



No. 832,259.

PATENTED OCT. 2, 1906.

E. HOYSRADT.  
MITER BOX.

APPLICATION FILED OCT. 25, 1905.

2 SHEETS—SHEET 2.

Fig. 4.

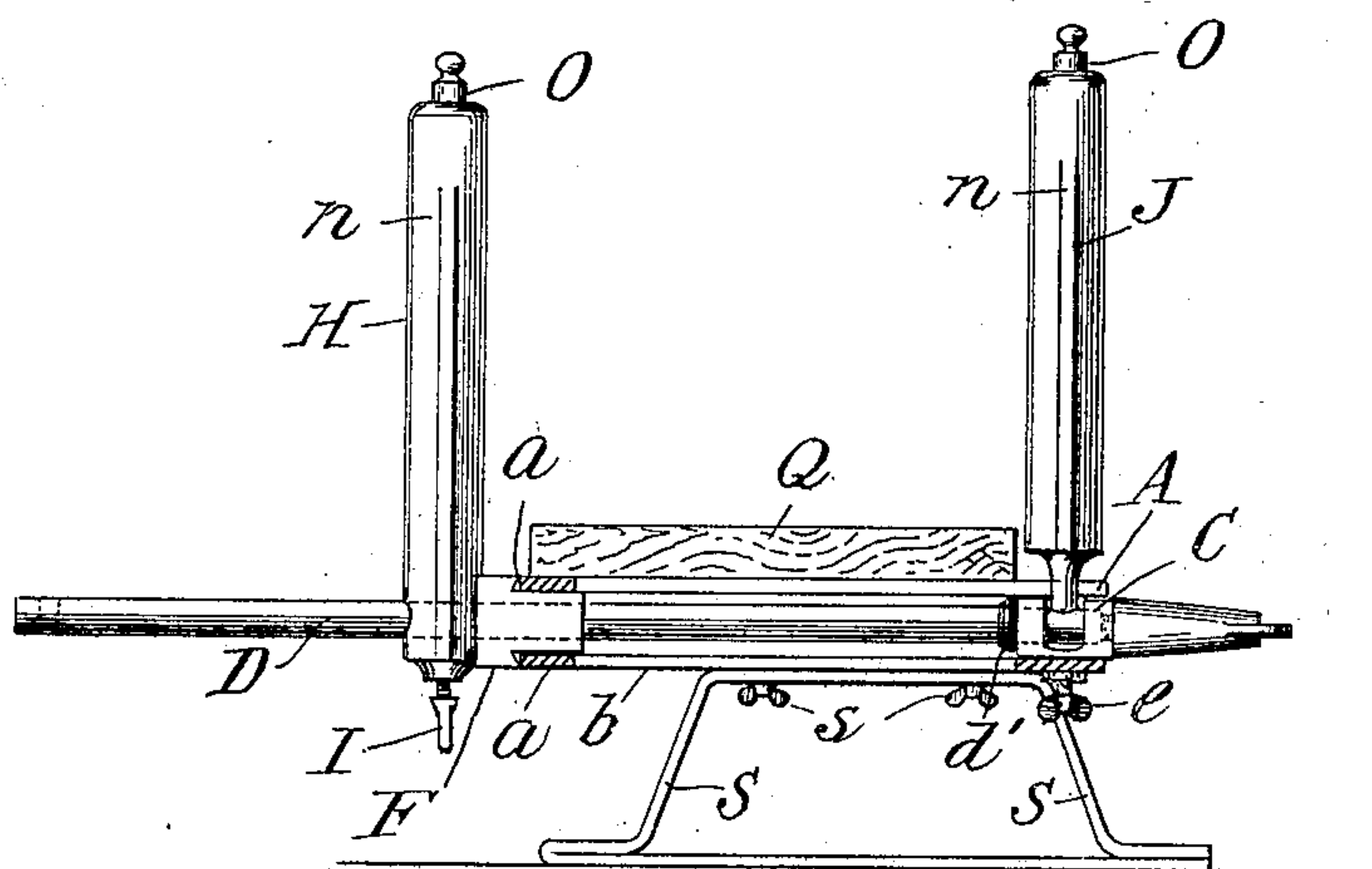


Fig. 6.

