M. F. ROBERTS.

JIG FOR BRACES AND BITS.

APPLICATION FILED DEC. 14, 1907.

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917,488.

Fig. 3.

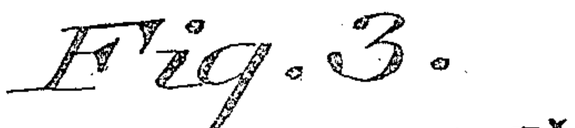


Fig. 2.

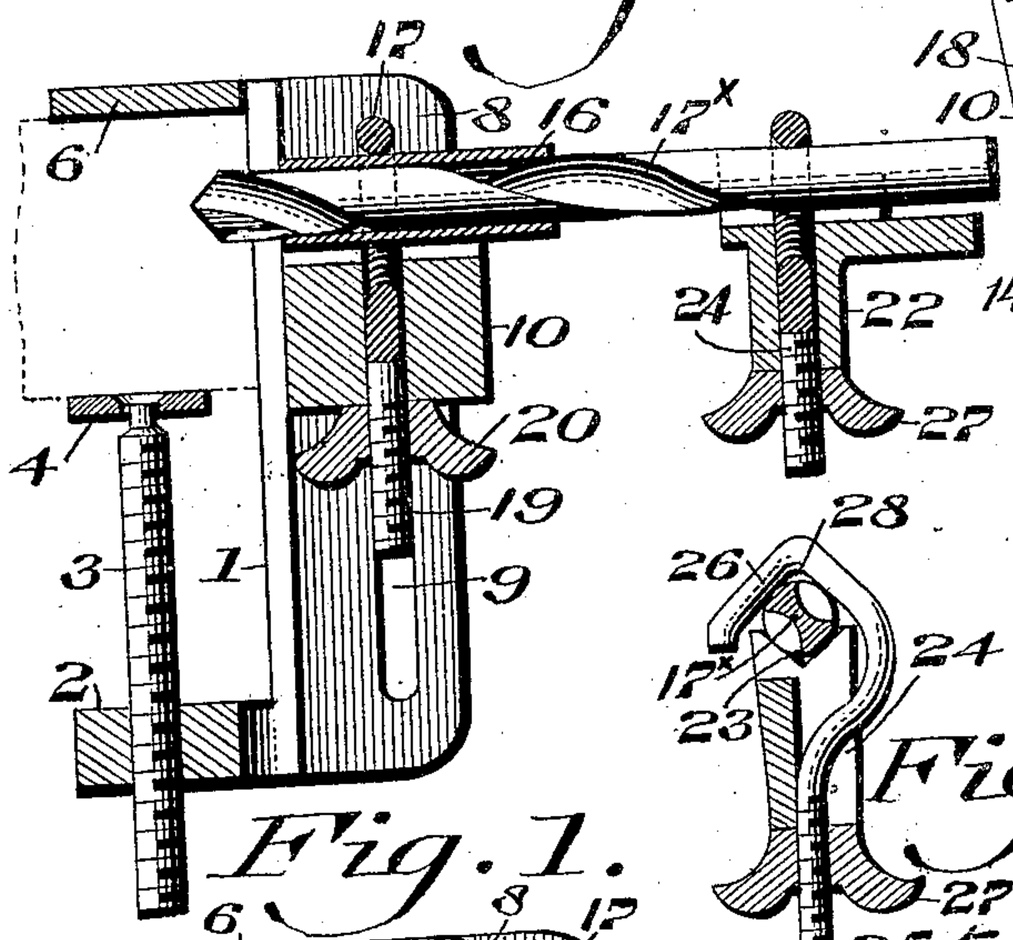


Fig. 5.

