

(No Model.)

B. IBELLI.
COMBINATION TOOL.

No. 586,849.

Patented July 20, 1897.

Fig 1.

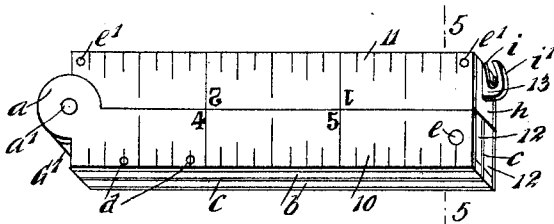


Fig 2.

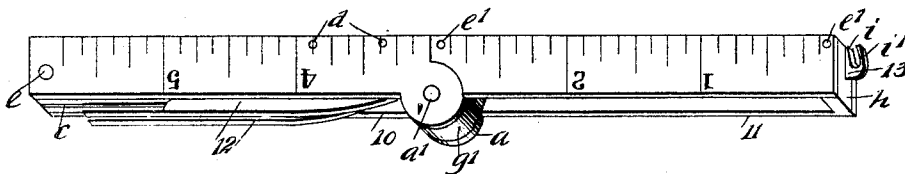


Fig 3.



Fig 4.

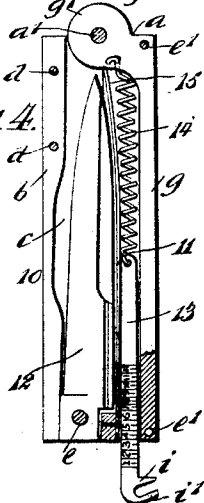
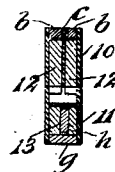


Fig 5.



WITNESSES:
Paul J. Baker
W. L. Patton

INVENTOR
B. Ibelli
BY *Mum*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

BENIAMINO IBELLI, OF NEW YORK, N. Y.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 586,849, dated July 20, 1897.

Application filed September 19, 1896. Serial No. 606,371. (No model.)

To all whom it may concern:

Be it known that I, BENIAMINO IBELLI, of New York city, in the county and State of New York, have invented a new and Improved Combination-Tool, of which the following is a full, clear, and exact description.

The invention relates to a novel combination-tool, and has for its object to provide a foldable measuring-rule with knife-blades and also with a spring-balance scale, so that a tool having triple functions is produced, which is of very compact form and may be carried in a vest-pocket of the user.

The invention essentially consists in the peculiar construction and novel combination of parts, as is hereinafter described, and pointed out in the claims.

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

Figure 1 is a perspective view of a folding measuring-rule having the improvements. Fig. 2 is a perspective view of the rule unfolded and exposing some of the features of improvement thereon. Fig. 3 is a side view of the extended rule, having one side wall removed and showing more plainly the novel details of construction. Fig. 4 is a side view of parts shown in Fig. 3, but in folded adjustment; and Fig. 5 is a transverse sectional view essentially on the line 5 5 in Fig. 1.

In carrying into effect the features of improvement, as shown in the drawings, a graduated rule is represented, which is of a style known as "six-inch" rules, the total length being adapted to measure one-half of a foot, United States standard, and is marked on the sides in inches and correct fractions of the same.

The rule is in two equal parts or limbs 10 11, which are jointed together at one end of each limb, as at *a*, the said joint being adapted to limit the flexure of the limbs beyond a straight line when the rule is opened for measuring more than three inches.

Ordinary graduated rules have solid limbs, which are usually composed of hard wood, bone, or ivory. In the present construction, however, to adapt the rule to contain other parts each limb 10 11 is rendered hollow, as will now be described.

The limb 10 consists in part of two flat thin sides that are of equal dimensions, having parallel edges which extend throughout the length of the said sides, except that at the same end of each side plate a circular-edged leaf is produced, which leaves form outer members of the rule-joint *a* when all parts of the rule are assembled.

The sides of the limb 10 are held spaced apart in parallel planes by one or two resilient strips *b*, and if two of said strips are provided an intermediate plate *c* of equal dimensions to that of the outer side plates is introduced between the pair of strips, and all the parts of the composite limb 10 are secured together by the transversely-disposed rivets *d*, that are inserted through aligned perforations in the outer side plates, strips *b*, and intermediate plate *c* and riveted at their ends.