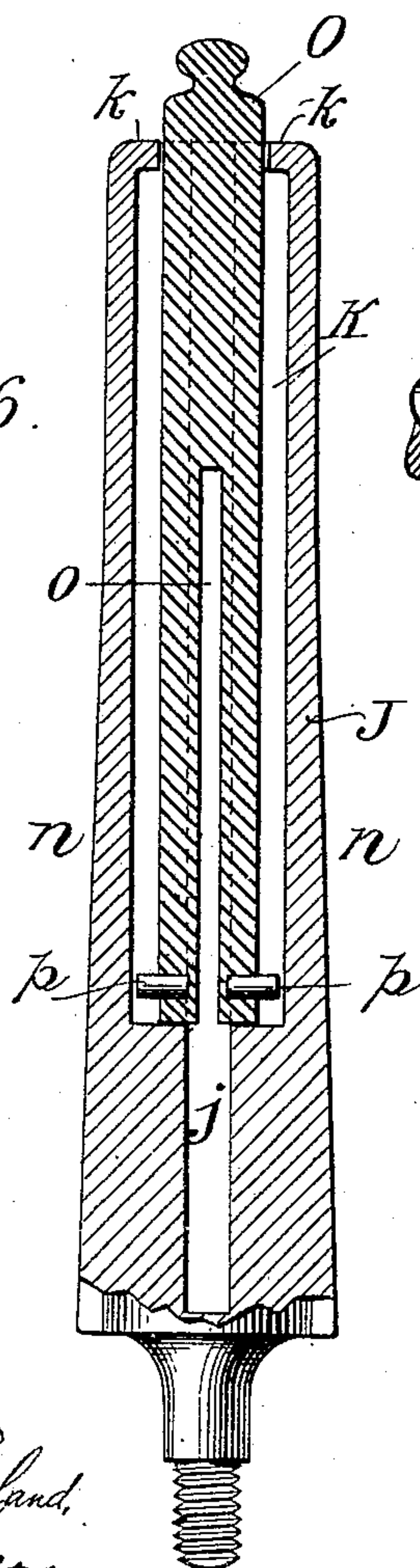


Fig. 7.

