Oct. 2, 1928. 1,686,441

A. B. DAUGER ET AL

FRAMING TOOL

Filed Sept. 3, 1927 2 Sheets-Sheet 1

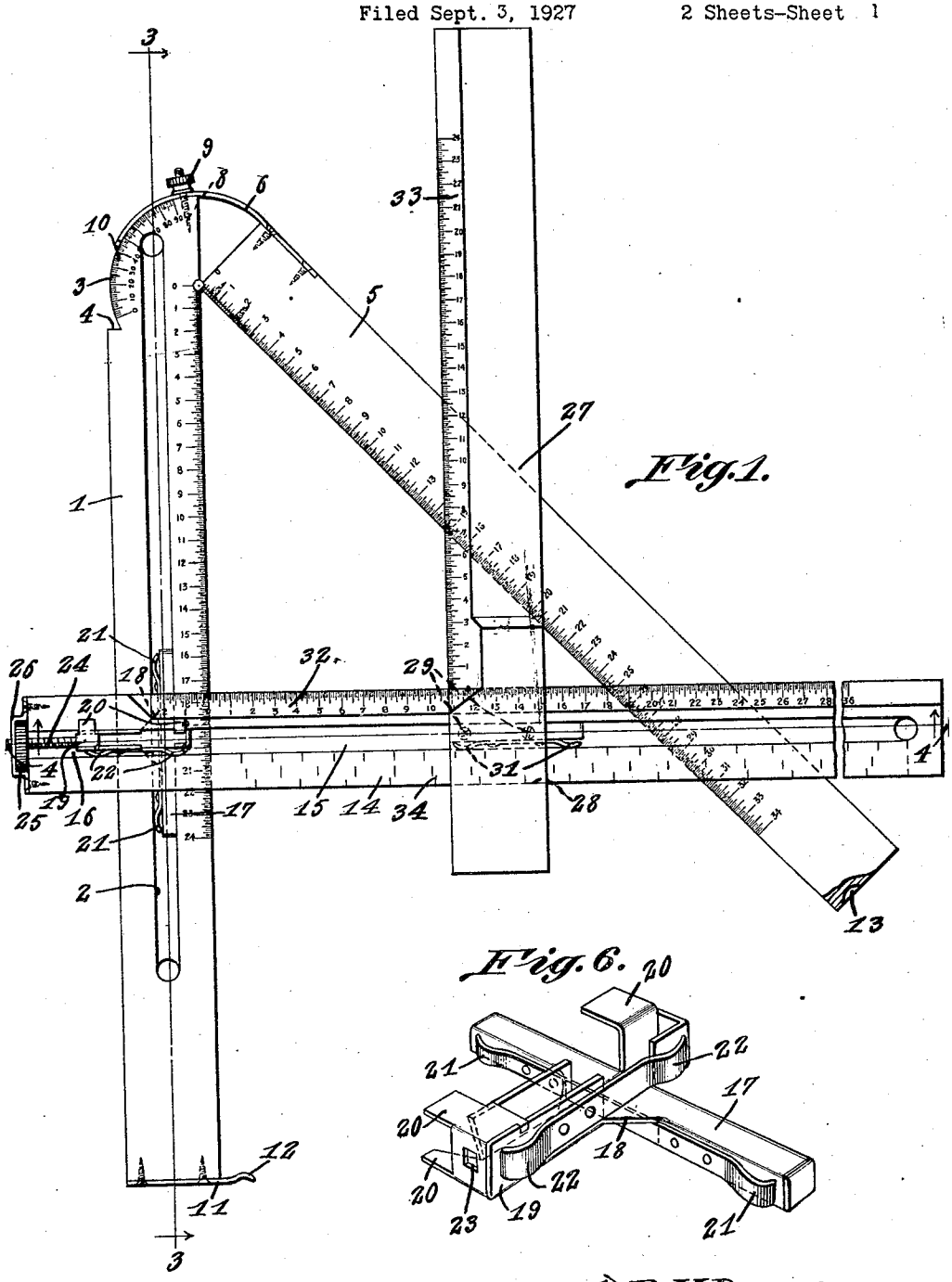


Fig. 1.

Fig. 6.

