(No Model.)

# J. C. K. HOWARD.

## CARPENTER'S SQUARE.

No. 247,353. Patented Sept. 20, 1881.

Fig. 1.

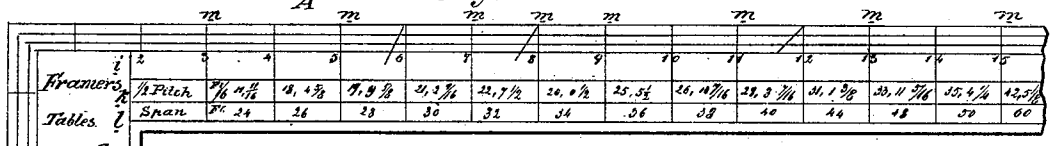



Fig. 2.

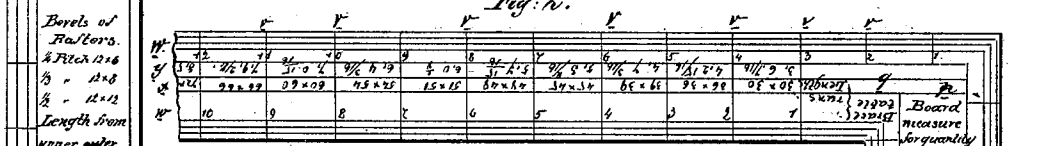



Fig. 3.

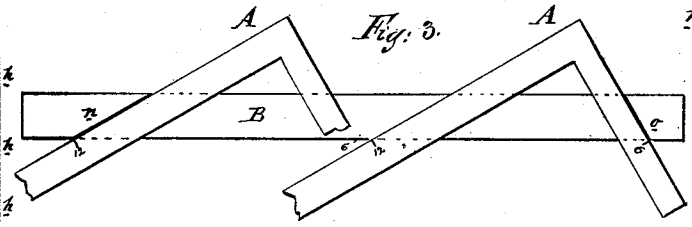
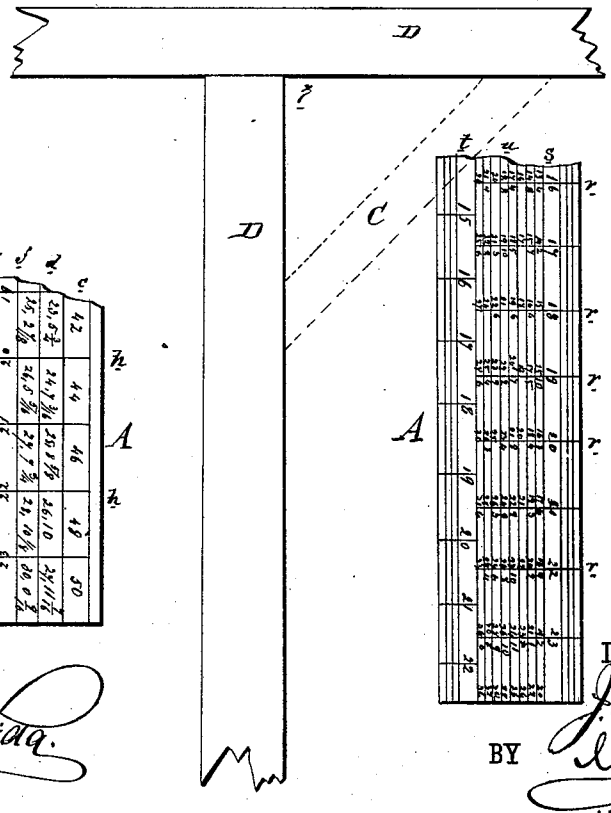



Fig. 4.




