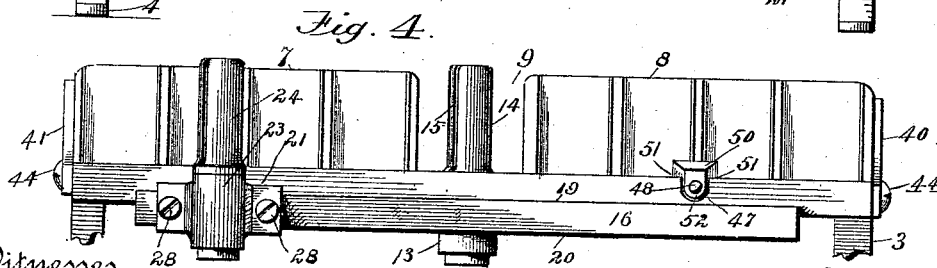
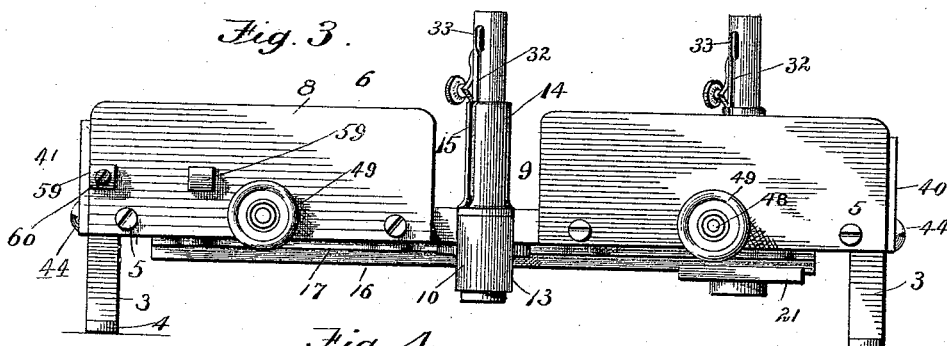
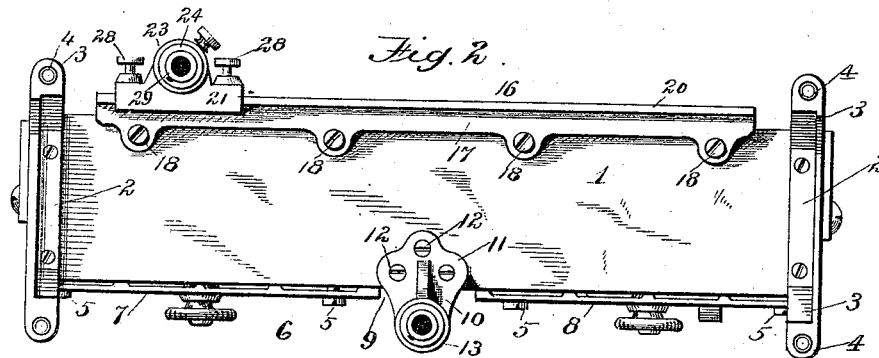
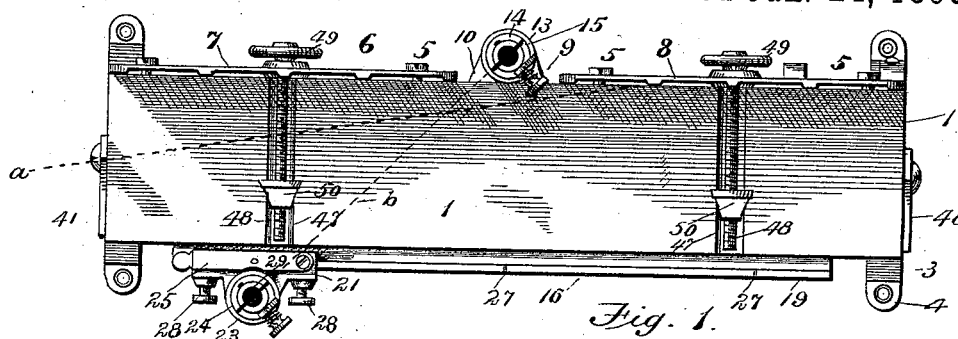


J. J. SPILKER.
MITER BOX.

No. 490,514.