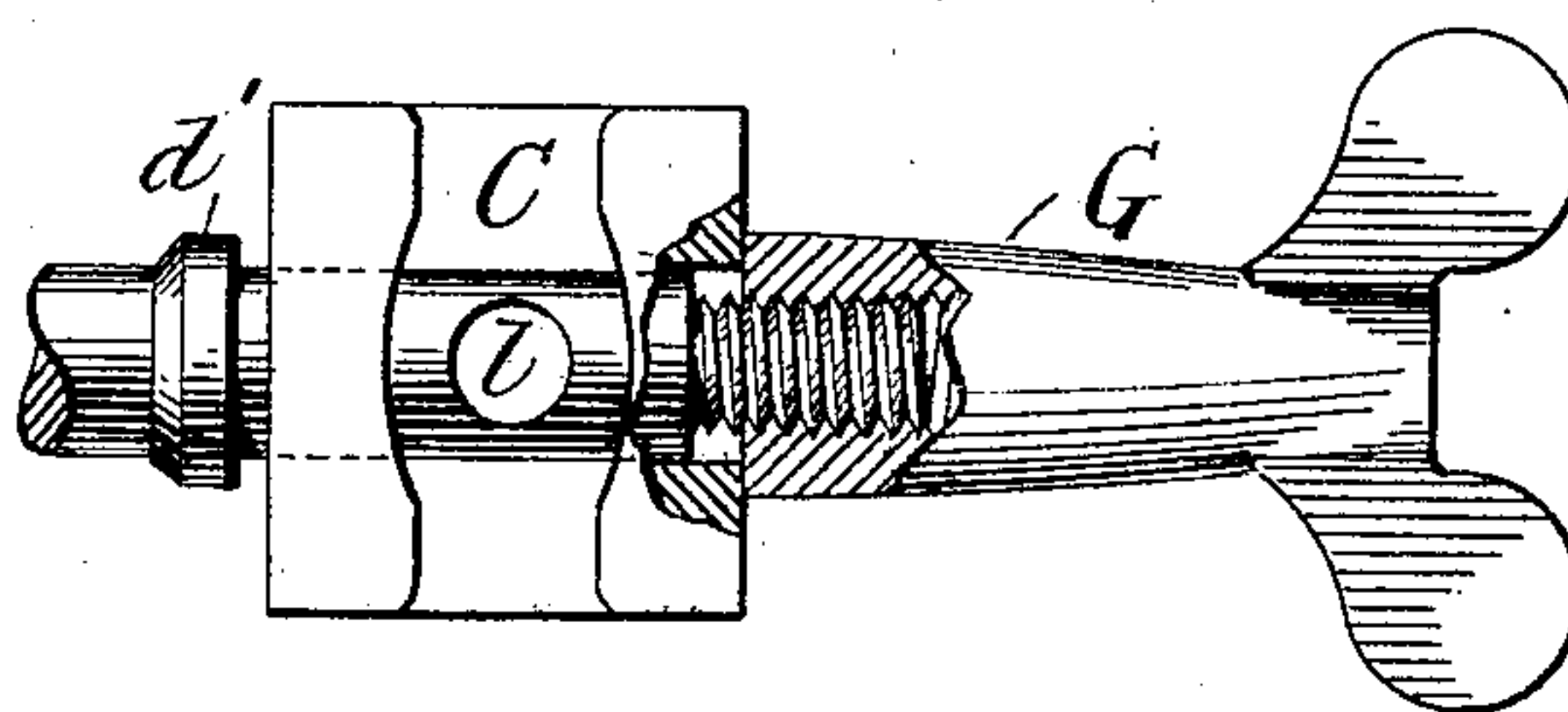
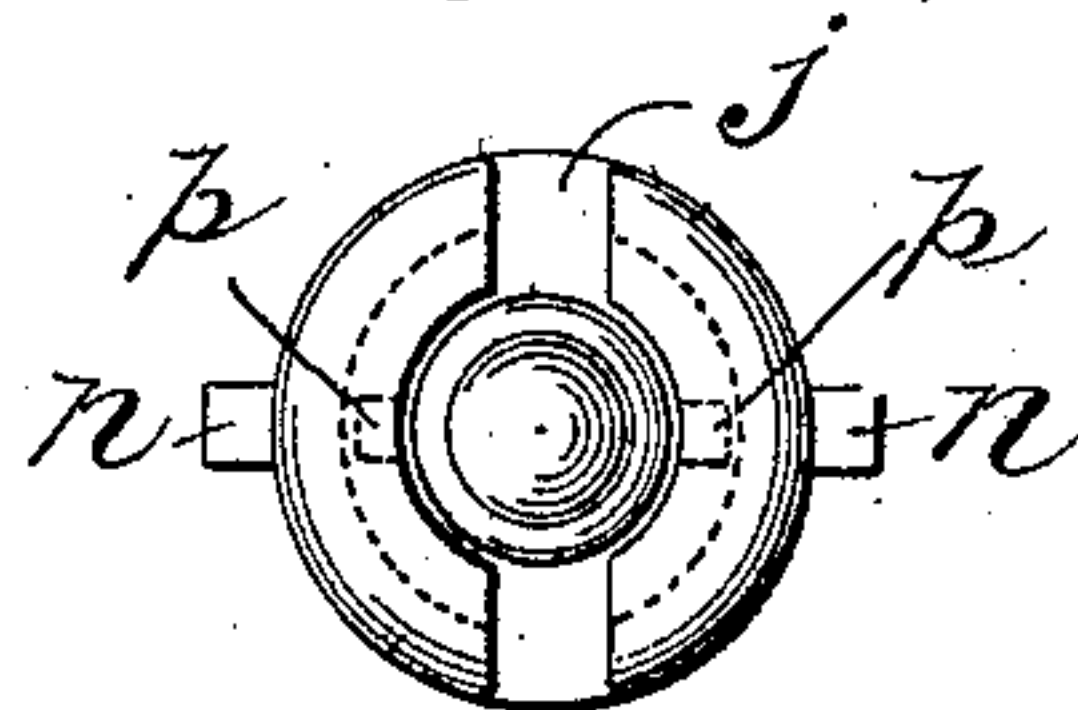


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## MITER-BOX.

