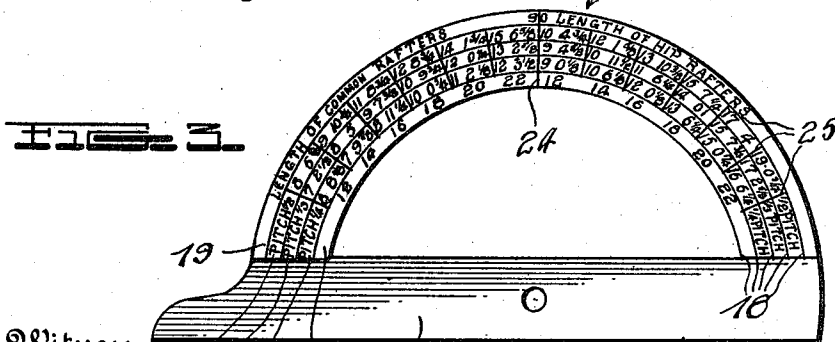
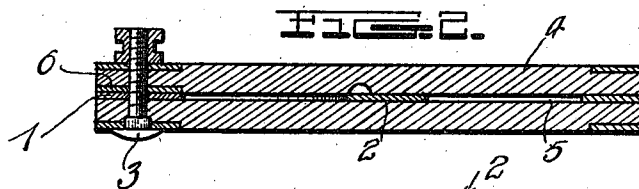
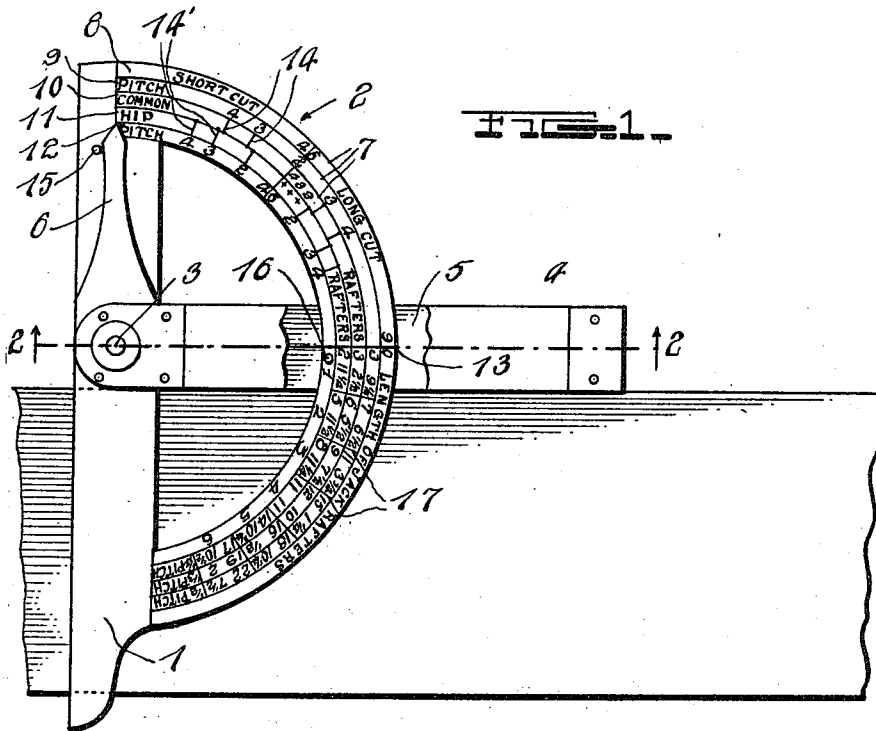


1,237,721.

H. M. STANLEY.
 RAFTER CUT INDICATOR.
 APPLICATION FILED JUNE 15, 1916.

Patented Aug. 21, 1917.
 2 SHEETS—SHEET 1.