Patented Jan. 24, 1893.



Witnesses
Wm H H Knight
Lambert Jacobson

Inventor
John J Spilker
By Attorney
Lewis Abraham

(No Model.)

2 Sheets—Sheet 2.

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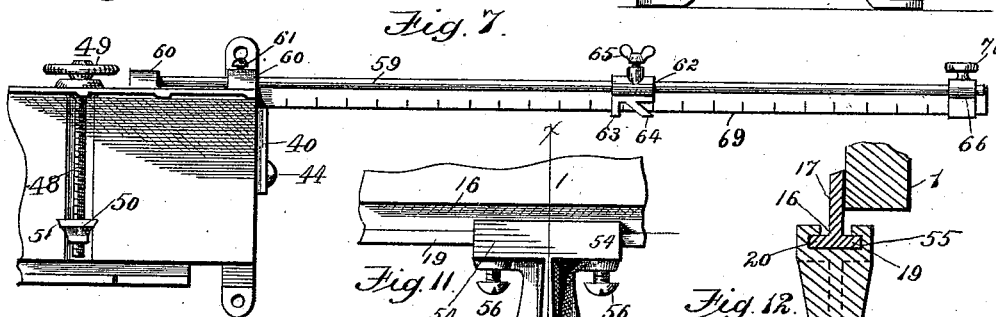
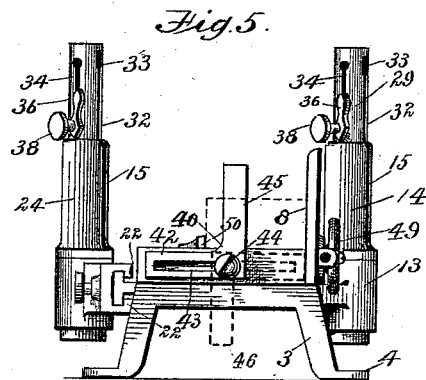
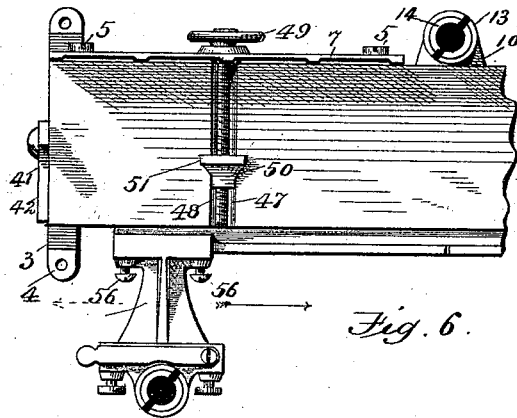
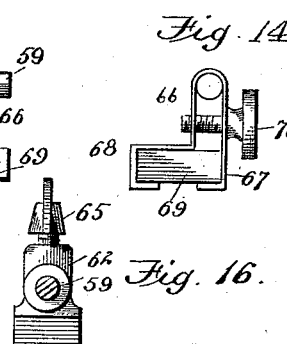
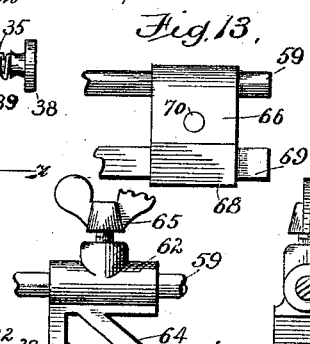
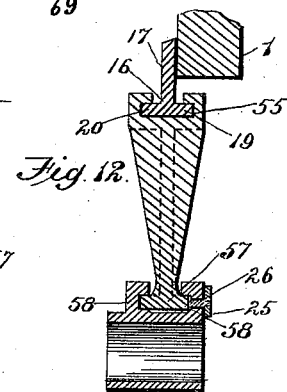
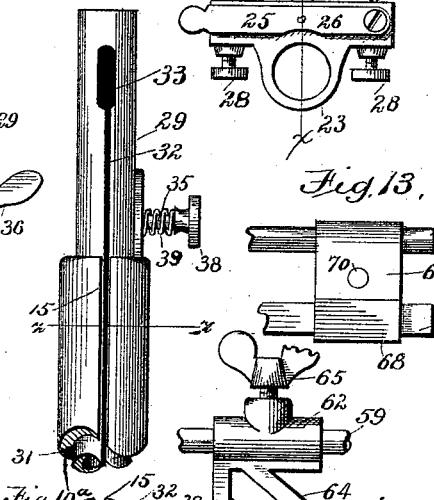
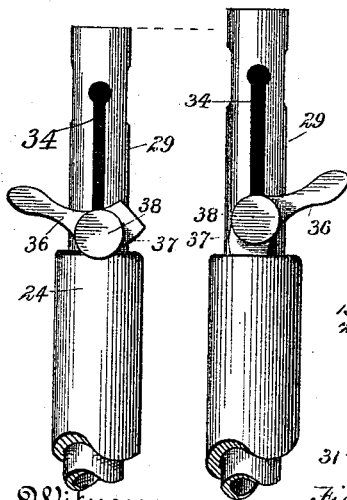
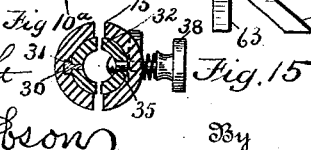


