(No Model.)

R. P. JENSEN.

COMBINED BEVEL, GAGE, AND TRAMMEL.

No. 421,500. Patented Feb. 18, 1890.

Fig. 1.

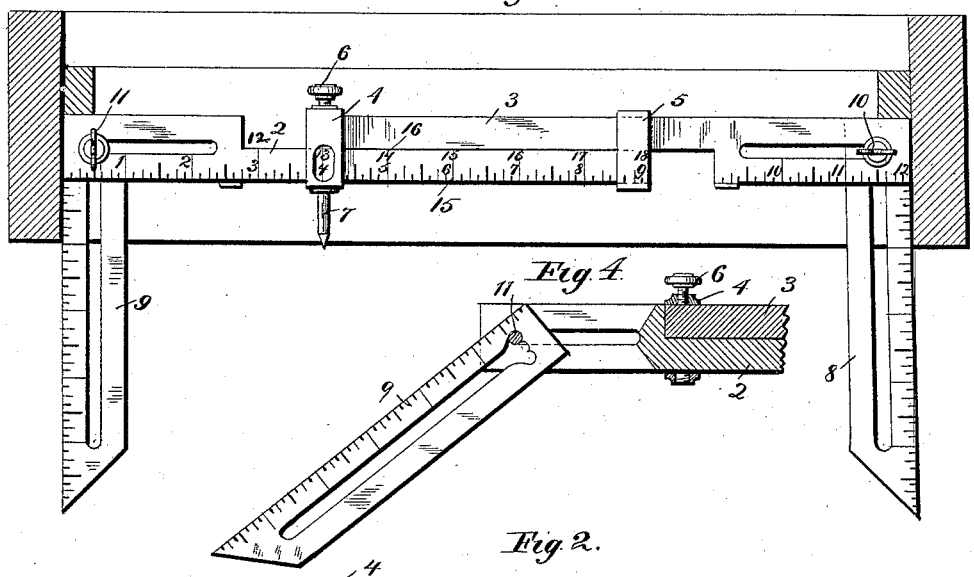


Fig. 4.

Fig. 2.

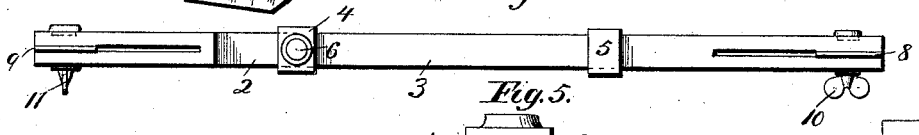


Fig. 5.

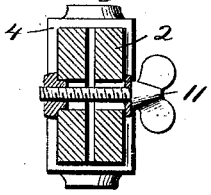


Fig. 3.

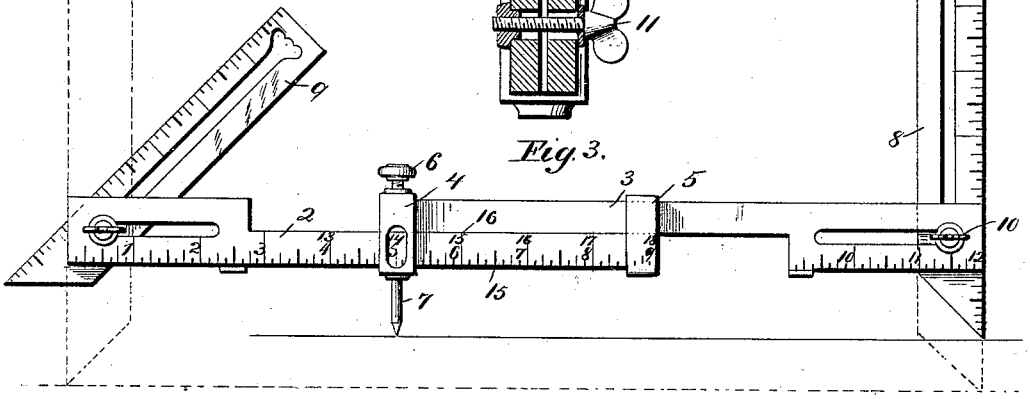


Fig. 6

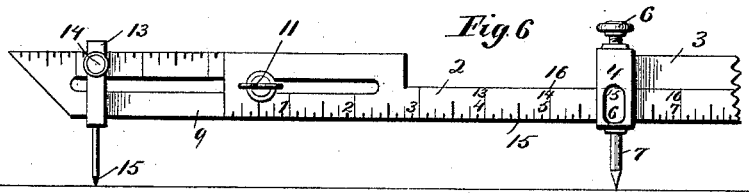
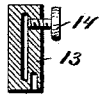


Fig. 7.