No. 832,259.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed October 25, 1905. Serial No. 284,280.

*To all whom it may concern:*

Be it known that I, EDWIN HOYSRADT, a citizen of the United States, residing at Mount Vernon, New York, have invented certain new and useful Improvements in Miter-Boxes, of which the following is a specification.

My invention relates to that class of miter-boxes which are provided with movable saw-guides adapted to be set at various angles and positions, so that the saw shall cut the material in the desired line; and my improvements consist in the particulars hereinafter set forth.

In the drawings, Figure 1 is a plan view of my improved miter-box, the top board being broken away from the right-hand portion. Fig. 2 is a front elevation of the same. Fig. 3 is a plan view of a portion of my miter-box, showing the saw-guides in a folded position. Fig. 4 is a cross-sectional view taken on the line X X of Fig. 1 looking in the direction of the arrows. Fig. 5 is a top view of one of the saw-guides. Fig. 6 is a vertical view of the rear saw-guide, the upper portion being in section; and Fig. 7 is a plan view of the swivel-block, rod end, and clamp.

Similar letters of reference designate similar parts in all the figures.

A is the frame of the miter-box, which is preferably made of light metal and which is provided with segmental rails *a a* and a bearing member *b* to carry the swivel-block C. The member *b* is preferably provided with a slot *d*, and the swivel-block is locked in position by means of a set-screw *e*, passing up through the slot and threaded into the swivel-block.

D is the swivel-rod, which is provided with a guide-block F, traveling between the tracks *a a*, the rear end of the rod passing through the swivel-block C and being threaded to receive the thumb-cap G. The top and bottom shoulders of the guide-block F, extending outside of the tracks *a a*, are undercut, as shown in Fig. 4, so as to grip the edges of the tracks and draw them down against the block when it is clamped against the tracks, as hereinafter described. The forward saw-guide H slides upon the rod D and has a slot *i* on its under side to receive a projection *h* in the bore of the saw-guide H and also to receive the end of the thumb-screw I, which locks the

saw-guide at the desired point on the rod. The rear saw-guide J fits in a socket *l* in the rod D. With the exception of their lower portions, by which they are attached to the rod D, the saw-guides H and J are of the same construction, each being provided with a vertical slot *j*, a central bore K, with overhanging lips *k k*, and stiffening-ribs *n n*. In the bore K slides the saw-back guide O, provided with a slot *o* and with stop-pins *p p*. Each saw-back guide is inserted into the bore K of its saw-guide by bringing its pins *p p* into position to slide down through the open end of the slot *j*, and when the pins *p p* have passed below the overhanging lips *k k* the saw-back guide may be rotated so as to bring the slots *k* and *o* into line and permit a saw-blade to be passed through them. The saw-blade will then lock the saw-back guide in sliding connection within the saw-guide, because while the former can slide up like a piston within the latter until the pins *p p* engage beneath the lips *k k* the saw-blade will prevent the saw-back guide from being rotated so as to bring the pins into position to be raised through the slot, which, however, can be done when the saw-blade is withdrawn.

Q is a top board upon which the work is laid, and R R are rods, which may be threaded or otherwise detachably inserted into the top of the frame A and which serve as back-stops for the work.

S S are legs detachably attached to the frame by means of the thumb-screws *s s*.

The operation of my invention is as follows: The miter-box having been assembled, as shown in Figs. 1, 2, and 4, the guide-rod is swung to any desired angle, as illustrated in broken lines in Fig. 1, and is also rotated so as to give the guides any desired variation from a vertical position—for instance, as shown by the broken lines in Fig. 2. The thumb-screw G is then tightened, drawing the rod D through the swivel-block C and bringing its shoulder *d'* up against the swivel-block C and also drawing the guide-block F against the tracks *a a*, which operation will lock the guides securely in place. The work to be cut is then placed upon the board Q and pushed back against the stops R R. The saw is then slipped through the slots in the saw-guides, the saw-back guides O being



raised, as may be desired, to accommodate the saw-blade. The work is then cut by the saw in the ordinary manner.

The slots in the saw-back guides being narrower than the slots in the main guides serve to center the saw-blade, so that its set teeth will have free play in the main slots without striking their edges, and thus dulling the teeth and injuring the guides.

