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FRAMING TOOL OR PROTRACTOR.

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1,050,969. Patented Jan. 21, 1913.

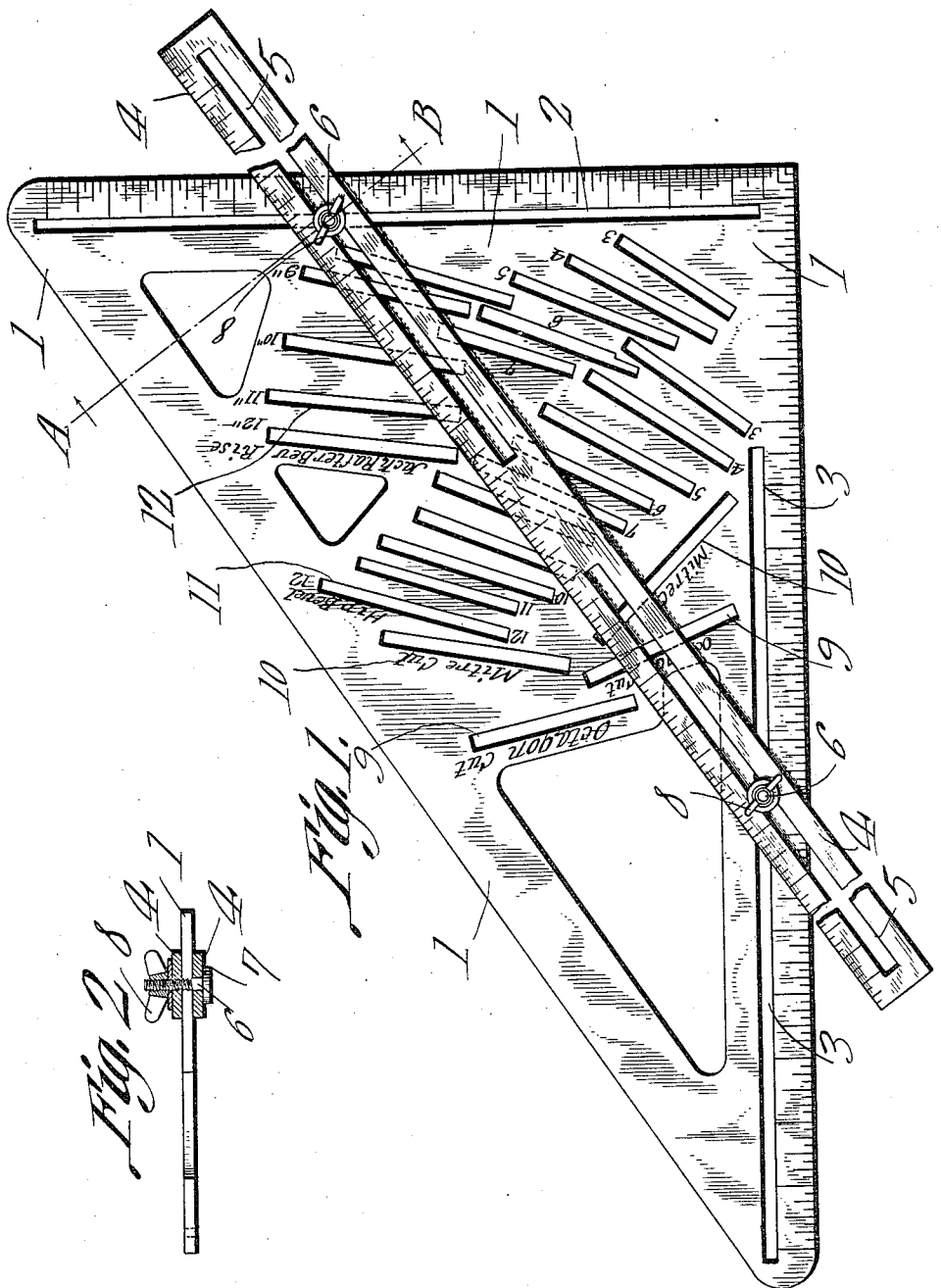

Fig. 1.

Fig. 2.

Witnesses

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DANIEL C. McLEOD, OF CEDAR RAPIDS, IOWA.

FRAMING-TOOL OR PROTRACTOR.

1,050,969. Specification of Letters Patent. Patented Jan. 21, 1913.

Application filed March 30, 1911. Serial No. 617,956.

To all whom it may concern:

Be it known that I, DANIEL C. McLEOD, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Framing-Tool or Protractor, of which the following is a specification.

