

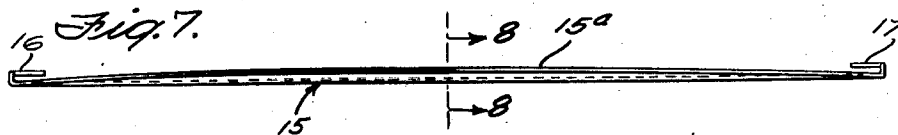
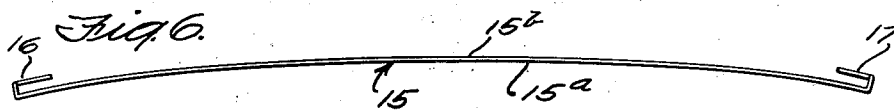
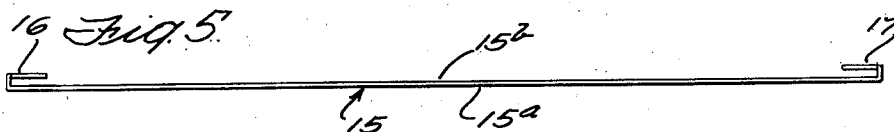
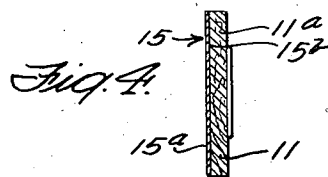
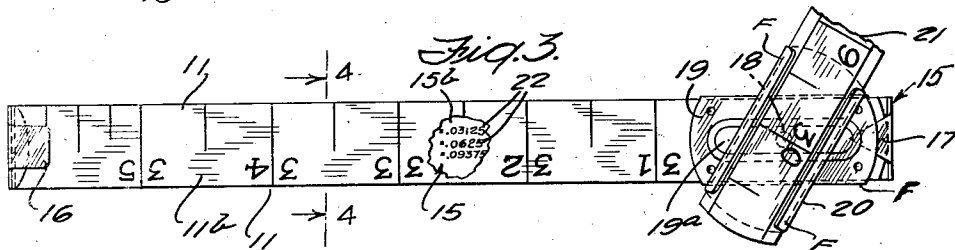
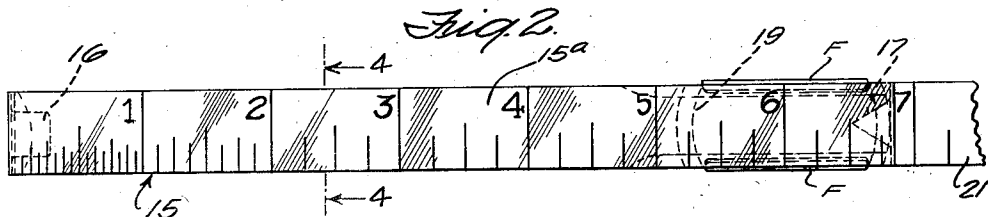
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FOLDING RULE CONSTRUCTION

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FOLDING RULE CONSTRUCTION

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8 Claims. (Cl. 33—105)

This invention relates to folding rule construction and more particularly to an attachment for existing types of folding rules.

One of the objects of this invention is to provide a folding rule construction with adequate protection, at the end section or sections, of the markings and indicia, against wear and obliteration. Another object is to provide a simple, practical and inexpensive attachment capable of ready application to an existing type of folding rule, particularly to replace or replenish the indicia on that face of that end section or those end sections where the original indicia become obliterated from handling, abrasion, use, and the like. Another object is to provide a practical, inexpensive and dependable device readily applicable to the worn or worn off face of an end section of a folding rule to extend the useful life of the latter. Another object is to provide an attachment of the above-mentioned character that will be inexpensive to manufacture and easy to apply to a rule. Another object is in general to improve and extend the utility of folding rules. Other objects will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts as will be exemplified in the structure to be hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawing in which are shown several of the various possible embodiments of my invention,

Figure 1 is a small-scale front elevation showing an extended foldable rule in one form of use and illustrating a form of rule to which my invention is applicable;

Figure 2 is a front elevation of an end section showing the device of my invention attached thereto;

Figure 3 is a rear elevation thereof;

Figure 4 is a sectional view as seen along the line 4—4 of Figures 2 and 3;

Figure 5 is a side elevation of one form of device;

Figure 6 is a side elevation of another form of device;

Figure 7 is a side elevation of another form, and

Figure 8 is a transverse sectional view as seen along the line 8—8 of Figure 7.

Similar reference characters refer to similar parts throughout the several views in the drawing.

