Jan. 16, 1968 W. H. GOHM, SR 3,363,487

MORTISING AND BORING DEVICE

Filed Jan. 7, 1965 2 Sheets-Sheet 1

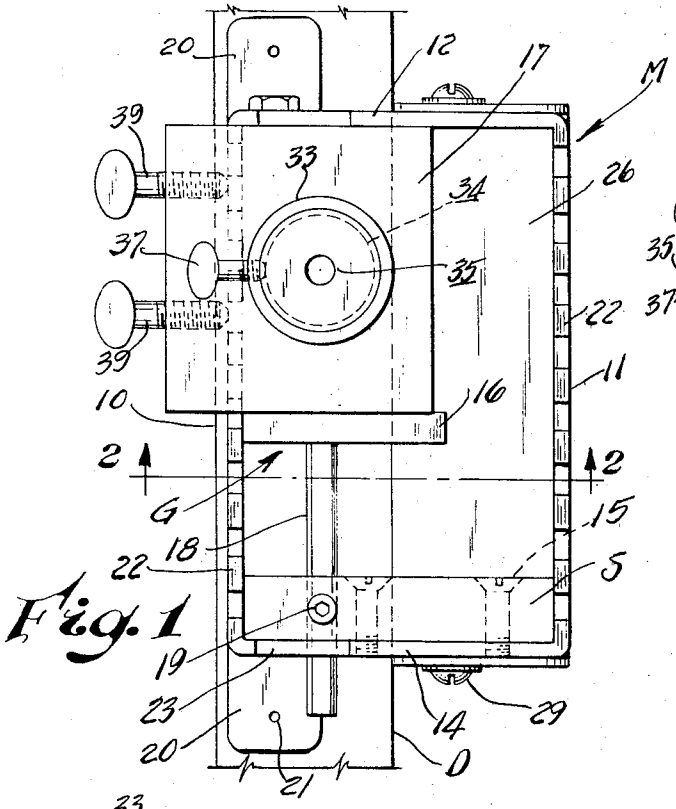


Fig. 1

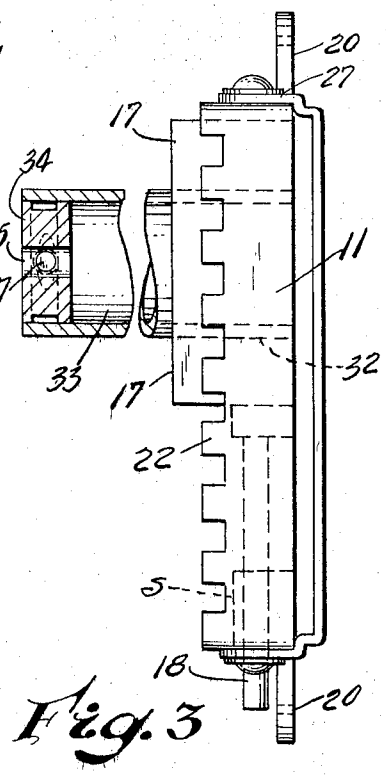


Fig. 3

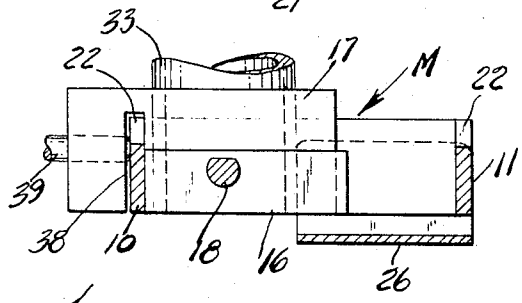


Fig. 2

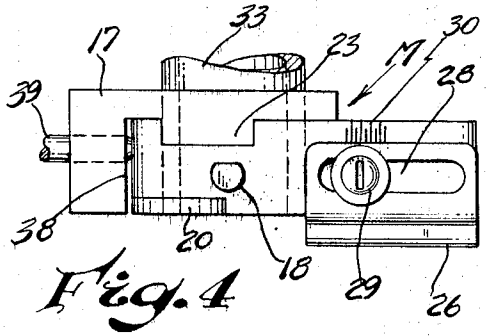


Fig. 4

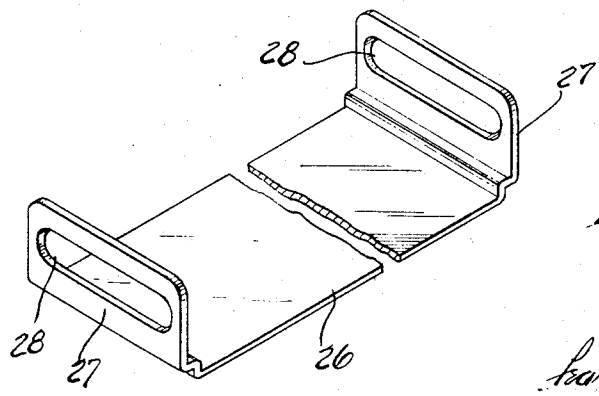


Fig. 5

