March 8, 1960 J. H. GODFREY ET AL 2,927,378

MORTISING TEMPLATE

Filed Aug. 11, 1958 2 Sheets-Sheet 1

FIG. 1

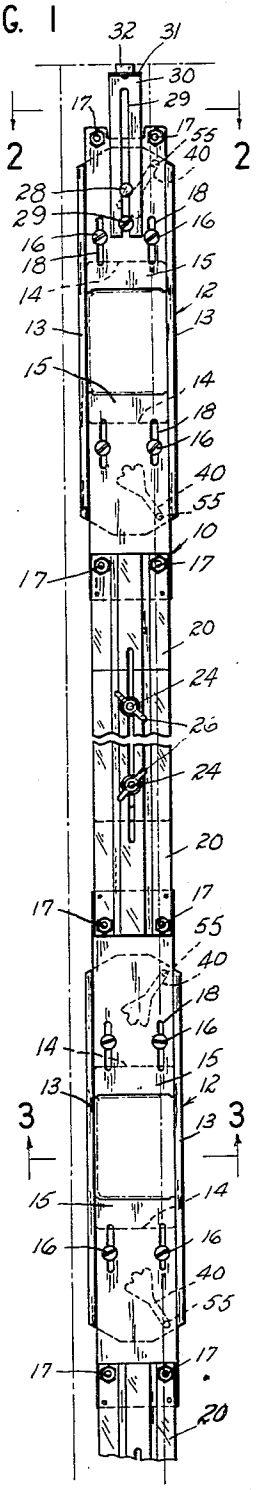



FIG. 2

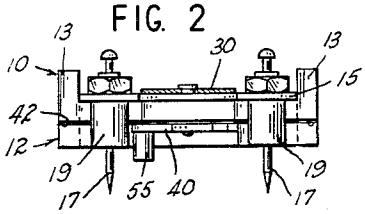
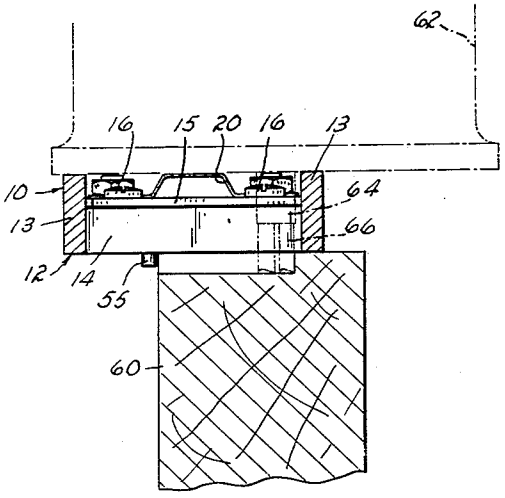



FIG. 3




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FIG. 4

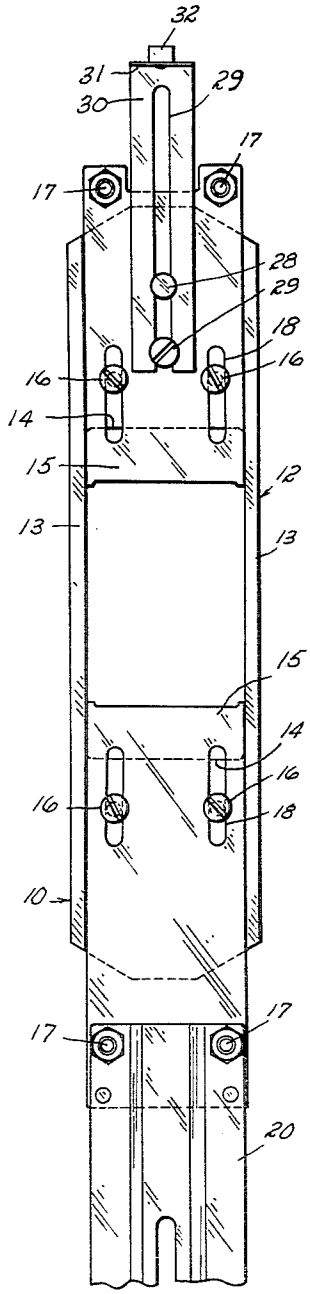



FIG. 5

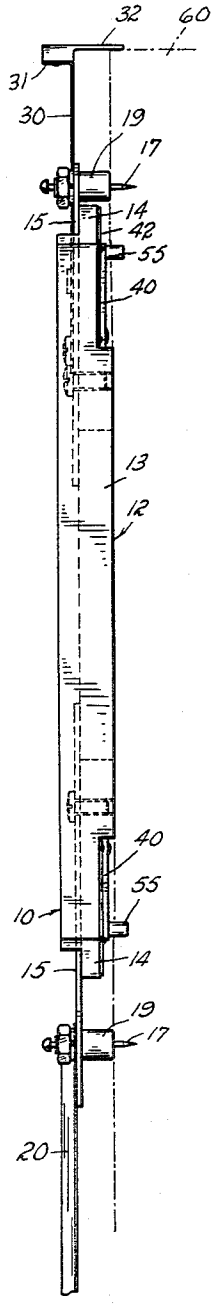
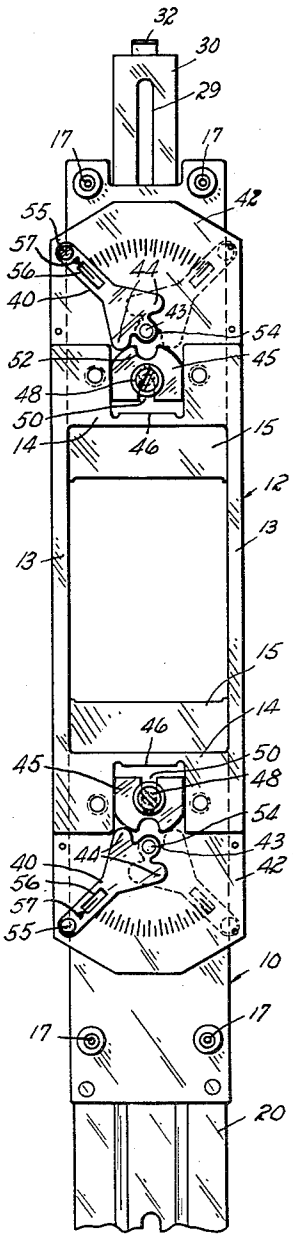