It will be seen that two open recesses are produced in the limb 10 by the described construction of parts, and these are adapted for the reception of knife-blades 12, which are of the usual form, as indicated in Figs. 2, 3, and 4, and are pivoted, as at *e*, between the outer sides of the limb 10 and the back strips *b*, that have a sufficient portion of each one left free to vibrate, and thus become springs for holding the blades, or either of them, open or closed.

Should it be preferred, but one blade 12 may be provided for the limb 10, or more than two blades may be held therein, it being understood that a spring-strip *b* is provided for each blade and suitably secured in place as a back wall for the rule-limb, of which it is a portion.

The limb 11 for the foldable rule is also provided with two side plates that equal in dimensions the sides of the limb 10, and the side plates of the limb 11 are spaced apart an equal distance with those of the limb 10 by a back bar *g*, secured between them by the rivets *e* near the ends of the said bar and having an integral leaf *g'* laterally formed thereon, which leaf is of such proportionate thickness as will adapt it to loosely fit between the leaves on the side plates of the limb 10, and when these three leaves are jointed together by a central pintle *a'* they complete the flexing-joint for the foldable rule.

In the recess produced by the back bar *g*,

when secured between the side plates of the limb 11, a guide-block *h* is located, which block affords an end of the limb 11 opposite the end closed by the leaf *g'*, and said guide-block may
5 be formed integral with the back bar, if preferred.

In a suitable aperture formed in the guide-block *h* a scale-bar 13 is loosely inserted and is connected at its inner end with one extremity of the contractile spring 14, secured
10 at its opposite end to the leaf *g'*, and the scale-bar is completely incased within the recess it occupies by securing a partition-wall 15 over said bar and in the recess of the limb 11. The
15 scale-bar 13 is suitably graduated on its sides to adapt it for weighing small articles, and, as plainly shown, said graduations increase in numerical value from the end of the bar which is farthest from the spring 14.

An offset is formed at *i* on the outer end of the scale-bar 13 to prevent the bar from being completely drawn into the chamber it occupies, and on said projecting end of the bar a hook *i'* is provided, whereon articles to be
20 weighed may be hung.

As the knife-blades 12, if of dimensions that adapt them for general use, may project at their backs out of the hollow limb 10, within which they are foldable, the space afforded
25 within the limb 11 exterior of the partition 15 becomes available as a receptacle for the projecting back portions of the knife-blades when the members 10 and 11 of the rule are folded, as clearly shown in Figs. 4 and 5, the
30 rule then appearing as represented in Fig. 1.

As the plates that form the sides of the sections or limbs 10 11 of the foldable rule are graduated on their outer faces, as clearly shown in Figs. 1 and 2, it will be evident that
35 the composite tool is well adapted to serve as a measuring-rule, a knife, and weighing-scale, and when folded occupies but little room in the pocket of the person carrying the same.

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

1. A rule formed of two sections hinged together to be in alinement when opened, each

section having a recess in one side, the recesses being in the sides of the sections that
50 about when the rule is folded, the rear wall of the recess of one section being of resilient material and free at its outer end, and a knife-blade hinged to the free end of the section
55 having a resilient rear wall in the recess thereof and with its pivot parallel with the pivot of the rule-sections, whereby when the blade is folded in the recess and the rule folded, the back of the blade will enter the recess of the other section of the rule, substantially as
60 described.

2. A combination-tool, comprising a rule formed of two sections, hinged together to be in alinement when opened, one section being
65 formed with a recess and the other with a recess and a chamber in rear of the recess, knife-blades hinged to the free end of one section with their pivots parallel with the pivot of the sections, said blade being adapted to fold
70 into the recess of its section and its back to enter the recess of the other section when the rule is folded, a scale-bar in the chamber of the other section, and a spring secured to the inner end of the bar and to the said section, substantially as described.

3. A combination-tool, comprising a rule formed of two sections hinged together, one
75 section consisting of side plates having ears, and a resilient back bar free at its outer end, and the other section formed of side plates, a rigid back bar having an ear at its inner end and forming with the ears of the side plates
80 of the other section the members of the rule-joint, a guide-block, and a transverse partition forming a rear chamber, knife-blades pivoted to the free end of one section, a scale-bar sliding in the chamber of the other section, and a spring secured to the inner end
85 of the scale-bar and to the ear of the back bar of said section, substantially as herein shown and described.

BENIAMINO IBELLI.

Witnesses:

FELICÉ SANITÁF,
EMILIO CRISTIANI.