Dec. 12, 1939. J. U. DAVIS 2,183,446

SQUARING AND BEVELING TOOL

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Fig. 1.

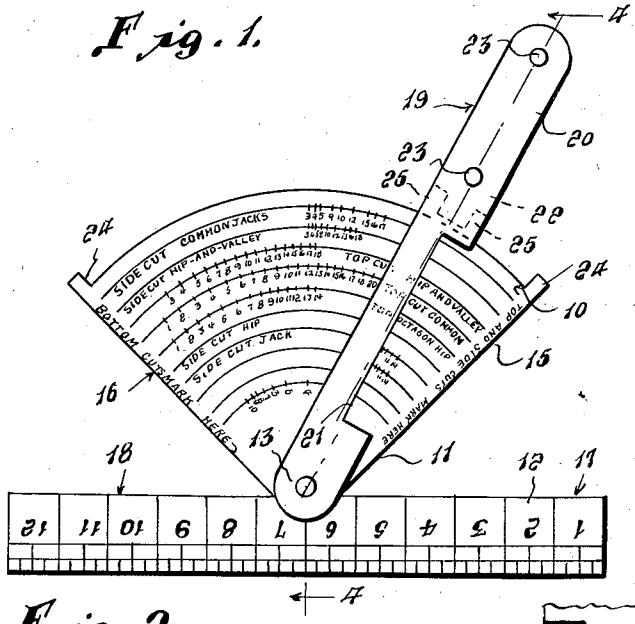


Fig. 2.

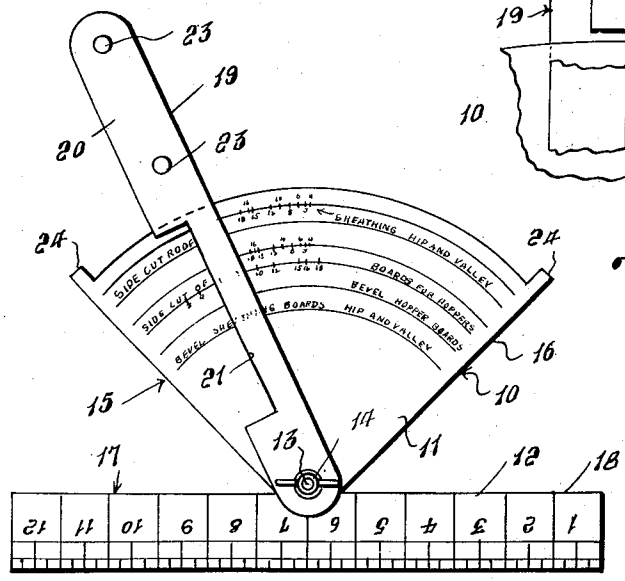


Fig. 3.

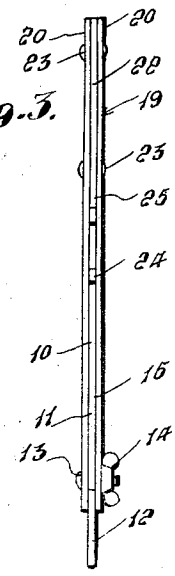


Fig. 4.

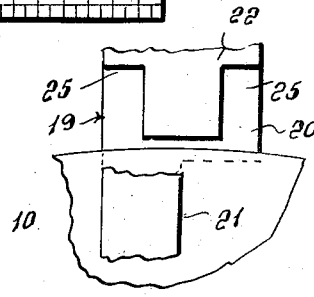
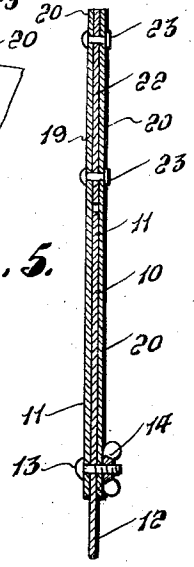


Fig. 5.



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Fig. 6.

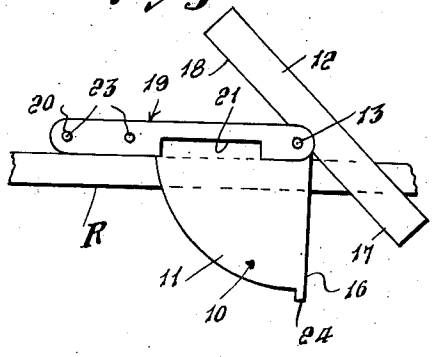


Fig. 7.

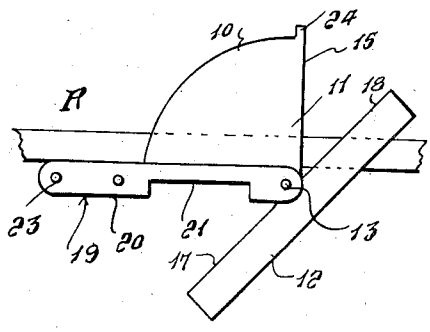


Fig. 8.