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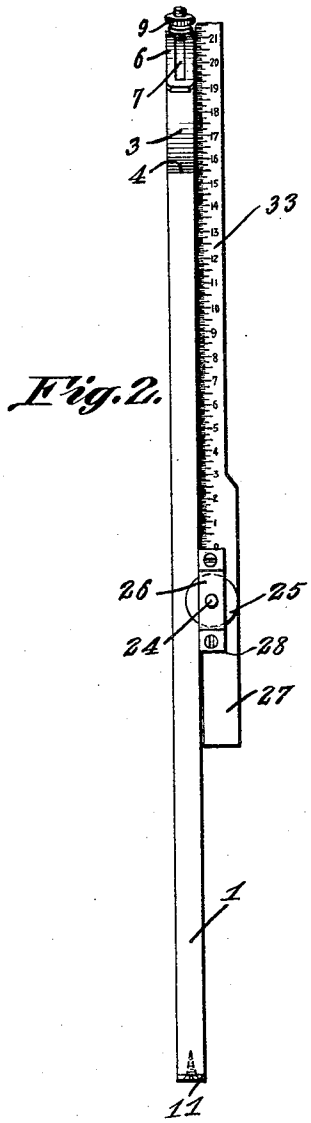


Fig. 2.

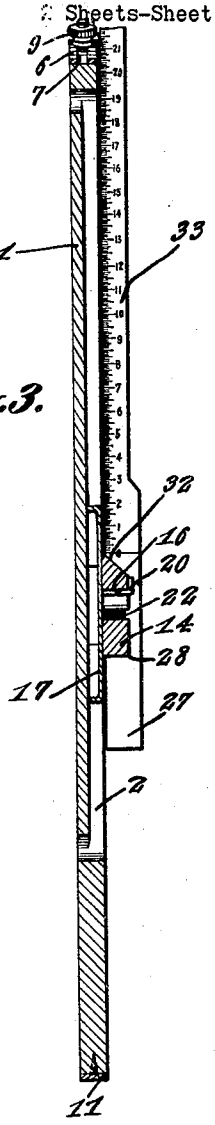


Fig. 3.

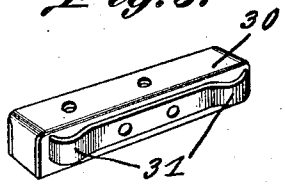


Fig. 5.

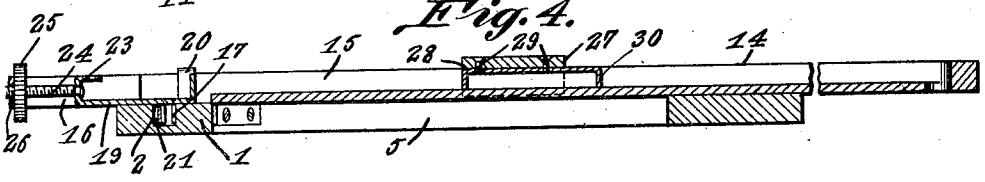


Fig. 4.

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Patented Oct. 2, 1928. 1,686,441

UNITED STATES PATENT OFFICE.

ALFRED B. DAUGER AND RUTH M. DAUGER, OF SACRAMENTO, CALIFORNIA.

FRAMING TOOL.

Application filed September 3, 1927. Serial No. 217,480.

This invention relates to geometrical instruments and its general object is to provide an adjustable roof and truss framing gage tool, for obtaining lengths and cuts of common rafters, hips, valleys, jack rafters, ties, brace lengths and cuts, hips and jacks for skylights in sheet metal work and all truss members in structural iron work, as well as all other truss members and the like such as knee braces, internal braces, top cords and struts, in an easy, accurate and inexpensive manner and with very little effort.

A further object of the invention is to provide a gage tool of the character above set forth, that is simple in construction, inexpensive to manufacture, and includes a number of rules cooperatively associated for determining the length and cuts of the members referred to and in a manner whereby the rules can be easily moved with respect to each other and retained in any desired set position.

Another object of the invention is to provide a gage tool which includes a number of rules provided with novel means for securing the same together for cooperative association.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing our invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a top plan view of the tool forming the subject matter of the present invention.

Figure 2 is an edge elevation thereof.

Figure 3 is a sectional view taken on line 3—3 of Figure 1 looking in the direction of the arrows.

Figure 4 is a sectional view taken on line 4—4 of Figure 1 looking in the direction of the arrows.

Figure 5 is a perspective view of the sliding block which is secured to the jack rule for mounting the same for slidable movement on the run rule.

