

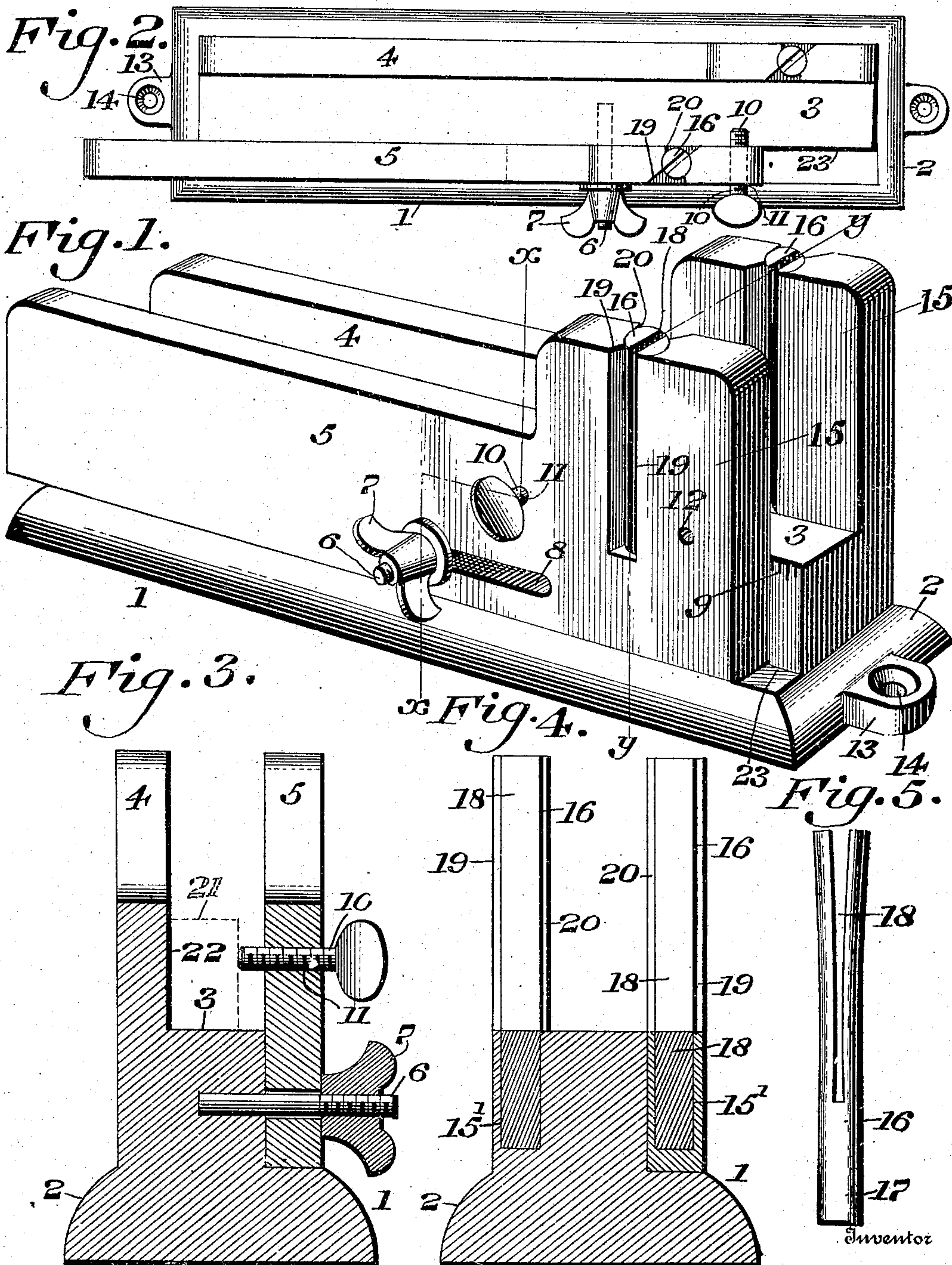
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W. S. POLLARD.

ADJUSTABLE MITER BOX FOR COMMUTATOR BRUSHES.

APPLICATION FILED AUG. 26, 1905.



Witnesses  
P. F. Nagle.  
H. S. Fairbanks

Walter S. Pollard.  
By  
Kiedersheim Fairbanks.  
Attorneys



# UNITED STATES PATENT OFFICE.

WALTER S. POLLARD, OF PHILADELPHIA, PENNSYLVANIA.

## ADJUSTABLE MITER-BOX FOR COMMUTATOR-BRUSHES.

No. 847,816.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed August 26, 1905. Serial No. 275,873.

*To all whom it may concern:*

Be it known that I, WALTER S. POLLARD, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Adjustable Miter-Box for Commutator-Brushes, of which the following is a specification.

In the operation of dynamos it is essential that the commutator-brushes shall be accurately faced to the exact desired angle. The accurate facing has been quite difficult for the lack of proper means for holding the brush and guiding the saw or other cutter for the brush.

The purpose of my invention is to provide an adjustable miter-box for holding commutator-brushes while they are being faced.

A further purpose of my invention is to make possible rapid and accurate adjustment of the position of the miter-box parts.

