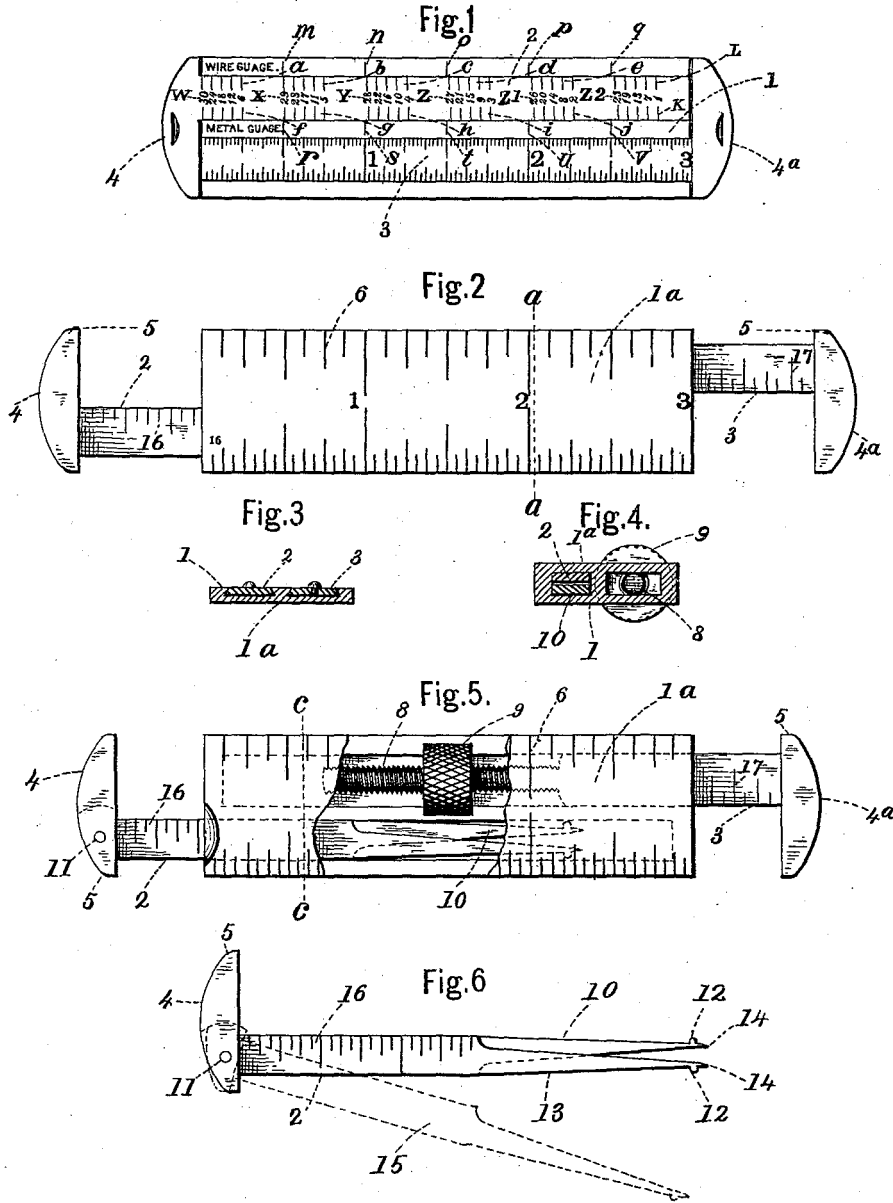


(No Model.)

P. BROADBOOKS.
POCKET GAGE.

No. 484,567.

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Witnesses.

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POCKET-GAGE.

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To all whom it may concern:

Be it known that I, PETER BROADBOOKS, a citizen of the United States, residing in Batavia, in the county of Genesee and State of New York, have invented certain new and useful Improvements in Pocket-Rules, of which the following is a specification.

My invention relates to certain improvements in pocket-rules or a combined wire-gage, sheet-metal gage, and pocket-rule and to certain details of construction, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation showing the two movable scales and the device closed, so that it can be carried in the pocket. Fig. 2 is a reverse side elevation showing the parts opened out for use. Fig. 3 is a transverse section through line *a a*, Fig. 2. Fig. 4 is a transverse section through line *c c*, Fig. 5. Fig. 5 is a side elevation showing a modification of some portions of the device. Fig. 6 is a detached side elevation of one of the movable portions, showing a pair of combined inside calipers and dividers, the dotted lines showing the calipers open.

One of the objects of my invention is to provide a suitable and efficient means whereby a fine scale, wire or sheet-metal gage, or pocket-rule of any kind may be carried in the pocket without injury.

It is well known that fine scales or rules become worn and defaced, so as to be rendered almost useless, by being carried in the pocket or thrown about the work-bench, the sharp edges and corners being easily worn off. Another objection is that the sharp ends and corners are liable to wear and cut the pocket in which they are carried. My invention is designed to avoid these objections.

