Sept. 14, 1926. 1,599,479

C. E. LOWRY

MITER AND FRAMING INSTRUMENT

Filed June 23, 1924 2 Sheets-Sheet 1

Fig. 1.

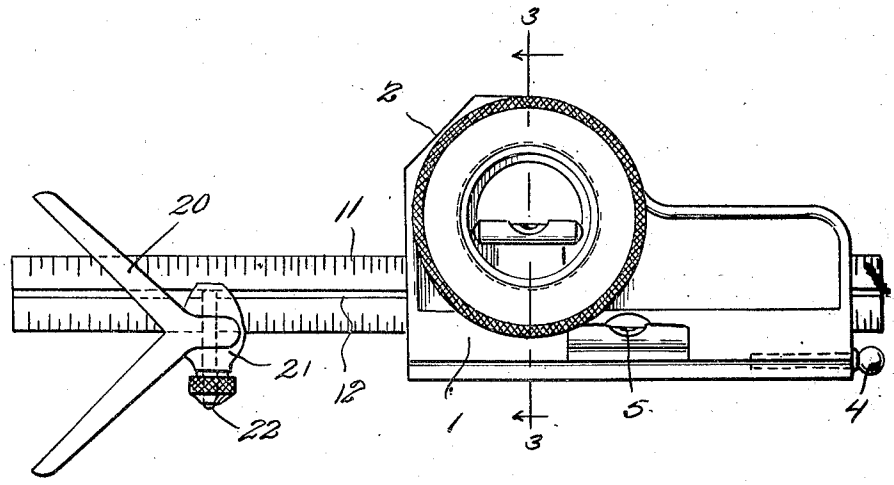


Fig. 3.

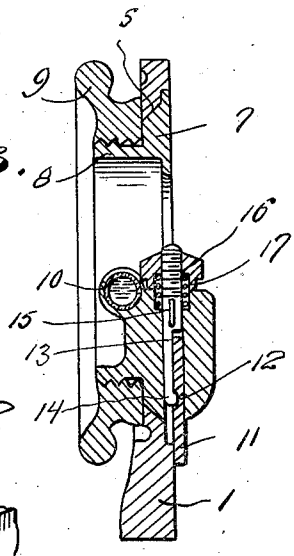


Fig. 7.

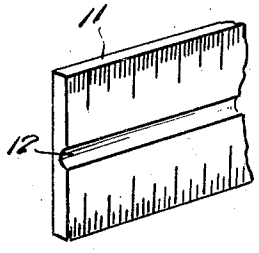
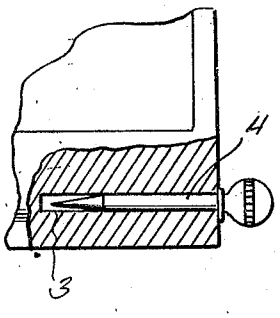


Fig. 6.



C. E. Lowry.

Inventor

By Clarence A. O'Brien

Attorney

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C. E. LOWRY

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Fig. 2.

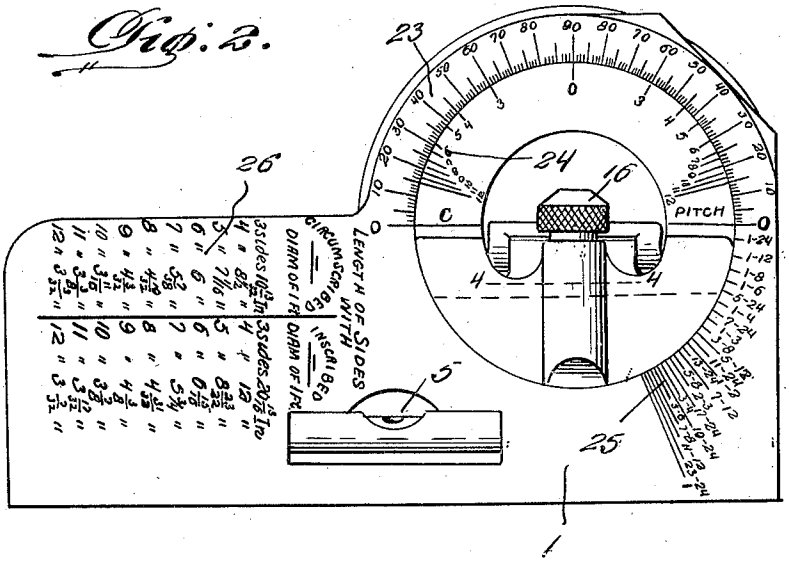
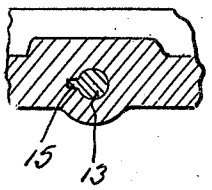


Fig. 4.



