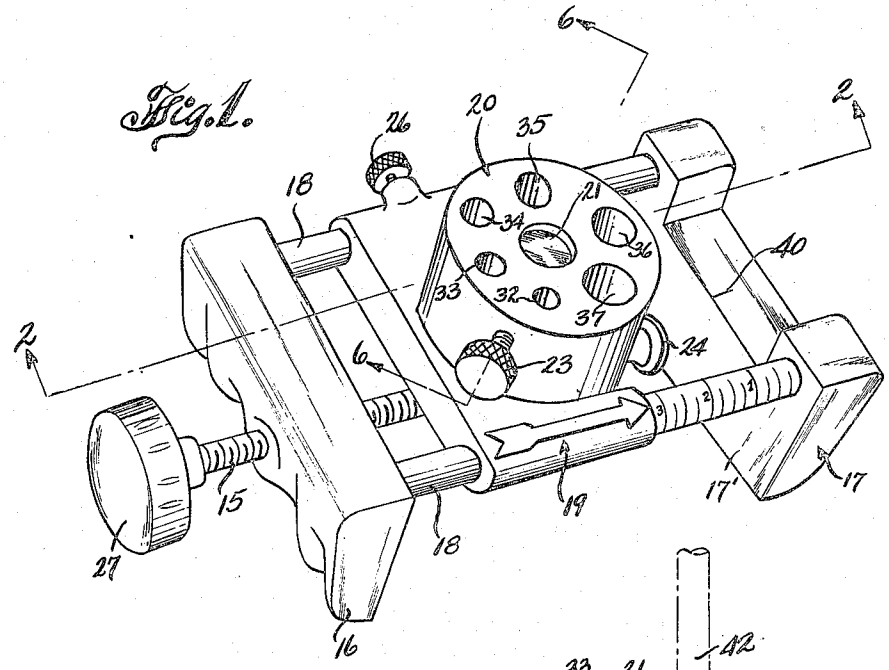
Sept. 12, 1950 B. L. POLKOSNIK 2,522,400

DOWELING JIG

Filed Nov. 15, 1949 2 Sheets-Sheet 1

Fig. 1.



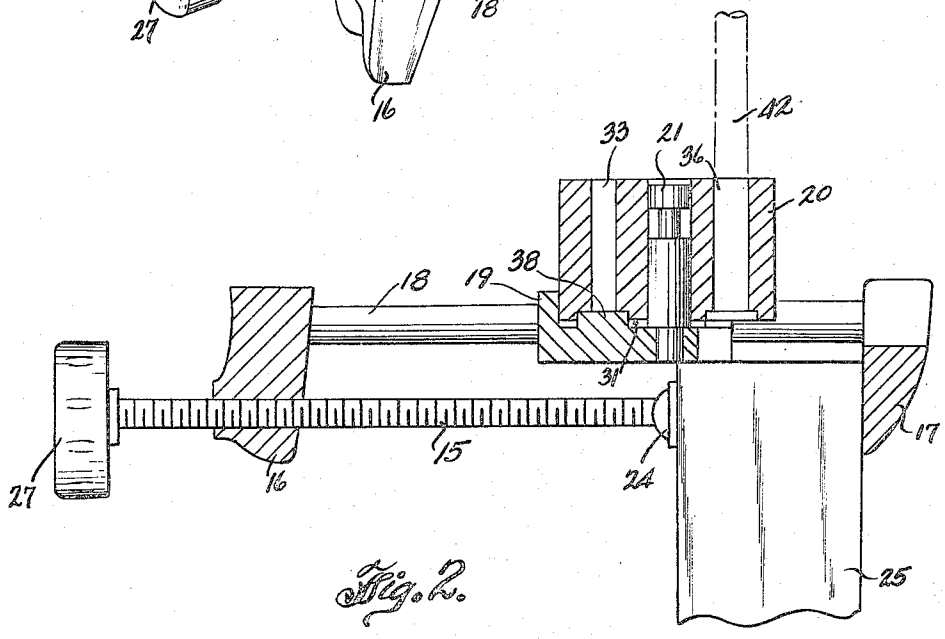


Fig. 2.

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DOWELING JIG

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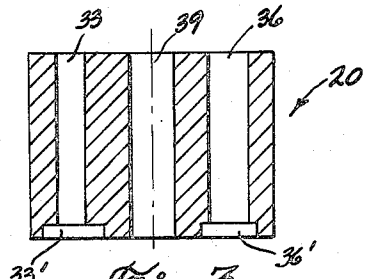


Fig. 3.

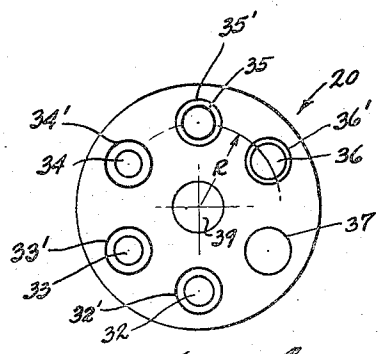


Fig. 4.