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RASMUS P. JENSEN, OF KASSON, MINNESOTA.

COMBINED BEVEL, GAGE, AND TRAMMEL.

SPECIFICATION forming part of Letters Patent No. 421,500, dated February 18, 1890.

Application filed May 25, 1889. Serial No. 312,137. (No model.)

To all whom it may concern:

Be it known that I, RASMUS P. JENSEN, of Kasson, county of Dodge, and State of Minnesota, have invented certain new and useful Improvements in Combination Extension Rules and Bevels, of which the following is a specification.

The object of my invention is to provide a tool for the use of carpenters and other artisans, which combines in simple form and convenient compass the features of several independent tools; and it consists, generally, in the construction and combination hereinafter described, and particularly pointed out in the claims.

The main features of my combination-tool are an extensible and adjustable rule, by means of which the distance between two points or between the jambs of a door or window may be measured and the rule set for that length; also, slotted bevels adjustably arranged in each end of said rule, by means of which bevels and shoulders on casings may also be measured and the tool set to show the measurement; also, trammel and pencil points adjustably secured to the tool for describing circles and curves. One end of each of the bevels being pointed, they are available for describing circles and other lines, and the tool being of adjustable length circles may be described of any desired radius, limited only by the minimum and maximum dimensions of the tool.

In the drawings forming part of this specification, Figure 1 is a side elevation of my improved combination-tool, showing it adjusted for taking a measurement between two objects. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation showing it in position for describing a circle with one of the bevels with the trammel-point as a center, and also in dotted lines with the point of one of the bevels as a center. Fig. 4 is a detail of one of the bevels, showing its adjustment in the tool. Fig. 5 is a cross-section of the tool, showing set-screw. Fig. 6 is a partial side elevation showing the tool adjusted for describing a circle with a pencil-point around the trammel-point as a center, and Fig. 7 is a detail of the pencil-point holder.

In the drawings, 2 and 3 represent the reciprocating adjustable members of the tool, which are preferably marked with scales of inches and fractions of inches. These members are preferably made rectangular, about one inch square at one end, and for the greater part of the length having one-half cut away to a square shoulder near this end, so that the two members when fitted together form a square body of any desired length, the halved end of one fitting against the shoulder of the other. The members are adjustably secured together in this position by means of the bands 4 and 5, secured, respectively, to the halved end of each member and embracing the other member, thus forming sleeves, through which the members can be reciprocated upon each other, the band 5 being preferably rigidly secured to its member, while the band 4 is removably secured to its member by means of the set-screw 6, so that it can readily be detached and the rule taken apart. The sides or edges of the members are marked with a regular primary scale 15 from one end to the other of the tool. A secondary scale 16 is marked parallel with this scale, beginning with the shoulder of one member and running to its halved end. The sleeve 4, through which this member slides, has an opening in the side next these scales, through which the markings can be read. The numbering of the secondary scale is a continuation of the primary scale, so that when the tool is closed or its members fit shoulder to shoulder its length corresponds with the numbering of the primary scale, but when extended the numbering of the secondary scale read through the opening in the sleeve 4 indicates the extended length of the tool. As shown in Fig. 1, the length of the tool when closed would be twelve inches, but is represented as extended to thirteen inches, as shown by the reading through the sleeve 4.

