number of parts, and simplifies manufacture. Significantly, he does not mention the number of scales that would appear on the slide. By this time he may have learned from prototypes that only a limited number of legible scales could be accommodated on the piston.

Curiously neither patent mentions any cursor.

As I have indicated above, I am convinced that Nicolet was very much aware of and influenced by Monroe’s chart pencils. What is the evidence for this? First, both versions of Nicolet’s pencil slide rule can be viewed as chart pencils that allow for lateral motion. Second, Nicolet’s final design very closely resembles Monroe’s chart pencils. Finally, in Nicolet’s second patent, the drawings show 12 scales on the piston (i.e., the slide). This ambitious number appears to have been lifted directly from Monroe’s chart pencils that offered up to 12 lines of chart on the piston. In the final version of the Nicolet/Monroe, the number of scales on the piston was reduced to a more realistic and legible four.

The Era of the Nicolet/Monroe Begins

To establish that production and marketing of the Nicolet/Monroe began sometime between 1953 and 1958 is relatively easy. First, the 1953 Monroe catalog (which could have been prepared late in 1952) offers chart pencils, but the catalog does not offer any pencil slide rules. Second, Nicolet submitted his second and final design for patent in November 1953. If the declaration “patent pending” (which appears on both the Nicolet and the Monroe) is to be believed, then the Nicolet and the Monroe must have appeared after November 1953. Finally, the Monroe pencil slide rule does appear in Monroe-Universal catalog of 1958. These facts restrict the time frame to 1953-58. However, this window can be narrowed further.

At this point we must return to direct examination of specimens of the Nicolet/Monroe, specifically the advertising that appears on some specimens. Two of such specimens provide key information. First, Hans Peter Schaub reports one example of the Monroe pencil slide rule that carries advertising that was current and valid only for the years 1951-54¹⁶. Second, in my own collection I have a Monroe that carries advertising that was current and valid only for the years 1952-54¹⁷.

However, I must point out that these two time windows are estimated on the basis of listings in city directories and telephone books. Such estimates are subject to errors of up to one year in either direction¹⁸. Nevertheless, the available data suggests that the first Monroes appeared by 1954. Because all the Monroes are marked “patent pending” and the relevant patent was submitted very late in 1953, most likely few, if any, pencils were released in 1953. This narrows the appearance of the Monroe to sometime in 1954.

What About the Nicolet?

Where does the Nicolet pencil slide rule fit into this picture? Before I attempt to answer this question, let me make five observations:

1. I submit that the Nicolet must have been manufactured by the Monroe Manufacturing Co. The Nicolet and the Monroe are identical except for branding. To assume that two different companies would each tool up to make this one device is unreasonable. Furthermore, Monroe’s experience with the chart pencils made them the ideal firm to make the Nicolet/Monroe. This experience would also have likely made Monroe the most competitive bidder.
2. Although only one design was executed, there are clearly two distinct brand names involved. The Nicolets are labeled as such on the barrel; the pocket clip is blank; and the instructions refer only to Nicolet. The Monroes are labeled as such on the barrel; the pocket clip bears the distinctive Monroe trademark; and the instructions refer only to Monroe.
3. The logical sequence of branding would be Nicolet before Monroe. As the inventor, Nicholas Nicolet could claim exclusive right to make his own pencil slide rule as soon as the patent application was submitted. He could immediately proceed to arrange the manufacture of his invention under his name. Why would he first

yield that right to Monroe and then reclaim the right in order to issue his own brand?

4. If the logical sequence of branding is Nicolet before Monroe, then Nicolets must have been made for only a short time. The relevant patent application was submitted late in 1953, yet Monroe had rebranded the product early enough to carry addresses listed in 1954 directories.
5. If Nicolets were made for less than a year and Monroes were made for over 15 years, then Nicolets pencil slide rules should be distinctly rarer now. This appears to be the case. A review of eBay listings suggests that the ratio of Nicolets offered to Monroes offered¹⁹ is in the range of 1:3 - 1:4. In my own collection the ratio is 1:6. When I conducted a survey of Oughtred Society members in 2014, I received several reports of Monroe, but no reports of Nicolets.

There are probably several scenarios that could be consistent with these views about the Nicolet. However, I am inclined to suspect that story goes something like this: Nicholas Nicolet designed his slide rule with Monroe Manufacturing in mind. In late 1953 or early 1954 he arranged with Monroe to manufacture a large number of Nicolet pencil slide rules. He found that marketing his pencil slide rule on his own was difficult. Within a year he sold out to Monroe. He may have even settled his residual debt to Monroe by turning over the patent rights. Monroe Manufacturing marketed the unsold Nicolets and then rebranded the product.

When Did the Monroe Era End?

Monroe slide rule pencils were definitely being made beyond 1967. I have one specimen that is marked with a phone number that could not have been current and valid before 1968²⁰ (See Figure 7). Possibly production continued even later because Monroe-Universal can be tracked in Manhattan phone books through the end of the slide rule era in the early 1970's.

Discussion

The Monroe pencil slide rule is one of two pencil slide rules that were made by a firm already producing writing instruments, the other firm being Makeba. Makeba was already producing pens when they developed the Kombinator²¹.

Monroe Manufacturing, Marcantoni, and Devco all produced pencil slide rules in relatively simple venues. Monroe's three locations appear to have been small offices or lofts. Marcantoni produced a whole line of slide rules in a basement shop²². Devco operated out of an apartment in Greenwich Village²³.

I remain intrigued by Nicholas Nicolet's relationship with Monroe Manufacturing. His second design clearly suggests a knowledge of Monroe's "chart pen". How was this knowledge acquired? Through a Monroe catalog? Through personal contact with a pencil chart? Through involvement with the company? What was his connection with Herman Neiges? Sadly, these are all questions that I must leave unanswered for the present.

