

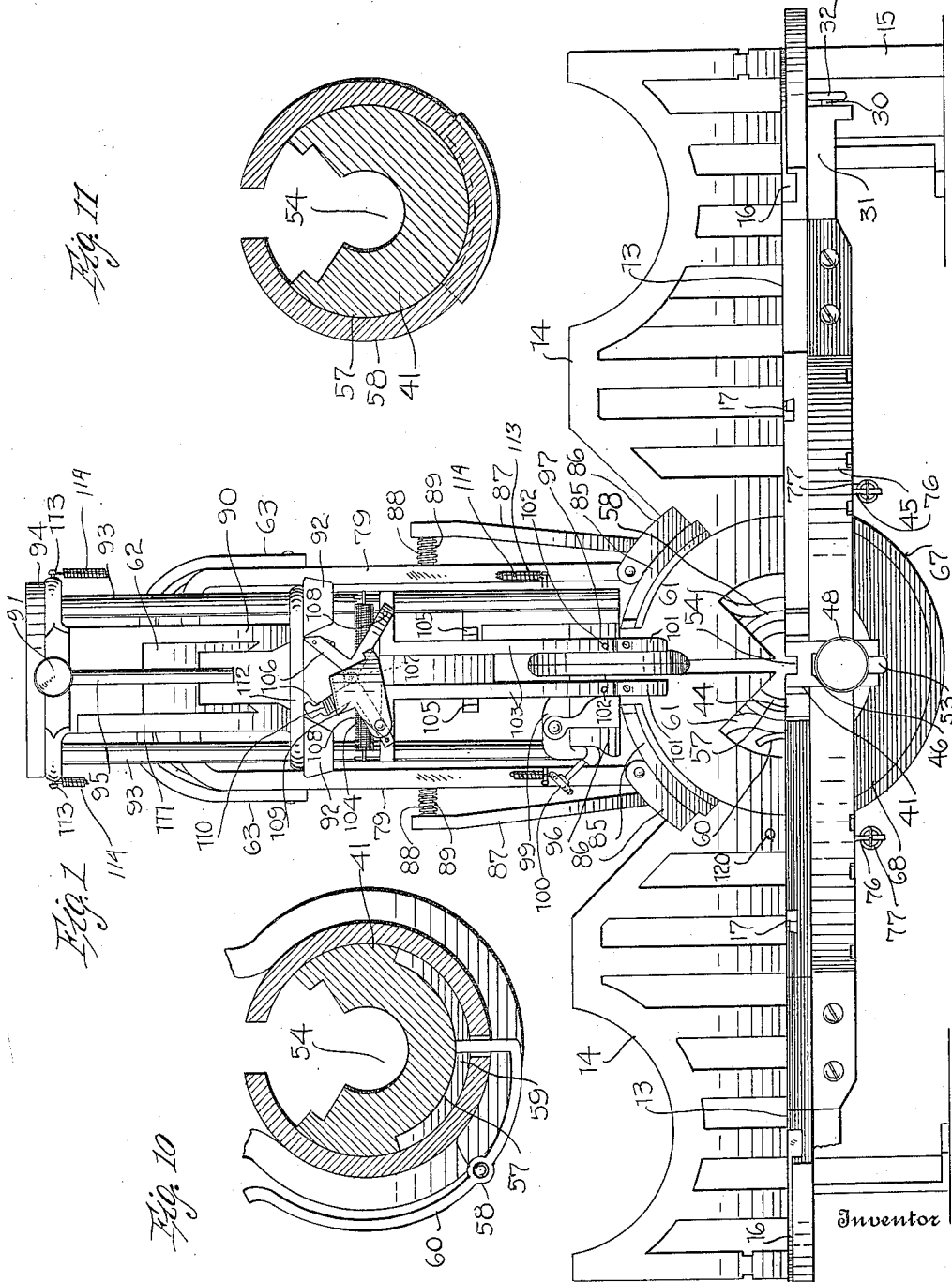
J. T. ROSS.  
MITER BOX.

APPLICATION FILED FEB. 17, 1913.

Patented Oct. 14, 1913.

7 SHEETS-SHEET 1.

1,075,730.



Witnesses

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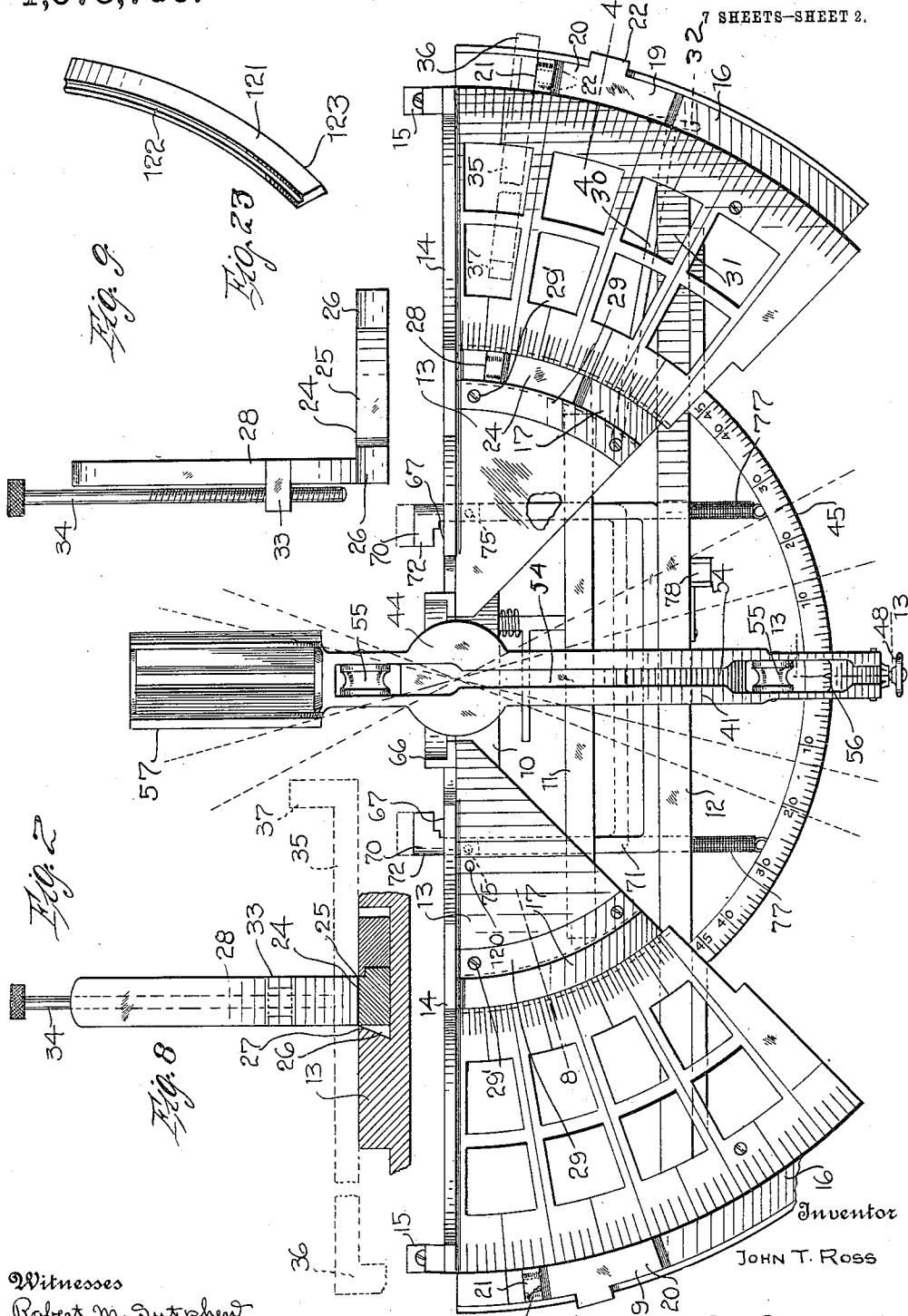
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7 SHEETS-SHEET 2.