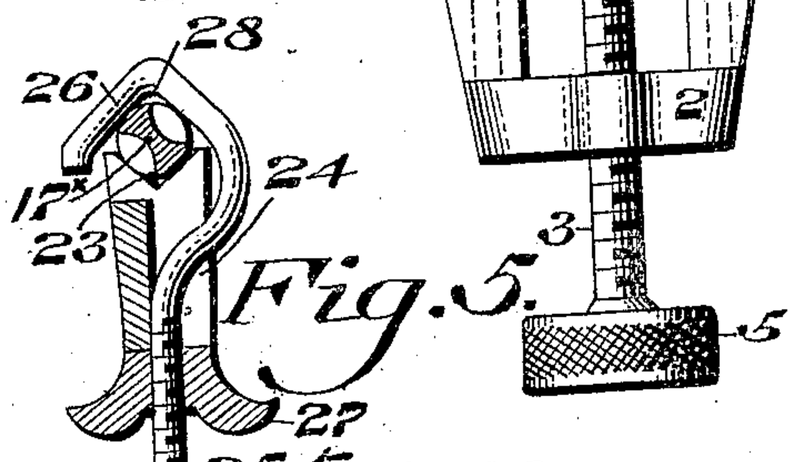


Fig. 1.

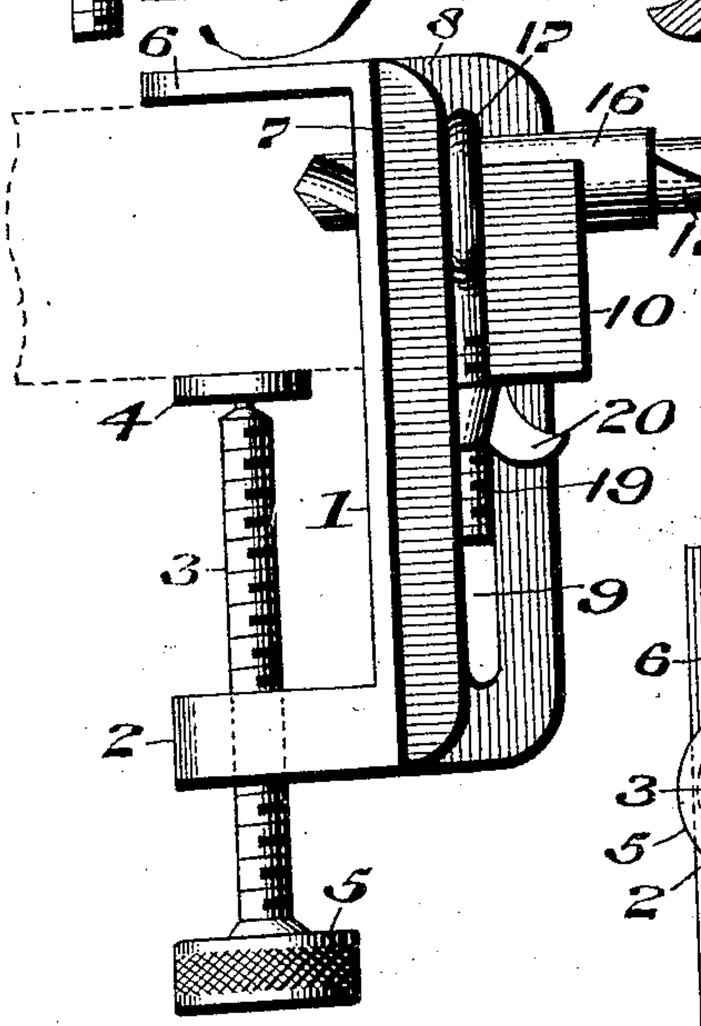


Fig. 6.

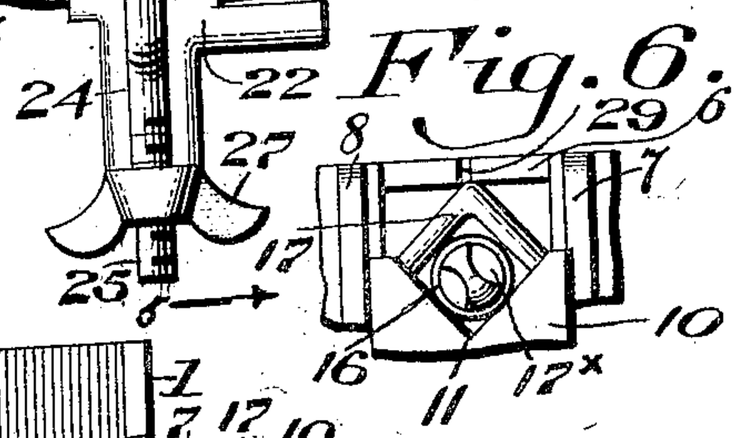


Fig. 4.

