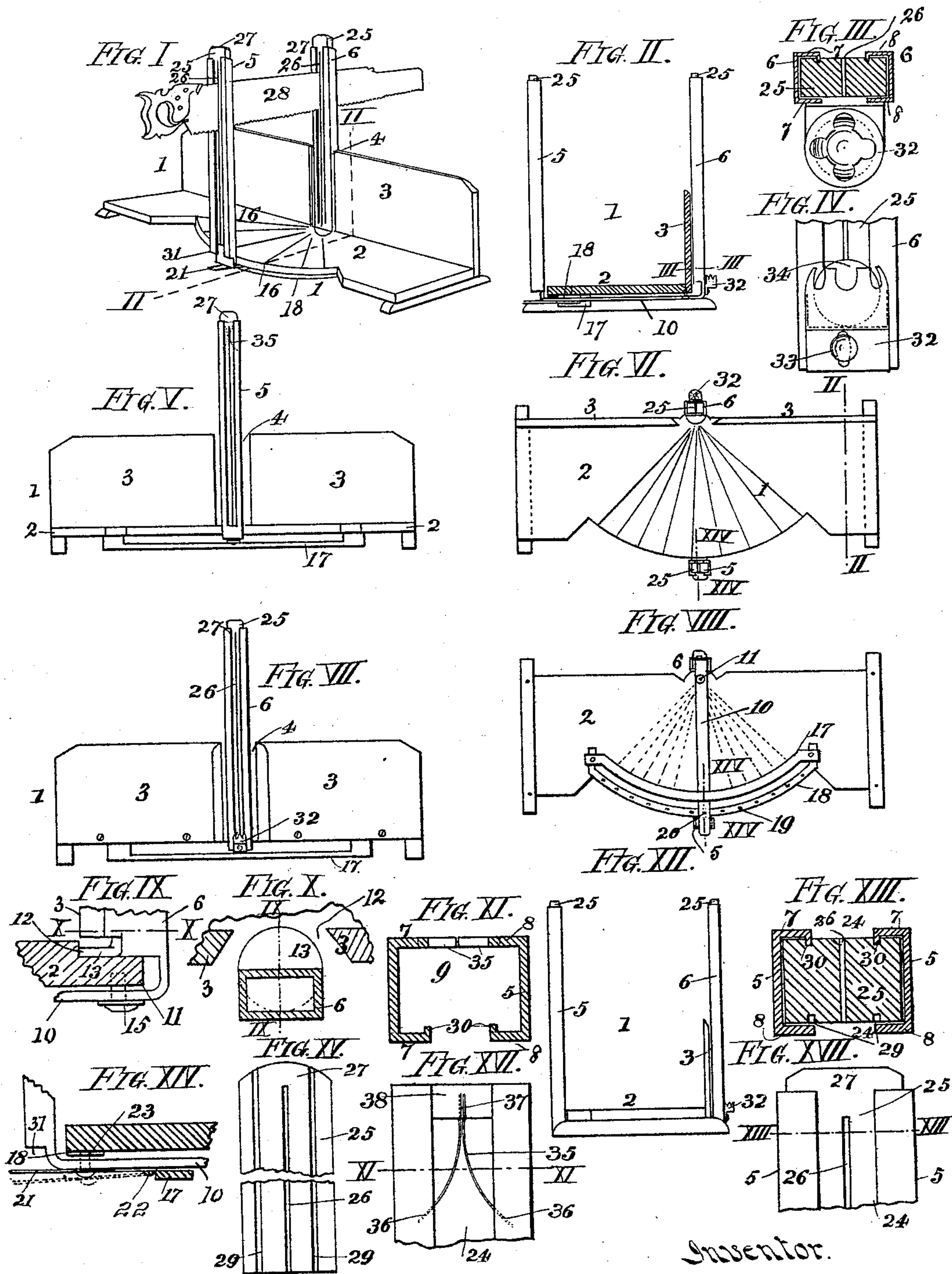


(No Model.)

F. A. ZEIGER.  
MITER BOX.

No. 585,168.

Patented June 22, 1897.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

FREDERICK A. ZEIGER, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-HALF TO E. A. HOFFMAN AND Z. H. WELLER, OF SAME PLACE.

## MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 585,168, dated June 22, 1897.

Application filed December 1, 1896. Serial No. 614,058. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK A. ZEIGER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Miter-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in the construction of miter-boxes; and my invention consists in features of novelty hereinafter described and claimed.

Figure I represents a perspective of my improved miter-box, showing saw held in its suspended position. Fig. II is a transverse section taken on line II II, Fig. I. Fig. III is a transverse section taken on line III III, Fig. II. Fig. IV is a detail view showing bearing-ball and holder secured to the back of the miter-box. Fig. V represents a front elevation of the miter-box. Fig. VI is a top view. Fig. VII is a rear elevation. Fig. VIII is a bottom view. Fig. IX is a detail view showing manner of pivoting the guides to the miter-box, said figure being a section taken on line IX IX, Fig. X. Fig. X is a transverse section taken on line X X, Fig. IX. Fig. XI is a section taken on line XI XI, Fig. XVI. Fig. XII represents a side elevation. Fig. XIII is a transverse section taken on line XIII XIII, Fig. XVII. Fig. XIV is a section taken on line XIV XIV, Fig. VIII, showing means of securing the adjustable guide frame or standards. Fig. XV is a detail front elevation of one of the leather guides. Fig. XVI is a detail front elevation, showing spring for supporting a saw. Fig. XVII is a detail front elevation of one of the standards, showing leather bearing or guide in position.