INVENTOR.
William H. Gohm Sr.

BY
Fairman Farman & McCulloch.
ATTORNEYS

Jan. 16, 1968 W. H. GOHM, SR 3,363,487

MORTISING AND BORING DEVICE

Filed Jan. 7, 1965 2 Sheets-Sheet 2

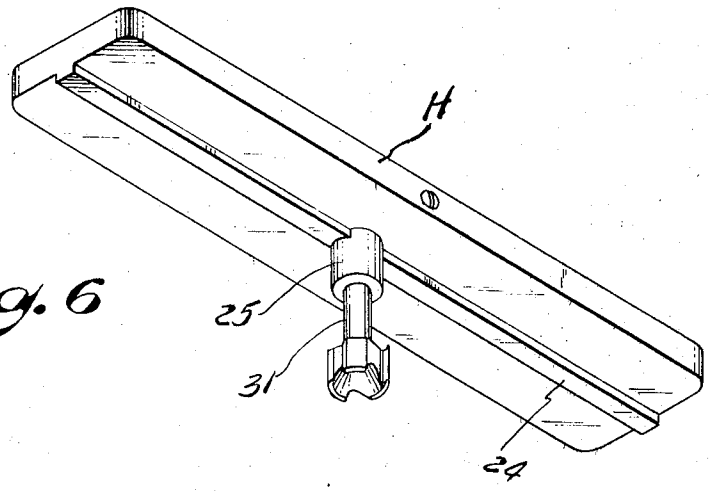


Fig. 6

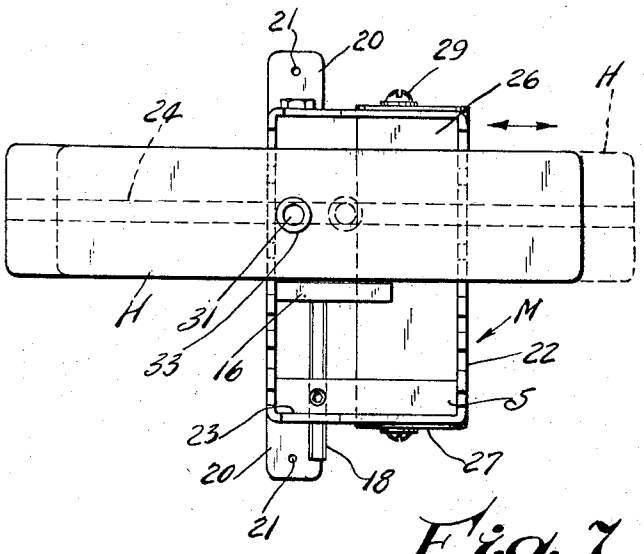


Fig. 7

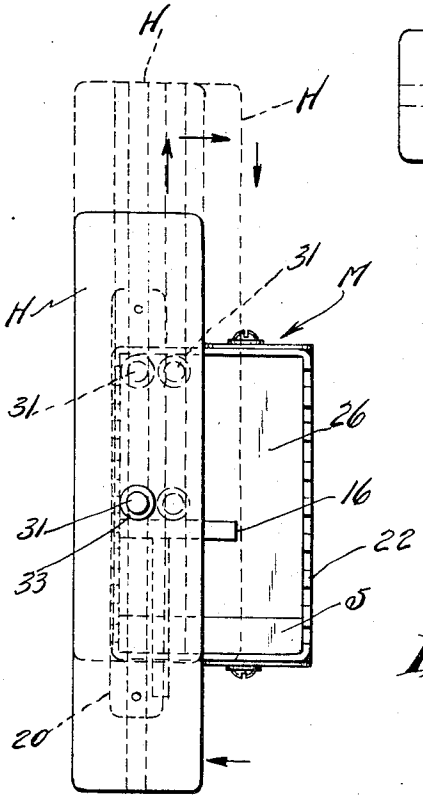


Fig. 8

INVENTOR.
William H. Gohm Sr.