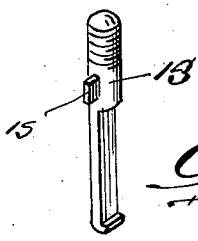


Fig. 5.

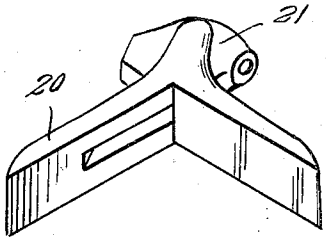


Fig. 8.

C. E. Lowry
Inventor

By Clarence A. O'Brien
Attorney

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UNITED STATES PATENT OFFICE.

CECIL E. LOWRY, OF CRAIG, COLORADO.

MITER AND FRAMING INSTRUMENT.

Application filed June 23, 1924. Serial No. 721,804.

This invention relates to mitering and framing instruments, and it consists in the novel features hereinafter described and claimed.

An object of the invention is to provide in a unitary assemblage of parts, elements and features, an instrument which may be conveniently and accurately used as a rule, square, level, bevel, height gauge and depth gauge.

With the above objects in view, the instrument includes a stock having a turret turnably mounted therein, and means for clamping the turret at an adjusted position with relation to the stock. The turret and the stock are each provided with a level. A blade is carried by the turret and means are provided for securing the blade at a fixed position with relation to the turret. The stock is provided with a bore, which may receive and retain a scriber and a shaft centering head is carried by the blade.

In the accompanying drawings:

Figure 1 is a side elevation of the mitering and framing instrument.

Figure 2 is an enlarged side elevation of the stock of the instrument illustrating the opposite side thereof, from that side shown in Figure 1.

Figure 3 is a transverse sectional view of the instrument, cut on the line 3—3 of Figure 1.

Figure 4 is a fragmentary sectional view through the turret of the instrument on the line 4—4 of Figure 2.

Figure 5 is a perspective view of a securing bolt 13 used in the instrument.

Figure 6 is a fragmentary side elevational view of the stock of the instrument, with parts shown in section, and illustrating the scriber held in the stock.

Figure 7 is a perspective view of an end portion of a blade used in the instrument.

Figure 8 is a perspective view of a shaft centering head used upon the instrument.

As illustrated in the accompanying drawings, the framing and mitering instrument comprises the stock 1 having an upper corner portion 2 bevelled off at an angle of forty-five degrees to the base line of the stock. The stock is provided at one end with a bore 3, which may receive and retain the scriber 4. The stock is further provided with a spirit level 5. The stock 1 is provided with a circular opening 6. A turret 7 fits in the opening 6 and is provided with an annular flange 8 which is externally threaded. A nut 9 is screwed upon the flange 8 and engages the threads thereof, and is adapted to bear against the side of the stock 1, whereby the turret 7 is held at an adjusted position in the opening 6 of the stock. A spirit level 10 is carried within the flange 8 of the turret. A blade 11 passes through the edge portion of the turret 7 and is provided at its side with a longitudinally disposed groove 12. A bolt 13 passes through the intermediate portion of the turret 7 and is provided at its ends with a lug 14 which engages the end of the groove 12 of the blade. The bolt 13 is provided at its side with a flange 15, which is adapted to fit in a recess provided in the turret 7, whereby the said bolt is restrained against turning movement with relation to the turret and the blade. A nut 16 is screwed upon the outer end of the bolt 13, and a spring 17 is interposed between the body of the turret and the nut and serves to hold the nut against turning movement with relation to the bolt. A shaft centering head 20 is provided with a shank 21, which receives the edge portion of the blade 11, and which carries a bolt 22 similar to the bolt 13 hereinbefore described, and which engages in the groove of the blade and holds the shaft centering bit at an adjusted position along the blade.