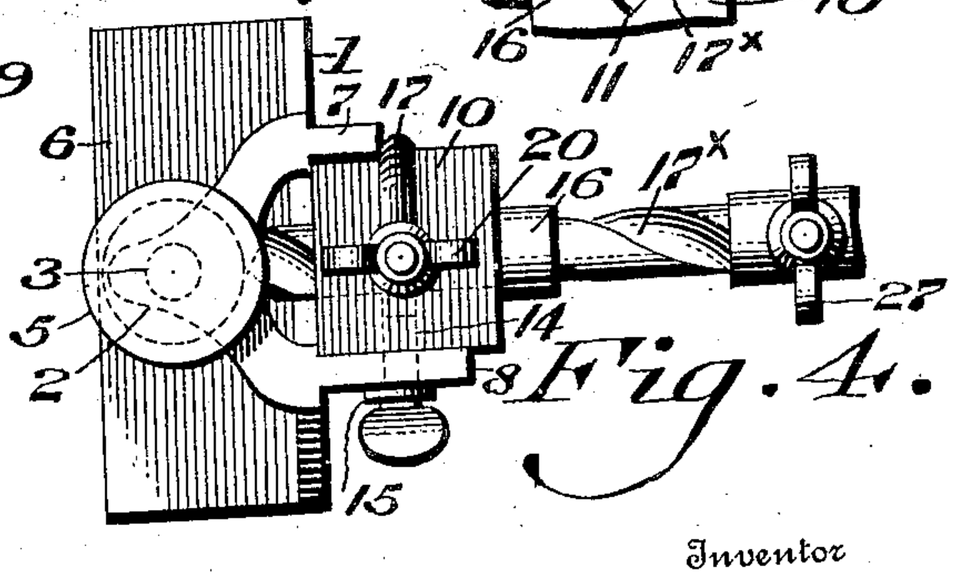
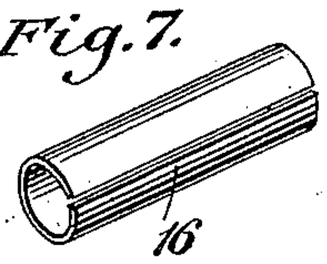


Fig. 7.



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UNITED STATES PATENT OFFICE.

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JIG FOR BRACES AND BITS.

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To all whom it may concern:

Be it known that I, MORRIS F. ROBERTS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Jig for Braces and Bits, of which the following is a specification.

My invention relates to new and useful jigs for braces and bits and consists of means for adjusting and locking a guide in adjusted position, whereby accuracy and speed is obtained.

It further consists in providing an expansible split guide for the bit or tool.

It further consists in locating the guide at a point adjacent the work, whereby the bit or tool is positively directed.

It further consists of an adjustable stop for limiting the forward movement of the tool or bit.

It further consists of other novel details of construction, all as will be hereinafter fully set forth.

Figure 1 represents a side elevation of a jig for wood workers embodying my invention showing the tool or bit in position. Fig. 2 represents a sectional view thereof. Fig. 3 represents a rear elevation of the device. Fig. 4 represents a plan view looking upward. Fig. 5 represents a sectional view on line *x*—*x*, Fig. 1. Fig. 6 represents an elevation of a portion of the device. Fig. 7 is a perspective of a guide member.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—I have found in practice that it is essential in boring for dowels and the like that some means be provided for properly directing the tool to the work and further that the guide of the tool be adjustable and held in adjusted position in order to insure accuracy in the work and I have further found that it is necessary to provide some form of guide which will accommodate various sized bits or tools.