Referring to the drawings, the side 1 of the rule is provided with two sliding portions 2 and 3, one having a protecting head portion 4, the other a protecting head portion 4'. The corners 5 and edges of these protecting-heads should be rounded and smooth, so as not to injure the pocket in which the rule is carried. The sliding portions 2 and 3 are each provided with inclined sides, so as to fit in and slide along the longitudinal dovetail grooves adapted to receive them, substantially as

shown in the cross-section, Fig. 3, and are nicely fitted, so as to be moved with sufficient ease, but are held with the force necessary to hold them at any point to which they may be moved. On the side 1^a of this rule is a series of graduated lines 6, indicating inches and parts of inches. (See Fig. 2.) On one side of the outer face of the sliding piece 2 (see Fig. 1) are placed several series *a, b, c, d, e*, and *L* of index-lines, and on the opposite side of the same face are placed several series *f, g, h, i, j*, and *K* of index-lines. Those marked *a, b, c, d, e*, and *L*, being opposite the words "wire gage," are for indicating the size of wire, and those marked *f, g, h, i, j*, and *K*, being opposite the words "metal gage," are used for indicating the thickness of sheet metal.

On that portion of the rule marked "wire gage" is a series of index-lines *m n o p q*, and nearly opposite on the portion of the rule marked "metal gage" is another series of index-lines *r s t u v*, the object of which will be shown farther on. The movable portion 2 is also provided with a series of groups of figures *W, X, Y, Z, Z'*, and *Z''*. The operation of this portion of the device is as follows, (see Fig. 1:) When it is desired to gage the size of wire—No. 30, for instance—the first line "30" opposite the group *W* should be moved (by pulling out the portion 2) until the said line is exactly at the end of the rule, when the space between the head 4 and the end of the rule will be opened just far enough to admit a piece of No. 30 wire. If the size of No. 29 wire is wanted, then the head 4 and its portion 2 should be drawn out until the line 29 opposite the group *X* is exactly in a line with the line *m*, or if the size of No. 4 wire is wanted the line 4 opposite the group *Y* should be moved exactly opposite the line *n* on the wire-gage side, thereby opening the space between the head 4 and the end of the rule, so that a No. 4 wire will fit exactly therein. The operation of the metal-gage side is exactly the same, the several groups of figures *W, X, Y, Z, Z'*, and *Z''* being used, the only difference being that the lines *f, g, h, i, j*, and *K*, also the lines *r, s, t, u*, and *v* on the metal-gage side, are used instead of the similar lines on the opposite side or wire-gage side of the rule, and this is done because of a slight difference between the sizes of the two gages.

In the modified construction (see Figs. 4, 5, and 6) the rule is made a little thicker and the sliding portions 2 and 3 are made to slide within the rule or between the two sides 1 and 1^a. The sliding pieces 2 and 3 are also provided with protecting-heads 4 and 4^a, and the sides 1 and 1^a may be marked for inches or parts of inches or any graduated measurement or scale. On the portion 3 is a reduced portion 8, provided with a screw-thread and with a thumb-nut 9, which projects through the rule, so as to be easily turned by the fingers to move the jaw or protecting-head 4^a in or out. The opposite head and its portion 2 may be provided with a side movable piece 10, pivoted thereto by a pin 11 and having at or near its tapering end a small projecting piece 12, corresponding in shape with the portion 12 on the tapering end 13 of the portion 2, thereby adapting it to be used as an inside caliper, and the sharp-pointed ends 14 adapting it to be used as a pair of compasses. The pivoted movable portion 10 is shown open by the dotted lines 15 in Fig. 6.

On the movable portions 2 and 3 is a series of graduated index-lines 16 and 17, which may be made to any scale desired. The object of this construction is to provide the means for the usual outside gage or caliper.

The object of the two smooth rounded heads 4 and 4^a is to protect the ends of the rule, as hereinbefore mentioned, and also to protect the pocket in which the rule is carried. It will also be noticed that either protecting-head may be used as a caliper head or jaw for measuring the thickness of anything or for any purpose for which such a movable head or jaw is adapted.

I am aware that a caliper-rule has heretofore been constructed with a longitudinal slideway in the body and having a bar adapted to be movable in said slideway and provided with a caliper-head. I therefore do not claim such construction, broadly; but

What I do claim is—

1. A pocket-rule having on one side two longitudinal slideways and on the opposite side indicating lines and figures for indicating measurements, in combination with a sliding bar adapted to move in one slideway and carrying indicating lines and figures for

indicating thickness and having a caliper-head adapted to cover one end of the opposite slideway, so as to move to or from one end of the rule, and a sliding bar carrying indicating-lines for measurement, adapted to slide in the other slideway and provided with a caliper-head extending in an opposite direction, so as to overlap the opposite end of its opposite slideway, substantially as and for the purposes described.

2. A pocket-rule having on one side of the body or main portion lines indicating ordinary measurements and on the opposite side a longitudinal slideway, in combination with a sliding bar provided with a caliper-head and having a double series of transverse indicating-lines and between the indicating-lines a series of figures indicating thickness, in connection with transverse indicating-lines on the body of the rule at each side of the sliding bar for gaging the size of wire or the thickness of metal, substantially as described.

3. A pocket-rule having on one side lines and figures indicating ordinary measurement and on the opposite side two longitudinal slideways, one of the slideways having a series of transverse indicating-lines on each side of the slideway, a sliding bar having a caliper-head and carrying a double series of transverse indicating-lines and between said series of lines a series of figures indicating thickness, whereby it may be used both as a wire and sheet-metal gage, in combination with a bar having a caliper-head and adapted to slide in the other slideway and carrying a series of transverse lines for indicating the usual measurement, to be used as an ordinary caliper, substantially as described.

4. A pocket-rule having two longitudinal slideways and two bars, each having a protecting caliper-head and adapted to slide in opposite directions in the slideways and each having measuring-marks, one of the sliding bars having a screw-shank and a thumb-nut for moving it in or out and the other a combined compass and inside caliper, substantially as described.

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