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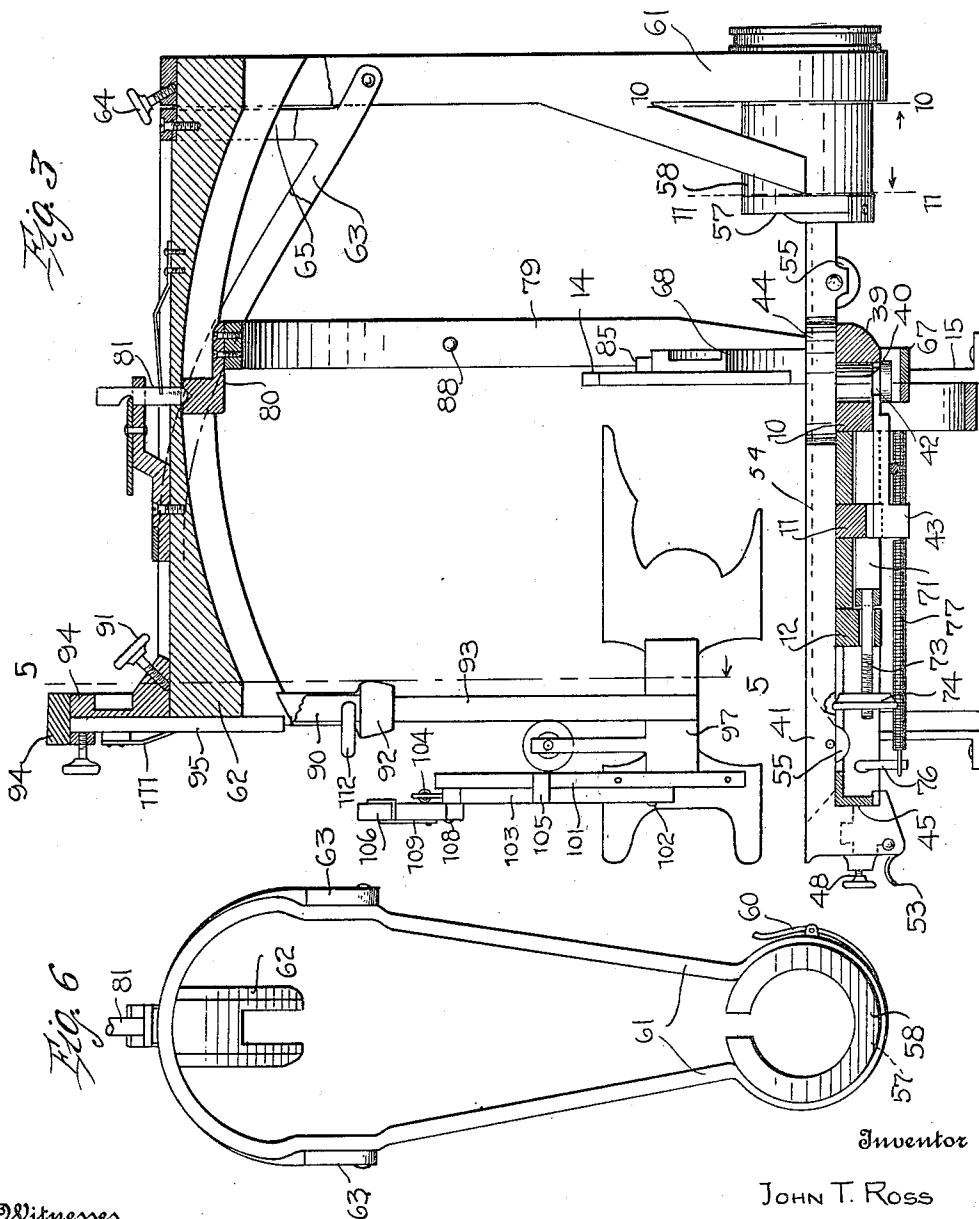
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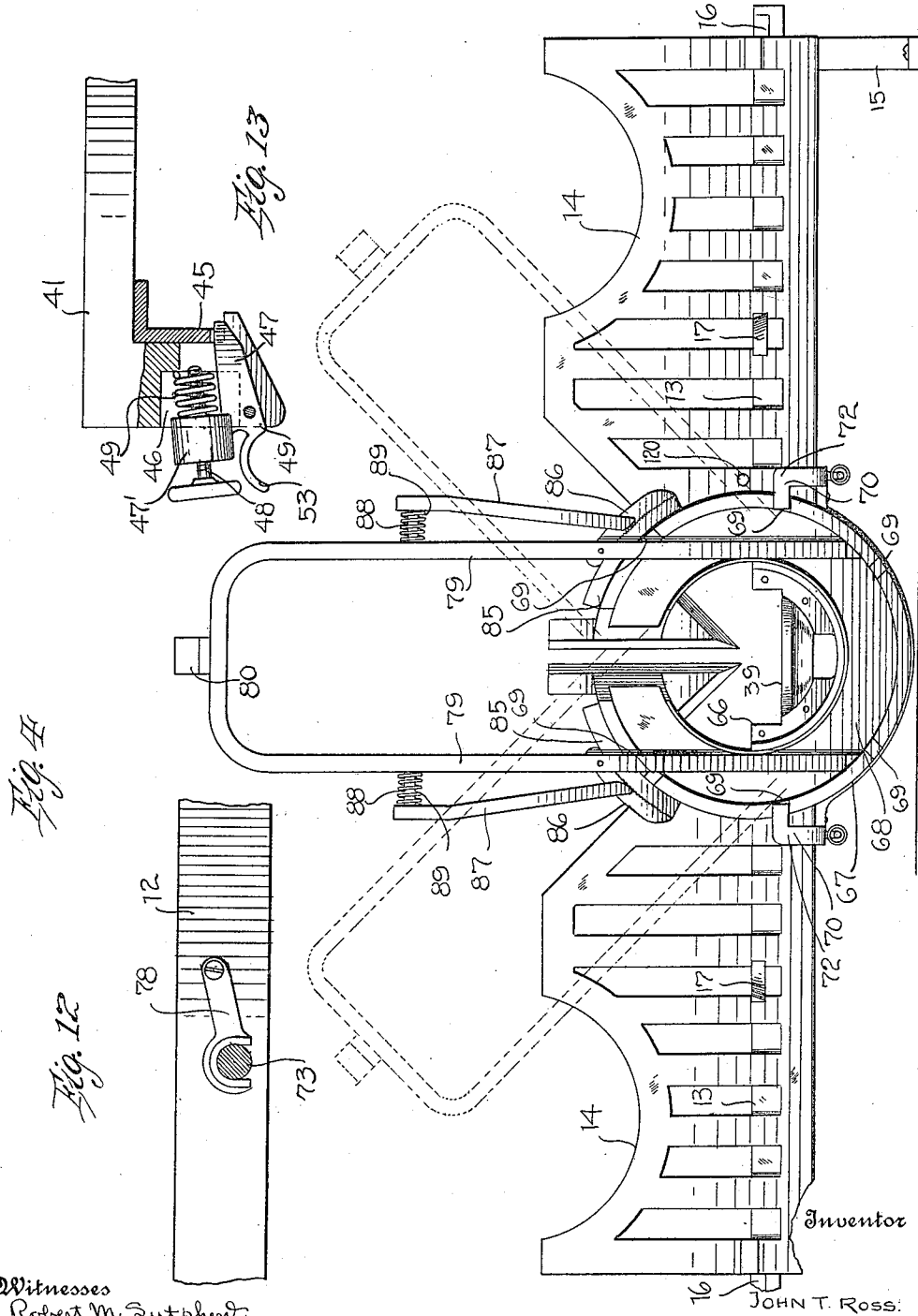
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