As conducive to a clearer understanding of certain features of my invention, reference might first be made to Figure 1 of the drawing in which I have indicated at 10, in side elevation, a folding rule of any number of sections, illustratively six six-inch sections, made of any suitable material, usually wood or composition, and flatwise overlapped at and adjacent ends where they are pivotally secured together by any suitable form of hinge construction, usually of the spring or snap hinge type, constructed in any usual or suitable way to hold any two pivoted sections in alinement either in overlapped or folded relation or in extended or unfolded relation. In the use of rules of this type, an endmost section, such as the section 11 in Figure 1, is found in practice to have its under face 11^a subjected to most wear, as compared to the faces of others of the sections excepting the corresponding face of the opposite end section, and frequently the rate of wear is increased by the practice of sliding the extended rule 10 along the surface being measured, such as a concrete floor or wall 12, whence the markings on the face 11^a are relatively quickly worn off. Such rapid wear handicaps the user of the rule and frequently the rule is discarded and has to be replaced by a new one, even though the other sections, excepting perhaps the opposite end section, are still perfectly usable. One of the dominant aims of this invention is to provide a construction that will materially extend the life or usefulness of rules of this type.

Accordingly, I provide an attachment generally indicated by the reference character 15, making it of a good wear-resisting material, such as metal, preferably suitably tempered or hardened steel, and give it a main body portion 15^a of a length and breadth to rest against and cover over the mutilated or worn face 11^a of section 11. In width, therefore, it may be on the order of $\frac{3}{4}$ ", in length it may be on the order of $6\frac{1}{2}$ " or so, and in thickness it may be on the order of $\frac{1}{8}$ ".

In that face of part 15^a that is to be exposed, that is, the front face visible in Figure 2, I provide in any suitable manner as by etching or embossing, the indicia to match the indicia initially borne on the face 11^a of the rule section, as indicated in Figure 2.

The part 15^a I arrange for ready attachment to the end section 11. Illustratively, and as is better shown in Figures 3 and 5, I provide it with end extensions, preferably integrally formed therewith, which are bent upwardly, as viewed in Figure 5, at about right angles to the part 15^a, and thence bent horizontally into substantial

parallelism to the part 15^a, as shown at 16 and 17, though these parts 16 and 17, which are to take against the back face 11^b of the section 11, are preferably inclined or curved downwardly toward the part 15^a, the metal, particularly when it is made of sheet steel suitably tempered, having a good degree of springiness to resiliently clamp the respective ends of the section 11 against the upper face, as viewed in Figure 5 of the part 15^a, and thus to maintain the assembly of the device 15 to the section 11.

As is better shown in Figure 3, the parts 16, 17 may be of less width than the width of the section 11, thus to encumber as little as possible the face 11^b, which is to slide into engagement with the face of the succeeding section when the rule is folded up, and preferably that securing element that is to take over the hinge end of the section 11 is tapered or somewhat pointed so that, with certain types of hinges, such as the kind shown in Figure 3, where the hinge pin 18 pivotally connects two sheet metal plate members 19 and 20 respectively secured to the sections 11 and 21, these parts being usual with the above-mentioned type of snap hinge, the part 17 may be entered in under one end of the metal plate 19, as appears clearly in Figure 3.

In such a typical construction, the plate members 19 and 20 may be secured to their respective rule sections, as by side flanges F which may function to act as gripping clamps and usually one of the plates, such as plate 19, has a longitudinally extending depression 19^a into or out of which a corresponding longitudinally extending raised or projecting portion (not shown) of the companion plate 20 rides or snaps during the folding or unfolding of the rule. There is sufficient play or give to permit the part 17 to be entered in between the plate 19 and the face 11^b of the section 11, and this action may be facilitated by the tapered shape of the part 17 and preferably also by tapering its thickness at its apex so that entry of the prong-like part 17, as by wedging itself in between the parts 19 and 11, takes place more readily.

In such case, the device 15 is first manipulated to hook the right-hand end as viewed in Figures 2, 3 and 5 flatwise onto the hinge end of section 11, member 17 entering under the plate 19, whence the device 15 is swung, in its own plane and substantially about the securing device 17 as a pivot, relative to the end section 11 to enter its free end flatwise in under the part 16. This operation may be accompanied by some springing or yielding of the parts at the ends of the part 15^a, particularly where, as in the preferred case, the horizontal spacing between the upstanding parts, as viewed in Figure 5, closely matches the length of the section 11. Thereby, a secure attachment is effected, the devices 16 and 17, by their spring action, clamping the end portions of the section 11 dependably against the part 15^a, while the snugness of the lengthwise fit may bring into play a corresponding springiness of the upstanding or vertical portions of the elements 16 and 17, thus yieldingly to grip the section 11 endwise. Thus, the part 15^a is held snugly against the face 11^a throughout its length, somewhat as shown in Figure 4.

If desired, the device 15, particularly when made of a springy material, may be initially set to have a normal curvature, as shown in Figure 6, with its rule-engaging face 15^b convex. When applied to the section 11, the portion 15^a becomes,

of course, straightened out, and its tendency, under its spring action, to assume its initial shape or curvature, as in Figure 6, aids in the gripping action of the devices 16, 17 and also aids in keeping the part 15^a flat against the face 11^a of the section 11.