By means of the set-screw 6 the members or sections of the rule may be adjusted in any desired relative longitudinal position, and the sleeve 4 is also preferably provided with a trammel-point 7 for use in describing circles. The square ends or heads of the members 2 and 3 are preferably centrally and longitudinally slotted parallel with the scale side to receive the slotted bevels 8 and 9, and are also slotted perpendicularly with the other slots and longitudinally of the tool to receive

the set-screws 10 and 11, which extend through the slots of the bevels and serve to secure them in the tool at any desired point and at any desired angle with it. These bevels are made preferably of flat steel of the same width as the tool, with one end square and the other beveled at an angle, preferably of forty-five degrees. The slot at the square end is preferably fan-shaped or dovetailed to allow the set-screw to be secured to one side of the center line in taking a bevel, so as to prevent the projection of the corner of the bevel. (See Fig. 4.)

13 is a sleeve arranged to be placed on one of the bevels and adjusted at any desired position by means of the set-screw 14, and to be fitted with a pencil-point 15 for use in describing circles, as shown in Fig. 6.

The mode of operation is as follows: To take a measurement less than the length of the tool when closed it is used as an ordinary rule, reading from the primary scale 15. To take a longer measurement the set-screw 6 is loosened and the member 3 is slipped through the sleeve 4 till the right-hand end of the tool reaches the point the distance to which it is to be measured. The reading of the secondary scale 16 through the opening in the sleeve 4 gives the measurement. In fitting a sill in a doorway or in similar work the measurement is taken between the two jambs or fixed points, the set-screw 6 securing the members together and fixing the tool so that the measurement may be laid off from it onto the work. The bevels may then be set to show the thickness and bevels of the stops, if any, on the jambs. The tool then being placed on the piece to be fitted the measurements can be accurately marked and the piece cut exactly as desired. To describe a circle the radius of which is less than the length of the tool, the trammel-point 7 is set by means of its set-screw at a distance equal to the required radius from either end, the bevel at that end then being set, preferably vertically with the tool, as shown in Fig. 3, when a circle may be described with its point as a center. Circles of still larger radius may be described by using one bevel-point for the center and the other to describe the circle, as shown by dotted lines in Fig. 3. The pencil-point may be used to describe a circle, as shown in Fig. 6, by securing a bevel parallel with the tool and securing the point upon it, and adjusting the tool for the required radius between the pencil-point and trammel-point or opposite bevel-point.

I claim as my invention—

1. In an extension-rule, the combination, with the parallel members thereof adjustably secured and adapted to slide each through a sleeve fixed upon the other, of a primary scale arranged thereon indicating the length of the rule when closed, a secondary or supplementary scale arranged upon one of said members indicating the length of the rule when extended, and bevels adjustably secured in the outer longitudinally and vertically slotted ends of said members, substantially as and for the purposes set forth.

2. In an extension-rule, the combination, with members longitudinally adjustable upon each other, of a primary scale marking the closed length of the rule, a secondary scale marking its extended length, a sleeve secured upon each member, a peep-hole in the sleeve covering the secondary scale, a trammel-point arranged upon said sleeve, and bevels adjustably secured to the outer ends of said members, substantially as described.

3. In an extension-rule, the combination of the longitudinally-slidable members 2 and 3, having the primary and secondary scales 15 and 16 arranged thereon, the bevels 8 and 9, provided with the longitudinal slots therein terminating at one end in a fan-shaped opening, substantially as described, and said members having longitudinal and vertical adjusting slots in their outer ends, said vertical slots being arranged to receive said bevels, the screw-clamps 10 and 11, adapted to pass through the horizontal slot in the member and the slot in the bevel and to clamp and hold the bevel in any position desired, and the intermediately-located trammel-point, all substantially as described, and for the purpose set forth.

4. In an extension-rule, the combination of the longitudinally-slidable members 2 and 3, the primary and secondary scales 15 and 16 arranged thereon, the bevels 8 and 9, adjustably secured in the longitudinal and vertical slots at the out ends of said members, sleeves 4 and 5 joining said members together, the trammel-point 7 and the pencil-point 15, and means for adjusting the distance between said points, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 10th day of May, 1889.

RASMUS P. JENSEN.

In presence of—

HORACE ANTHONY,

C. A. FAIRCHILD.