AN IMPROVED PEN MECHANISM for certain STRIP-CHART RECORDERS

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A. I. Schepartz, R. R. Calhoun, and G. Pisano
Eastern Utilization Research and Development Division

Strip-chart recorders are used for the graphic display of data in conjunction with many types of laboratory instruments. Although some of these recorders present no problems in their operation, many are the subject of considerable complaint, particularly the malfunction of pens and ink supply systems. In the strip-chart recorders of the horizontal (flat-bed) type, these difficulties can sometimes be eliminated by conversion to a standard lettering pen with integral reservoir, such as a Leroy[1/], (Keuffel & Esser Co.) or a Mars (J. S. Staedtler, Inc.).

The advantages of this type of pen over the ones usually provided with the recorder are as follows: (1) The pen is self-cleaning, containing a built-in cleaning plunger. (2) It requires no remote ink well or siphon line; the ink supply is in a reservoir immediately above and integral with the pen. (3) The entire pen and well unit can be removed and replaced easily when ink refill or complete overhaul is necessary. (4) Ink colors can be changed quickly by simply changing pens; there is no need to clean out an entire siphon line.

Although the conversion to a lettering pen can be accomplished by only a slight modification of the penholder on some recorders, others require a redesign of the holder. As an example of the latter case, we have designed and constructed a penholder that is applicable to many of the recording instruments marketed by Beckman Instruments. The construction details of the penholder are shown in Figure 1. This device substitutes for the Beckman holder and fits precisely into the transport mechanism of the recorder between the existing pivot sockets. It accommodates a standard Leroy reservoir lettering pen (Keuffe & Esser No. 61-0051, size 0). Figure 2 shows the complete unit in place on the recorder. Four instruments in our laboratories have been modified by the installation of this pen mechanism. The users report completely satisfactory operation over the past year.

Based on our experience, we believe it should be a fairly simple matter to modify other recording instruments in like manner.

1/ Trade or company names are used in this publication solely for the purpose of providing specific information. Mention of a trade name does not constitute a guarantee or warranty of the product by the U. S. Department of Agriculture or an endorsement by the Department over other products not mentioned.

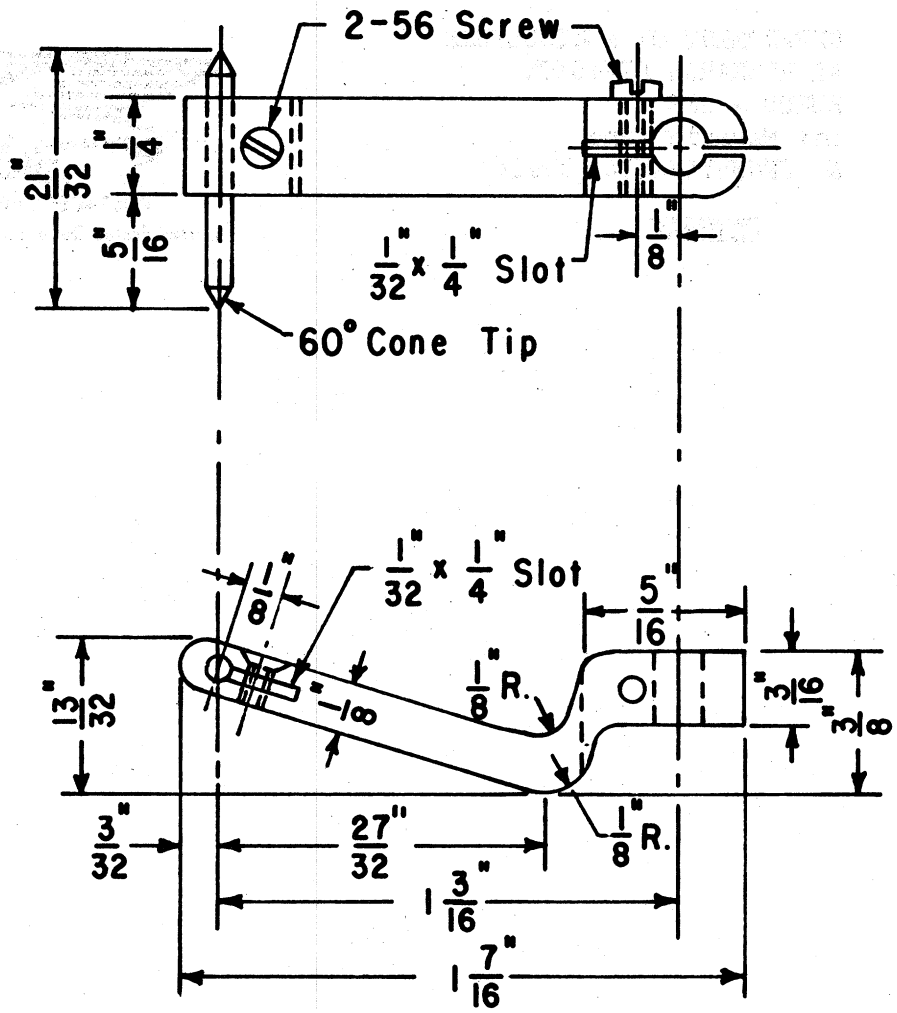

Figure 1

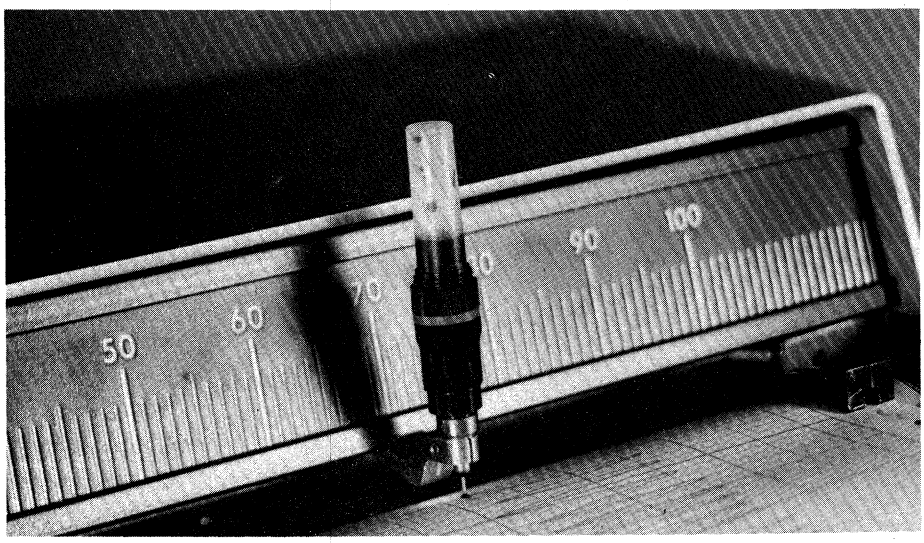

Figure 2