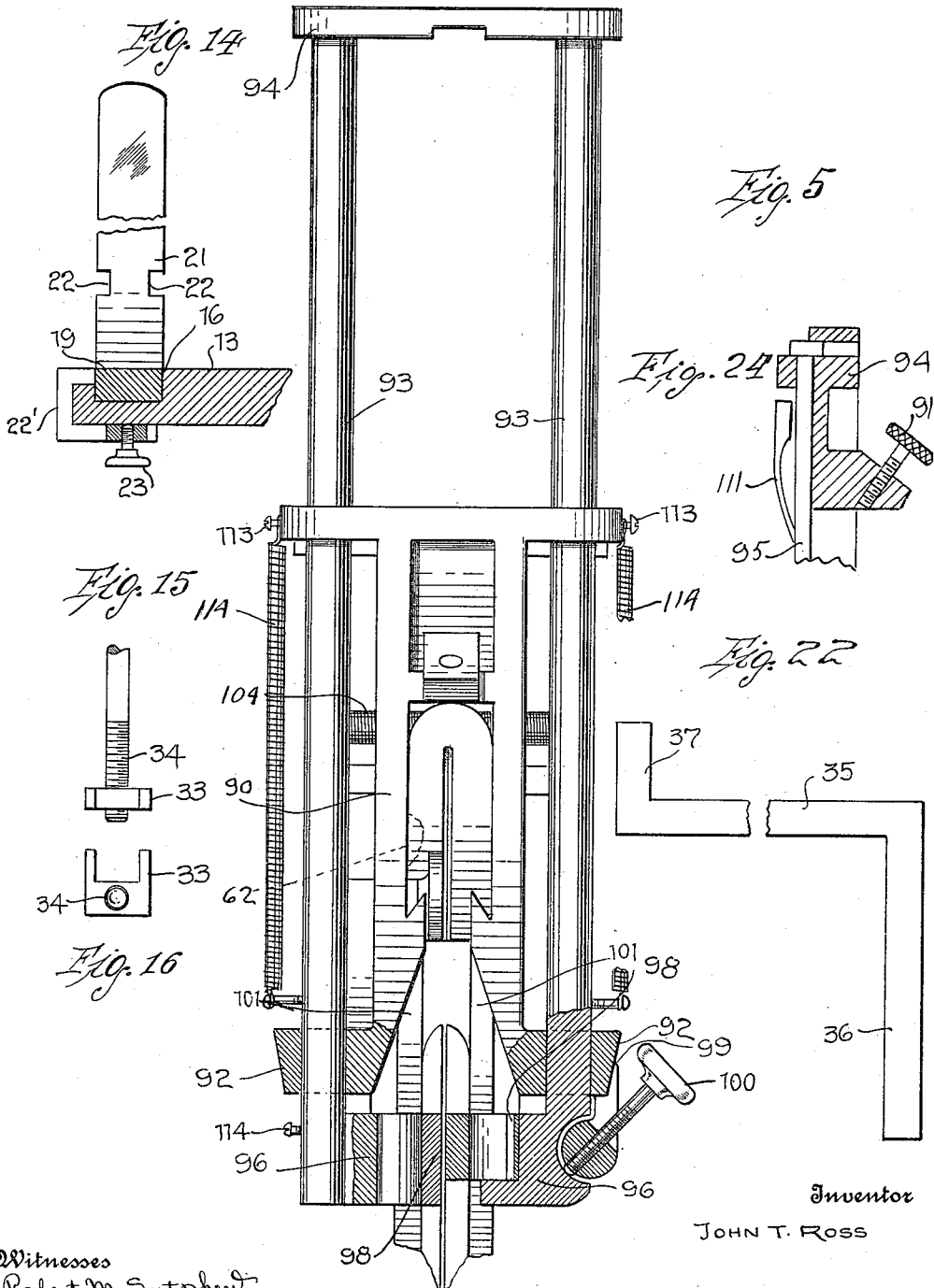
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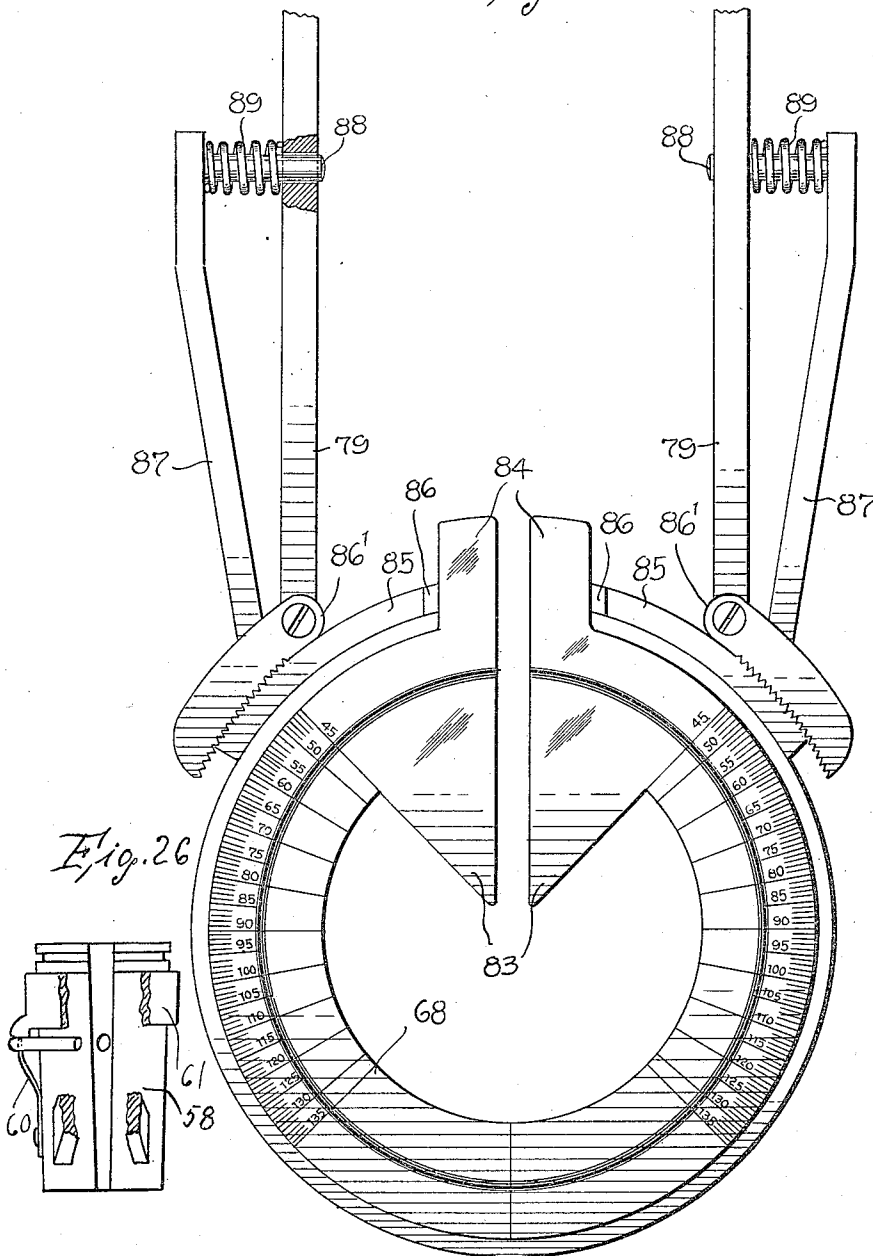
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7 SHEETS—SHEET 6.