BY
Fearman Fearman & McCulloch
ATTORNEYS

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MORTISING AND BORING DEVICE

William H. Gohm, Sr., 2104 Passolt,
Saginaw, Mich. 48603

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ABSTRACT OF THE DISCLOSURE

Mortising and boring devices having a main frame with vertical teeth on the upper edges thereof; also having a drill jig adjustably and removably mounted on the main frame, with a stop guard engageable with the drill jig; and the mortising means is adjustably mountable on the main frame when the drill jig is removed.

This invention relates to a mortising gauge, and more particularly to a device of this character for use in providing the required hinge mortises and opening in a door for the application of hinges, strike plate and lock thereto.

One of the prime objects of the invention is to provide a simple, practical and relatively inexpensive means which can be readily manufactured and assembled, and which is adapted for the preparation of a door for the mounting of hinges, locks, strike plates and the like.

Another object of the invention is to provide a main frame which can be easily mounted in position on the edge of a door and which is provided with a detachable drill jig which accurately guides the boring tool used to form the opening for the barrel of the door lock.

Another object of the invention is to design a mortising gauge including a combination side plate, adjustable on the main frame to accommodate doors of various thicknesses and prevent splintering of the door edges when mortising for hinges and strike plates, particularly when mortising doors formed of veneered material.

A further object is to provide a mortising gauge including a frame and a holder for a router bit operable by an operator for easily, quickly, and accurately forming the mortises to both necessary size and depth.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims; it being understood that changes may be made in the form, size, proportion and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawings:

FIG. 1 is a plan view of my mortising gauge showing the drill jig in position thereon.

FIG. 2 is a sectional, end elevational view taken on the line 2—2 of FIG. 1.

FIG. 3 is a side elevational view.

FIG. 4 is an end elevational view.

FIG. 5 is a perspective view of the adjustable side plate.

FIG. 6 is a perspective view showing the holder with the router bit in position.

FIG. 7 is a plan view showing the holder in position for mortising for a hinge, the broken lines indicating the length of the stroke, the arrows indicating the direction of travel.

FIG. 8 is also a plan view similar to FIG. 7 showing the holder mounted on the frame for mortising in a vertical direction for strike plates, etc., the arrows showing the path of movement of the holder, the broken lines indicating the direction of travel.

Referring now more specifically to the drawings in which I have shown the preferred embodiment of my invention.

The letter M indicates a main frame which comprises a pair of spaced apart side bars **10** and **11** respectively, with connecting end bars **12** and **14** as usual.

A safety block S is mounted in the one end of the main frame by means of screws **15**, and a T-shaped combination guide and stop member G is associated therewith, the section **16** bearing against one end of a drill jig **17** when the jig is mounted in position, and the stem section **18** extending through the safety block and end bar **14** with a set screw **19** provided in the block S for securing the stem **18** in adjusted position, and it will be obvious that the stop guide is readily adjustable to accommodate drill jigs of various lengths, and also to form a suitable guide when the gauge is used to provide mortises for the hinges and strike plates.

The end bars **12** and **14** are formed with projecting flanges **20** which rest on the edge of the door, and suitable openings **21** are provided in said flanges to accommodate anchor pins (not shown), which are driven into the edge section of the door D to hold the gauge in set position.

The upper edges of the side bars **10** and **11** are formed with accurately spaced apart teeth **22** (see FIG. 3 of the drawings), and for a purpose to be presently described; and the end bars **12** and **14** are also provided with guide passages **23** to accommodate the depending rib **24** of an elongated tool holder H which is provided with a centrally disposed sleeve bearing **25** as shown.

