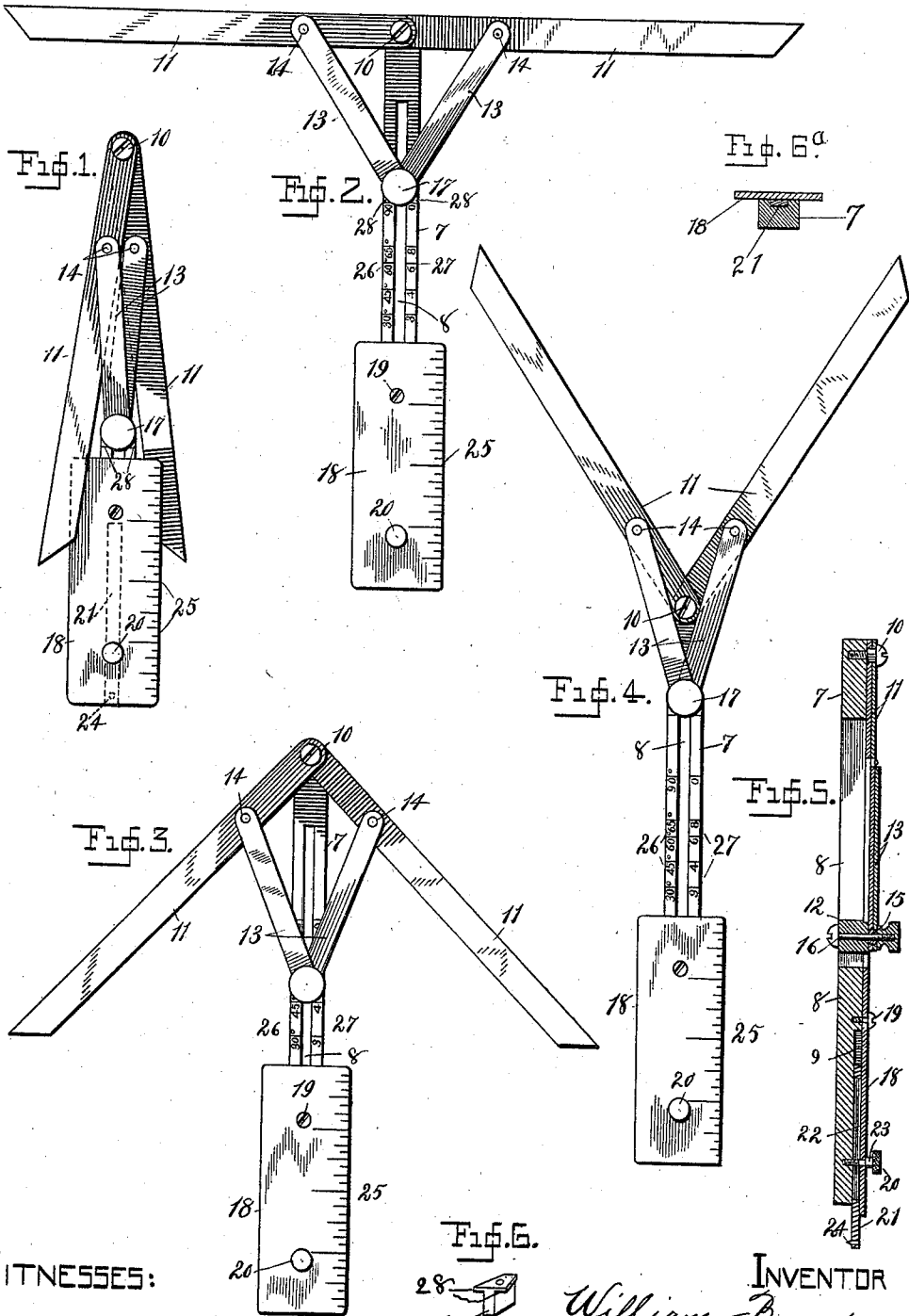


W. BUNDY.
GEOMETRICAL MITER SQUARE.
APPLICATION FILED JUNE 28, 1906.

963,274.

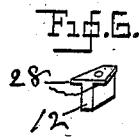
Patented July 5, 1910.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM BUNDY, OF VALPARAISO, INDIANA.

GEOMETRICAL MITER-SQUARE.

963,274.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed June 28, 1906. Serial No. 323,887.

To all whom it may concern:

Be it known that I, WILLIAM BUNDY, a citizen of the United States, residing at Valparaiso, in the county of Porter and State of Indiana, have invented certain new and useful Improvements in Geometrical Miter-Squares, of which the following is a specification.

My invention relates to mechanics' tools and especially to that class known as miter or bevel squares.

The primary objects of my improvement are to facilitate the determination of any angle, inclination or bevel to be found in structural frames; to provide means for mechanically bisecting any angle in a frame or structure whether such angle be external or internal, and to enable such bisection to be transferred to the material of construction, thus enabling miters of any inclination to be readily and accurately cut.