Referring to the drawings, 1 represents the miter-box, having a horizontal supporting-bottom 2 and a vertical back 3, the back 3 having the usual recess 4, through which the saw extends when the device is being used.

5 represents a front and 6 a rear standard or guide, preferably made in the form of a channel-iron, having flanges 7 8, leaving the vertical channel 9 extending the length of

the standards. The standards are preferably made in one piece and are connected at their lower ends by a section 10, which extends beneath the miter-box from one standard to the other. The guide-standards are pivoted to the rear of the bottom board 2, as shown at 11. (See Fig. IX.) The board 2 is provided with a recess 12, into which fits a rounded plate 13 on the rear standard, thus forming a bearing on the upper side of the bottom board 2, the standard being provided with a plate or extension 10, extending beneath the bottom board 2 and having a screw 15 inserted therein and engaging the bottom board, which permits the standard to swing as upon a pivot. Thus by taking hold of the front standard and moving it sidewise any angle desired may be obtained between the standard and the miter-box, the usual angles being shown at 16 on the board 2, but, of course, the standard can be so adjusted as to divide up the angle shown.

17 represents a bearing-bar, preferably curved in form and secured to the bottom of the miter-box near its forward edge and extending beneath the section 10, which connects the front and rear standards.

18 represents a curved bar secured to the bottom of the miter-box, but extending above the section 10. The curved bar 18 is provided with a series of orifices 19.

20 represents an aperture extending through the section 10, said aperture being on line with the center of the curved bar 18.

21 represents a spring-plate having its inner end secured to the section 10 at 22 and having a pin 23 secured near its outer end, said pin extending upward and of the proper size to pass through the orifice 20 in the section 10 and into the apertures 19 in the curved bar 18. By pressing down upon the outer end of the spring 21 the pin 23 is withdrawn from the apertures 19 in the curved bar 18, leaving the section 10 free to be moved either to the right or the left to the angle desired. Then by releasing the pressure on the spring 21 the pin 23 will enter one of the apertures 19 and thus secure the section 10 and standards at the proper angle at which they have been set. The guide-standards 5 6 are provided with vertical openings 24, so as to ad-



mit the passage of the saw. In order to form a guide that will not injure the teeth of the saw and at the same time have lasting qualities, I provide guides 25, preferably formed of sole-leather, said guides being inserted into the vertical hollow spaces 9 of the guide-standards 5 6. The guides 25 are provided with vertical slots 26, extending nearly the length of the guides, but have a short section 27 at their tops, into which the slot 26 does not extend, the slots 26, of course, being for the passage of the saw 28. (See Fig. I.) The guide-leathers are easily placed in position in the standards and are provided with grooves 29, running parallel with the central groove 26.

30 represents inwardly-extending lips on the flanges 7 of the guide-standards, said lips entering the said grooves 29 in the leather guide and holding it in its proper position in the guide-standards. Should the grooves 29 become worn to too great an extent, so that a true guide would not be provided for the saw, the leather guides can be readily reversed, grooves being formed in the rear side of the same for that purpose, if desired. The front standard 5 is cut away at the bottom, as shown at 31, in order to give free access to the spring 21 when it is desired to change the angle of the guides.

In order that the forward end of the saw shall not descend too low and thus damage the miter-box, I provide a cup 32, adjustably secured to the rear standard by means of a set-screw 33. In this cup I place a ball 34, formed of leather or some other suitable material, a portion of the ball extending a short distance above the top of the cup, the center of the ball being on line with the groove 26 in the guide-leather, the result being that when the saw has descended a sufficient distance to sever the molding, or whatever the carpenter may be sawing, the teeth of the saw will come in contact with the ball 34 and roll with the saw as it is forced back and forth, the rolling motion preventing the saw from cutting the ball and the ball preventing the saw from passing below a predetermined point.

In the use of a miter-box when it is desired to adjust the angles of the guides or to rest the saw for other reasons and for the protec-

tion of the teeth it is desirable that the saw be suspended in the frame or guides, and to arrive at this end I have placed springs 35 near the top of the front guide-standard, said springs being preferably made in two parts, having their lower ends secured at 36 to the sides of the standards and having their top ends secured at 37 to a cross-bar 38, which braces and connects the top of the standards. The springs thus form an inverted-V shape, into which the upper edge of the saw is wedged as it is forced upward and held therein until removed by a slight downward pressure.

I claim as my invention—

1. A miter-box comprising a box proper, vertical standards having a pivoted bearing connection with the box proper consisting of a circular plate providing an upper bearing, a section connecting the standards and providing a lower bearing, and a screw extending through the connecting-section; substantially as set forth.

2. A miter-box comprising a box proper, having a divided back, and a ball loosely supported at the lower end of the divided portion, and adapted to receive the impact of the saw and to rotate freely in any direction thereunder; substantially as set forth.

3. A miter-box comprising a box proper, guide-standards, and a loosely-supported ball adapted to receive the impact of the saw and to rotate freely in any direction thereunder; substantially as set forth.

4. A miter-box comprising a box proper, guide-standards, a cup secured to one of the standards, and a ball loosely supported in the cup and adapted to receive the impact of the saw, and to rotate freely in any direction in the cup; substantially as set forth.

5. A miter-box comprising a box proper, guide-standards, an adjustable cup secured to one of the standards, and a ball loosely supported in the cup and adapted to receive the impact of the saw and to rotate freely in any direction in the cup; substantially as set forth.

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