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*Fig. 7*



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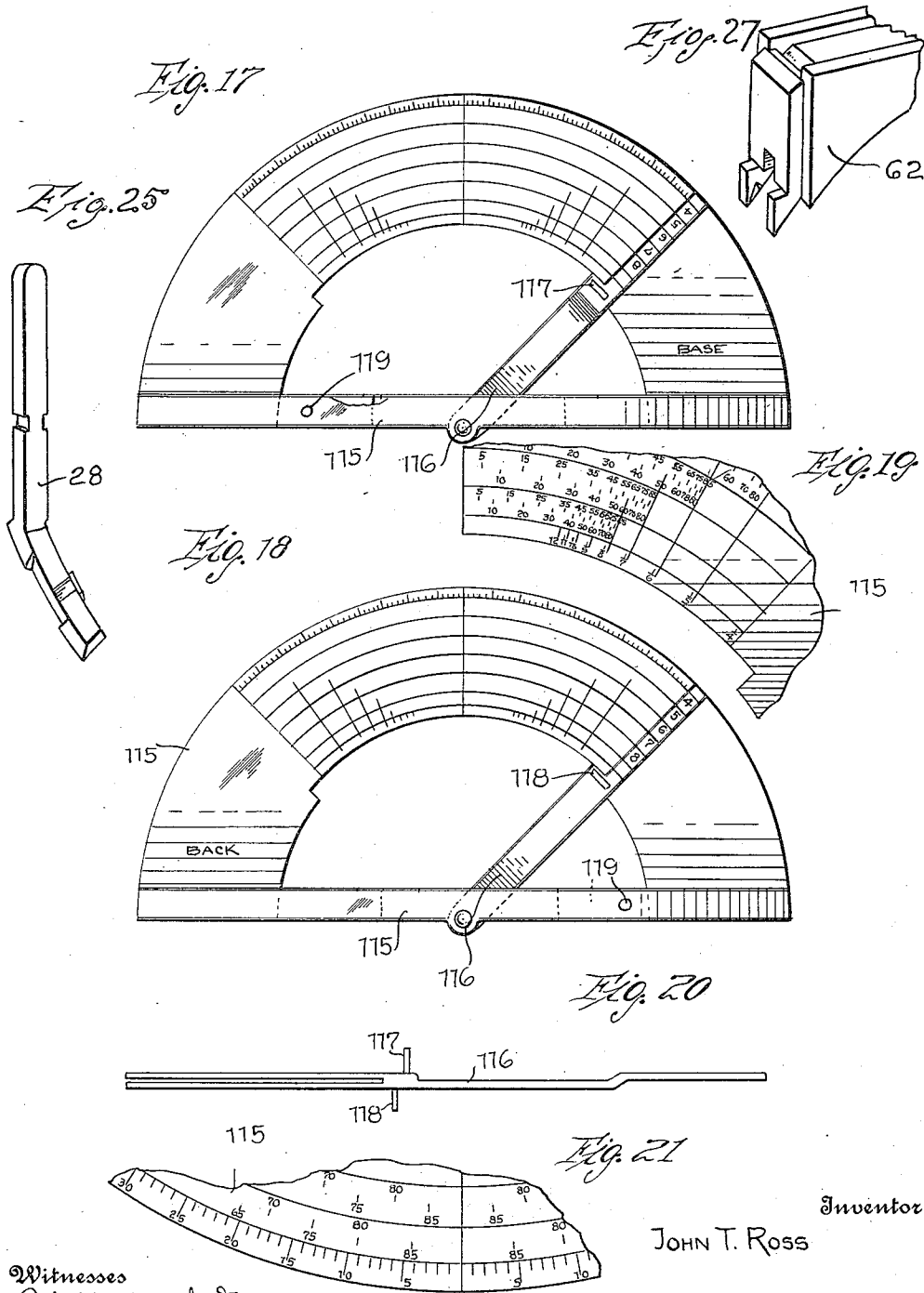
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7 SHEETS—SHEET 7.

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# UNITED STATES PATENT OFFICE.

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## MITER-BOX.

1,075,730.

Specification of Letters Patent.

Patented Oct. 14, 1913.

Application filed February 17, 1913. Serial No. 748,958.

*To all whom it may concern:*

Be it known that I, JOHN T. ROSS, a citizen of the United States, residing at Blanca, in the county of Costilla and State of Colorado, have invented certain new and useful Improvements in Miter-Boxes, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to improvements in miter boxes and the primary object of the present invention is to provide a device of the character mentioned with a saw supporting frame which may be swung in a horizontal or vertical plane, so that a compound angle may be easily and readily ascertained.

15 A further object of the present invention is to provide a device of the character described with means for permanently holding the block to be cut so that a more accurate angle may be ascertained than that of miter boxes now in use.

