No. 787,230. PATENTED APR. 11, 1905.

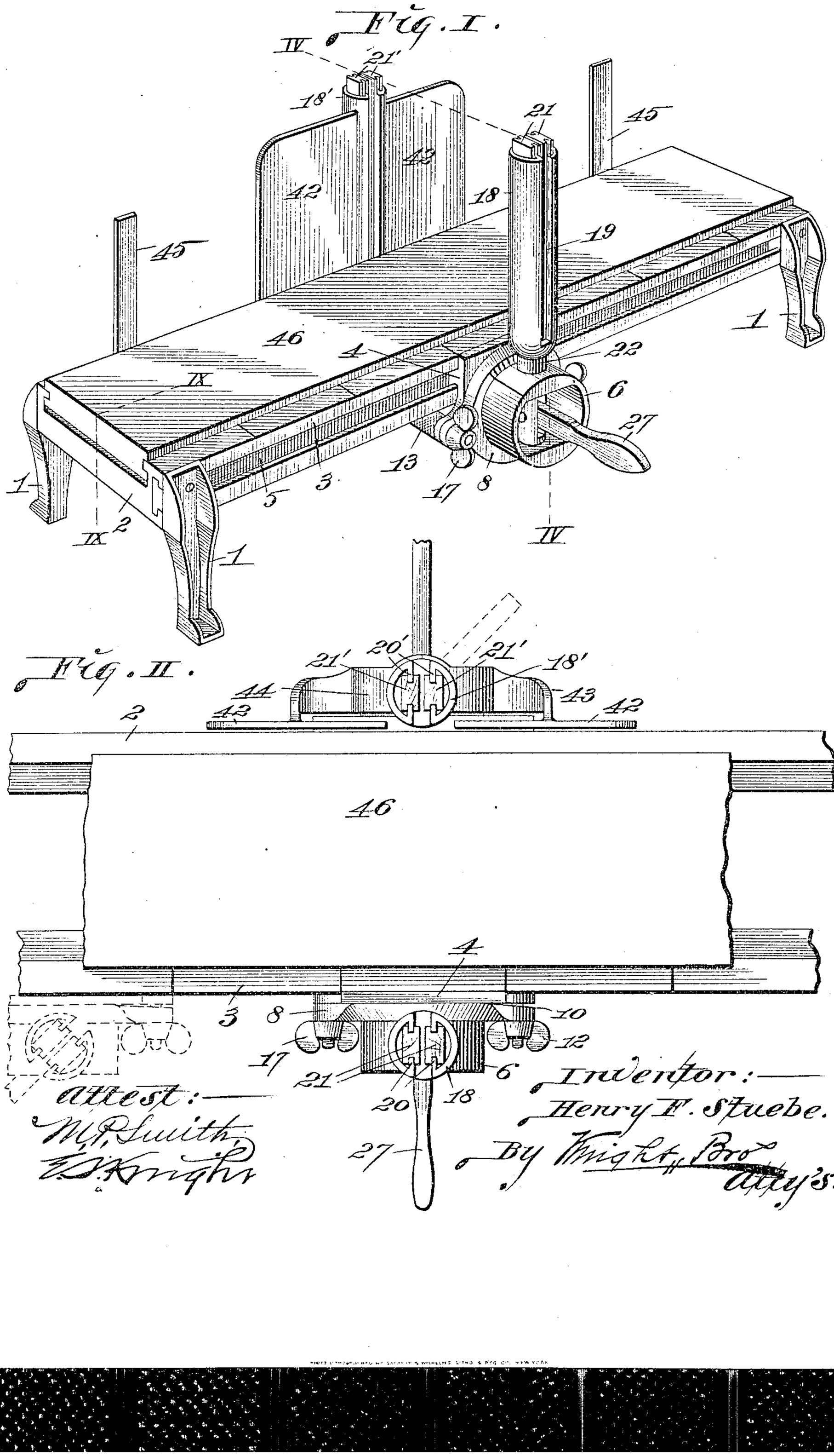
H. F. STUEBE.

MITER BOX.

APPLICATION FILED MAY 22, 1903.

2 SHEETS—SHEET 1.

Fig. I.



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2 SHEETS—SHEET 2.