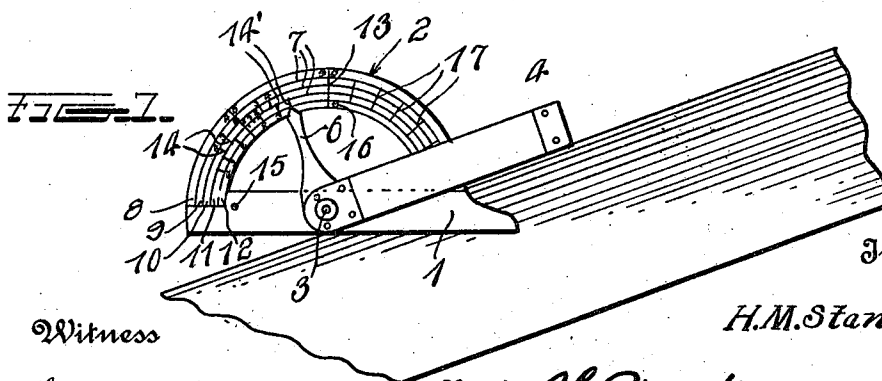
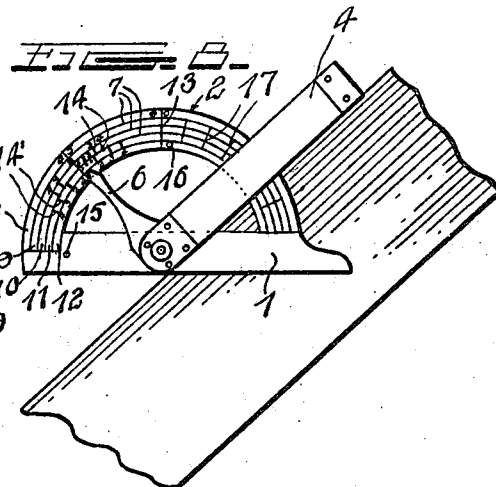
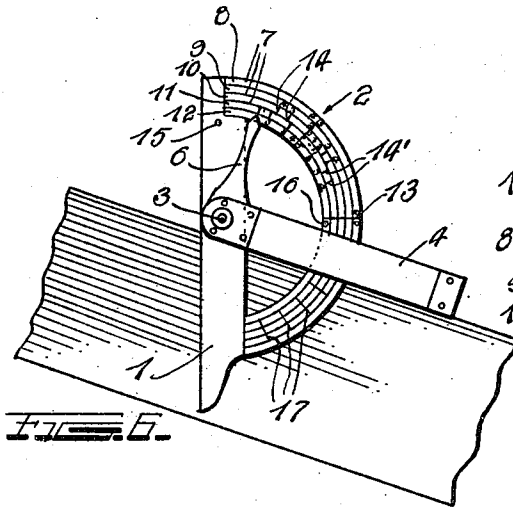
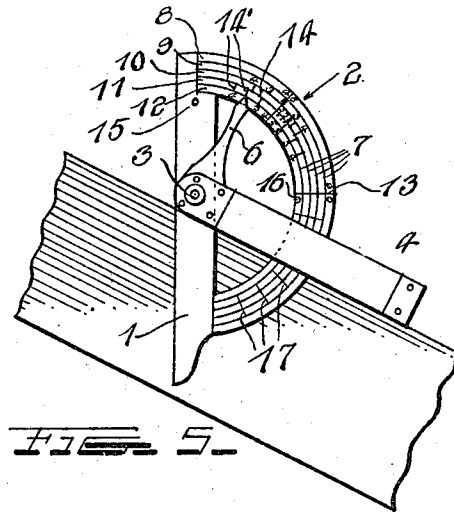
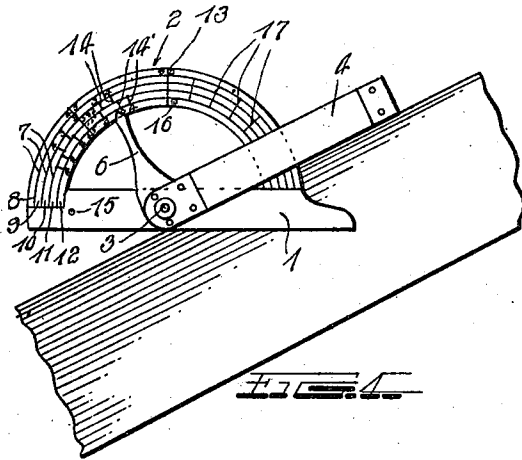
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RAFTER-CUT INDICATOR.

1,237,721.

Specification of Letters Patent.

Patented Aug. 21, 1917.

Application filed June 15, 1916. Serial No. 103,901.

To all whom it may concern:

Be it known that I, HORACE M. STANLEY, a citizen of the United States, residing at Lodi, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Rafter-Cut Indicators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improved tool for marking the proper angles at which to cut all kinds of rafters regardless of the pitch of the roof to which they are to be applied, the object being to provide an extremely simple yet highly efficient and durable tool for accomplishing this end and for also determining the length of rafters of different pitches for use on buildings of various widths.