In the drawings, I have shown a construction for carrying out my invention, but it will be evident that arrangement of the parts may be varied and other instrumentalities may be employed which will come within the scope of my invention and I do not, therefore, desire to be limited to the exact form herein shown and described but desire to make such changes as may be necessary.

1 designates the frame of the jig having the lug 2 thereon through which passes the threaded rod 3 carrying the washer 4 and having the operating nut or head 5 thereon, it being understood that said screw is moved in the lug 2 by rotating the same.

6 designates a lug extending from the frame 1 and between which and the washer 4 the article to be bored or otherwise operated upon is adapted to be secured, this being shown in dotted lines in Figs. 1 and 2.

7 and 8 designate tracks or guides which project from the frame 1 preferably in the opposite direction from the lug 2 and plate 6 and one of said tracks, as for example 8, being provided with a slot 9. Interfitting the tracks is the adjusting block 10, the same being provided upon the one face with the V-shaped recess 11 and having a slot 12 extending through said block and the slot 13 extending part way down one side of said block. For locking the block in position I provide a screw 14 movable in said slot 9 and engaging said block and being adapted to be tightened to lock the said block 10 in its adjusted positions, this being accomplished by properly rotating the said screw 14 and causing a washer 15 or other suitable device to engage with the outer side of the track 8. Adapted to be seated in the V-shaped recess 11 in the block is an expansible guide 16, which in the present instance consists of a split tube and which is adapted to receive the bit 17× or tool for guiding the same. It will be noted that this tube is of a suitable material so that when different sized drills are used, the split tube will expand to receive the same and act as a guide for setting and maintaining the tool in correct alinement. The said guide 16 is suitably held in position by any desired means. In the present case, I have shown a hook 17, one end of which as 18 Fig. 3 being seated in the slot 13, and said hook being also provided with a threaded end 19 seated in the slot 12, the hook passing around and engaging the expansible split guide after the same has been placed in position. The hook is locked in position by means of a thumb nut 20 which engages with the threaded end 19 of the hook 17 and abuts the block, whereby the said hook will be held firmly in position, the movement thereof in side direction being prevented by being seated in the slots 12 and 13. The hook 17 is adapted to accommodate various sized guides by simply loosening the thumb nut 20 and raising the hook, removing one guide and substituting

another guide, after which the nut is again rotated to lock the parts. The hook is preferably made with the V-bend 21, so that the guides are firmly held between the V-seat 21 and the V-seat 11, this construction being more clearly seen in Fig. 3.

I provide a suitable stop for the bit or tool $17^{\times}$, the same being adapted to be firmly connected with the said bit at the desired point, said stop consisting in the present instance, of the frame 22 having a V-shaped recess 23 and the slot or cut away portion 24 in one side which is adapted to receive the threaded end 25 of a hook 26 similar to that already described, said hook having the thumb nut 27 thereon, which is adapted to abut the lower portion of the body 22 when the tool $17^{\times}$ is in position between the V-shaped recess 23 and the hook, the latter being also provided with the bend or V 28 similar to that described with respect to the hook 17.