20 A further object of the present invention is to provide a saw support for a device of this character, by which the same may be readily adjusted and directed for use, which may be raised and lowered to the desired height and, at the same time, hold the saw in a raised position when not in use.

25 A still further object of the present invention is to provide a miter box of this construction, of which the various parts thereof may be easily and readily assembled and, at the same time, be readily taken apart and placed away in a compact form when not in use.

30 Other objects of the present invention will be apparent hereinafter to those who are familiar with the art.

35 With the above and other objects in view, this invention consists of the novel details of construction, combination, formation and arrangement of parts, as will be hereinafter more fully described, claimed and particularly pointed out in the appended drawings, in which—

40 Figure 1 is a front elevational view of the complete device with the saw guide in vertical position and the angle indicating arm at zero. Fig. 2 is a top plan view thereof, the saw holding and guiding means being removed. Fig. 3 is a vertical cross sectional view with parts shown in elevation. Fig. 4 is a rear elevational view with

the saw holding and angle indicating mechanism removed, said view also showing in dotted lines the U-shaped supports in various positions. Fig. 5 is an enlarged detail elevational view of the saw carrying means in lowered position. Fig. 6 is a detail view of the loop support, showing its connection with the rotatable sleeve and horizontal arm above the angle indicating arm. Fig. 7 is an enlarged front elevational view of the ring-shaped dial and parts connected therewith. Fig. 8 is an enlarged detail sectional view through the inner channel of one of the sector plates on the line 8—8 of Fig. 2, said view showing a slidable stop positioned in said groove. Fig. 9 is a side elevational view of the stop removed and with the length gage holding yoke and screw engaged upon said stop. Fig. 10 is a detail vertical sectional view on the line 10—10 of Fig. 3, looking in the direction indicated by the arrow. Fig. 11 is a similar view on the line 11—11 of Fig. 3 and looking in the direction indicated by the arrow. Fig. 12 is a fragmentary detail view of one of the longitudinal extending beams, showing the dog carried thereby engaged with the threaded stem of the U-shaped clamp. Fig. 13 is a slightly enlarged detail sectional view on the line 13—13 of Fig. 2, showing the means for locking the angle indicating arm in adjusted position. Fig. 14 is a detail sectional view on the line 14—14 of Fig. 2. Fig. 15 is an elevational view of the lower portion of the length gage holding means. Fig. 16 is a bottom plan view of the same. Fig. 17 is an elevational view of the base or front side of the chart. Fig. 18 is a similar view of the back side of the chart. Fig. 19 is an enlarged fragmentary detail elevational view of the back side of the chart, showing the arrangement of the figures thereof. Fig. 20 is a detail view of the bottom edge of the chart. Fig. 21 is a view similar to Fig. 19, showing a portion of the front or base side of the chart. Fig. 22 is a detail view of the gage bar. Fig. 23, is a detail perspective view of one of the segmental stops for adjustable engagement in the central segmental grooves of the sector plates to stop or limit movement of the indicator arm. Figs. 24, 25, 26 and 27 are enlarged details of certain parts.

Referring now more particularly to the drawings, wherein I have shown a specific



embodiment of the present invention, the miter box is supported upon a frame, which consists of three longitudinally extending beams, indicated by the numerals 10, 11 and 12, respectively. Mounted upon the upper face of these beams and adjacent the extremities thereof are a pair of sector plates 13, upon which are placed the blocks to be cut, as will be hereinafter more fully described. Each of these sector plates has mounted upon one of the radially extending edges thereof, which is adjacent the rear portion of the frame, a support 14 which extends at right angles to the sector plates. Secured to each of these supports and the under face of the opposite edges of the sector plates, are standards 15, upon which the frame is mounted. Each of these sector plates is provided adjacent to its outer edges with a segmental groove 16 and a segmental groove 17, within its intermediate portion. Each of these grooves is provided with a block support, which holds the block in a permanent position when cutting the same.

The stops 19, which are slidably mounted within the outer segmental grooves formed upon the face of the sector plates, are provided with a base portion 20, which is of substantially the same contour as that of the groove and has extending upwardly therefrom at right angles thereto an arm 21, which has provided adjacent its lower end a pair of marginal recesses 22, the purpose of which will be hereinafter described. The base portion of each of these stops has extending from one edge thereof a U-shaped clamp 22', which is adapted to fit over the edge of the sector plate and is provided in its lower portion with the set screw 23 by which the stop may be held at any adjusted position.

The stops 24 which are slidably mounted within the central segmental grooves 17 are each provided with a base portion 25 having extending laterally therefrom lugs 26 which are adapted to rest under the flanges 27, formed within the grooves, thereby preventing any lateral movements of the stops. Each of the base portions of these stops is also provided with a vertically extending arm 28 which is at right angles thereto and is adapted to hold short blocks in a permanent position when being cut by the saw. Each of these segmental central grooves 17 is provided with a segmental link 29 which is pivoted, as at 29', at one end within said grooves while their opposite ends are each connected to a stem 30. These stems extend under the base portion of the machine and each has one end journaled within a bearing 31 mounted in one extremity of the longitudinally extending bar 12. The opposite extremities of the stems 30 are threaded to each receive a thumb nut 32, by which

the link mounted within the groove 17 may be adjusted, for permanently holding the stops within the slots. Each of these segmental links 29 is provided under one edge with a flange under which is adapted to operate one of the laterally extending lugs, formed on the stops, thereby only permitting the stops to be removed from the extremities of said grooves. Each of the vertically extending arms of the stops is also provided with marginal recesses formed adjacent the lower extremity thereof for receiving a U-shaped yoke 33 having adjustably mounted therein a threaded screw 34.

In finding the length of blocks to be cut, I provide a length gage 35 which is adapted to rest upon one of the sector plates 13. This length gage comprises a longitudinally extending body portion having formed at one end thereof a handle 36 and at its opposite end a stop 37, which is adapted to rest against one end of the block to be cut. When the stop 37 of the gage 35 is placed upon one end of the block to be cut one of the stops 24 mounted upon the sector plates is placed under the body portion of the length gage and the U-shaped yoke 33 is then mounted within the recesses formed in the arm of the stop 24 and the set screw mounted within the member 33 is adjusted so as to permanently hold the length gage upon the stop. Each end post of the back supports 14 is provided with marginal recesses for also receiving the U-shaped yoke 33, so that the length gage may be also adjustably held adjacent the backs 14.