Fig. 8. Fig. 9. Fig. 10.



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UNITED STATES PATENT OFFICE.

JOHN J. SPILKER, OF CINCINNATI, OHIO.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 490,514, dated January 24, 1893.

Application filed February 23, 1892. Serial No. 422,470. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. SPILKER, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Miter-Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in miter-boxes, and contemplates the provision in a device of the class named, of means for increasing the material receiving space, between the saw guides, for holding material securely in position when operated upon, for accurately spacing or measuring the material into equal parts, for gaging the direction of the saw cut at a predetermined angle, and for regulating and determining the depth of cut of the saw when the device is in operation.

To the accomplishment of the ends above set forth, the invention consists in the construction, arrangement and combination of the several parts comprised therein for service substantially as hereinafter set forth and illustrated in the accompanying drawings, and specifically pointed out in the claims.

Referring to the accompanying drawings, wherein like numerals and letters of reference point out similar parts on each figure;—Figure 1. represents a top plan view of a device embodying my invention. Fig. 2. is bottom plan view thereof. Fig. 3. is a rear elevation of my invention. Fig. 4. is a front elevation thereof. Fig. 5. represents an end elevation of my invention. Fig. 6. is a partial top plan view of my invention, showing the adaptation thereto of means for increasing the width of the box, to receive material of more than ordinary width. Fig. 7. is a partial top plan view, showing means for measuring the material into predetermined lengths when the device is being operated. Figs. 8,—9,—and, 10,—illustrate detached detail views of the means employed to determine the depth of cut of the saw. Fig. 10^a, is a transverse section of Fig. 10, on line, *z, z*. Fig. 11. is a detached detail view, in top plan, of the means whereby the width of the box is increased to receive material of more than ordinary width. Fig. 12, is a

longitudinal section of the parts shown in Fig. 11, taken on the line, *x, x*, of said figure. Figs. 13,—and, 14,—represent respectively a front view, and an end elevation of the clamp, which secures the measure or scale to its retaining rod. Figs. 15, and 16, represent respectively a top plan view and an end elevation of the adjustable stop which moves upon said scale, retaining rod.

In carrying out my invention, I employ a base, 1, of suitable material, preferably wood, and provide the same, at each end with a leg standard, the body, 2, of which extends from front to rear of the base, and terminates at each end in short depending legs, 3, having perforated feet, 4, by which the device may be secured to a bench or other support. To the base, 1, I secure by screws or bolts, 5, a back, 6, forming said back in two parts, herein called shields 7,—and 8,—which are so secured to the base, 1, as to leave an opening, 9, through which the saw passes, when the device is in operation.

To the rear edge of the base, 1, intermediately of the back sections I secure a casting, 10. This casting I provide with a flange, 11, which extends inwardly and is secured to the lower surface of the base, 1, by screws, 12, and with an enlargement, 13, which is perforated vertically, to receive a hollow standard, 14, which extends thence to a point above the upper edge of the back, 6. The standard, 14, is free to turn in the enlargement, 13, and is provided at its opposite sides with slots, 15, which extend from the top of said standard to a point immediately above the casting, 13. As shown in the drawings, the standard, 14, is centrally disposed in the opening, 9, between the sections, 7, and 8, of the back, 6, for a purpose presently explained.