An adjustable side plate **26**, of predetermined width, spans the bottom of the frame (see FIG. 5 of the drawings), and includes upwardly projecting arms **27**, slotted as at **28**, and secured to the end bars **12** and **14** by means of screws **29** or the like. The outer face of the end bars **12** and **14** have indicia **30** thereon to provide means to determine accurate setting or adjustment when the combination side plate is adjusted to accommodate doors of various thicknesses, the inner edge of the combination side plate bearing against the one edge of the door D as shown.

In using the gauge it is normal practice to first mortise for the hinges, after which the tool is adjusted to accommodate the drill jig preparatory to boring the opening to accommodate the barrel of a door lock, after which the mortise for the strike plate is done.

For the mortising operation, a router bit **31** is mounted in the bearing **25** provided in the tool holder, said bit projecting above the tool holder and being driven from a hand power tool (not shown), which is connected to any suitable source of power.

In the hinge mortising operation, the area to be mortised is first defined, the operator then moves the tool holder H transversely of the main frame, the rib **24** being slidably accommodated between pairs of teeth **22**, the lower bearing **25** extending downwardly into the frame the required distance to engage the side bars and stop to limit the length of the stroke to suit the width of the mortised area, and the router bit **31** engages the face of the "work" and mortises with each stroke to required depth and size, after which the tool holder is placed vertically to mortise and provide a sharp, clean end area.

When the hinge mortises have been completed, the next operation is to prepare the opening to accommodate the barrel of the door lock (not shown) and for this operation the detachable drill jig is adjustably mounted on the side bar **10** of the main frame, said jig being bored as at **32** to accommodate a projecting sleeve **33**, the outer end of said sleeve being provided with an insert **34**, centrally bored as at **35**, to accommodate the upper end of the drill

shank (not shown), which drill is also electrically driven from a hand power tool. A set screw **37** secures the insert in position in the sleeve, but when a common hand-operated drill is used, this insert is removed, and the opening then accommodates the drill shank of the common hand drill in the usual manner.

The lower face of the drill jig is slotted as at **38** to slidably accommodate the frame bar **10**, and laterally projecting set screws **39** are provided in the side wall of the jig, and are adjustable to engage said bar to secure the jig in set position.

After the opening for the barrel of the door lock has been bored, the set screws **39** are backed off, and the drill jig removed to permit mortising for the lock plate (see FIG. 8 of the drawings). For this operation, the rib **24** of the tool holder H rides vertically in the passages **23** provided on the main frame, the combination guide and stop member are first set to serve as a stop to limit travel of the tool holder and the passages **23** control the width of the mortise area, the tool holder is then operated with the rib **24** riding in the passages **23** provided in the end walls **12** and **14**.

In practice, the router bit **31** is first spotted at substantially the center of the door lock opening and it is then moved to contact the side bar **10**, thence riding upwardly along said side bar to engage the end bar **12**, thence laterally, the width of the passage **23**, and thence engaging the stop member G, thence up and crosswise to the place of beginning. The holder is moved in a right hand path until the mortised surface is sharply and accurately defined.

To provide clean, sharp corners in a mortised area, a chisel (not shown) is placed against the inner face of the stop and end wall of the frame, and a hammer (not shown) is utilized as an impact tool so that the chisel cuts a clean, sharply defined corner.

From the foregoing description, it will be obvious that I have perfected a very simple, practical and relatively

inexpensive mortising gauge which is easy to operate and which accurately bores and mortises to required size.

I claim:

1. A drill jig comprising: a main frame having side and end bars; an adjustable side plate spanning the main frame and mounted on the end bars, said plate being provided with upwardly projecting slotted arms adjustably connected to the end bars; a drill jig mounted in said frame and slidably engageable with one of the side bars; a safety block mounted in said frame, and an adjustable stop slidably mounted in said frame and block and engageable with said drill jig.

2. The combination defined in claim **1** in which the drill jig is bored to guide a boring tool, and the bottom face of the drill jig is slotted to engage one side bar of the frame, and means for clamping said drill jig in set position on said side bar, and end ribs provided on said side plate for slidable engagement with the lower edge of the main frame.

3. The combination set forth in claim **1** in which a safety bar is provided at one end of said main frame and the stop is adjustably slidable in said safety bar.

4. The combination defined in claim **1** in which a bearing is removably mounted in said drill jig to accommodate drills of various diameters.

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DONALD R. SCHRAN, *Primary Examiner.*