The longitudinally extending beam 10 of the bed of the machine is provided with an enlarged aperture portion 39 for receiving a depending lug 40, formed upon the angle indicating arm 41. This depending lug is provided with an annular groove 42 for receiving a spring actuated stop 43 which obviously holds the indicator upon the bed of the machine, but at the same time allows the indicator arm to be swung in a horizontal plane. This angle indicator arm 41 is provided with an enlarged circular portion 44 which lies between the apex of the sector plates and its longer arm thereof is adapted to ride upon the lower face of the bed of the machine, so that it may swing in a horizontal plane and the outer extremity of this longer arm is provided with a depending portion, which engages over one edge of a segmental guide bar 45, mounted upon one face of the longitudinally extending beam 12 and lying in the same plane therewith. The depending forward portion of the arm 41 is provided with a recess 46 in which is pivotally mounted a spring actuated stop. This stop comprises an angular shaped pawl 47 and has extending laterally therefrom at its apex, lugs 49 which are pivotally mounted within the depending portion

of the arm. This angular pawl 47 of the stop has provided on one arm thereof a bearing 47' in which is adjustably mounted a set screw 48. A coil spring 49' extends between this bearing and the outer face of the segmental guide 45 and normally holds the opposite arm of the angular pawl upon the lower face of the segmental guide 45 so that the same will engage the notches 50 formed upon the lower face of this segmental guide 45. The angle indicator will then be held in a stationary position, but when the arm is out of alinement with the notches, the set screw 48 may be adjusted to engage the outer face of the segmental guide 45, thereby also providing means for holding the angle indicator in the desired position. A handle or finger grip 53 is mounted adjacent to the apex of the angle-shaped pawl, whereby the same may be readily operated when adjusting the angle indicator. The upper face of this angle indicator arm is adapted to lie flush with the sector plates 13, so that when the block is placed upon the bed of the machine, it will lie evenly thereupon. The upper face of this angle indicator arm 41 is provided with a longitudinally extending groove 54 for receiving the teeth of the saw, when the same have cut through the block. To prevent the teeth of the saw from coming into contact with the metal frame of the angle indicator, a pair of wooden rollers 55 lie within the longitudinally extending slot 54, upon which the teeth of the saw will rest when they have cut through the block, which will obviously prevent the same from coming in contact with the angle indicator arm, thereby having a tendency to dull the same. The upper face of the segmental guide 45 is provided with graduations starting at zero at its central portion and then extending to 45° equidistant each side of the central portion. A pointer 56 extends within the slot formed in the angle arm and is adapted to contact the graduations so that, as the angle arm is adjusted, the pointer will indicate the angle in which the arm is resting. The notches formed within the lower face of the segmental guide 45 are also arranged so the angle arm may be held at zero or at  $\frac{1}{4}$ ,  $\frac{1}{6}$ , or  $\frac{1}{8}$  of an angle, as shown. The opposite or shorter arm of the indicator 41 is provided with an enlarged cylindrical portion 57, upon which is rotatably mounted a sleeve 58 of the central guide and saw support. The lower face of this cylindrical portion 57 is provided with an arcuate slot 59 in which operates a spring actuated pawl 60, mounted upon the sleeve 58, which will obviously permit the sleeve to freely rotate a limited distance upon the bore and at the same time, prevent same from being removed without first releasing the pawl 60. The upper face of the bore 57 has a portion thereof cut away on an angle

of about 45° so that the saw which is adapted to reciprocate therein will permit the saw support to be swung at the desired angle. The upper edge of this sleeve 58 is provided with a longitudinally extending slot, through which the saw is allowed to freely reciprocate and, at the same time provide a guide therefor.

Extending from the sleeve 58 and made integral therewith is a support 61 which is preferably loop-shaped, as shown, and through which the saw is adapted to reciprocate. Extending at right angles to the upper end of this loop support 61 is an arm 62 which is parallel to the angle indicator arm 41 and is held in the space relation therewith by means of the support 61.

A brace bar 63 which is secured at one end to the arm 62 is secured at its opposite extremity to the loop-shaped support 61 thereby providing means for bracing the arm 62. The extremities of this brace 63 which is secured to the loop-shaped support 61 are detachably secured thereto by means of stud bolts as shown, and the arm 62 is secured at one end to the loop-shaped support 61 by means of a set screw 64. A semi-circular bar 65 is made integral with the lower extremities of the support 63 and is connected at its middle portion adjacent to one end of the arm 62, thereby providing other means for supporting the inner end of this arm and, at the same time, allowing parts thereof to be readily assembled or taken apart when not in use.

Secured upon the outer face of the longitudinally extending beam 10 is a semi-circular guide 66 and spaced from this guide is a similar depending guide 67. These guides form a track in which is adapted to oscillate a ring-shaped dial 68. This dial 68 is provided with a reduced portion adapted to oscillate within the track and an enlarged portion having formed on its outer face a plurality of notches 69. A clamp 70 is adapted to engage these notches formed on the outer face of this dial and comprises substantially a U-shaped portion 71, which is journaled in the lower face of the longitudinally extending beams 10 and 11, and the extremities of this U-shaped member are provided with a pair of upwardly extending dogs 72, which are adapted to engage the notches formed in the outer face of the dial. Extending from the central portion of this U-shaped portion 71, is a threaded stem 73, which has mounted thereon a thumb nut 74 by which the clamp may be adjusted. Depending from each of the extremities of the body portion of the clamp 70 are lugs 75 and depending from the segmental guide 45 are depending lugs 76. These lugs are connected by coil springs 77, whereby the clamp will be normally held against the outer face of the dial. A dog 78 is pivotally mounted

upon the outer face of the beam 12 and has formed integral therewith a semi-circular sleeve, which is adapted to rest over a threaded stem 73 between the beam 12 and the thumb nut 74 mounted on said stem. This will obviously prevent the clamp 70 from moving and allowing the dial to turn, but when it is desired to turn the dial, the dog 78 is raised from the stem 73 and pushing inwardly on the stem the clamp will be forced out of engagement with the notches formed on the outer face of the dial. Made integral with the rear portion of the dial is an inverted U-shaped support 79 which extends parallel with the support 62, but terminating short thereof. The upper extremity of this support 79 is provided with a vertically extending lug 80 which is adapted to operate within the segmental slot formed in the lower face of the arm 62. This arm 62 has provided upon its upper face a bracket in which is slidably mounted a spring actuated pawl 81, which is adapted to engage the lug 80 when the machine is in a vertical position, but when the same is swung upon its vertical axis, this spring actuated pawl 81 is released so that the lug 80 will be allowed to operate within the slot, thereby permitting the saw supporting frame to be swung upon its vertical axis to the desired angle. The reduced portion of the dial ring has portions thereof cut away adjacent the slot formed within the same, through which the saw is adapted to reciprocate and mounted within each of the cut-away portions is a sector-shaped plate 83, the apexes of which terminate adjacent the slot formed within the angle bar 41, and their upper extremities are provided with vertically extending arms or stops 84. These sector plates 83 are held in a spaced relation so that the saw may be allowed to reciprocate through the same and their inner faces are beveled at an angle of substantially 45° so that the saw may be swung in a horizontal plane with relation to the bed of the machine. The front face of the dial plate is provided with graduations, as shown, which are adapted to register with the upper edge of the sector plates 13, so that when the saw frame is swung upon its vertical axis, the angle may be readily ascertained.