At the forward edge of the base, 1, I arrange a track iron, 16, and provide said iron with an inwardly projecting flange, 17, having apertures, to receive screws, 18, by which it is secured to the lower surface of the base, 1. I provide this track iron, 16, at its outer edge with upwardly and downwardly extending flanges, 19,—and—20, thereby composing a T-bar to receive a sliding block, 21, the flanges, 22, of which take over said flanges, 19, and 20, see Figs. 5, and 12. I provide the block, 21, with an outwardly projecting en-

largement, 23, having a vertical aperture to receive a standard, 24, similar in construction to the standard, 14. The block, 21, is free to move from end to end of the track, 16, and is provided upon its upper surface with a leaf spring, 25, from which projects a spur, 26, that passes through an aperture formed in the block, 21, and engages with notches, 27, formed in the flange, 19, of the track iron, 16. This spring, 25, and spur, 26, determines the proper position of the block, 21, upon the track iron, 16 set screws, 28, which pass through said block, 21, hold it against displacement from such position.

As has been hereinbefore stated, the standards, 14, and 24, are similar in construction, each having slotted sides and each free to turn in its bearings. Within each of said standards I place a hollow tube, 29, each of which is free to move vertically in its standard, 14, or 24, but is held from turning therein by a spline, 30, which extends from each of said tubes, 29, into grooves, 31, formed in the inner surface and extending from end to end of the standards, 14, and 24, see Fig. 10^a, which is a sectional view looking in an upward direction. This spline is shown in said figure at right angles to slots, 15, but may be arranged on tubes, 29, protruding directly under slots, 32, whereby, as said tubes are moved up or down, the spline will enter one of the slots, 15, and be therein guided in the same manner as if passing along interior grooves as previously set forth.

I provide each of the tubes, 29, upon their opposite sides with slots, 32, which are placed, when said tubes, 29, are in position in the standards, 14 and 24, in alignment with the slots 15 in said standards. The slots, 32, of the tubes, 29, extend nearly the entire length of said tubes, and are, at their upper ends, enlarged laterally, as shown at 33, to receive the thickened back, of an ordinary back saw.

To control, and determine the depth of the saw cut, in the material under operation, I employ the following described means, viz:—Each of the tubes, 29, at a point intermediate of the slots, 32, and at one side, are provided with a slot, 34, through which extends an outwardly passing bolt or screw, 35, which also passes through a small lever, 36, having a cam shaped lower end, 37 and enters a thumb nut, 38, a spiral spring, 39, surrounds the shank of the screw, 35, between the thumb nut, 38, and the lever, 36, whereby a greater or a less degree of spring pressure may be exerted upon said lever, 36, by the action of said thumb nut, 38.

By reference to Figs. 8,—and, 9,—of the drawings, the operation of the lever 36, will be readily understood, the former of said figures showing said lever when turned down, while the latter figure shows said lever at its highest point of elevation, and the tube, 29, as raised thereby.

It will be understood that the screw, 35, may be moved to any point of the slot, 34,

thus raising or lowering the tube to impart any desired depth of cut to the saw, and also that the lever, 36, when used will, to a limited extent, still further decrease the depth of cut of the saw. I am thus enabled to maintain the toothed cutting edge of the saw at any pre-determined distance from the base, 1, when said saw is at its lowest point of movement, a fact which will be duly appreciated by those skilled in the art to which my device appertains.

I provide the device with means for securely holding material against displacement while being operated upon, both as regards that, wherein it is desirable that the miter cut extend transversely of the thickness of the material, as is the case when mitering base boards, draw sides, &c., and that, wherein it is desirable that the miter cut extend transversely of the width of the material, as is the case when mitering architraves, picture frames, &c.

To meet the requirements of the former of the cases cited, to wit, that having miter cut transversely of thickness, I provide the opposite ends of the base, 1, with L-shaped clamping dogs, 40,—41,—the horizontal parts, 42, of which are provided with slots, 43, to receive screws, 44, which pass through said slots, 43, into the ends of the base, 1, and serve to hold said dogs in fixed position.

As will be understood the vertical parts, 45, of the dogs, 40,—41,—may be moved toward and from the back, 6, to accommodate material of different thickness, and said dogs may be turned down, as shown, by dotted lines, 46, Fig. 5, when not in use.