With the foregoing general object in view, the invention resides in certain novel features of construction and in unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings which constitute a part of this application and in which:

Figure 1 is a side elevation of the improved tool in use as an ordinary square, parts being broken away to more clearly show the scale;

Fig. 2 is a sectional view taken on the plane of the line 2—2 of Fig. 1;

Fig. 3 is a rear elevation of the scale and the straight edge joined thereto;

Fig. 4 is a diagram showing the application of the invention for marking the long or level cut of common rafters of one-fourth pitch;

Fig. 5 is a similar view for marking the short or plumb cut of common rafters of one-fourth pitch;

Figs. 6 and 7 are diagrams illustrating the use of the tool for marking respectively the short cut and the long cut for hip rafters of one-fourth pitch;

Fig. 8 is a similar view illustrating the manner of using the device for marking the miter cut for jack and hip rafters of one-fourth pitch.

In specifically describing the structure shown in the drawings above briefly described, similar characters will be employed

to designate corresponding parts throughout the several views, and reference will be herein made to the numerous elements by their respective indices. To this end, the numerals 1 and 2 designate respectively a straight edge and an arcuate scale stamped from a single sheet of steel or other suitable metal, the ends of said straight edge joining the ends of the scale. Pivoted at one of its ends to the straight edge, by means of a bolt 3 is a second straight edge 4 preferably constructed of hardwood faced with metal at suitable points to prevent splitting. The straight edge 4 has formed longitudinally thereof a slit 5 which opens through its opposite edges to receive the scale 2 and straight edge 1 as the two straight edges are adjusted relatively. The bolt 3 passes through the straight edge 1 at the point around which the arcuate scale 2 is described, the pivoted end of the straight edge 4 being provided with a rigid indicating finger 6 extending at right angles therefrom on a line intersecting the aforesaid point, the free end of said finger 6 cooperating with indicating characters on one half of the scale 2.

By inscribing arcs 7 thereon concentric with its outer edge, the scale 2 is divided into five arcuately extending spaces 8, 9, 10, 11 and 12, the former being disposed at the outer edge of scale 2 while the others gradually near the inner edge thereof, the space 12 being disposed at this edge. A line 13 extends transversely of the scale 90° from both ends thereof. At one side of this line a system of indicating characters is provided, whereby the short and long cuts of common and hip rafters may be determined, regardless of the pitch of said rafters while at the other side of line 13 indicating means are provided by whose use the length of jack rafters may be ascertained. Furthermore, on the rear side of scale 2, systems of numbers are provided for determining the length of common and hip rafters.

In the outer and inner spaces 8 and 12 at a point 45° from the line 13, the number 45 is inscribed on said scale. At one side of this number in the space 8 appear the words "Short cut" while at the other side thereof the words "Long cut" are provided, indicating that for all classes of rafters, the indicating finger 6 will operate to one side of 45 for making the short or plumb cuts,

and to the other side of 45 for locating the long or level cuts, it being obvious that adjustment of said finger 6 to a predetermined point will dispose the two straight edges 1 and 4 in the proper angular relation for permitting the rafter to be marked along the edge of the former.

Disposed in the space 9 at the outer end thereof is the word "Pitch" and in this same space on opposite sides of 45, the numerals 3 and 4 appear while 2 is inscribed in line with said numerals. By this arrangement if the straight edges 1 and 4 are to be set for cutting rafters for a half pitch roof, the finger 6 will be alined with 2 in the space 9. Since on a half pitch roof, the plumb and level cuts of the rafter are at the same angle, the tool will now be in condition for marking both of such cuts.

When, however, it is necessary to mark the short or plumb cut for a one-third or one-fourth pitch rafter, the finger 6 will be set at 3 or 4 as the case may be to one side of 45. This permits the straight edge 1 to extend obliquely of the rafter at the proper angle when the straight edge 4 is in contact with the edge of said rafter. For determining the proper angle of the long or level cut for rafters of one-third or one-fourth pitch, the finger 6 will be set at 3 or 4 as the case may be to the other side of 45. The operation just described will take place when cutting common rafters, the word "Common" being printed at the outer end of the space 10 and radial lines 14 being drawn across this space in line with the numbers 2, 3 and 4.

The words "Hip" and "Pitch" appear respectively at one end of the spaces 11 and 12, these indicating that these two spaces or rather the indicating means therein, are employed when cutting hip rafters of different pitches. To this end, space 11 has a number of lines 14' drawn transversely across the same, said lines corresponding to those designated at 14, while at opposite sides of 45 in the space 12, the numerals 2, 3 and 4 appear.

At the centers of the spaces 10 and 11, adjacent line 13, the word "Rafters" is preferably inscribed so that by reading this word in connection with the words "Common" and "Hip" at one end of said spaces, it will be clear that the lines 14 and 14' are to be used for marking the cuts of common rafters and hip rafters respectively.