A further purpose of my invention is to provide movable guides for a hack-saw blade at a distance from each other and means for bodily moving these guides with respect to one another.

Figure 1 represents in perspective a miter-box embodying my invention. Fig. 2 represents a top plan view of the construction shown in Fig. 1, the brush-securing screw being shown in a different position. Fig. 3 represents a section upon line *x x*, Fig. 1. Fig. 4 represents a section upon line *y y*, Fig. 1. Fig. 5 represents in elevation one of the guide-posts removed from the miter-box.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates a miter-box comprising, primarily, a base 2, having a work-seat, which by reason of the special use intended I designate a "brush-seat" 3, a preferably vertical side 4, and an adjustable side 5, preferably vertical, longitudinally movable with respect to the base and side 4 and clamped thereto by means of stud 6 and thumb-nut 7 passing through aperture 8 in said side 5. It will be evident that this side 5 may be moved to any position with respect to the side 4 within the limit of the slot 8 and that the tightening of thumb-nut 7 will securely hold this side in its adjusted position. The scale 9 is provided, so that by proper initial calibration it will indicate either the movement of the side in inches or the angular position of the guides with respect to the seat 3. I provide a set-

screw 10, which is insertible in either of the apertures 11 or 12 for the purpose of increasing the range of angles which can be reached in sawing short commutator-brushes. At the ends of the base or frame I provide projections 13, apertured at 14, so that my clamp may be secured thereby to any suitable bench.

Within the sides 4 and 5 in extensions 15 and located, preferably, vertically therein I provide cylindrical seats 15', within which I place guides 16, having cylindrical bases 17 fitting within the apertures 15' and having the upper parts of the guides slotted at 18. At the upper end of the cylindrical seats 15' I provide grooves 19 and 20 from the outside and inside of said cylindrical seat or groove, but preferably not of such dimensions as to prevent a portion of the cylindrical surface from forming a bearing for the upper part of my guide 16.

I wish to call especial attention to the novel manner in which the size of the bearing at the upper end of the cylindrical seats 15' is increased, while at the same time sufficient adjustment for the guides 16 will be permitted. As seen in Figs. 1 and 2, one side of the groove 19 is beveled, while the opposite side thereof forms substantially a right angle with the outer wall of the adjustable side 5. The groove 20 in like manner has one of its walls beveled, the other wall forming substantially a right angle with the inner wall of the side. It will be seen that the beveled portion of the groove 19 and the beveled portion of the groove 20 are on opposite sides of the cylindrical seat 15'. The amount of bearing which the guides 16 have is materially increased, so that they will be more rigidly maintained in the adjusted position given thereto, and, furthermore, when a brush is to be trued or sawed at a sharp angle there will be less liability of the brush breaking or splintering. These guides are preferably of hardened metal sprung at the top, as shown, and are placed in the seats 15' in such a position that the sprung upper ends provide sufficient frictional contact to prevent improper turning of the guides. They preferably turn just stiffly enough so as not to be turned by the saw. It will be evident that whatever position the sides 4 and 5 may occupy with relation to each other within their range of adjustment these guides may be turned so that slots 18 of the guides 16 may be placed in alinement and will be held in



such alinement with any desired predetermined amount of friction to the turning of the guides and at any desired angle and that a hack-saw or other cutter inserted therein  
5 will be guided in its movement at a corresponding angle to the length of any brush placed upon the seat 3.

At 21 I have indicated in dotted lines a brush which is held therein by the screw 10,  
10 so that it rests upon the seat 3 and against the inside 22 of the side 4. It will be evident that the shape of the side and the position of the side may be changed to accommodate brushes of other shapes or of different rectangular cross-section, if desired, and that  
15 either or any side of the brush may evidently be placed vertically within a miter-box of proper dimensions and that the end of the brush may therefore be trued or sawed to  
20 any desired angle with respect to any of the sides thereof.

It will be evident that any form of guide for the side 5 other than the right-angular seat at 23 may be provided and that the side  
25 may be held in adjustment by other means than that herein shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

30 1. In a device of the character described, a base having a work-seat and side angularly

thereto, a sliding side also angular to said work-seat, said sides having cylindrical sockets thereon and the sockets depressed below the level of the work-seat in combination  
35 with cylindrical spring-guides fitting to said sockets open at the upper ends and frictionally engaging the walls of said sockets.

2. In a device of the character described, a base having a work-seat, fixed and movable  
40 sides in proximity to said work-seat, sockets in said sides open toward and away from the work-seat in each side down to the level of said seat and depressed below the level of  
45 said seat, in combination with split guides open at the top and yieldingly engaging the limiting-surfaces of said sockets.

3. In a device of the character described, a base, fixed and movable sides in proximity thereto having sockets therein depressed below the level of the work-seat, means for permitting a saw to operate through said sides  
50 in line with said sockets down to the work-seat, and spring-guides normally flaring, pressing against the interior surfaces of said  
55 sockets and forming in place guide-slots of uniform width.

WALTER S. POLLARD

Witnesses:

W. O. JACKSON,  
H. S. FAIRBANKS.