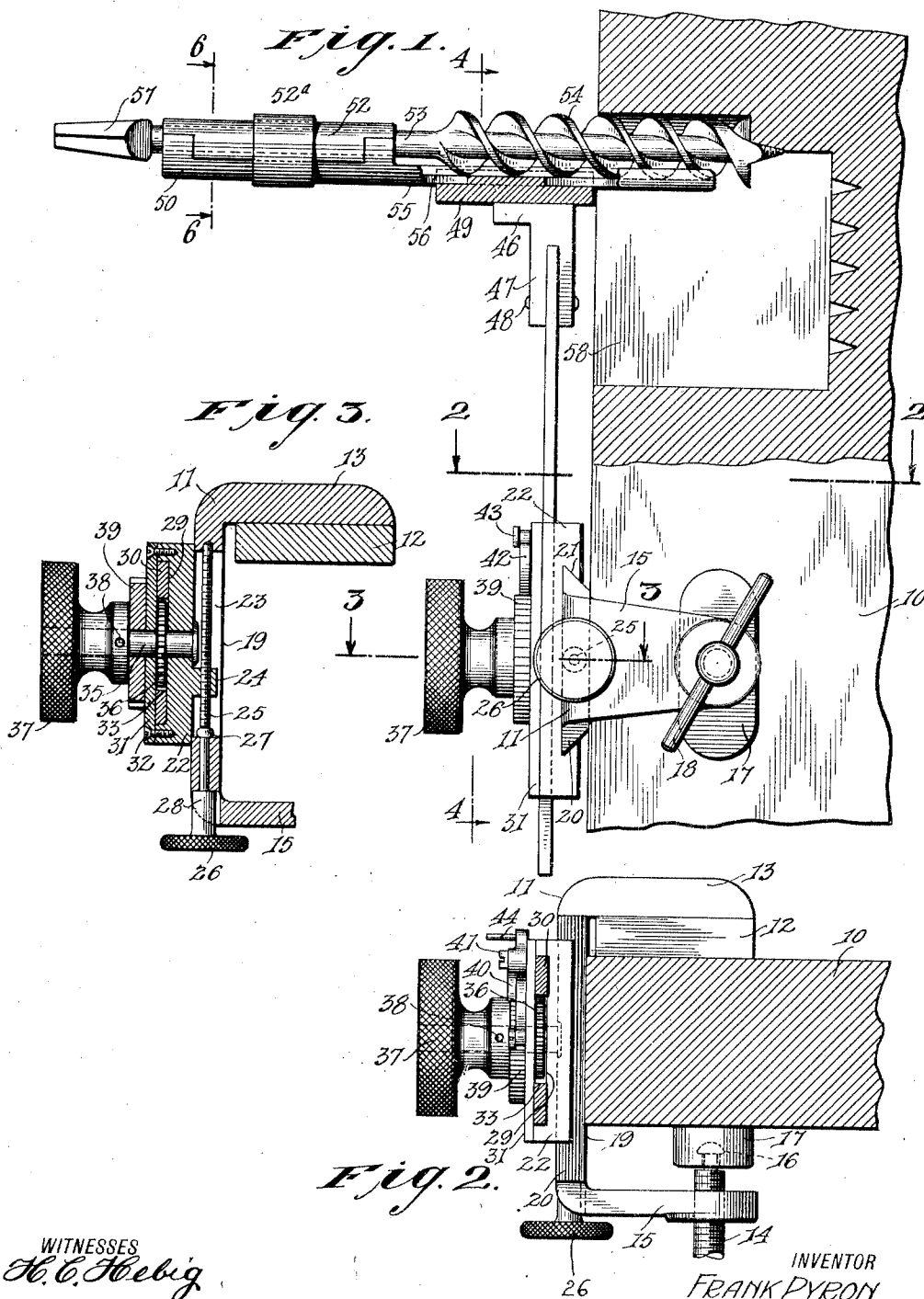


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BIT AND DRILL GUIDE.
APPLICATION FILED MAY 14, 1920.

Patented July 19, 1921.

2 SHEETS—SHEET 1.



WITNESSES
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Fig. 4.

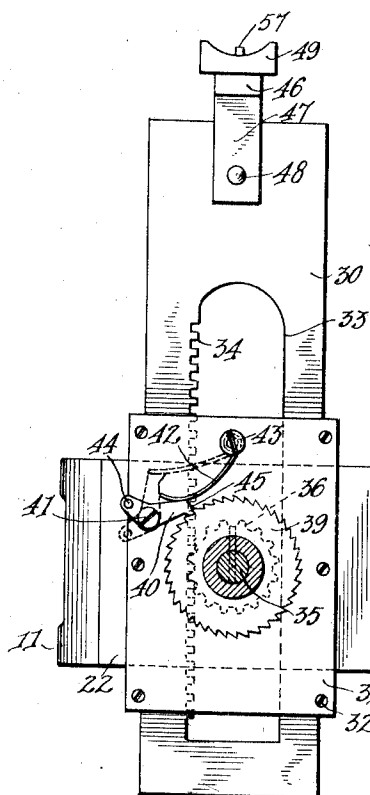


Fig. 5.

