(No Model.)

O. S. MATTHEWS.

RULER.

No. 421,102. Patented Feb. 11, 1890.

Fig. 1.

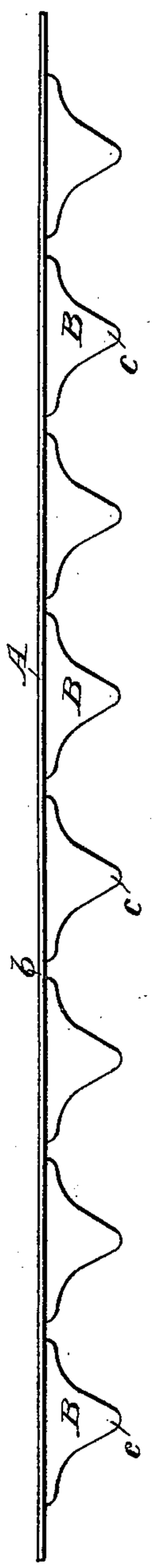


Fig. 2.

Fig. 3.

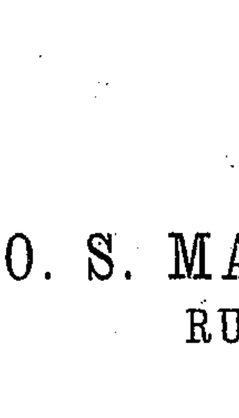


Fig. 4.

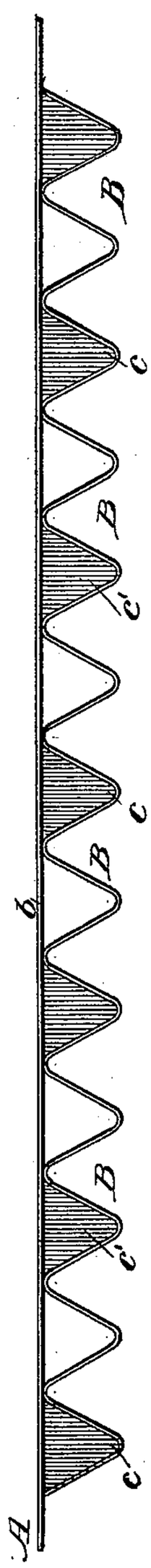


Fig. 5.

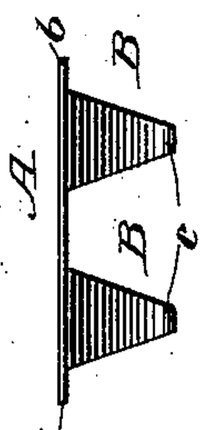
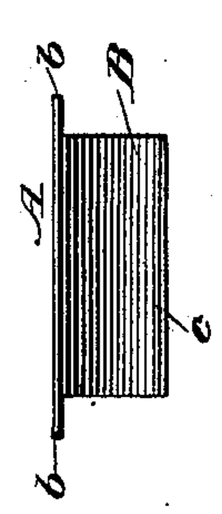


Fig. 6.



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RULER.

SPECIFICATION forming part of Letters Patent No. 421,102, dated February 11, 1890.

Application filed September 11, 1889. Serial No. 323,636. (No model.)

To all whom it may concern:

Be it known that I, OSCAR S. MATTHEWS, of Dallas, in the county of Dallas and State of Texas, have invented a new and useful Improvement in Rulers, of which the following is a full, clear, and exact description.

This invention relates to flexible rulers—that is, rulers capable of being bent and conforming themselves to curved or undulating surfaces—such, for instance, as the pages of an account-book when open, for the purpose of insuring straight or regular ruling.

One objectionable feature of flexible rulers that I have observed has been that they lie so low, or rather that their ruling-edges lie so close to the paper to be ruled, that correct ruling by them is difficult, and their ruling-edges are so near the pen-point that clotting of the ink and blotting is almost certain to occur. Rulers having raised and overhanging ruling-edges of course are not new; but these as heretofore constructed have but imperfectly effected the desired result, especially when the ruler is a flexible one.