The clamping dogs, 40,—41,—in addition to functions above set forth also serve to change the angle at which the material is cut by the saw; the rear edge of the material in such case bearing against one or the other of said dogs, as shown by dotted lines, *a*, Fig. 1, the cut, *b*, of the saw being at a greater or less angle with the back of material as will be readily understood. To meet the requirements of the latter case, *i-e*, that having miter transversely of width of material, I provide the base, 1, near the ends thereof, with transversely extending grooves, 47, to receive screw threaded rods, 48, which are journaled at one end in the back, 6, and extend thence in the grooves, 47, the rods, 48, are operated by small hand wheels, 49, which are secured to the ends thereof, outside of said back, 6. I provide each of the rods, 48, with clamping blocks, 50, having extending side wings, or shoulders, 51, which bear upon the upper surface of the base, 1, and at their center with downwardly extending lugs, 52, perforated and screw threaded to receive the rods, 48. By turning the hand wheels the blocks 50, will be moved toward and from the back, 6, as will be readily understood.

I provide the device with means for increasing the distance between the saw guiding standards, 14, and 24, the same consisting in

a casting, 53, one end of which is provided with laterally projecting portions, 54, and a grooved face, 55, which fits and slides upon the track iron, 19, at front of base, 1, set screws, 56, pass through the parts, 54, of the casting, 53, and bear against the front of the track iron, 19, to hold the casting, 53, at any desired point of the length of said track iron. The opposite end of said casting, 53, is provided with an elongated head, 57, having ribs, or flanges, 58, that fit into the grooves in the sliding block, 21, the screws, 28, of which bear against the face of said head, 57, and serve to maintain said parts in adjustment. I also provide the device with means for accurately measuring the material to be cut, into equal lengths, the same consisting in a removable rod, 59, one end of which extends through aligned perforations, formed in lugs, 60, which are cast upon one of the back sections, 8, of the device, one of which is provided with a set screw, 61, to hold the rod from displacement. The rod, 59, extends outwardly from the device in line with the back thereof, and carries a movable block or stop, 62, which is provided with projecting portions, 63, and 64, the latter of which is arranged at an angle with the body of said block, 62, as shown.

The end of the material, to be cut, abuts against the projections, 63, and 64, a thumb screw, 65, which passes through an enlargement of the stop, 62, and bears against the rod, 59, serves to hold said stop against displacement on the rod, and at any desired point thereon.

I provide the outer end of the rod, 59, with a clamp, 66, having depending portions, 67, and 68, to inclose one end of a scale or measure, 69, the opposite end of which bears against the end of the base, 1. A set screw, 70, holds the rod, 59, and measure or scale, 69, securely in the clamp, 66, and against displacement therefrom.

By the disposition of the rod, 59, and scale, 69, last above described, it will be apparent that the position of the movable stop, 62, may be accurately determined by the scale, 69. Said scale measuring rod adjustable as described serves the purpose, not only of determining the distance of the miter cut from the extreme end of the material but can also be adjusted to be employed as a scale for cutting off lengths or widths thereof either before or after the mitring especially is it of service for attachment to back board cutters, and for predetermining the length and thickness of picture boards and frames.

From the foregoing description of my invention, it will be obvious to those skilled in the art to which said invention appertains, that a miter box, having the improvements set forth, will greatly facilitate the work of the mechanic using the same, and that such work will be more securely held in position, against displacement, and accurately measured into lengths, thus insuring truer saw

cuts, and consequently better results, than can be produced in miter boxes, not having my improvements.

I am aware that miter boxes have been heretofore constructed and provided with a base, back, and swiveling standards carrying hollow tubes, to receive and guide a saw, and I therefore do not claim such a construction, although such forms a part of my device, and is hereinbefore described for the purpose of more clearly defining my invention.