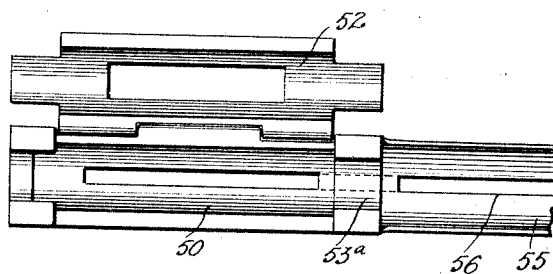
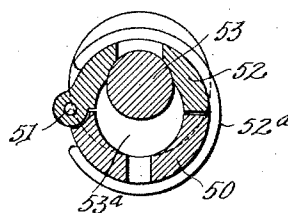


Fig. 6.



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BIT AND DRILL GUIDE.

1,385,227.

Specification of Letters Patent.

Patented July 19, 1921.

Application filed May 14, 1920. Serial No. 381,361.

To all whom it may concern:

Be it known that I, FRANK PYRON, a citizen of Italy, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Bit and Drill Guide, of which the following is a full, clear, and exact description.

This invention relates to drill and bit guides, and has reference more particularly to drill and bit guides adapted for cutting mortises for the purpose of installing locks.

An object of this invention is to provide a device for quickly and easily cutting a mortise for installing a door lock.

Reference is to be had to the accompanying drawing forming a part of this specification in which it is understood that the drawing illustrates only one form of the invention, and in which—

Figure 1 is an elevation of the guide in operation with parts broken away to disclose the method of operation.

Fig. 2 is a sectional view through the device on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view through the device on the line 3—3 of Fig. 1.

Fig. 4 is a sectional rear view of the guide on the line 4—4 of Fig. 1.

Fig. 5 is a fragmentary view of the bit guide in an open position.

Fig. 6 is a sectional view through the bit guide on the line 6—6 of Fig. 1.

Referring to the accompanying drawing by numerals, 10 indicates a piece of material in which it is desired to make a mortise, such as a door or window, said mortise being for the purpose of installing a lock or other device. A U-shaped clamp 11 is provided with a clamping cleat 12 on one leg 13 which is adapted to engage one face of the door 10. A clamping screw 14 is received by the other leg 15 of the clamp 11 and said clamping screw is provided on one end with a head 16 which engages a cleat 17 adapted to engage the surface of the door 10 opposite the cleat 12 when the clamping screw 14 is tightened against said door by means of a handle 18 on the end of said screw opposite the head 16. The connecting bar 19 of the clamp 11 is provided with beveled edges 20 which are slidably received by a

similarly shaped groove 21 in an adjusting plate 22. A rectangularly shaped recess 23 is formed in the connecting bar 19; and a lug 24 is formed on the adjusting bar 22 so as to be positioned in said recess 23. An adjusting screw 25 is rotatably mounted longitudinally of the connecting bar 19, said adjusting screw also passing through the lug 24 so that when the screw 25 is rotated by means of a knurled adjusting head 26, the adjusting bar 22 will be moved longitudinally of the connecting bar 19. The screw 25 is restrained from moving axially by a shoulder 27 engaging the edge of the recess 23, and a shoulder 28 adjacent the adjusting head 26. Thus the adjusting bar 22 may be positioned centrally with respect to the edge of the door 10 or may be adjusted to any other desired position by rotating the screw 25 by the adjusting head 26. A groove 29 is formed longitudinally in the surface of the adjusting bar 22 opposite the lug 24, and a rack bar 30 is slidably mounted in said groove 29 so as to be positioned parallel to the edge of the door 10. A plate 31 is secured to the face of the bar 22 by screws 32 so that the rack bar 30 will be maintained in position in the groove 29. A rectangular opening 33 is provided in the rack bar 30, and rack teeth 34 are formed in one side of the rack bar 30 adjacent the opening 33. A spindle 35 is rotatably mounted in the adjusting bar 22 and a pinion 36 is secured to said spindle so that its teeth engage the rack teeth 34. A knurled adjusting head 37 is secured to the outer end of the spindle 35 by a pin 38 so that when said adjusting head 37 is manually rotated the pinion 36 will cause the rack bar 30 to move longitudinally in the recess 29.