The invention consists in a raised flexible ruler of novel construction, substantially as hereinafter described, and pointed out in the claims, whereby all clotting, blurring, or blotting is most effectually prevented, and straight ruling on curved or undulating surfaces is insured.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents a longitudinal side view of a flexible ruler embodying my invention. Figs. 2 and 3 are end views of the same, showing under different forms or constructions certain feet or projections on the under side of the ruling top used to raise the latter from the paper or surface being ruled. Fig. 4 is a side view showing a modified construction of the ruler; and Figs. 5 and 6 are end views of the same, showing two further modifications of the supporting feet or projections.

Referring, in the first instance, to Figs. 1, 2, and 3 of the drawings, A indicates the top or ruling piece, which may be made of tin, gutta-percha, or the usual hard rubber of which flexible rulers are made, or of any other suitable flexible material, the same being of any desired length and width and having parallel opposite side ruling-edges *b b*. Secured, as by glue, cement, or otherwise, to the under side of this top piece A is a series of supporting feet or projections B B, of about half an inch in depth, more or less, arranged crosswise of the top piece, but not extending the full width of said top piece, so as to allow the ruling-edges *b b* of the latter to overhang them, and made with tapering sides, so as to present point or ridge-like presentations *c* below. These feet or supporting-pieces B, which are arranged at regular or suitable distances apart, so as not to impair the flexibility or elasticity of the ruler, may be made of wood, preferably cut across the grain, tin, paper-pulp, stiff rubber, or any other suitable material, and not only serve to steady the ruler and prevent its tilting, but to so raise the ruling marginal portions of the overhanging top piece A as to relieve the same of that heavy clotting and consequent blotting which is such an objectionable feature of flexible rulers generally. The interrupted support, too, to the top piece A, furnished by the several separated feet B and their divided bearing-surfaces on the paper being ruled, not only provides for every desirable flexibility of the top piece A, but also serves, by only coming in contact with the paper at distant points, to reduce the liability of blurring caused by accidental contact of the ruler with the freshly inked or ruled lines. The ruling-margins *b* are sufficiently raised by said feet B as only to come in contact with the pen above its thickly ink-charged part, whereby the common annoyance of clotting or blotting is avoided.

The supporting-feet B are shown in Fig. 2 as made with parallel ends and concave bottoms, which will be found a desirable shape for them, or they might be made, as in Fig. 3, with sloping ends and a straight bottom, and if it is desired to increase their steadiness or strength they may be made thicker toward the point *c*.

In Fig. 4 the flexible top piece A, made preferably of tin, is represented as supported by feet B, made of one or more strips of tin suitably bent, and which may be attached to

the top piece A by solder or otherwise. In Fig. 5 two strips of tin are supposed to be used in the construction of the feet B in two rows running throughout the length of the top piece A and each foot B as being made tapering on all sides and of largest capacity above. In Fig. 6 a single strip of tin is supposed to be used for making the feet. In either case each alternate foot, if desired, may be filled, as shown at *c'* in Fig. 4, with solder, tin, or other suitable material, to give strength and durability and prevent breakage under pressure accidentally applied by books or other articles. I do not restrict myself, however, to any precise construction of the feet or supports, which might even be made of wire, if desired; but in all cases the ruler should consist of a flexible top or ruling piece provided beneath with interrupted supports of a suitable depth and of lesser width than said top piece, and its general construction should combine lightness, durability, and cheapness with the necessary flexibility.

Between the two outer feet under each end of the ruler and slightly projecting beyond the same may be affixed a bent wire or tough elastic tongue, perforated so as to make it convenient to hang the ruler up when not in use.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A flexible ruler consisting of a top piece or strip having parallel side edges and composed of tin, hard rubber, gutta-percha, or other suitable flexible material, and of a series of interrupted supports throughout the length of said top piece, secured to the under side of the latter and arranged within the longitudinal side margins thereof, substantially as specified.

2. In a flexible ruler, the combination of the flexible top piece or strip A, having parallel longitudinal ruling-edges *b b*, and the separate tapering feet B, secured to the under side of said strip at suitable distances apart throughout the length of the latter, and with the ruling-edges *b b* of the top strip overlapping them, essentially as and for the purposes herein set forth.

OSCAR S. MATTHEWS.

Witnesses:
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