This invention relates to framing tools or protractors for use in laying out roofs, stairs, etc., the principal object of the invention being to provide a simple and compact device of this type which can be readily manipulated and by means of which various angles found necessary in structures of the type mentioned, can be quickly obtained without the necessity of mental calculation.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings, the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a plan view of the framing tool or protractor. Fig. 2 is a section of line A—B of Fig. 1.

Referring to the figures by characters of reference 1 designates a plate preferably of metal and in the form of a right angle triangle the hypotenuse of which can be at any desired angle or angles relative to the two sides. Each side of the triangle is graduated to indicate inches and fractions thereof, these graduations being preferably arranged on both faces of the plate and the zero point of the two scales being located at the point of conjunction of the two sides. A slot 2 is arranged close to and parallel with one side of the triangle while another slot 3 is arranged close to and parallel with the other side thereof.

A rule 4 is mounted on each face of the triangle, each rule having alining slots 5 extending longitudinally therein. The two rules are preferably graduated throughout their lengths so as to indicate inches and fractions thereof. A set screw 6 is loosely mounted in each of the slots 5, one of these screws being slidable within the slot 3 while the other one is slidably mounted within the slot 2, each screw 6 having a head 7 at one end, while its other end is adapted to be engaged by a nut 8 by means of which the screw can be tightened for the purpose of securing the rules in any positions to which they may be adjusted relative to the triangle 1.

Straight slots 9 are formed within the triangle 1 and coöperate with the adjacent edges of the triangle for indicating the angles to be laid out for producing an octagon cut, each of these slots being preferably designated by the words "Octagon cut". Additional slots 10, designated by the words "Miter cut" are formed within the triangle and coöperate with the adjacent edges thereof to indicate the angles to be laid off when it is desired to produce a miter cut.

In addition to the slots hereinbefore mentioned, two additional series of slots are formed within the triangle, one series being designated by the numeral 11 while the other series has been indicated at 12. The slots 11 are designated by the words "Hip bevel". These slots 11 are further designated by the numbers 3 to 12 inclusive, these designating numerals indicating "rise" in inches. The slots 12 are designated by the words "Jack rafter bev." and the several slots are further designated by numerals ranging from 3 to 12 inclusive and which indicate the "rise" in inches.

Should it be desired to get the proper cut for hip or valley rafters for half pitch roofs, the rules 4 are adjusted to the proper graduations on the side edges of the triangle and are then placed against the edge of the rafter. The top and bottom cuts of the rafter can thus be laid off by marking along the graduated edges of the triangle. After the rafter has thus been laid off the cuts on the edges of the rafter can be laid off by using the proper slots indicated by the words "Jack rafter bev. rise". For example if the rafter has a twelve inch rise, the triangle is placed on the edge of the rafter with the rules 4 against one side thereof and a line is drawn across the rafter by placing a pencil or other marking device in the slot indicated by "12''". The line thus drawn should be extended from the end of the line previously drawn on one side of the rafter and which indicates the end cut.

It is to be understood that other pitches can be readily obtained by shifting the

rules 4 to other graduations upon the sides of the triangle. Miter and octagon cuts can be laid out by using the slots designated as "Octagon cut" and "Miter cut" respectively.

Should it be desired to lay out the face string for stairs having, for example a ten inch run and a $7\frac{3}{8}$ inches rise, the rules 4 are shifted to the 10 inch and the $7\frac{3}{8}$ inches graduations upon the respective sides of the triangle and as indicated in Fig. 1. The rules 4 are then placed against the edge of the string and lines drawn along the graduated edges of the triangle to indicate where the cuts are to be made in laying out the said string.

As shown in Fig. 1, any unnecessary metal may be removed, so as to reduce the cost of the tool and also lighten the same.

What is claimed is:—

1. A framing tool including a right angle triangle having graduated sides, a rule adjustable upon the triangle to different angles relative to said sides to indicate the runs and rises or side bevels of rafters, and said triangle having a series of slots coöperating with the rules to indicate the top and bottom or edge bevels of different rises.

2. A framing tool including a right angle triangle having graduated sides, rules adjustable upon the triangle to different angles relative to said sides to indicate side bevels or the runs and the rises of rafters and said triangle having a series of slots cooperating with the rules to indicate the top and bottom or edge bevels of the rafters at predetermined rises.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

DANIEL C. McLEOD.

Witnesses:

Ed. Bzbanek,

Louis Nyere.