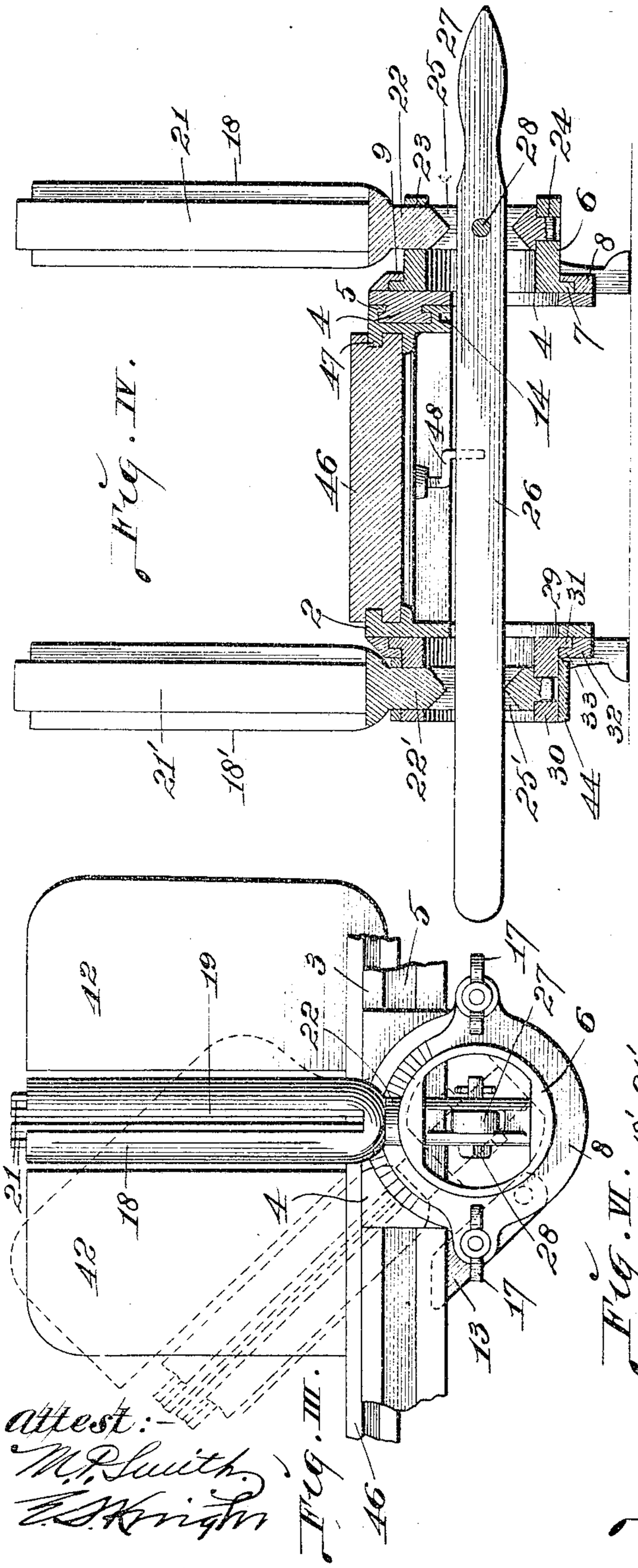

Fig. IV.

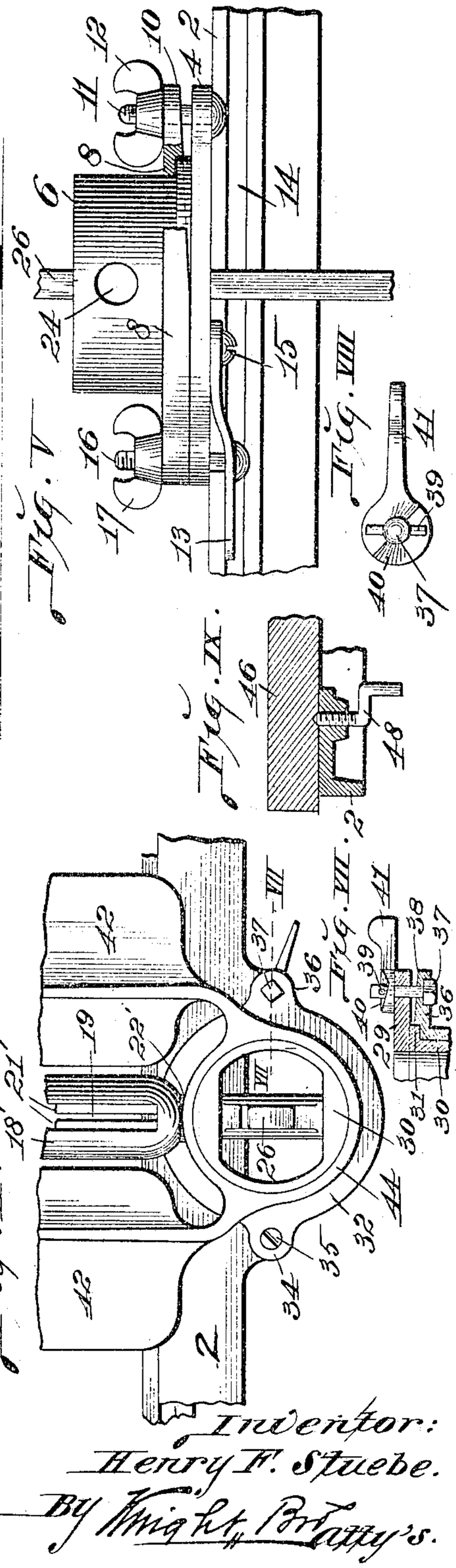

Fig. V.