The stock is provided with a series of graduations 23, the turret with a series of graduations 24. The stock is also provided with a series of graduations 25 and suitable calculating tables 26.

It is apparent that the parts of the instrument may be adjusted with relation to each other and temporarily secured whereby the instrument may be used as a rule, square, bevel, level, height gauge and depth gauge. The miter cut for all polygons up to twelve sides may be obtained accurately and quickly.

The tables which give the length of the sides of all polygons up to twelve sides, with an inscribed and a circumscribed diameter of one foot, will prove to be of great assistance to the mechanic as a time saver.

The blade 11 is graduated on both sides so that it may be used as a rule, independently of the stock 1. When the instrument is used as a square, the blade 11 is inserted through the edge portion of the turret 7 so that the lug 14 on the end of bolt 13 en-

gages the groove 12 of the blade. The stock may then be slid along the blade so that said blade may be shortened or lengthened as desired. The blade is then secured by tightening the nuts 16. By loosening the nut 9, the turret 7 may be moved until the line marked "Pitch" will coincide with the 90° graduation; the turret 7 is secured by tightening the nut 9. When used as a bevel, the nuts 9 and 16 are loosened thus allowing both turret 7 and blade 11 to be adjusted to the angle desired, after setting is made both nuts 9 and 16 are tightened.

The instrument may be used as a level without the blade, while with a blade of any desired length, a level of corresponding length is obtained by inserting the blade and moving turret 7 until the line marked "Pitch" coincides with the 90° graduation, the level 10 on turret 7 works in conjunction with the blade.

When the instrument is used as a height gage, the turret 7 is moved until the line marked "Pitch" will coincide with the 90° graduation, and then clamped by tightening nut 9, blade 11 is then inserted and moved until its end is flush with the base line of the stock 1, and then clamped by tightening nuts 16.

When used as a depth gauge, the turret 7 is moved until the line marked *c* will coincide with the 90° graduation, and then clamped by tightening nut 9, blade 11 is then inserted and clamped at any desired place by tightening nut 16. The graduations 24 are used to find the miter cuts, both right and left for all polygons from the triangle to the dodecagon, inclusive; thus if it is desired to obtain the miter cut for a hexagon, move the turret 7 until the graduation 6 of the group of graduation 24 will coincide with the 90° graduation. After clamping turret 7, place the base line of the stock 1 against the work and draw or scribe a line against the blade. This line will be the miter for the hexagon. The miter cuts for other polygons are found in like manner.

The graduations 25 are used to find the miter cuts of rafters for roofs of different pitch from one-twenty-fourth pitch to pitch 1 or unity; thus if it is desired to cut rafters for a roof of ⅓ pitch, move the turret until the marked line of "Pitch" on the turret will coincide with one-third graduation 25 on stock 1; after clamping the turret place the base line of the stock 1 against the work and draw a line against the blade. This line will be the bottom or sill cut. Now by placing the end of the instrument against the work and drawing a line against the blade, the top or plumb cut is obtained.

The miter cuts of other rafters for roofs of different pitch are found in the same manner.

Having described the invention, what is claimed is:

An instrument of the class described including a stock having indicia formed thereon and provided with a beveled opening having an annular shoulder formed on its larger end, said indicia being arranged about said opening, a turret having an arcuately arranged series of indicia for cooperating with the indicia on the stock, said turret being rotatable in the opening and provided with a beveled end to be receivable in the opening of the stock and having a shoulder formed thereon for engaging the shoulder of the stock, said turret being provided with an opening concentric within the beveled edge, said turret having a projection in its opening, said projection having a structure adapted to permit a spirit level to be carried thereby, an annular externally threaded flange projecting from the face of the turret adjacent the smaller end of the beveled edge thereof, a nut threadedly engaged on said flange for abutting the turret and the stock to hold them assembled, a blade having indicia and extending from the stock, and means for attaching the blade to the turret.

In testimony whereof I affix my signature.

CECIL E. LOWRY.