No. 770,770. PATENTED SEPT. 27, 1904.

J. W. MORRISON.

ROOF FRAMING TOOL.

APPLICATION FILED MAR. 24, 1904.

NO MODEL.

Fig. 1

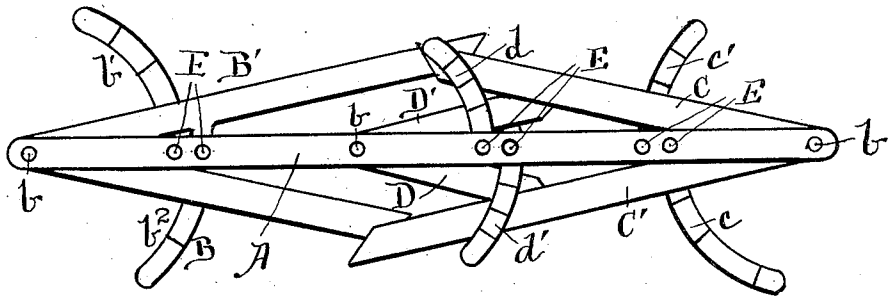


Fig. 2

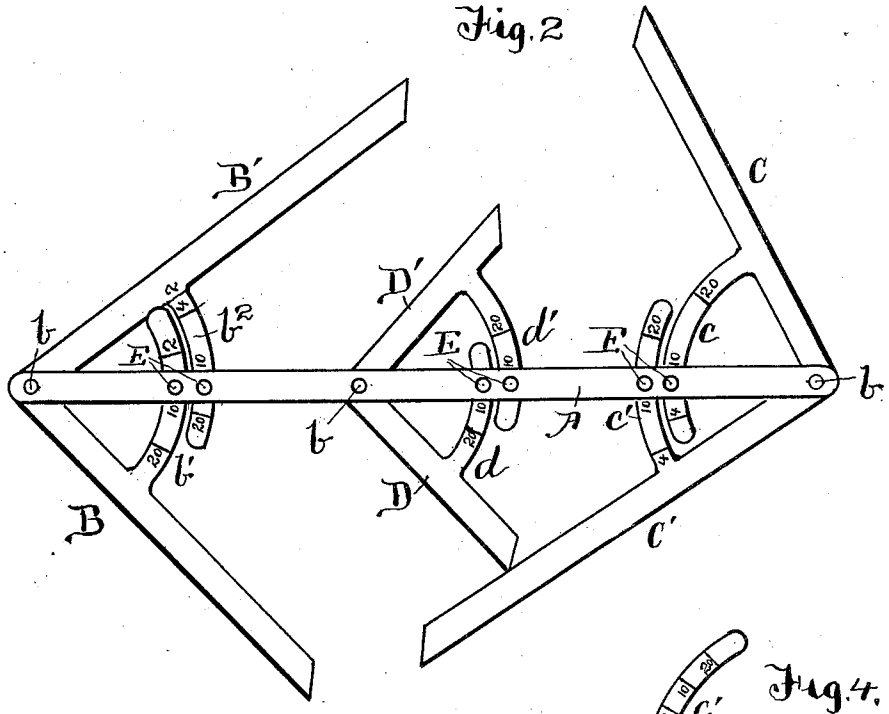


Fig. 4.

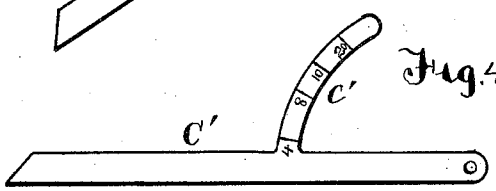
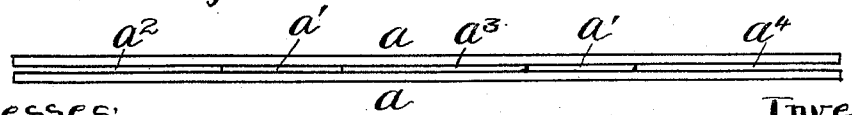


Fig. 3.



Witnesses:
W. B. Minnick.
W. A. Cowell

Inventor.
John W. Morrison
By Banning & Banning
Attys.