Fig. VIII.

Fig. IX.

Fig. III.

Fig. VII.

Fig. II.

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No. 787,230. Patented April 11, 1905.

UNITED STATES PATENT OFFICE.

HENRY F. STUEBE, OF ST. LOUIS, MISSOURI.

MITER-BOX.

SPECIFICATION forming part of Letters Patent No. 787,230, dated April 11, 1905.

Application filed May 22, 1903. Serial No. 158,241.

To all whom it may concern:

Be it known that I, HENRY F. STUEBE, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, 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, forming part of this specification.

My invention relates to a miter-box for the use of joiners, carpenters, and others, the object of the invention being to produce an article with which both simple and compound miters may be cut with accuracy and of various degrees.

A further object of the invention is to provide a removable and adjustable work-supporting table and removable wear-blocks against which the saw operates.

The invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a perspective view of my miter-box. Fig. II is a top or plan view of the central portion of the miter-box. Fig. III is an elevation of the central portion of the miter-box. Fig. IV is a vertical transverse section taken on line IV IV, Fig. I. Fig. V is a bottom view of the front guide-post head and its clamp. Fig. VI is an elevation of the rear guide-post head and its clamp. Fig. VII is a section taken on line VII VII, Fig. VI. Fig. VIII is a view of the cam-lever used in connection with the rear guide-post clamp-head. Fig. IX is a vertical section taken on line IX IX, Fig. I.

1 designates legs by which the miter-box is supported, and 2 the bed-frame of the box, that is provided at its forward side with a dovetailed guideway 3. (See Figs. I, III, and IV.)

4 is an apertured slide that is provided with a dovetail tongue 5, which rides in the dovetailed guideway 3 and by which the slide is upheld for reciprocation longitudinally of the miter-box at its forward side.

6 is an apertured guide-post-supporting head loosely fitted to the slide 4 and provided at its inner end with an annular rim 7, as seen in Fig. IV.

8 is a clamp-ring that lies against the slide 4 and having an annular flange 9, that projects over the annular rim of the head 6 to embrace it and hold said head to said slide in a manner to permit the rotation of the head or the clamping thereof into a fixed position. One end of the clamp-ring 8 has an inner tapered face 10, (see Fig. V,) that opposes the facing end of the slide 4.

11 is a set-bolt which passes through the slide 4 and the end of the clamp-ring having said tapered face. This set-bolt bears a set-nut 12, through the medium of which the tapered end of the clamp-ring may be forced inwardly toward the slide for clamping action against the rim 7 of the head 6 to hold said head from rotation.

13 designates a clamp-arm carried by the slide 4 at its inner side and having a free end that operates in a groove 14 in the under side of the bed-frame. (See Figs. I, III, IV, and V.) The lower end of the clamp-arm 13 is fixed to the slide 4 at 15, and through said arm intermediate of its ends passes a set-bolt 16, which extends through the slide 4 and clamp-ring 8 at the opposite end from that containing the set-bolt 11. The set-bolt 16 bears a set-nut 17, by which the bolt may be drawn forwardly to effect clamping engagement of the arm 13 against the forward wall of the groove 14 to thereby lock the slide to the front of the bed-frame 2.

18 designates a front guide-post provided with a slot 19, through which a saw may operate, the post having interior thereof inwardly-projecting tongues 20, two of which are carried by each half of the post.

21 represents wear-blocks the edges of which are grooved to receive the tongues 20 of the guide-post, so that they will be held by said tongues in a detachable manner to be readily inserted into the post in each half thereof. These wear-blocks are preferably of wood or other material that will not dull the saw which operates between them, and they are removably positioned in the guide-post, so that they may be reversed in position therein or replaced by new blocks of similar shape when they become worn.

The shank 22 of the guide-post 18 is loosely

fitted in apertures 23 and 24 in the post-supporting head 6 for rotation therein. In said shank is a vertical slot 25.

26 designates a lever having a handle 27 at its forward end and pivotally secured in the slot 25 of the post-shank by a pin 28. (See Figs. I, III, and IV.)

