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(9647) O. S. asks: I have seen two different methods for reading, by attached vernier, 1-500 part of 1 inch, as follows: 1. To divide on the scale 1 inch in 20 1-20, and on the vernier 25 parts, which 25 parts equal on the scale 24 1/2. 2. To divide on the scale 1 inch in 20 1-20, and on the vernier 25 parts, which 25 parts equal on the scale 19 1-20. I am a scientific instrument maker, and I have very much to do with verniers for reading 1-500 parts of 1 inch, so I ask you kindly to tell me which of these two methods is correct. A. If you wish a vernier reading to 1-500 of one inch, you should first divide each inch on your scale into 20 equal parts, and then, by means of the vernier, be able to divide each part into 25ths. There are two ways of doing this, either one of which is absolutely accurate. First. Make your vernier 24-20 of an inch long, and divide it into 25 equal parts. Each part will then equal 24-500 inch. Each main division of the scale itself equals 25-500. The difference one division on the scale and one division on the vernier, therefore, equals 1-500 of an inch, as required. Second. Make the vernier 26-20 of an inch long, and divide it into 25 equal parts. One division on the vernier then equals 26-500 inch, while one division on the scale equals 25-500. The difference between the two, therefore, is 1-500 of an inch, as before. These are the only current methods of making the vernier, provided each inch on the scale is divided into 20 equal parts. You can readily determine which of these two types of vernier will suit your purpose in any given case.

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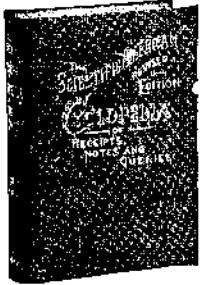
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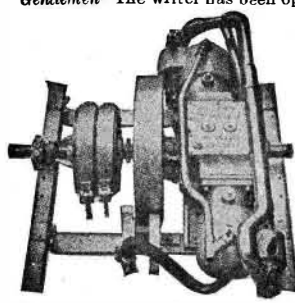
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