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UNITED STATES PATENT OFFICE.

JOHN W. MORRISON, OF COLORADO SPRINGS, COLORADO.

ROOF-FRAMING TOOL.

SPECIFICATION forming part of Letters Patent No. 770,770, dated September 27, 1904.

Application filed March 24, 1904. Serial No. 199,820. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. MORRISON, a citizen of the United States, residing at Colorado Springs, in the county of El Paso and State of Colorado, have invented certain new and useful Improvements in Roof-Framing Tools, of which the following is a specification.

The object of the present invention is to provide a tool for the beveling of rafters which is complete in itself and does away with the use of squares and other framing-tools and which can be so adjusted that all the cuts or bevels necessary to be made in the framing of a roof can be found by adjusting all the parts at a predetermined ratio, and the tool, as shown, is adapted to mark all graduations for any roof having a pitch of from two to twenty inches rise to one foot run.

Another object of the present invention is to so arrange the tool that it will occupy but a small space when in closed position, thereby enabling it to be easily packed away when not in use.

The invention consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings illustrating the invention, Figure 1 is a side elevation of the tool in closed position; Fig. 2, a side elevation of the same with the bevels adjusted to give the rafter-cuts for a roof having a pitch of ten inches to the foot; Fig. 3, an edge elevation of the stock, and Fig. 4 a side elevation of one of the bevels with the adjusting-arm attached thereto.

As shown, the tool is so constructed to have a stock A formed of two sections a, having between them spacing-blocks a' positioned to leave spaces or slots a^2, a^3, and a^4 for the reception of the bevels. The stock is preferably composed of steel or other metal and is substantially square in cross-section, having smooth edges adapting it to be moved along the edge of a rafter to obtain the cuts thereon. At one end of the stock is located a bevel B, adapted to give the top cut of the main rafter, and on the opposite side of the stock is a bevel B′ for giving the bottom cut of the main rafter, and the two bevels are pivoted at the end of the stock by means of a pivot-pin b, which passes through the sections of the stock and the ends of the bevels and pivots them together. The bevel B is provided with a curved arm b', and the bevel B′ with a curved arm b^2, the two arms lying in edgewise relation to one another and passing through the slot a^2, and the arms are graduated with suitable spaces so calculated as to enable the bevels to be set to give the top and bottom cuts of a main rafter for any roof having a pitch varying in degree from two to twenty inches rise to one foot run. The arm b' has the figure "2" near its outer end, and the arm b^2 has the figure "2" near its inner end, so that when the bevels B and B′ are set at "2" the former will be widely extended and the latter but slightly extended, giving the cuts or bevels for a main rafter having the pitch indicated. As shown in Fig. 2, all of the bevels of the tool are set at "10" to enable the cutting of all rafters for a roof having a pitch of ten inches to the foot. The bevels and arms in each case are formed of a single thin plate of metal, so that both bevels can have their pivoted ends positioned within the end slot in the stock, and the material composing the bevels should preferably be capable of a slight spring, so that when the bevels are folded into the position shown in Fig. 1 the ends of the bevels can be sprung over one another, so as to occupy a minimum amount of space. At the opposite end of the stock and within the slot a^4 are pivoted a pair of bevels C and C′, provided with arms c and c', respectively, and the bevel C is adapted to give the top cuts for the hip and valley rafters and the bevel C′ to give the bottom cuts of said rafters. The arms c and c' are graduated at a predetermined ratio with respect to the arms b' and b^2, so that when said arms are set at "10" they will indicate the proper cuts for the hip and valley rafters of a roof having the same pitch as that hitherto indicated.

Within the slot a^3 are pivoted a pair of bevels D and D′, which are preferably shorter than the other bevels, the bevel D being intended to mark the side-cut jack-rafters and the bevel D′ being intended to mark the side-cut hip and valley rafters, and said bevels are pivoted to open in the same direction as the bevels B and B′. The bevels D and D′ are provided with curved arms d and d', which are graduated in a manner similar to that hitherto described, and all of the curved arms are held in an adjusted position by means of thumb-screws E, which pass through the stock at the proper point and abut against the respective arms.