29 designates an apertured drop-hanger depending from the rear side of the bed-frame 2, the said hanger being located centrally of the bed-frame. 30 is a rotating guide-post-supporting head fitted to the outer face of said drop-hanger and having an annular rim 31, that is embraced by a clamp-ring 32, provided with a flange 33, that projects over said rim. (See Figs. IV and VIII.) The clamp-ring 32 is provided with an arm 34, through which a screw or other fastening 35 passes to connect the ring to the bed-frame 2. Said ring also has an arm 36, that receives a set-bolt 37. (See Figs. VI, VII, and VIII.) The inside of the clamp-ring arm 36 is tapered at 38 (see Fig. VII) in order that said arm may be swung to the opposing face of the drop-hanger 29 to provide for forward movement of the clamp-ring toward said hanger and enable it to clamp the flange of the head 30 and hold said head from rotation. This clamping action is secured through the medium of the set-bolt 37, which is provided with a cross-pin 39 and which receives the cam-head 40 of a lever 41, that when rotated acts against the cross-pin to carry the bolt 37 inwardly and move the tapered arm of the clamp-ring to the opposing face of the hanger 29.

18′ is a rear guide-post similar in construction to the guide-post 18 and having corresponding inwardly-extending tongues 20′ to receive the wear-blocks 21′, between which a saw operates in conjunction with its operation through the forward guide-post. The shank 22′ of the rear guide-post passes through apertures in the post-supporting head 30 and is provided with a slot 25′, in which the rear portion of the lever 26 is loosely fitted.

42 designates wings situated at the rear of the miter-box and carried by arms 43, that are connected to a sleeve 44, which encircles the rear post-supporting head 30. These wings serve as stops against which the board, strip, or other piece of lumber is placed in making a miter cut across it, and the wings being carried by the post-supporting head move therewith and with the rear guide-post into any position into which the post may be placed.

45 represents uprights secured to the rear side of the bed-frame 2 and extending upwardly therefrom to serve as stops against which the piece of work is held to maintain it in alinement with the miter-box while it is resting thereon in making a cut across the work.

46 is a table, preferably of wood, which is grooved at its edges to receive tongues 47, projecting inwardly from the sides of the bed-frame 2. (See Figs. I and IV.) This table is held to the bed-frame by set-screws 48, (see Figs. IV and IX,) that pass upwardly through the ends of the bed-frame, in which they are screw-seated, and enter into the table, as clearly seen in Fig. IX. By providing the table of the form shown and securing it in the manner described I provide for its ready removal when it becomes worn by saw cuts or other injury, upon which occurrence the set-screws may be readily disengaged from the table and the table withdrawn to either invert and replace it or substitute a new table in its stead. The arrangement also provides a construction that permits of the table being drawn outwardly to furnish an extended support for a piece of work laid thereon, as its engagement with the tongues 47 is retained when the table is so extended.

In the practical use of my miter-box the guide-posts may be variously positioned in alinement with each other as follows to receive a saw operated therein to effect desired cuts upon a piece of work: By grasping the handle 27 of the lever 26 and moving the front post-supporting head 6 in a direct transverse alinement with the rear post-head the front and rear posts will be positioned for a straight cut across the work, in which position they are held by tightening the nut 17 of the set-bolt 16 to draw the clamp-arm 13 into binding engagement with the bed-frame 2, as explained. While in such position the forward head is held from rotation through the medium of the set-bolt 11 and its nut 12 when said nut is tightened to the clamp-ring 8, as explained. The rear head is held in like manner by the clamp-ring 32 through the medium of the cam-lever 41. After the parts have been secured in the manner stated it is only necessary when it is desired to make a simple miter cut of any angle in either drection across the piece of work to loosen the nut of the set-bolt 16 and free the clamp-arm 13, when by pressure against the lever-handle 27 the forward post-head and its post may be moved with the slide 4 along the front of the bed-frame to either side of the center of said frame. When the clamp-arm is again set, the posts are held in a position to provide for the miter cut of the angle desired. Where it is desired to make a compound miter cut, the clamp-rings 8 and 32 are relieved of restraint by the means which hold them, so as to permit rotation of the guide-post-supporting heads to position the guide-posts obliquely to the table 46, as indicated by dotted lines, Fig. III. The heads are again clamped and the posts are retained in the positions named ready for the reception of the saw to produce a compound cut of the degree desired and for which the parts have been properly shifted.

I claim as my invention—

1. In a miter-box, the combination of a bed-frame, a guideway thereon, an apertured slide having a dovetailed tongue riding in said guideway, a forward guide-post-supporting head mounted in said slide to rotate in a plane parallel to the length of the guideway, a hanger secured to the rear of the frame, an apertured rear post-supporting head rotatably mounted thereon, a rear guide-post mounted in said supporting-head, and a level pivotally mounted in said forward post-supporting head, and loosely mounted in said rear post-supporting head.

2. In a miter-box, the combination of a bed-frame, a guideway thereon, a slide having a tongue riding in the guideway, an apertured guide-post-supporting head mounted in said slide to rotate in a plane parallel to the length of the guideway, an annular rim on the inner end of said head, a guide-post rotatably mounted on said supporting-head, a clamp-ring lying against the slide, the inner face of said ring being beveled at one end, an annular flange on said ring, and means for forcing said ring tightly against the annular rim on the guide-post-supporting head.

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In presence of—
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