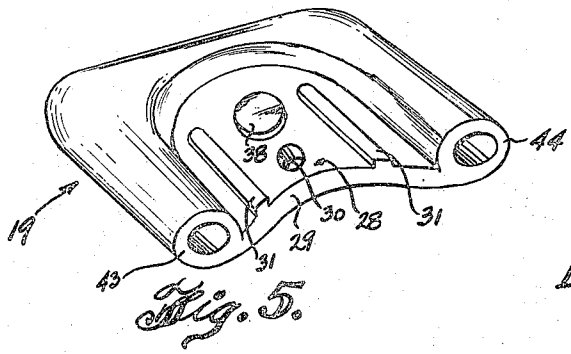
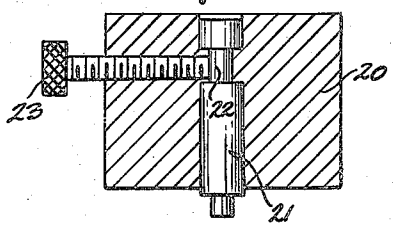


Fig. 5.

Fig. 6.



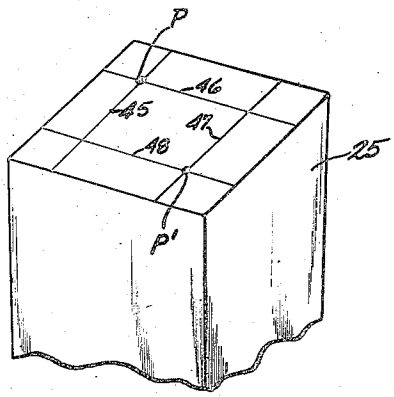


Fig. 7.

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Patented Sept. 12, 1950 2,522,400

UNITED STATES PATENT OFFICE

2,522,400

DOWELING JIG

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Application November 15, 1949, Serial No. 127,400

2 Claims. (Cl. 77—62)

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The present invention relates to dowelling jigs used in carpentry and kindred arts and trades, and more particularly to jigs which clamp onto the work. Although primarily intended for woodworking, these tools are adaptable for work in metal, plastic, stone and various other materials.

Heretofore, jigs of this class were made for a single size drill each, or else for the drilling of different sized holes by including a plurality of separate nested slip bushings, in which instance, to drill a hole of a size of one of the bushings, all of smaller size were removed. Many times, such bushings removed from the jig proper, were lost.

It is therefore one of the objects of the present invention, to provide a novel and improved dowelling jig of the character mentioned, which affords provision for the drilling of holes of various sizes, and yet has no separable parts at all, but in composite is a unitary structure.

Another object hereof is to provide a jig of the type described, of novel and improved construction, which precisely holds the required size bushing at true drill position, because of novel functional relationship of jig components.

A further object hereof is to provide a novel and improved dowelling jig of the class set forth, which is reasonably cheap to manufacture, easy to use, accurate in performance, and efficient in carrying out the purposes for which it is designed.

Other objects and advantages will become apparent as this disclosure proceeds.

In the accompanying drawings forming part of this specification, similar characters of reference indicate corresponding parts in all the views.

Fig. 1 is a perspective view of a dowelling jig embodying the teachings of this invention.

Fig. 2 is a section taken at lines 2—2 in Fig. 1, showing the jig in use.

Fig. 3 repeats part of the sectional view shown in Fig. 2, namely that of the bushing turret included in this device.

Fig. 4 is a bottom view of Fig. 3.

Fig. 5 is a perspective view of the turret carriage included in this jig embodiment of Fig. 1.

Fig. 6 is a section taken at lines 6—6 of Fig. 1.

Fig. 7 shows how a piece of work is marked with lines through centers of the holes to be drilled, before mounting it in the jig.

In the drawings, the numeral 15 designates the handled screw of what is really a C-clamp having a longitudinal opening along its back. Such C-clamp is comprised in the embodiment illustrated, of a screw-supporting arm 16, held spaced from the clamping block 17, by the spaced rods

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18, along which the carriage 19 is slidably carried for movement between the end members 16 and 17. Outwardly of the back of the said C-clamp structure, said carriage 19 supports a turret member 20, rotatably on a stud 21 which extends fixedly from said carriage. Said stud is of reduced size at 22, within the turret member 20, affording an annular groove for the stud-engaging end of the set-screw 23, radially positioned in and threadedly engaged in said turret member 20. The clamping end of the screw 15, preferably swivelly carries the head 24. The post or other work 25 to be drilled to provide a dowel socket, is clamped by said screw 15 against the block 17. Fixing of the position of the carriage along its track rods 18, is accomplished by means of the set-screw 26, which is threadedly engaged in the body of said carriage 19, and adapted to engage the rod 18 to which it is adjacent. The numeral 27 denotes the screw handle.