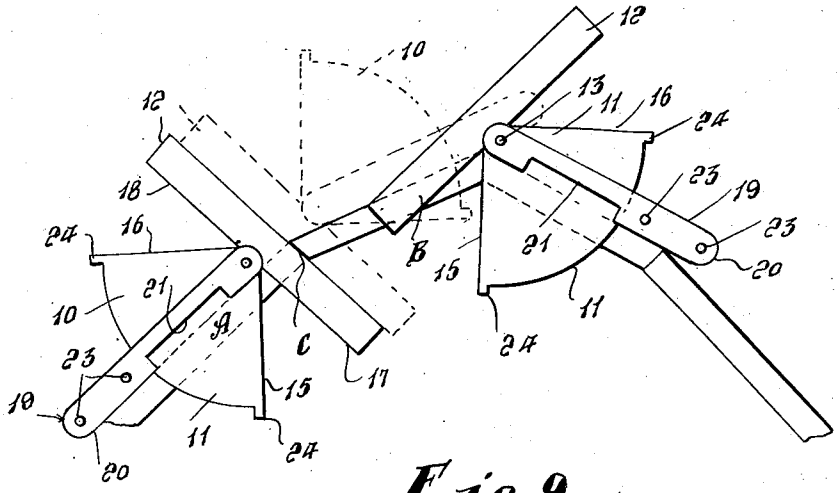
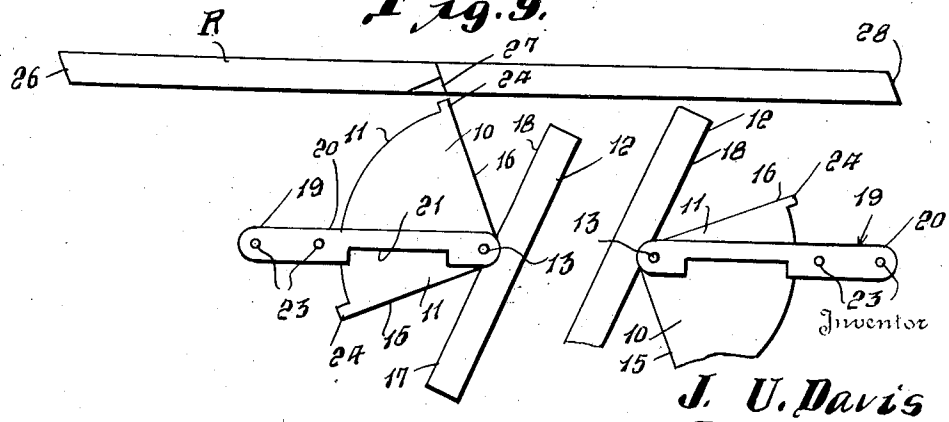


Fig. 9.



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UNITED STATES PATENT OFFICE

2,183,446

SQUARING AND BEVELING TOOL

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Application March 16, 1939, Serial No. 262,249

4 Claims. (Cl. 33—75)

This invention relates to a tool primarily adapted for carpenters' use in squaring and beveling or plotting in connection with building members such as rafters, grain bins, elevator bin chutes and the like.

It is particularly aimed to provide a tool or protractor of the character mentioned which will define cuts at different angles with respect to each other, for instance at forty-five degrees and ninety degrees.

A particular object is to provide such a gage, tool or protractor especially useful where rafters of different pitches join, as in forming a self-supporting roof, in order to expeditiously give or define the intersecting miter. Such feature I also find advantageous in the construction of grain bins, elevator bin chutes as well as in many other fields.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawings illustrating an operative embodiment.

In said drawings:

Figure 1 is a view in elevation showing the tool;

Figure 2 is a view of the tool in elevation taken from the reverse face to Figure 1;

Figure 3 is an edge view of the tool;

Figure 4 is a sectional view taken on the line 4—4 of Figure 1;

Figure 5 is a detail sectional view, partly broken away, to disclose the interior construction of the gage arm;

Figure 6 is a view in elevation illustrating the use of the invention in connection with a rafter or other stock;

Figure 7 is a view in elevation showing the use of the tool in connection with the same rafter but in a different position;

Figure 8 is a view showing the tool used in connection with rafters of a self-supporting roof, and

Figure 9 is a view in elevation showing the use of the tool in connection with the cutting and notching of rafters.