Conclusion

The Nicolet and the Monroe pencil slide rules are indeed identical. The evidence favors the view that they were both made by the same firm. The Nicolet probably appeared on the market in 1954. Within a year this pencil slide rule had been rebranded by Monroe Manufacturing. Production continued through 1968 but could not have continued much longer because of the introduction of the electronic calculator in the early 1970's.

Acknowledgements

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FIGURE 7. Late Model Monroe with Gold Markings and Rounded Cap, Circa 1968

Notes

1. Photo of the Nicolet from an internet catalog listing kindly supplied by Rick Blankenhorn of The Gemmary.
2. US Patent 1,859,524 for a "Scoring Device". Filed October 8, 1931 in New York. Granted May 24, 1932.
3. US Patent 2,656,978 for Improvement in or Relating to Slide Rule. Filed October 24, 1950 in New York, NY, and granted October 27, 1953.
4. US Patent 2,806,649 for Slide Rule Pencil. Filed November 6, 1953, and approved September 17, 1957.
5. His address was 135 W 225, Manhattan. According to apartable.com, this address is (and has been since 1937) a seven story apartment building in the Marble Hill area of the Bronx.
6. According to archives.com, a Nicholas Nicolet who was born October 27, 1894, died in Manhattan in November 1964. Curiously his telephone book listings persist through the 1969-70 edition. This could reflect a surviving companion or a rent control ploy.
7. An article in the Syracuse Herald Journal of September 7, 1982, reports that a Herman Neiges was promoted to regional vice president of the American General Life Insurance Company of New York. He had joined the firm in 1980 as regional director. The article mentions that, "He is a graduate of Poly Technical Institute and Pratt Institute".
8. Sun Sentinel, November 23, 2004, "H. Neiges, 82, Insurance Executive Worked Magic", by Bill Kaufman.
9. The claim to "55 years of manufacturing experience" appears in the Monroe catalog of 1953.
10. Monroe Manufacturing, 69 Murray, BA(rclay) 7-4451. According to google.com/maps this address is currently (and in the 1950's probably was) a narrow office building with a street level shop. This location is not far from the World Trade Center.
11. Monroe Universal, 808 Driggs Ave, Brooklyn, EV(ergreen) 4-1317. According to streeteasy.com, this address is a classic Williamsburg industrial building that was built in 1922 and subsequently converted to luxury furnished lofts.
12. 694 Metropolitan Ave, Brooklyn. Google Maps shows this address to be a four-story brick commercial building. However, loft apartments are currently listed.
13. I have had access to over 45 Monroe novelty pencils. Based on the advertising that appeared on these specimens I conclude that Monroe might have been marketing novelty pencils as early as 1944-46 but it must have been marketing them by 1950. This timing raises the possibility that Monroe was shifting from a wartime role to a peacetime role.
14. Both the Monroe catalog of 1953 and the Monroe-Universal catalog of 1958 state that the "chart pencil" was patented. However, I was unable to find any such patent. This is very frustrating because such a patent or patents might have mentioned Nicholas Nicolet and connected him more closely with Monroe Manufacturing.
15. Perhaps Nicolet was referring here to parts already being used in Monroe's line of "chart pencils".

16. This specimen from the collection of Hans Peter Schaub is overprinted with the following: "A. O. Smith Corp, Electric Motor Div., 1000 Webster St., Dayton, Ohio". This firm appears at this address only in the William's Dayton city directories for the years 1951 through 1954.
17. This specimen is overprinted with the following: "Haedden Fuel & Oil Corp, Journal Square 23-0777, Digby 4-1198, 921 Bergen Ave, Jersey City 6, NJ". This data correspond with listings in the Jersey City phone books for 1952, 1953, and 1954. I did not have access to the phone book for 1955. The listing in the 1956 phone book is different.
18. Sometimes city directories and telephone books can be used to establish when a pencil with advertising was made. Advertisers go in and out of business. They also can change their names, addresses, and phone numbers. These changes can be reflected in annual publications such as city directories and phone books. However, relying on these resources involves a potential error of plus or minus one year. For example, consider the advertiser that goes into business in January 1954 and fails to be included in the directory for 1954 because it was prepared during December 1953. This would be an example of a false negative. The converse can occur. For example, consider the advertiser who is in business during December 1953, but goes out of business in January 1954. He would still be listed in the directory for 1954. This would be an example of a false positive. In the case of telephone books the situation is even more complicated because the annual publication cycle can be anchored anywhere in the calendar year, for example June-to-June.
19. On Ron Lovett's website sliderules.lovett.com, he offers search output of slide rule sales on eBay from 2000 through 2015. In this listing I find 8 Nicolets sold versus 26 Monroes sold. This is a ratio of 1:3.6.
20. This specimen is overprinted with the following: "Sioux City Foundry Co. Telephone (712) 252-4181". The firm acquired this phone number in 1968 and has retained it since. This is a particularly elegant Monroe with a distinctive rounded cap; the color scheme is gold on black; and it was offered in a slim gold colored box.
21. The National Museum of Natural History (Washington, DC) cites the following reference: *Der neue Makeba-Kombinator; Fallstift mit Rechenschieber* (Bautzen, East Germany: VEB FüllhalterFabrik, Makeba, 1957).
22. St. Clair, J., *Marcantoni - An Unusual Discovery*. Slide Rule Gazette, Issue 4, Autumn 2003, pages 91-99.
23. Shepherd, Rodger, *Pencil Slide Rules: Part 2 - The Devco Series*, Journal of the Oughtred Society, 22:1, Spring 2015.