When it is desired to fold up the tool, as shown in Fig. 1, the thumb-screws are loosened and the ends of the bevels brought together, so that they will overlap one another, and such overlapping can be easily arranged, since the slight spring or resiliency of the metal out of which the bevels are made enables this to be done. When the bevels are folded up, the arms of one bevel will overlap the body of the companion bevel; but since the arms are formed integral with the bevels such overlapping can be easily accomplished.

It will be seen from the foregoing description that the tool is simple and compact in construction, and that after the bevels have all been set at a common mark indicated on the graduated arms all of the cuts necessary to be made in the framing of a roof can be drawn from the same tool, and that none of the bevels will interfere in any way with the operation of the others. This arrangement simplifies roof-framing, which is one of the most difficult features in building a house and enables all of the cuts to be properly made, so that the completed roof will be more perfect and durable and at the same time more easily constructed than by the employment of squares or similar instruments.

The tool is one which is complete in itself and obviates the necessity for the employment of other tools or for mathematical calculations, the necessary mathematical calculations having been made in graduating the respective arms. By this arrangement after the tool has once been adjusted the proper cuts are indicated for all of the rafters in a roof, and no readjustment whatsoever is necessary at any time.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a roof-framing tool, the combination of a stock having pivoted thereto two bevels one adapted to give the top cut for a main rafter and the other the bottom cut for a main rafter and having pivoted thereto two bevels one adapted to give the bottom cut for the hip and valley rafters and the other the top cut for the hip and valley rafters, the bevels being all provided with arms graduated with numbers indicating the pitch of a roof so that when the arms are all set at the same predetermined graduation four cuts necessary in the framing of a roof of the pitch indicated can be made from the bevels, substantially as described.

2. In a roof-framing tool, the combination of a stock having pivoted thereto two bevels, one adapted to give the top cut for a main rafter and the other the bottom cut for a main rafter and having pivoted thereto two bevels, one adapted to give the bottom cut for the hip and valley rafters and the other the top cut for the hip and valley rafters, and having pivoted thereto two bevels one adapted to indicate side cuts for the jack-rafters and the other the side cuts for the hip and valley rafters, the bevels being all provided with arms graduated with numbers indicating the pitch of a roof so that when the arms are all set at the same predetermined graduation four cuts necessary in the framing of a roof of the pitch indicated can be made from the bevels, substantially as described.

3. In a roof-framing tool, the combination of a stock provided in its body with two end slots, two bevels pivoted within one of the end slots one of the bevels being adapted to indicate the top cut from the main rafter and the other adapted to indicate the bottom cut for the main rafter, two bevels pivoted in the opposite end slot one of the bevels being adapted to indicate the bottom cut for the hip and valley rafters and the other the top cut for the hip and valley rafters, the bevels at opposite ends of the stock being adapted to open outwardly in opposite directions, each of the bevels being provided with an arm working within the slot all of the arms being graduated with numbers indicating the pitch of a roof so that when the arms are all set at the same predetermined graduation four cuts necessary in the framing of a roof of predetermined pitch will be indicated by the bevels, substantially as described.

4. In a roof-framing tool, the combination of a straight metal stock provided with two end slots and a middle slot, two bevels pivoted at one end of the stock within one of the end slots one of the bevels being adapted to indicate the top cut of the main rafter and the other the bottom cut for the main rafter, two bevels pivoted at the opposite end of the stock within the other end slot one of the bevels being adapted to give the bottom cut for the hip and valley rafters and the other being adapted to give the top cut for the hip and valley rafters, two bevels pivoted to the stock within the middle slot one adapted to give the side cut for the jack-rafters and the other the side cut for the hip and valley rafters, all the bevels being constructed of metal having a slight

resiliency, and all provided with curved arms within the slots all of the arms being graduated with numbers indicating the pitch of a roof so that when all the arms are set at the same predetermined graduation six cuts necessary in the framing of a roof of the pitch indicated will be given, the bevels being adapted to fold inwardly and have their ends overlap one another when in closed position, substantially as described.

JOHN W. MORRISON.

Witnesses:
W. C. MINNICK,
W. A. COWELL.