Or, as in Figures 7 and 8, the part 15^a may be given a transverse curvature, preferably concave upwardly toward the face 11^a. The resultant springiness with this shape may be several-fold in character and advantage. Thus, the longitudinal edge portions of the part 15^a are snugly and yieldingly pressed against the marginal portions of the face 11^a and a longitudinal stiffness or semi-rigidity, yielding or resilient however, may thus become effective to coact with the spring tongue parts 16, 17 to insure a better gripping action by the latter. Also, as with the form of Figure 6, a snugness of engagement of the part 15^a against the face 11^a throughout its length is better assured.

Thus, the device may be readily attached in place and dependably maintained on the end section. The device, as appears better from Figure 2, substitutes for the indicia on the face 11^a of the end section its own indicia which, particularly where the device is made of a material of good wear-resisting qualities, prolong the life and usefulness of the foldable rule. Even if the device 15 itself were to become worn, it is easily and inexpensively replaced by a new one. And as above indicated, where, as is usually the case, one face of each of the two end sections are subjected to wear, each of such faces is covered over by a device 15. Its attachment is easy and simple and its securing devices I have found in practice do not interfere with the folding or unfolding of the rule; in this connection, the insertion of the member 17 under the hinge plate 19 keeps it from interference with the swinging of the adjacent sections, such as the section 21 of Figure 3.

Furthermore, I may achieve other advantages. Thus, folding rules of the type above-mentioned do not bear various kinds of tables, such as decimal conversion tables, tables of pipe fittings, tables of holes to drill for various kinds of threads to tap, and the mechanic or workman using such rule is frequently handicapped; however, I apply such tables as by embossing, engraving or the like, on a face of the device 15, preferably and illustratively on the back face 15^b, a portion of which is shown in Figure 3 where such tables or such other handy indicia are indicated by the reference character 22. In such case the quick detachability of the device 15 or sometimes by simply swinging the left-hand end, as seen in Figure 3, out of engagement with the left-hand end of the rule section 11, brings the tables 22 to view.

Thus, it will be seen that there has been provided in this invention a rule attachment in which the various objects hereinabove noted, together with many thoroughly practical advantages, are successfully achieved.

As many possible embodiments may be made of the above invention and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth, or shown in the accompanying drawing, is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. The combination with a sectionalized rule of an indicia-bearing sheet-like device for protect-

ing against wear a face of an end section of the rule or for replacing worn indicia of said face, said device being relatively thin as compared to the thickness of said end section and dimensioned to rest against and cover said face of said end section of the rule and having securing means operative at its ends for readily assembling and attaching it to the said end section, said securing means holding said relatively thin device flatwise against said face with the respective indicia thereof in registry.

2. The combination with a foldable rule having a plurality of sections connected together to permit extension or collapsing together, of a device for protecting against wear a face of an end section of the rule or for replacing worn indicia of said face, said device being relatively thin as compared to the thickness of said end section and having a flat portion to rest against said face of said section and bearing indicia similar to those allocated to the said face, said device having means for securing it in place that comprise means extending over an end edge of said section and engaging the opposite face thereof, thereby to hold said relatively thin device flatwise against said face and by the engagement of said means with said end edge to hold said device in a position so that its indicia are in substantial registry with the indicia of said end section.

3. A device as claimed in claim 2 in which said securing means comprises also means in engagement with the opposite end edge of said section and thereby coact with said means that extends over said first-mentioned end edge to hold the device against longitudinal shift in either direction relative to said section and hold its indicia in registry with the indicia allocated to the face underlying said portion.

4. As an article of manufacture, an attachment for protecting against wear a rule section comprising an indicia-bearing elongated sheet-like member adapted to overlie a face of the rule and carrying rule-engaging means for quickly attaching it to the rule, said rule-engaging means and said rule section interlocking to hold said device against movement lengthwise of the rule section.

5. An article of manufacture comprising an attachment for a rule section in the form of an indicia-bearing elongated sheet-like member adapted to overlie a face of the rule and having means for quickly attaching it to the rule, said member being substantially plane to rest flatwise against the rule and said attaching means comprising members adapted to extend over an edge of the rule and engage the opposite face of the section and holding said member against movement lengthwise of the rule.

6. An article of manufacture comprising an attachment for a rule section in the form of an indicia-bearing elongated sheet-like member adapted to overlie a face of the rule and having means for quickly attaching it to the rule, said member being of a springy material and being normally biased into a longitudinal curvature, the indicia thereon being on the concave face.

7. A folding rule having pivotally connected sections, the pivotal connection of at least one section comprising a plate-like member resting against a face of the section, and an indicia-bearing device resting against a face of said one section and having securing means that comprises an element in engagement with said plate-like member.

8. A folding rule having pivotally connected sections, the pivotal connection of at least one section comprising a plate-like member resting against a face of the section, and an indicia-bearing device resting against the opposite face of said one section and having means for holding it assembled thereto, said holding means comprising an element that extends about an edge of said one section and has a part entered in between said plate-like member and the face of said section to which said plate-like member is related.

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