In order to permit the improved tool to be employed as an ordinary square, the front side thereof is preferably provided with a stop pin 15 to be engaged by the finger 6 to limit the movement of the two straight edges 1 and 4 to right angular relation. An additional stop 16 is provided to prevent movement of the finger 6 beyond the line 13.

For the application of the tool as a square, see Fig. 1.

To the side of line 13, opposite that already described, the space 8 has inscribed therein the words "Length of jack rafters" and the spaces 9, 10 and 11 are divided by radially extending lines 17. The space 12 is provided with numbers running from 1 to 6, these numbers referring to the spaces between the lines 17 and representing the first to the sixth jack rafters, and in said spaces between the lines 17 the lengths of these rafters are given, those for one-half, one-third and one-fourth pitch being disposed respectively in the spaces 9, 10 and 11 as indicated at the lower end of Fig. 1.

On its reverse side (Fig. 3) the scale 2 has a plurality of lines 18 extending throughout its length and dividing it into arcuate spaces 19, 20, 21, 22 and 23, these spaces being divided centrally between their ends by the line 24. To one side of this line the words "Length of common rafters" appear in the space 19 while to the other side of said line in the same space the words "Length of hip rafters" are inscribed. Respectively at the opposite ends of the spaces 20, 21 and 22, the legends One-half pitch, One-third pitch and One-fourth pitch are disposed, while between said legends and the line 24, a plurality of radial lines 25 extend across said spaces 20, 21 and 22 to provide individual blocks. These blocks to each side of the line 24 have therein the lengths of common and hip rafters for differently pitched roofs and for buildings of different widths, the width of the building being designated by numbers ranging from 12 to 22, these numbers being disposed in the space 23 on opposite sides of line 24.

In determining the length of a one-fourth pitch common rafter for a twelve foot building, the result will appear in the space 22 in radial alinement with the numeral 12, such result being six feet, eight and one-half inches. For ascertaining the length of hip rafters for a one-fourth pitch roof upon a building for instance, twenty-two feet wide, the result will be found in the space 21 in radial alinement with the numeral 22. Other lengths of common and hip rafters will be determined in the same manner and further description is therefore unnecessary.

When marking the long or level cut for common rafters for a roof of one-fourth pitch, the indicating finger 6 is set at 4 (space 9) to one side of 45, whereas when marking the short cut said finger will be positioned at 4 to the other side of 45 and in the same space. See Figs. 4 and 5 respectively.

To mark the short cut for hip rafters, the tool will be used as shown in Fig. 6 if the rafter be for a one-fourth pitch roof, finger

6 being disposed at 4 in the space 12 to one side of 45. Similarly, when marking the long cut for hip rafters, the finger 6 will be positioned at 4 in the space 12 to the other side of 45.

To determine the proper miter cut for jack and hip rafters, the finger 6 will be set at any one of the three points 4 3 2 appearing in spaces 10 and 11, according to the pitch of the rafter.

In the foregoing, wherever a roof of a third, fourth, etc., pitch is mentioned, it is meant that the height of the roof at its ridge is one-third, fourth, etc., of its width.

From the foregoing, it will be obvious that regardless of the fact that the improved tool is very simple and compact, it will be highly efficient and durable and will fulfil a long felt need.

I claim:

1. A rafter cut indicator comprising an arcuate scale, a straight edge extending between and secured at its ends to the ends of said scale, a second straight edge pivoted at one end to the first named straight edge between the ends thereof, and an indicating finger extending laterally from the pivoted end of said second straight edge, said finger cooperating with the scale, said scale having an indicating character forty-five degrees from the first straight edge, an ar-

cuate series of indicating numbers to one side of said character for cooperation with the aforesaid finger to set the two straight edges for locating the short or plumb cut of rafters, said scale also having similar rows of numbers to the other side of said character for setting the straight edge for the long or level cut.

2. A rafter cut indicator comprising a straight edge having a longitudinal slit opening through its opposite longitudinal edges and through one of its ends, a flat metal straight edge and semi-circular scale formed of the same piece of metal and both extending through said slit with said flat metal straight edge adjacent the open end of said slit, a combined clamping bolt and pivot passing through the first named straight edge and through the center of the other, and a flat metal indicating finger contacting with the scale and rigidly secured to said first named straight edge, said scale having indicating characters cooperating with said finger.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HORACE M. STANLEY.

Witnesses:

ARTHUR R. GOODWIN,
CHAS. LIGHT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."