Figure 6 is a similar view of the run and rise rule sliding blocks or tongues.

Referring to the drawings in detail, the reference numeral 1 indicates the vertical or rise rule which is provided with a groove 2 and has its upper end arranged in curved formation as at 3 with a shoulder 4 disposed at the juncture of the curved portion with the body of the rule, as best shown in Figure 1 of the drawings.

Hingedly secured to the rise rule adjacent its upper end and on the edge opposite the curved portion is a hypotenuse rule 5 which has counter-sunk in its edge opposed to its hinged edge, one end portion of a strip 6. The strip 6 is curved from its secured end portion in a manner to follow the curvature of the curved portion 3 and is adapted to be disposed in contacting engagement therewith. The curved portion of the strip is provided with a longitudinally disposed slot 7 through which is arranged a screw 8 having wood threads on one portion for securing the same in the end of the rise rule adjacent one edge as shown, and the remaining portion of the screw 8 is provided with machine threads to accommodate a nut 9. By this arrangement, it will be obvious that the hypotenuse rule is hingedly secured to the rise rule and can be disposed at any desired angle within the range of the slot 7 and secured at said angle through the medium of the nut 9. The curved portion has arranged on one of its faces degree graduations which are indicated by the reference numeral 10.

The rise rule has secured to its end opposite the curved portion a straight strip 11 which has one end extending beyond the inner edge of the rise rule and terminates in a curved spring finger 12 adapted to be received in a recess 13 formed in the adjacent end of the hypotenuse rule for securing the latter in contacting engagement with the rise rule as will be apparent.

Mounted for slidable movement with respect to the rise rule is a run rule 14 which is provided with a groove 15 longitudinally disposed therein for the greatest portion of its length, and which terminates adjacent one end while its opposite end is disposed in communication with a slot 16 extending the remaining distance of the run rule as best shown in Figure 1 of the drawings.

In Figure 6 I have shown the means for slidably securing the run rule to the rise rule and for moving the run rule transversely thereof, and this means includes an elongated hollow member 17 square in cross section, which has extending laterally therefrom a substantially triangularly shaped projection 18 having formed therewith one portion of a

block member 19, while the remaining portion of said block member extends from the opposite side of said member 17 as shown. The block member 19 has, projecting from its ends, ears 20 arranged in spaced parallel pairs and adapted to slidably receive one of the portions adjacent the slot 16 in the run rule 14, as shown in Figure 1 of the drawings. When in this position, the member 17 is disposed in the groove 2 of the rise rule, and the member 17 and block 19 are each provided with spring fingers indicated respectively by the reference numerals 21 and 22 for engagement with one of the walls of the groove 2 and slot 16. One of the ends of the block 19 is provided with a square opening 23 adapted to receive and to be secured therein the square end of a screw 24 which threadedly receives a serrated nut 25 mounted in a bracket 26 secured to the slotted end of the run rule. The bracket is provided with an opening to allow for the passage of the screw 24 and upon rotating the nut 25, it will be apparent that the run rule will be capable of being moved approximately the length of the screw 24, and transversely of the rise rule. The run rule is further secured to the rise rule and is movable longitudinally thereof due to the arrangement of the block member 19 in the groove 2.

The jack rule which is indicated by the reference numeral 27 is provided with a recess 28 adjacent one end to slidably receive the run rule and secured to the jack rule in the recess 28 thereof through the medium of screws 29 is a block 30 which is provided with spring fingers 31 arranged to engage one of the walls of the groove 15 of the run rule as best shown in Figure 1. This arrangement allows the jack rule to be slidably mounted on the run rule, and to be positioned toward and away from the rise rule as will be apparent. The run rule and jack rule are disposed to overlie the rise rule and hypotenuse rule, and it will be noted that the run rule is provided with a beveled edge 32 and the jack rule is also provided with a beveled edge 33 disposed in confronting relation with the inner edge of the rise rule.

Each of the rules are graduated or laid off to a foot scale, and these graduations are disposed upon the beveled edges 32 and 33 of the run rule and jack rule, while the rise rule and hypotenuse rule have their graduations disposed adjacent their confronting edges. The jack rule is further provided with jack spaces 34 arranged for sixteen inch, eighteen inch and twenty-four inch spaces.