Other objects of my invention are to produce an appliance for laying out various polygons and provide means for transferring to the material the proper miter cuts for such polygons.

Further objects are to enable miters for polygons to be readily cut when angles that should correspond are unequal and to enable the user to accurately and rapidly fit new work to old, even when the latter is irregular.

By the use of my improved miter square a large percentage of the work of framing is greatly facilitated. The cuts for rafters, braces, jack rafters, studs and trusses are quickly and easily laid out and with unusual accuracy. In the construction of hip roofs, bay windows, stairs and panel work, this device will be found especially advantageous. In cases where it is usual to make use of the slow and laborious process of making templets this appliance will be especially applicable and will give much better results.

I accomplish the results above set forth by the use of a device consisting of duplicate blades pivoted to a stock which forms a handle and connected by means of levers which form a toggle joint to an adjusting screw secured in a block having a sliding engagement with a groove in said stock, as fully illustrated in the accompanying drawing which forms a part of this specification, and in which:—

Figure 1 is a view of my improved miter square in folded position; Fig. 2 is a view of

the device with the blades adjusted at angles of 90° with the stock; Fig. 3 shows the tool adjusted for scribing an angle of 45°; Fig. 4 indicates the method of adjustment for taking off an external angle; Fig. 5 is a longitudinal section showing the gage bar extended to an operative position; Fig. 6 is a perspective view of the sliding block and index; Fig. 6^a is a cross-section through the part 18 taken on a line just below the center of said part.

Referring to the drawings the numeral 7 indicates the stock upon which the working parts are assembled. This stock is provided with a longitudinal slot 8 and a groove 9.

At the upper end of the stock is a shouldered screw 10, by which duplicate blades 11 are pivotally secured thereto. These blades are connected to a block 12, adapted to slide in the slot 8, by links 13, secured at one end to said blades by pivots 14 and joined together at the other by a sleeve 15 which passes through holes in the ends of the links. The sleeve thus forms a bearing or journal upon which the links turn. A clamping screw 16 passes through both the block 12 and the sleeve 15 and is furnished with a thumb nut 17.

To the lower end of the stock is attached a supporting or index plate 18, secured by a common screw 19 and a thumb screw 20. A slide bar 21 is adapted to fit in the groove 9 and is furnished with a slot 22 through which the set screw 20 passes. The slide 21 is slightly thicker than the depth of its groove 9, and the screw 20 has a shoulder 23 which engages the plate 18 and thus serves to hold the slide in any position required. The end of the said slide is provided with a hardened steel point 24 which serves as a marking gage. Upon the plate 18 is stamped a scale 25 divided into inches and fractions, which may be conveniently used for linear measurements.

In order to aid in setting the blades and to assist in determining the miters for polygons having a different number of sides, I provide the upper face of the stock with scales 26, 27. The scale 26 designates the bisection of the angle at which the blades are set in relation to each other, or in other words the number of degrees in the angle formed between either of the blades and the stock. The divisions of the scale 27 upon the opposite margin of the face of the stock,

are designated by numerals which indicate the number of sides in a corresponding polygon; in other words, the scale upon one margin indicates the number of degrees in the miter-cut required to construct a polygon having sides equal in number to that marked upon the opposite margin. To facilitate the reading of these scales I provide the block 12 with lateral flanges 28, the lower margins of which overlap the scales 26, 27, and serve as indexes to indicate the division upon the scale corresponding with the angle of the blades.

In taking the angles of deviation of two frame members the stock is grasped by one hand and with the other the blades are adjusted to the inclination of the frame pieces by sliding the block 12 until the blades are in apposition with the surfaces. When they are secured in position by tightening the thumb screw, the stock is then removed and the miter angle can be read by inspecting scale 26. In order to transfer this angle to the piece to be cut the stock is placed alongside the timber with one blade and the projecting margin of the plate 18 resting upon the upper surface of the stock. The miter is then marked by scribing along the edge of the blade.

To facilitate the cutting of a timber into lengths, scribe marks having been made on the timber, one end-margin of the index plate 18, or a division of the scale 25 thereon, is brought into coincidence with such mark,

and when the tool is thus set, the miter is scribed in the usual manner.

What I claim as new, is:—

1. In a miter-square, the combination of a stock having graduations marked thereon and provided with a longitudinal slot, a flanged block slidable in said slot, duplicate blades hingedly attached to one end of the stock, said hinge permitting the blades to be extended beyond the end of the stock, pivoted links connecting the blades with the block, a set screw for clamping the blades when adjusted, and an index plate attached to the stock and adapted to support the tool upon the work.

2. In a miter square, the combination of a stock having a plurality of scales marked thereon, and provided with a longitudinal slot, a flanged block slidable in said slot, duplicate blades pivoted to one end of said stock and adapted to be extended beyond the end of the stock, pivoted links between the blades and block, a set screw for clamping the blades in adjusted position, an index plate on the stock having projecting margins for supporting the tool on the work, and an index scale on said plate.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM BUNDY.

Witnesses:

MARK B. ROCKWELL,
LEWIS M. GREEN.