Referring specifically to the drawings wherein like reference characters designate like or similar parts, a body is provided at 10 which may be made of any suitable material, for instance flat sheet metal. Said body preferably consists of a segmental portion 11 and a blade or bar 12 integral therewith, the latter containing linear delineations thereon like a rule or scale, as shown, if preferred. The segment 11 on both sides thereof, as in Figures 1 and 2, has delineations for polygon miters, as shown, the same being on concentric lines with respect to a bolt 13 equipped with a wing nut 14. Such delineations as shown in Figure 1, relate to the side cuts for common jack rafters, side cuts for hip and valley rafters, top cuts for the hip and valley rafters, top cuts for common rafters, top cuts for octagonal hip rafters, side cuts for hip rafters and side cuts for jack rafters. This is by way of example only. The same is true of the representations on the other side, as shown in Figure 2, that deal with a side cut roof, sheathing hips and valleys, boards for hoppers, bevels for hopper boards and bevels for sheathing boards, hip and valley.

It will be realized that the segment 11 provides straight edges at 15 and 16 in cooperative relation with straight edges at 17 and 18, respectively on the bar 12. It will be noted that the edges 15 and 17 are forty-five degrees apart and that the same is true of the edges 16 and 18.

A gage arm is provided at 19 which is pivotally mounted by the bolt 13 and adapted to be fastened in rigid relation with respect to the segment 11 through tightening of the nut 14. This gage arm comprises similar strips of metal or other suitable material at 20, engaging opposite faces of the segment 11 and each provided with cut-out portions affording a straight edge at 21, radial with respect to the axis of bolt 13. Such straight edges 21 co-act with the delineations on the respective faces of the segment 11.

A filler strip 22 is disposed between the strips 20 outwardly of the segment and are held in place by rivets, bolts or other fastenings as at 23. The parts are constructed and arranged so that there is sufficient clearance for movement of the gage arm 19 over the segment.

Stops are provided at 24 on the segment to limit the movement of the gage arm and the filler has notches as at 25 receiving the stops 24 when the outer edges of the gage arm are in registry with the edges 15 and 16.

Since the delineations on the segment 11 form a polygon miter for four sides equal to forty-five degrees, by setting the adjacent edge 21 in registry with the numeral twelve of the indications for top cut common rafters, a forty-five degree cut from either edge of the body, along the edges 15 and 16 will be given as well as a ninety degree cut along either straight edge 17 or 18. With the tool set in this manner, the blade 12 may be used to advantage in laying out openings, spacing studding, squaring and beveling lumber, etc.

As shown in Figures 6 and 7, the tool may be

used from either side of a rafter or other stock R.

In Figure 8, the tool is shown as used in connection with rafters A and B of different pitch, such as are used in forming a self-supporting roof. The tool is used quite advantageously in giving the correct miter at the intersection or joint of such rafters as at C.

The tool is also used advantageously in cutting rafters as in Figure 9, where a number of them, for instance four, are usually piled on each other. These rafters R through the use of the tool have the correct bevel for the peak of the roof marked off at 26 as well as notches 27 marked off where the rafter is to set on a wall and the correct angle for the tail of the rafter marked off as at 28. It will be realized from Figure 9, that the different angles or lines necessary at 26, 27 and 28 may be obtained from the use of the tool in either reverse position from right to left or vice versa, as suggested in Figure 9.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:

1. A tool of the class described having a bar provided with parallel inner and outer straight edges, a segment extending from the bar, said segment having straight edges angularly disposed and both spaced from adjacent portions of the said inner straight edge of the bar, and a gage arm movable over the segment from an axis adjacent the junction of the bar and segment.

2. A tool of the class described having a bar provided with parallel inner and outer straight edges, a segment extending from the bar, said segment having straight edges angularly disposed and both spaced from adjacent portions of the said inner straight edge of the bar, a gage arm movable over the segment from an axis adjacent the junction of the bar and segment, said edges of the segment being at forty-five degrees with respect to the said portions of the inner straight edge of the bar.

3. A tool of the class described having a bar provided with parallel inner and outer straight edges, a segment extending from the bar, said segment having straight edges angularly disposed and both spaced from adjacent portions of the said inner straight edge of the bar, a gage arm movable over the segment, said edges of the segment being at forty-five degrees with respect to the inner straight edge of the bar, said gage arm comprising strips disposed on opposite sides of the segment, a pivot member for the strips disposed adjacent the junction of the bar and segment, filler means for the strips, and stop means on the segment engageable by the filler means.

4. A tool of the class described having a bar provided with parallel inner and outer straight edges, a segment extending from the bar, said segment having straight edges angularly disposed and both spaced from adjacent portions of the said inner straight edge of the bar, a gage arm movable over the segment, said edges of the segment being at forty-five degrees with respect to the inner straight edge of the bar, said gage arm comprising strips disposed on opposite sides of the segment, a pivot member for the strips disposed adjacent the junction of the bar and segment, filler means for the strips, stop means on the segment engageable by the filler means, said filler means having notches to receive the respective stop means when the opposite side edges of the strips register with the edges of the segment, and said strips having radial straight edges, and delineations on the segment co-acting with the radial straight edges.

JAY ULYSSES DAVIS.