From the above description and disclosure of the drawings, it will be obvious that we have provided an adjustable roof and truss framing gage tool including a plurality of cooperatively associated rules secured to and arranged with respect to each other in a manner whereby they can be easily adjusted as desired and retained in their respective adjusted positions.

The tool is extremely useful for obtaining the lengths and cuts of roof members and bracing means therefor and the operation thereof for obtaining the lengths and cuts of a common rafter may be briefly described as follows:

Considering that the roof is nine feet rise and thirteen feet run, and with all rafters set at sixteen inches center to center, place the run rule as shown in Figure 1 of the drawings, move the run rule on rise rule, so that graduation 9 on rise rule intersects with the zero of run rule, which is the rise, then move the hypotenuse rule to thirteen on run rule which is the run, and at the intersection of the run rule and hypotenuse rule the length of the rafter can be ascertained. For steel square marking of rafters use nine for rise cut, and thirteen for run cut as shown on rise rule and run rule, which are the cuts for common rafters. For getting cuts with ordinary carpenter bevel square, place heel of bevel square on hypotenuse rule and blade against run rule, this will give bottom cut of rafter and for top cut of rafter put heel on bevel against the hypotenuse rule, and blade against the rise rule. By the use of the tool, the lengths and cuts are extremely accurate, and it will be apparent that while we have illustrated the application of the tool for common rafters, it can be used with as much simplicity with hips, valleys, jack rafters and other members.

It is thought from the foregoing description that the advantages and novel features of our invention will be readily apparent.

We desire it to be understood that we may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What we claim is:

1. A roof and truss framing gage tool of the character described comprising a rise rule formed with a groove longitudinally arranged therein, a hypotenuse rule secured adjacent one end of the rise rule, means for retaining said hypotenuse rule at desired angles with respect to the rise rule, a run rule formed with a longitudinally disposed groove terminating in a slot at one end, means secured in said slot for moving the run rule transversely of the rise rule and including a block member having a square opening in one end, a screw having one end secured in the square opening, a nut threadedly mounted on the screw, a member formed with said means and disposed at right angles thereto, said member being mounted in the groove of the rise rule for slidable movement and carrying the run rule accordingly, a jack rule provided with a recess receiving the run rule, and resilient means secured to the jack rule and disposed in the groove of the run rule for

slidable movement, and said rules being graduated as and for the purpose specified.

2. An adjustable roof and truss framing gage tool of the character described comprising a rise rule having a groove longitudinally arranged therein, a curved portion formed on one end of said rise rule, a hypotenuse rule hingedly secured adjacent the curved end, a strip fixed to said hypotenuse rule and formed with a curved portion following the curvature of the curved portion of the rise rule and mounted for slidable movement thereon, said curved portion of the strip being slotted, a screw secured in the rise rule and passing through the slot, a nut secured to said screw and adapted for securing the hypotenuse rule at desired angles with respect to the rise rule and in parallelism therewith, a straight strip secured to said rise rule, a spring finger formed with said straight strip and arranged in the path of a recess formed in the free end of the hypotenuse rule to be received therein for holding the latter in normal position, a run rule mounted for slidable movement transversely and longitudinally with respect to the rise rule, a jack rule mounted for slidable movement on the run rule, and said rules being graduated as and for the purpose specified.

3. A roof and truss framing gage tool of the character described comprising a rise rule, an hypotenuse rule hingedly secured thereto, means for fixing the hypotenuse rule in set positions with respect to the rise rule, a run rule formed with a longitudinally disposed groove terminating at one end in a slot, a frame for securing the run rule for movement on the rise rule and including a hollow member, square in cross section, arranged in a longitudinal groove formed in the rise rule for slidable movement therein, spring fingers secured to said hollow member and engageable with one of the walls of the groove of the rise rule, a triangular projection formed with said hollow member, a block member formed with the projection and the hollow member and being arranged at right angles to said hollow member, ears formed with said block member and securing the latter in the slot of the run rule, means carried by said block member for adjusting the run rule transversely of the rise rule through the medium of the block member, a jack rule formed with a recess receiving the run rule, a block secured in the recess and disposed in the groove of the run rule, spring fingers formed with said block and block member, the spring fingers of the block being engageable with one wall of the groove and the spring fingers of the block member being engageable with one wall of the slot, said rules being provided with graduations disposed thereon for cooperation with each other.

In testimony whereof we affix our signatures.

ALFRED B. DAUGER.
RUTH M. DAUGER.