Bevels of Rafters.
⅓ Pitch 12×6
⅓ " 12×8
½ " 12×12
Length from upper outer corner of Roof.
L. dividable etc. for resp. Pitch.

| Span. | ⅓ Pitch. | ⅜ Pitch. |
|---|---|---|
| 24 | 10.0 3/4 | 14.1 3/4 |
| 30 | 12.6 1/4 | 17.8 3/4 |
| 28 | 14.3 3/8 | 20.2 1/4 |
| 24 | 13.5 | 19.1 1/4 |
| 36 | 14.6 3/8 | 20.7 3/4 |
| 28 | 15.2 3/8 | 21.5 1/4 |
| 30 | 16.9 1/8 | 23.9 3/4 |
| 32 | 17.10 7/8 | 25.2 3/4 |
| 34 | 19.0 1/8 | 26.10 1/4 |
| 36 | 20.1 1/4 | 28.5 3/4 |
| 38 | 21.2 3/8 | 29.11 1/4 |
| 40 | 22.4 3/8 | 31.6 3/4 |
| 42 | 23.5 1/2 | 33.1 1/4 |

WITNESSES:

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# UNITED STATES PATENT OFFICE.

JEREMIAH C. K. HOWARD, OF EDGERTON, MONTANA TERRITORY.

## CARPENTER'S SQUARE.

SPECIFICATION forming part of Letters Patent No. 247,353, dated September 20, 1881.

Application filed August 16, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, JEREMIAH C. K. HOWARD, of Edgerton, in the county of Beaver Head and Territory of Montana, have invented a new and Improved Carpenter's Square, of which the following is a specification.

The invention consists of a carpenter's square containing a table for determining the length of rafters for pitches and spans of roofs, and a rule finding the length of rafters for spans of one-fourth, one-third, or one-half pitch.

Figure 1 is an elevation of one face of the square. Fig. 2 is an elevation of the reverse thereof to show the board and brace tables which I preferably employ in connection with my square. Fig. 3 is an elevation representing the application of the square to a rafter for determining the bevels for a span of one-fourth pitch. Fig. 4 is an elevation representing a brace applied to a post and sill.

Similar letters of reference indicate corresponding parts.

My invention will now be described in connection with a carpenter's square, on which I preferably use it.

One side of the square A is designed for framer's tables, as shown at *a* on the angle thereof. Below this, at *b*, on the long arm of the square, is given the formula or explanation of the said tables. Below this formula, at *b*, the long arm of the square is marked off in four longitudinal columns, *c d f g*, respectively, and these columns are intersected at right angles with inch graduation-lines *h*, as shown, whereby a series of rectangular sections are formed. In the first of these sections the purposes, uses, or values of the figures in the columns *c d f g* are designated. For instance, "span" at the beginning of column *c* indicates that the figures in said column relate to the span of the roof of a building. "One-fourth pitch" at the beginning of column *d* indicates that the figures in said column *d* give the required lengths of rafters for given spans when said rafters are to be set at one-fourth pitch. "One-third pitch" at the beginning of column *f* indicates that the figures in said column *f* give the required lengths of rafters to be set at one-third pitch for given spans. The column *g* is for inch-graduations. On the same side of the square A the short arm thereof has a graduated inch-column, *i*, a one-half pitch column, *k*, and a span-column, *l*, as shown, all divided into sections by the rectangularly-drawn inch-graduated lines, *m*.

The method of finding the required length of rafters for the various pitches and spans is as follows. For instance, find 40 in the column of figures marked "span," trace the column marked "one-fourth pitch" to the point immediately below the 40 span, and there is found the required length in feet, inches, and sixteenths of an inch of a rafter for a forty-foot span and a one-fourth pitch. The same method is observed for finding other required lengths and pitches of rafters.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

A carpenter's square having the columns of figures *c d f g* and *i k l* divided by inch-graduations and representing the various pitches and spans of roofs arranged in such relation to each other as to indicate the length of rafters corresponding to each combination, as shown and described.

JEREMIAH C. KEEF HOWARD.

Witnesses:

JAS. W. PORTER,

A. HELMER.