The operation of the device will be readily seen: The article to be bored or otherwise operated upon, is seated between the lug 6 and the washer 4, and by proper manipulation of the rod 3 the article is firmly gripped between the parts, thus locking the body in position. The position of the block 10 is adjusted, on the body, by loosening the screw 14 and raising or lowering the block 10 between the tracks 7 and 8 until the desired portion is reached, when said block 10 is locked. The split guide 16 has been placed in position with respect to the V recesses 11 and 21, said guide 16 receiving the tool 17^{x}, it being a suitable size therefor, the thumb nut 20 having been tightened in order to secure the hook 17 firmly, with respect to the block 10 and thus locking the guide 16 in position. The stop is positioned or placed upon the tool 17^{x} at the point where it is desired that the work thereof should cease by placing the tool or bit between the hook 26 and the V recess 23 in said stop, and by tightening up the thumb nut 27 so that the said stop is firmly held in position on the bit. By proper operation of the bit or tool, it will be seen that the holes are bored in the material, the work ceasing as soon as the stop contacts with the guide 16, preventing further entrance of the tool. By this means work can be quickly and easily accomplished and the adjustment of the parts is an easy matter also. At a suitable point on the frame, as at 29, Fig. 6 I provide a suitable marker or indicator which is so arranged with respect to the jig and the guide 16 itself, that it will always mark or indicate the location of the exact center of the guide tube and the tool or bit therein, so that as it is, in practice, impossible to bring the guide tube so close to the indicator as to obscure the laying out mark, there will always be a sufficient space for the operator to observe the laying out marks in order to bring the indicator on the jig in proper alinement with the laying out mark on the work. By this means the tool will be very quickly and easily centered in position with respect to the work required and no further adjustment of the parts nor further marks or measurements will be necessary after the jig is set. It is well known that in boring dowels in order to insure accuracy of the work, it is necessary for the workman to lay out and indicate by marks the points he desires to bore, after which the jig is placed upon the work, the indicator 29 on the jig corresponding or coinciding with the first laying out point, after which the screw 3 is operated to lock the parts and the bit is then ready to bore. By loosening the screw 3, the jig can be quickly moved to the next laying out point, accurately set by the indicator and again locked and the bit operated to bore, this being repeated as often as it is desired to bore. It will be further noted that the guide 16, by reason of the arrangement of the parts, is located extremely close to the work, by which arrangement the operating end of the body or tool is held or guided directly to the proper point regardless of the grain, which heretofore has proved a serious drawback to exact work, even where the work is done by machinery, since the tool being of a certain length, vibrates and does not strike the exact point, or if striking a grain, goes either to one side or the other of the proper point, thus accuracy of the work is impossible.

Attention is called to the fact that by reason of the engagement of the hook 17 with the expansible guide 16, when said hook is tightened by thumb nut 20, it will press the guide between it and the V-seat 11 of the block so that the guide will be properly positioned and held, depending upon the size of the tool or bit 17^{x} employed.

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

1. In a device of the character described, a frame, means for adjustably connecting the same with the article to be bored, an expansible guide adjustably mounted on said frame, and means for locking said guide in position.

2. In a device of the character described, a frame, means for adjustably connecting the same with the article to be bored, a block movably carried by said frame and having a V-seat, means for locking the block in its adjusted position, an expansible guide seated in said V-seat and means for locking the same therein.

3. In a device of the character described, a frame, means for connecting the same with the article to be bored, a block movably carried by said frame and having a V-seat, means for locking the block in its adjusted position, an expansible guide seated in said

V-seat and a hook for locking said guide in said seat.

4. In a device of the character described, a frame, means for connecting the same with the article to be bored, a block movably carried by said frame and having a V-seat, means for locking the block in its adjusted position, an expansible guide seated in said V-seat and a hook having a V-shaped seat formed to lock said guide in position.

5. In a device of the character described, a frame, a screw movable therein, a plate between which and said screw the article to be bored is seated, tracks on said frame, a block movable between said tracks and having a V-shaped seat, means for locking said block in its adjusted position, a hook removably connected with said frame, an adjustable guide held between said hook and said V-seat, and a stop carried by the tool for limiting the movement thereof.

6. In a device of the character described a frame, means for connecting the same with the article to be bored, a block movably carried by said frame, means for locking the block in its adjusted position, an expansible guide seated in said block, and means for locking the same therein.

7. In a device of the character described a frame, means for connecting the same with the article to be bored, a block movably carried by said frame, means for locking the block in its adjusted position, an expansible guide seated in said block, and a hook for locking said guide therein.

8. In a device of the character described a frame, a plurality of lugs thereon, clamping means secured to one of said lugs, a plurality of guides on said frame, a block movable therein, means for locking said block in adjusted position, an expansible sleeve seated in said block and means for locking the same therein.

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