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F. BUCK.

FOLDING RULE.

APPLICATION FILED NOV. 15, 1919.

1,432,834. Patented Oct. 24, 1922.

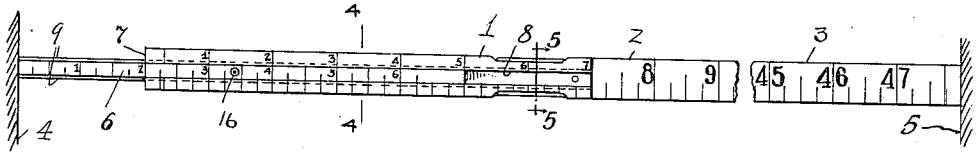


FIG. 1

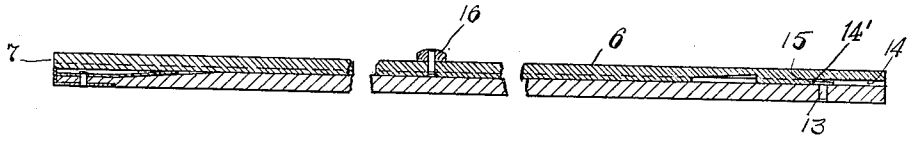


FIG. 2

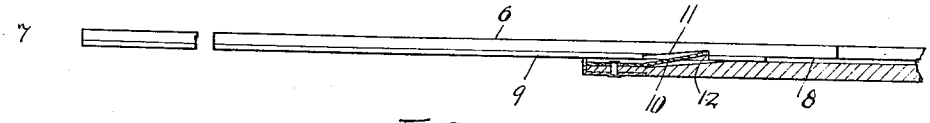


FIG. 3

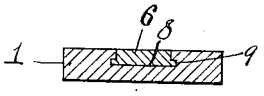


FIG. 4

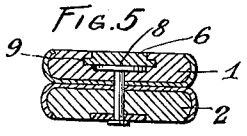


FIG. 5

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UNITED STATES PATENT OFFICE.

FRED BUCK, OF SAGINAW, MICHIGAN, ASSIGNOR TO THE LUFKIN RULE COMPANY, OF SAGINAW, MICHIGAN, A CORPORATION OF MICHIGAN.

FOLDING RULE.

Application filed November 15, 1919. Serial No. 338,256.

To all whom it may concern:

Be it known that I, FRED BUCK, a citizen of the United States, and a resident of Saginaw, county of Saginaw, and State of Michigan, have invented a new and useful Invention in Improvement in Folding Rules, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The present invention, relating, as indicated, to folding rules, is particularly directed to an improved extension for use with the end portion or section of a folding rule, although this device is not of course limited in its application to a folding rule, but may equally well be used with other types of measuring instruments. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claim.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—

Fig. 1 is a side elevation of a folding rule, in which is incorporated my improved extension, this view showing the rule and extension in use; Fig. 2 is a longitudinal section on an enlarged scale through the end portion of the rule and extension member; Fig. 3 is a similar view, but showing the extension in its drawn-out or extended position; Fig. 4 is a section on the line 4—4 in Fig. 1; and Fig. 5 is a section on the line 5—5 in Fig. 1.

In Fig. 1 there is shown a folding rule in which the various sections, 1, 2, 3, etc., are pivotally attached together, the sections being six inches between centers, and about seven inches over all. This type of rule is very generally used, and is commonly known as a boxwood folding rule, and usually is made in five-foot lengths. With any folding rule it is sometimes difficult to measure between parallel surfaces, as for instance, when walls which are relatively close together, and it is in this condition that an extension is desirable. In Fig. 1 the rule is shown extended to 48 inches in length and is placed between walls or surfaces 4 and 5, which are slightly more than 48 inches apart. Under these circumstances the rule is first placed at right angles to the two surfaces and extended to the nearest whole section, after which a slidable extension member 6 is drawn out from its position in the first section of the rule until it contacts with the wall 4. The number of inches over the nearest number indicated at the right of the rule is then shown on the extension against the edge or end of the first section of the rule, and in the case shown, the measurement between the walls would be 48 inches plus two inches shown on the extension or 4 feet 2 inches.

The extension member consists of a graduated metal strip 6 which is slidably mounted in a groove 8 extending longitudinally along the upper surface of the section 1. This groove 8 is undercut, as indicated in Fig. 4, and the metal strip 6 is provided with flanges 9, which are received in the undercut portion of the groove 8 and thus holds the extension in position in the groove. Mounted on the section 1, are means for preventing the accidental removal of the extension from the groove. This means consists of an upstanding flat spring 10, which is set into a depression formed at the outer end of the section 1, and a recess 11 formed adjacent to the inner end of the extension 6. When the extension is drawn out to the point shown in Fig. 3 the flat spring engages in the groove or recess 11 in the extension and contacts with the shoulder or surface 12 of the recess 11, and thus prevents the further withdrawal of the extension. A second stop is provided to prevent the withdrawal of the extension in the other direction, this stop being in the form of a removable stud 15 mounted adjacent to the inner end of the section 1 and extending into the groove 8 in this section. This stud or button is received into a recess 14 in the inner end of the extension and contacts against a shoulder 14′ at the inner side of this recess, when the extension is in its normal position, as indicated in Fig. 2. The extension may, however, be wholly withdrawn from the section 1 for repair or replacement by first sliding the extension to the left to uncover the stud 13 and then force

the stud 13 out of its hole in the section 1, after which the extension may be withdrawn by pulling it to the right until it is drawn out of the groove. For convenience in manipulating the extension a small button 16 is mounted centrally on the extension, and this button may be very conveniently pressed in either direction by the thumb of the user to force the extension either way.

The present device is a very great convenience in folding rules and is simply constructed, although safely carried within the outlines of the end section so that there is little danger of injury either to the extension or to this section.

Other modes of applying the principle of my invention may be used instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by the claim or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

In a device of the character described, the combination of a rule having a longitudinally extending slot formed adjacent one end thereof, a graduated strip slidably mounted in such slot, an upwardly projecting spring mounted in the bottom of said slot at one end and a stop mounted at the other end, said strip having engaging surfaces adjacent each end adapted to be engaged by said spring and stop, respectively, to prevent removal of said strip from such slot, and said stop being removably mounted in said rule to allow removal of said strip.

Signed by me, this 11th day of November, 1919.

FRED BUCK.