A ratchet 39 is secured to the spindle 35 between the adjusting head 37 and the plate 31 and a pawl 40 is pivotally mounted on a pivot screw 41 so that said pawl will engage the teeth of the ratchet 39, said pawl being resiliently pressed against said teeth by a flat spring 42 secured to a stud 43. A stud 44 is secured to the outer arm of the pawl 40 so that said pawl may be moved about its pivot to the position shown in dotted lines in Fig. 4, thus being disengaged from the

ratchet 39. When in this latter position a flat surface 45 on the pawl 40 engages the spring 42 thus maintaining said pawl in said disengaged position. When the pawl 40 engages the teeth of the ratchet 39, the rack bar 30 may be moved any desired number of teeth on the ratchet 39 by rotating the adjusting head 37 but said pawl 40 will prevent the rack bar 30 from moving downwardly due to the pressure of the bit guide to be hereinafter described.

A guide support 46 is provided with a forked end 47 which is secured to the upper end of the rack bar 30 by a rivet 48. A tray 49 is secured to the upper end of the support 46, said tray being preferably arcuate in cross section on the upper surface so as to receive a bit guide 50 which is cylindrical in cross section. Approximately one-half of the bit guide 50 is hinged by means of a pin 51 so as to form a gate 52 which may be opened as shown in Fig. 5, so that the shank 53 of a bit 54 may be inserted in said bit guide 50. A split sleeve 52^a has an inside diameter approximately that of the outside diameter of the bit guide 50 and the gate 52, and said sleeve serves to maintain the gate 52 in a closed position about the shank 53. A pair of bushings 53^a are secured in the bit guide 50 serving to position the shank 53 so that the bit 54 will be in contact with an extension guide 55 formed on the bit guide 50. A longitudinal slot 56 is formed in the bit guide 50 and extension guide 55, which is adapted to receive a shoulder 57' formed in the upper surface of the tray 49. The shank 53 of the bit 54 is usually provided with a square head 57 which is received by a brace not shown, so that said bit may be rotated by said brace, thus drilling a hole in the edge of the door 10 into which a lock may be inserted.

In operation a hole is bored in the edge of the door 10 by rotating the bit 54 by means of the brace not shown. The adjusting head 37 is then rotated so that the pawl 40 passes one or more teeth of the ratchet 39, which causes the bit 54 to be elevated a predetermined distance. A second hole is now bored by moving the bit guide 50 and the extension guide 55 inwardly on the tray 49 and rotating said bit 54 by the brace. This operation is repeated the desired number of times so that the mortise 58 is formed in the edge of the door 10, which is of such size as to fit the lock to be inserted. When the adjusting head 37 is rotated, the pinion 36 engages the rack teeth 34 so as to cause the upward movement of the rack bar 30 in the recess 29. When it is desired to move the rack bar 30 downwardly, the pawl 40 is raised to the position shown in dotted lines in Fig. 4 by the stud 44 so that said pawl is disengaged from the ratchet 39, thus allowing the rack bar 30 to be pushed

downwardly in the recess 29. The position of the adjusting bar 22 is adjusted relative to the edge of the door 10 by rotating the adjusting head 26 secured to the screw 25. The clamp 11 is secured to the door by tightening the clamping screw 14 by the handle 18.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention, I do not limit myself strictly to the mechanical details herein illustrated, since manifestly the same can be considerably varied without departure from the spirit of the invention as defined in the appended claims.

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

1. A device for drilling mortises in doors, which comprises a clamp to be attached to the door, a drill bit support attached to the clamp, means for moving the support in one direction relative to the clamp, and means for moving the support in another direction relative to the clamp.

2. A device for drilling mortises in doors, which comprises a clamp for the door, a drill bit support attached to the clamp and disposed longitudinally along the edge of the door in which the mortise is to be formed, means for moving the support longitudinally of the door face, and means for moving the support laterally thereof.

3. A device for drilling mortises in doors, which comprises a clamp adapted to grip a door adjacent the edge in which the mortise is to be formed, a body portion on said clamp extending across the front of the edge to be operated upon, a drill bit support, a holder for said support adjustably attached to said clamp, a pinion on said holder, a rack on said support adapted to cooperate with the pinion whereby the movement of the pinion will cause the movement of the support with respect to the face of the door.

4. A device for drilling mortises in doors, which comprises a clamp adapted to grip the edges of the door adjacent the face to be operated upon, a body portion on said clamp extending across the front of the face to be operated upon, a drill bit support disposed longitudinally along the face to be treated, a holder for said support adjustably engaging said clamp, a threaded shaft on the clamp, and a lug on the holder cooperating with the threaded shaft, the movement of the threaded shaft adapted to cause lateral adjustable movement of the holder and the support with respect to the door face.

5. A device for drilling mortises in doors, which comprises a clamp adapted to grip the face of the door adjacent the edge to be treated, a drill bit support disposed along

the face to be treated and spaced therefrom, a holder for said support laterally adjustable with respect to and cooperating with the clamp, a pinion on said holder, a rack 5 on said support cooperating with the pinion for the longitudinal adjustment of the support with respect to the door face, a threaded shaft disposed on the clamp laterally with respect to the door face, and a lug on the holder cooperating with the threaded 10 shaft to permit lateral adjustment of the holder with respect to the door face.

FRANK PYRON.