Having thus described my invention, and the manner of its operation, what I claim and desire to secure by Letters Patent of the United States of America, is:—

1. A miter box having a base, supporting legs thereon, a back uprising from the base separated vertically into two sectional shields, and provided directly under the opening, dividing said sections, with apertured casting, 10, having integral therewith an extending flange permanently secured to the under surface of the base, said casting supplied with hollow standard, 14, having opposite lengthwise slots, 15, extending to the upper edge of back shields, free to turn within casting 10, said standard provided with concentric tubular saw guide adapted, to be reciprocated vertically therein and rigidly held at required elevations by screw controlled spur, 36, the saw guide provided with opposite vertical slots, 34, maintained in parallel alignment with slots, 15, of standard, 14, by spline, 30, extending outwardly from lower end of the saw guide and entering groove, 31, in inner surface of the standard, in combination with similar standard, tube and saw guide at opposite side of the base, having block, 21, conformed to intermesh with track on front of the base and adapted to be slid thereon and be held at any point of its length by thumb screws, 56, substantially as described.

2. In a miter box saw guiding tube, 29, having extending nearly the full length thereof opposite vertical slots 32, the upper ends of which have lateral extensions, 33, for passage therethrough of saw blade and thickened back, and at right angles thereto intermediate slot, 34, into which is inserted screw bolt, 35, carrying cam lever 36, the shank of which is surrounded with spiral spring, 39, whereby the saw guide tube is held within inclosing standard at elevation relative to depth of cut required on material under treatment and by actuation of spring controlled lever the saw and its guiding tube can be readily lifted during progressive operative steps of the device as and for the purpose intended, substantially as described.

3. In a miter box, swiveling saw guiding standards and supports therefor, provided with longitudinally moving hollow tubes, 29, within said swiveling standards said tubes having vertical slots to receive and guide a saw blade, each of said slots having upper lateral enlargement 33, for passage of the saw back, spring controlled cam lever, 36, piv-

- otally journaled on bolt, 35, passing through vertical slot 32, of tubes 29, and extending outwardly therefrom whereby said tubes can be held at required elevations within the standards as the device is operated, the saw
5 be gaged to cut wholly or partially through material under treatment, and be lifted therefrom, from time to time, substantially as described.
- 10 4. In a miter box, swiveling slotted standards, hollow saw guiding tubes therein, having slots to receive a saw, levers to limit the movement of said tubes in said standards, set screws having shanks extending through
15 said levers and into said tubes, and springs, surrounding said screws, between the heads thereof, and the levers, to impart a yielding pressure to said levers, substantially as described.
- 20 5. In a miter box, swiveling slotted standards connected to the base of the box, hollow tubes, within said standards, having slots, 32, to receive and guide a saw, and slots, 34, to receive the shank of a screw, in combination
25 with said screws, levers mounted thereon and bearing against said tubes, threaded thumb nuts upon the outer ends of said screws, and springs upon said screws, between said thumb nuts and levers, for the purpose set forth.
- 30 6. The combination of a miter box having a base, a back connected thereto, a saw guiding standard upon such back and a track iron at the forward edge of said base, with a removable casting, 53, having a grooved end
35 provided with set screws to fit and be secured upon said track iron, and an end provided with ribs to receive and retain the movable standard bearing block, 23, substantially as described.
- 40 7. A miter box having a base, a back secured thereto, adjustable saw guiding stand-

ards connected to said base and L-shaped clamping dogs, 40 and 41, one arm of which has lengthwise slot, 43 each of said dogs being pivotally connected at opposite ends of the base by screw, 44, whereby they can be turned, and elevated above the base and there-over extend and present a V-shaped support at any desired angle, substantially
50 as described.

8. The combination with a miter box, having a base, a back and saw guiding standards, of a removable bar or rod, 59, connected to the rear of said box and held extended therefrom horizontally within perforated
55 lugs, 60, an adjustable stop, 62, upon said rod and means for holding said stop at any desired point on said rod, substantially as described.

9. The combination with a miter box having a base, a back thereon and adjustable saw guiding standards at front and back of said base of a removable straight scale or measure, 69, extending horizontally from the
60 rear of the box and means, substantially as described, for securing said measure to said box, as and for the purpose specified.

10. The combination of a miter box having a base, a back connected thereto, and saw guides at front and back of said base with a rod extending from said box and provided with adjustable stop, a measure extending parallel with said rod, a clamp to secure said
70 measure to said rod and means substantially as described to secure the rod and measure to the box, as and for the purpose set forth.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

JOHN J. SPILKER.

Witnesses:

J. M. GUNTHER,
ALFRED HERHOLZ.