When it is desired to knock down the miter-box, the legs S S are removed by unscrewing the thumb-screws s s. The stops R R are withdrawn and may be slipped inside of the frame between the tracks a a, if desired. The thumb-screw I of the guide H is loosened, and the guide is slid out along the rod D. The thumb-cap G and screw e are loosened. The saw-guide J is given a one-quarter turn to bring its side flanges n n parallel with the plane of the rod D. The guide-block C is slid forward, and the saw-guides are folded down into the position shown in Fig. 3. The miter-box is then in a very compact form, so that it can be conveniently carried in a carpenter's box or other small receptacle.

By means of my improvements I secure a miter-box which can be quickly and simply adjusted to different positions and angles in which an ordinary saw can be used without injury to its teeth and which miter-box can be readily knocked down and packed in a very small compass.

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

1. The combination, with a miter-box frame, of a guide-carrying member, mounted upon a horizontally-adjustable pivot sliding from front to back in a slotted track, and provided with guides having vertical slots therein adapted to give free play to the set-teeth of a saw-blade and secondary, saw-back members mounted within said guides and provided with relatively narrower, vertical slots therein and adapted to receive the flat back but not the teeth of such saw-blade.

2. The combination, with a miter-box frame, of a guide-carrying member mounted upon a pivot-block horizontally adjustable from front to back upon a slotted track in said frame and provided with guides having vertical slots therein adapted to give free play to the set-teeth of a saw-blade and secondary, saw-back members mounted within said guides and provided with relatively narrower and shorter, vertical slots therein adapted to receive the flat back but not the teeth of such saw-blade, and means for locking said pivot-block in the desired position upon said slotted track.

3. The combination, with a miter-box frame provided with segmental guide-track members, of a guide-rod pivoted in the rear

of the frame, and provided with a guide-block having undercut shoulders and traveling between the guide-track members, and means for retracting said rod to clamp said undercut shoulders against the edges of said guide-track members.

4. The combination, with a miter-box frame provided with segmental guide-track members, of a guide-rod mounted in a horizontally-adjustable block, pivoted in the rear of the frame, and provided with a guide-block having undercut shoulders and traveling between the guide-track members, and means for retracting said rod to clamp said undercut shoulders against the edges of said guide-track members.

5. The combination, with a miter-box frame, of saw-guides mounted upon a guide-rod journaled in a pivot-block, which block is horizontally adjustable from front to back of the miter-box upon a slotted track, and which saw-guides are adapted to be folded into the plane of the frame by the turning of said rod.

6. The combination, with a miter-box frame, of saw-guides mounted upon a guide-rod journaled in a horizontally-adjustable pivot-block, and adapted to be folded into the plane of the frame, with the rear saw-guide slid within the frame.

7. The combination, with a miter-box frame provided with segmental guide-track members, of a guide-rod provided with a guide-block having undercut shoulders and traveling between said guide-track members, a shoulder upon said guide-rod and a screw-thread upon its end, a pivoted block to receive said guide-rod, and means, consisting of a threaded thumb-cap, to retract said rod through said block and thereby clamp its shoulder against the block and also clamp said undercut shoulders against the edges of said guide-track members.

8. The combination, with a miter-box frame, provided with segmental guide-track members, of a guide-rod provided with a guide-block having undercut shoulders and traveling between said guide-track members, a shoulder upon said guide-rod and a screw-thread upon its end, a pivoted block, horizontally adjustable upon a slotted track, to receive said guide-rod, and means, consisting of a threaded thumb-cap, to retract said rod through said block and thereby clamp its shoulder against the block and also clamp said undercut shoulder against the edges of said guide-track members.

9. The combination, with a miter-box frame, of a vertically-slotted saw-guide and a detachable, slotted saw-back member locked in sliding connection therein by a saw-blade passing through the slots in said guide and saw-back member.

10. The combination, with a miter-box

frame, of a tubular, vertically-slotted, saw-  
guide provided with a top stop, and a detach-  
able, cylindrical, vertically-slotted saw-back  
member locked in sliding connection in said  
5 guide by a saw-blade passing through the  
slots in said guide and saw-back member,  
said saw-back member being rotatable out of

its locked connection with said guide when  
the saw-blade is withdrawn.

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