Slidably mounted upon the periphery of the enlarged portion of the dial ring are a pair of segmental arms 85 having extending laterally therefrom adjacent to one end thereof lugs 86, which are adapted to operate between the vertically extending arms formed integral with the sector plates mounted on the dial and the recesses formed within the inner ends of the back members 14. Each of these arms 85 has formed in its upper face a serrated groove in which are adapted to rest the pawls 86' pivotally mounted at one end to the U-shaped support

79 and having serrations formed on one face adapted to engage with the serrated grooves of the arms 85. Each of these pawls has extending therefrom and made integral therewith an arm 87. The upper or free ends of these arms have extending at right angles thereto, lugs 88 adapted to operate within apertures formed within the U-shaped support 79. Encircling these lugs are coil springs 89 which rest between the U-shaped support and the arms 87 and which have a tendency to normally hold the pawls in engagement with the arms.

The outer or free end of the arm 62 is provided with a reduced portion to which is detachably secured a bracket 90. This bracket has a recess formed in its central portion for receiving the reduced portion of the arm and having extending therefrom a lug in which is mounted a set screw 91 adapted to engage in a recess formed within the upper face of the arm 62, which will obviously hold the bracket in a permanent position. The extremities of this bracket are provided with bearings 92 in which are slidably mounted a pair of parallel extending arms 93 of the saw supporting frame. These arms 93 are connected at their upper ends by means of a transverse member 94 having formed in the lower face thereof a recess. A stop 95 is adjustably mounted within this bracket and the upper end thereof is adapted to rest within the recess formed in the transverse member, whereby the saw supporting frame may be held at a desired height.

The lower extremities of the parallel arms of the saw supporting frame are provided with longitudinally extending portions 96 and 97, respectively. The inner face of these portions 96 and 97 are each provided with one member of the saw guide and support 98, one of which is permanently secured to the member 96 and the other member thereof being provided with laterally extending blocks, which are adapted to slide within a recess formed in the member 97. A leaf spring 98' is mounted within the recess formed within the member 97 and its extremities are adapted to rest upon the movable member of the saw guide. This will normally hold the members together so that a saw of various widths may be inserted between these guides and the leaf spring will obviously prevent the saw from wobbling, which will cause the saw to cut a more accurate angle. To permit the saw to slide freely between the members of the saw guide 98, I pivotally mount upon the member 97 a pair of dogs 99 which are adapted to engage the upper surface of the removable member of the guide 98. The inner extremities of these dogs are connected by a transverse member in which is adjustably mounted a set screw 100, whereby by adjusting this

set screw the dogs may be held into engagement with the upper face of the laterally extending lugs of the movable member of the saw guide, thereby permitting saws of various widths to be inserted between the guide members. When their width has been ascertained, the dogs may be tightened upon the movable member, thereby providing a guide which will permit the saw to freely reciprocate the same and at the same time permit saw blades of various widths to be inserted through the same to prevent their wobbling when cutting the block.

When it is desired to hold the saw in a raised position, I have provided a gripping member which is adapted to engage the upper edge of the saw plate and which will hold the saw out of engagement with the block. This gripping member comprises two vertically extending parallel arms 101 which are secured adjacent their lower extremities to each of the members of the saw clamp 98 and have pivotally connected thereto adjacent their lower extremities, as at 102, L-shaped gripping arms 103. Each of these arms have mounted on their inner faces rubber bearing blocks, which are adapted to engage the upper end of the saw when holding the same in a raised position. The shorter arms of the gripping members 103 are provided at their extremities with lugs which are connected by coil springs 104 which normally holds the gripping members together in a gripping position. To provide stops for preventing the lateral movement of these gripping arms, lugs 105 are formed integral with the members 101 at right angles to the outer edge thereof. A pair of angular members 106 are pivotally connected at their apexes, as at 107, and one arm of each of these members is pivotally connected, as at 108, to the outer extremities of the shorter arms of the L-shaped gripping members. It is obvious that when these angular members 106 are brought together, their apexes will lie below a point parallel to that of the pivoted point of the angular members, thereby holding the gripping members in an open position, but when they are raised the coil spring will normally hold the gripping members in a closed position, thereby gripping the upper edge of the blade of the saw. A pawl 109 is pivotally mounted to one of the angular members 106 and is adapted to engage a tooth rack 110 formed on one arm of the same angular member so that when saws of different heights are inserted between the saw guide 98, this pawl may be adjusted so that the upper edge of the saw blade may readily contact the same for operating the angular members 106. It will be obvious from this construction, that when the angular members are past center, the gripping members will be open as before described, thereby allowing the saw to re-

ciprocate freely between the same, but when it is desired to hold the saw in a raised position, the upper edge of the saw will contact the pawl 109 and by a little force will cause the same to raise, thereby raising the angular members 106 past center and permitting the gripping members to grip the upper edge of the saw blade as before described.

The bracket mounted on the extremity of the arm 62 for supporting the saw guide is provided on its outer face with the leaf spring 111, which is adapted to engage under a transversely extending bar 112, connecting the parallel arms of the saw guide adjacent to their middle portion, whereby raising the saw guide above this leaf spring 111, the same may be held in a raised position, but upon releasing the spring the carriage will assume its lower position by gravity.

Extending laterally from the upper bearings, formed on the bracket and adjacent the lower extremity of the parallel side members of the saw guide are lugs 113, which are connected by light coil springs or any suitable elastic member 114, which will apparently release the saw of any weight when cutting a block.

It is obvious from the foregoing description, taken in connection with the accompanying drawings, that by adjusting the angle indicator arm upon the segmental guide any angle, in a horizontal plane to the bed of the machine, may be cut within the block or when adjusting the dial plate any angle may also be cut within the block to the vertical axis bed of the machine, but in finding compound angles, when constructing polygonal pyramids and the like, I provide a chart, indicated by the numeral 115 by which the desired angles may be easily and readily ascertained. This chart 115 comprises a semi-circular blade connected at its lower portion with an arm extending at straight angles thereto and having pivotally mounted in the center thereof an indicating arm 116, being bifurcated at its outer extremity to receive the semi-circular portion of the chart. This indicating arm has extending laterally therefrom a dove-tailed-shaped lug 117 on one side thereof and a lug 118 on its opposite side. A portion of the chart which extends at right angles thereto has provided on each side thereof, adjacent to one end, lugs 119, which are adapted to rest within openings 120 formed in one sector plate and in the back member 15 of said plate. It is apparent from the chart that the semi-circular plate thereof is provided on each face with the same graduations by which various angles may readily be ascertained. Each of these graduations is divided into seven sections, the upper section thereof indicating degrees, similar to those marked on the dial plate and