The carriage 19 is formed with a central sunken floor 28, commencing at the edge 29 which is nearest the block 17. A little inward of this edge, there is a hole 30 through this floor, in which the stud 21 is mounted securely. In use, the turret bottom rests on the seats 31 which may be integral with the floor 28.

The turret member 20, which is a cylindrical block, has drilled therethrough a plurality of different-sized, equi-spaced holes, denoted respectively by the numerals 32 through 37. All these holes are parallel to the axial pin or stud 21, and the locus of their centers is a circle of radius "R." The turret block thus provides drill bushings of predetermined sizes which may be marked thereon at appropriate positions on the exposed face thereof. All these holes are aside the carriage floor 28. The line of movement of the carriage 19 is perpendicular to the face 17' of the clamping block 17.

On said floor 28 of the carriage, is a boss or pad 38 of a diameter equal to or slightly larger than the largest of the bushing holes 32 through 37 in the turret 20. At the bottom of said turret, all of said holes having a diameter less than that of the boss 38, are countersunk shallow. The diameter of the countersinkings shall be in good sliding fit with the locating boss 38, which is of sufficient height to enter the counter-sinks denoted respectively by the numerals 32' to 36'; hole 37 being just right to admit said boss slide fit thereinto. When said boss 38 is within one of the bushing holes or their countersunk portions respectively, the bushing hole clear of the floor

28, is in drill position, and the plane determined by the axis lines of the stud 21, said bushing hole in drill position, and the marking 40 on the block 17, is parallel to the line of movement of the carriage 19. For convenience and for the sake of symmetry, the axis lines of the boss 39, the stud 21 and the marking 40, are coplanar. Of course, the height of the boss 38 exceeds the height of the seats 31, so that said boss may enter the countersunk holes and the bushing hole intended to admit it. The set screw 23 need be withdrawn from the axis hole 39 of the turret member 20, and the turret lifted to shift the turret to its different positions.

If bushing hole 36 is the one to be at drill position, the turret member 20 is set so that boss 38 is within countersunk 33', and set screw 23 is then tightened. Said turret member 20 is thus fixed against axial rotation and against movement longitudinally of the pin 21 and the drill 42. The carriage member 19 is so dimensioned that the axis line of the bushing hole at drill position, is in the plane determined by the faces 43 and 44, which plane is perpendicular to the line of movement of the said carriage. Thus said faces 43 and 44 determine the true position of one of the center lines of the hole to be drilled, and marking 40 determines an intersecting center line for such first determined line.

Therefore the work 25 to be drilled, is first marked with the perpendicular lines 45 and 46 determining center at point P of one of the holes to be drilled in said work, and likewise for other points as P', by marking on such work the lines 47 and 48.

To position the work 25 in the jig for the drilling of a hole at point P, line 45 is brought to marking 40, the carriage 19 is brought so that line 45 is in the plane of the faces 43 and 44, and then the work is clamped against the block 17 by means of the screw 15. With the jig so set on the work, the drill 42 is applied through the bushing hole at what is herein termed "drill position."

The graduations shown on rod 18 indicate the distance from the face 17' to the center line of drill position, and the carriage 19 may carry an arrow symbol pointing to such graduation which is in the plane of the face 43.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiment shown herein shall be deemed illustrative and not restrictive and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the specific description herein to indicate the scope of this invention.

I claim:

1. In a dowelling jig of the character described, the combination of a clamping means adapted to hold an object to be drilled, a carriage slidably mounted on said clamping means, means to releasably secure the carriage at any position along its scope of movement, a turret member rotatatably carried on the carriage and slidably mounted along its axis of rotation; said turret member presenting a plurality of differently sized holes whose axes are parallel to and equi-spaced from its axis of rotation; said holes at a corresponding end of each of them, being identically dimensioned and a turret-positioning element extending from the carriage; said element being of a shape engageable in said identically dimensioned hole ends respectively, adapted to be engageably set selectively in one of said identical hole ends at a time, upon movement of the turret member along and about its axis of rotation, whereby the turret member is held against rotation on the carriage and whereupon one of the holes is in position to have a drill passed therethrough and into the object clamped.

2. In a dowelling jig of the character described, the combination of a clamping means adapted to hold an object to be drilled, a carriage slidably mounted on said clamping means, means to releasably secure the carriage at any position along its scope of movement, a turret member rotatably carried on the carriage and slidably mounted along its axis of rotation; said turret member presenting a plurality of differently sized holes whose axes are parallel to and equi-spaced from its axis of rotation; all except the largest of said holes being countersunk at one of their respective ends; the size of said countersunks being that of the largest of said holes and a turret-positioning element extending from the carriage; said element being of a shape engageable in said identically dimensioned hole ends respectively, adapted to be engageably set selectively in one of said identical hole ends at a time, upon movement of the turret member along and about its axis of rotation, whereby the turret member is held against rotation on the carriage and whereupon one of the holes is in position to have a drill passed therethrough and into the object clamped.

BERNARD L. POLKOSNIK.

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