the segmental bar 45, and the lower section of these graduations is marked in common miters to that of the degrees in the other section. The intermediate sections formed on this dial plate are so graduated that you may readily ascertain compound angles and in finding these angles, the indicator is divided into sections provided with the members 4 to 8 which are adapted to register with intermediate sections formed on the chart. Whereas I have only illustrated five intermediate sections whereby to obtain compound angles, it is, of course, to be understood that there may be as many of these intermediate sections as desired. On each side of the semi-circular plate of the chart are indicated the words "Back" and "Base", the use of which will be hereinafter described. In using this chart in conjunction with this machine, the same is placed upon the back of the machine and the side of the chart having the word "Back" indicated thereupon should appear so that the graduations indicated on that side may readily be seen, and applying the chart thereto the dove-tailed lug formed upon the indicating arm is inserted within the opening formed between the sector plates mounted on the dial, the central portion of the chart is adapted to rest within the groove formed in the angle indicating arm and one of the laterally extending lugs is adapted to rest within an aperture formed in the back plate 15. For an example of cutting a truncated pyramid having five sides on an incline of 35°, the chart is first placed in the position, as before described, and the dial is then swung upon its vertical axis until the numeral 5, indicated on the indicating arm, registers with the numeral 35 indicated upon one of the intermediate sections in alinement with the section provided with the numeral 5 on the indicating arm and then by placing the chart upon the upper face of the base of the machine and allowing the lug 118 on the indicating arm to rest within the longitudinally extending groove formed within the angle indicating arm 47 and allowing the lug 119 to rest within the recess formed upon the upper face of one of the sector plates 14, the face of the chart marked "Base" will then appear. The angle indicator arm will then be moved carrying the indicator mounted on the chart, with the same until the section indicated by the numeral 5 of the indicating arm on the chart registers with the numeral 35, indicated on the "Base" face of the chart and which section is in alinement with the numeral 5. The chart is then removed and the machine is set at the proper angle for cutting the block of a truncated pyramid, as before described, but of course, in cutting a block of compound angles having 4, 6, 7 or 8 sides or angles, the sections of the indicating arm provided with a number

corresponding with the number of angles and the incline desired upon the pyramid or other articles may be found within that section, corresponding to the number of sides to be cut. When swinging the arm upon its vertical axis, the clamp 70 is released from the outer face of the dial plate, thereby permitting the same to freely oscillate, but upon releasing the thumb nut mounted on the clamp, the coil springs will normally hold the same in its engagement with the dial plate, thereby preventing the same from moving. When the dial plate is turned to its desired angle, the pawls 86 are then released by pressing inwardly upon the arms made integral therewith, thereby releasing the segmental links mounted upon the periphery of the dial plate until the laterally extending lugs, mounted thereon rest within the inner ends of the members 14. The pawls 86 are then released and the coil springs will normally hold them in engagement with the segmental links, which will obviously prevent any further oscillation or movement of the dial plate, thereby permanently gripping upon the same so that an accurate angle may be ascertained.

When desired, the stops 24 may be removed from the inner segmental grooves 17 and the segmental stops 121 adjusted in said grooves after the angle at which the indicator arm 41 is to be placed has been determined. Each segmental stop 121 has its outer end beveled, as shown at 123 to correspond with the outer edge of the groove 17 while its inner edge is provided with the cut-away or channel portion 122 to accommodate the flange formed on the link 29 within the inner edge of the segmental groove 17. It will be seen that as a segmental stop 121 is adjustably positioned in each inner segmental groove 17 with its end projecting from the end of the groove, movement of the indicator arm 41 in either direction will be limited by engagement of said arm with the extended ends of the segmental stops 121, thus making it possible to swing the segmental arm back and forth and stop said arm at the proper place each and every time.

What I claim is:—

1. In a miter box having an angle indicator, a support pivotally mounted thereupon an arm permanently secured at one end to said support, a bracket adjustably secured to the opposite end of said arm, a saw guide comprising a pair of parallel rods adjustably mounted within said bracket, means mounted in the lower extremities of said rods for guiding the saw, and means mounted upon said saw guide for holding the saw in a raised position.

2. In a miter box comprising an angle indicator and saw guide adjustably mounted thereupon, said saw guide comprising a

stationary member, a pair of arms extending from each of said members, gripping blocks mounted between said arm, a pair of annular-shaped members mounted upon said arms, for holding the same in an open position, and a coil spring connecting said angular members for holding said arms in a closed position when the angular members have been released, substantially as described.

3. A miter box comprising a base, an arm pivotally mounted upon said base adapted to swing in a horizontal plane, an angle indicator mounted upon said arm, a dial ring encircling said arm and adapted to swing in a vertical plane, links slidably mounted upon the periphery of said dial, spring actuated pawls for holding said links upon said dial, and lugs extending from said links and adapted to rest upon said base to prevent rotation of said dial, substantially as described.

4. A miter box comprising a base, an angle indicator mounted thereupon and adapted to swing in a horizontal plane, a ring mounted upon said base and adapted to swing in a vertical plane, a pair of arms extending from said ring, an angle indicator mounted upon said ring, links mounted upon the periphery of said ring and adapted to engage said base, pawls pivotally mounted upon said arms and adapted to engage the said links, arms extending from said pawl, means mounted between the opposite extremities of said arm and the arms mounted upon said pawls for holding the same into engagement with said links, a saw guide supported upon the first mentioned arms and said first mentioned angle indicator, substantially as described.

5. In a miter box having an angle indicator, a support mounted thereon, an arm secured at one end to said support, an adjustable bracket secured to the opposite end of the arm, a saw guide comprising a pair of rods adjustably mounted within said bracket, saw guiding means mounted in the lower ends of the rods, and means mounted upon said saw guiding means for retaining the saw in raised position.

6. In a miter box having an angle indicator, a support pivoted thereto, an arm connected to one end of said support, a bracket adjustably mounted upon the opposite end of said arm, a saw guide comprising parallel rods adjustably mounted within said bracket, means carried by the lower ends of the rods for guiding the saw, and means carried by the saw guiding means for holding the latter in raised position.

7. A miter box comprising an angle indicator and saw guide adjustably mounted thereon, said saw guide including a stationary member, a pair of arms extending from said member, gripping blocks mounted between said arms, a pair of members mounted upon said arms for holding the same in open position, and connections between the pair of members for holding the arms in closed position when the pair of members have been released.

8. A miter box comprising a base, an arm mounted upon said base and adapted to swing horizontally, an angle indicator beneath said arm, a dial ring encircling said arm and adapted to swing in a vertical plane, links movably mounted upon the periphery of said dial ring, means for holding said links upon the dial, and means extending from said links and adapted to rest upon the base to prevent rotation of the dial.

9. A miter box comprising a base, an angle indicator carried by the base, an indicator arm mounted upon the base and adapted to swing horizontally over the angle indicator, a dial ring encircling a portion of the arm and adapted for movement in a vertical plane, links slidably mounted upon the periphery of said dial, spring actuating pawls for holding said links upon the dial, and lugs extending from said links and adapted to engage the base to prevent rotation of the dial.

10. A miter box comprising a base, an angle indicator mounted thereon and adapted to swing horizontally, a ring mounted upon the base and encircling the indicator, said ring being adapted for movement in a horizontal plane, arms extending from said ring, an angle indicator mounted upon said ring, means mounted upon the periphery of the ring and adapted to engage the base to prevent movement of the ring, means engaged with the links for retaining the latter in position, arms extending from the means for retaining the links in position, means carried by the arms for holding the link retaining means in engagement with said links, and a saw guide carried by the first mentioned arms and the first mentioned angle indicator.

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

JOHN T. ROSS.

Witnesses:

FRANK O. WALKER,  
GEO. W. MILFORD.