FIG. 6




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# MORTISING TEMPLATE

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10 Claims. (Cl. 33—197)

This invention relates to a novel and improved mortising template for use with a router while forming complementary hinge receiving recesses in the edge of a door and the face of a door jamb.

It is the object of this invention to provide a template for use with a router in mortising complementary hinge receiving recesses in doors and door jambs which is provided with novel and improved means for accurately locating the recesses in the edge of a door and the face of a door jamb and which is selectively adjustable for various sizes and spacings of hinges.

It is further an object of the invention to provide a mortising template of the type described which does not require turning end-for-end when shifting the template from use on a door to use on a door jamb or vice versa, which will accurately locate the hinge recesses on a door or door jamb regardless of whether the jamb is provided with a jamb stop or not and which is rugged and durable to assure accuracy of performance over an extended service life.

Other objects will be in part obvious and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the drawings:

Fig. 1 is a fragmentary front view of a mortising template, constructed in accordance with the invention, in operative position against a door jamb shown in dotted lines;

Fig. 2 is an enlarged cross sectional view along the line 2—2 of Fig. 1;

Fig. 3 is an enlarged cross sectional view taken along the line 3—3 of Fig. 1 with the template in position on a door edge, and illustrating in broken lines a router during the operation of forming a hinge receiving recess in the door edge;

Fig. 4 is an enlarged fragmentary front view of the upper portion of the template of Fig. 1;

Fig. 5 is a fragmentary side view of the upper portion of the template shown in Fig. 4; and

Fig. 6 is a fragmentary view of the reverse side of the portion of the template shown in Fig. 4.

Referring to the drawings and particularly Fig. 1, the template 10 comprises a plurality of guide frames 12, it being understood that the number of frames 12 utilized will depend on the number of hinge recesses it is desired to cut. In the specific embodiment, each frame 12 is an integral rectangular structure consisting of the spaced apart parallel side rails 13 and connecting end webs 14. An end plate 15 is slidably and adjustably mounted on each end web of the frames 12 by means of screws 16 which extend through elongated slots 18 in the plate 15 whereby the plates 15 are adjustable longitudinally of the frames to increase or decrease the length of the frame opening.



Each pair of next adjacent frames are connected by a pair of overlapping tie plates 20 mounted on the outer ends of the end plates 15 and adjustably secured together by bolts 24 extending through aligned slots in adjoining pairs of overlying tie plates 20 and provided with wing nuts 26 whereby the longitudinal spacing of the frames may be adjusted.

The top plate 15 on the uppermost frame 12, as viewed in Fig. 1, has an adjustable gage plate 30 slidably mounted thereon, the gage plate 30 having a slot 29 to slidably accommodate the fixed pin 28 and being retained in adjusted position by a screw 29. The free end of the gage plate 30 has a flange 31 extending at right angles to the plate 30 on which is pivotally mounted a projecting stop 32 for locating the gage relative to the top edge of the door or the top of the door jamb, it being understood that the position or height of the uppermost frame 12 is determined by the adjustment of the gage plate 30.

In accordance with the invention, the means for locating the template transversely of the door edge or jamb comprises a pair of locating arms 40 pivotally mounted at the opposite ends of each frame 12 on the underside thereof. To provide a mounting surface for the arms 40, the rails 13 and end webs 14 are milled or otherwise recessed on the underside thereof to form flat recessed faces provided with face plates 42. The arms 40 are mounted for pivoting movement in a plane parallel to the faces 42 and have their pivots 43 located on the longitudinal centerline of the frame intermediate the side rails 13. Each arm is provided with a pair of symmetrical lobes or ears 44 extending at equal angles and for equal distances outwardly of the arm from the opposite sides thereof adjacent the pivot. An adjustable slide 45 forming a stop for each arm 40 is slidably mounted in a rectangular slot 46 in the end web 14.

The end of each slide 45 facing the associated arm 40 is adapted to be engaged by the lobes 44 on the arm to limit the pivotal movement of the arm to an equal amount in both directions of movement from a median position of the arm in alignment with the longitudinal centerline of the frame 12. The slide 45 is accurately machined to fit in the slot 46, and screw 48 extending through a slot 50 in each slide 45 is utilized to clamp the slide in adjusted position longitudinally of the frame. While the slide 45 is fitted in the slot 46 as accurately as possible using standard manufacturing techniques, nonetheless some clearance is required and due to manufacturing tolerances this may be sufficient to permit some tilting of the slide 45 to take place transversely of the slot 46 which, unless overcome, could resulting in an inaccuracy in the setting of the pivoted arms 40 on opposite sides of the centerline of the frame. In accordance with the invention, this possible inaccuracy is overcome by rounding the end of each stop where it is engaged by the lobes 44. Preferably the ends are rounded on an arc of such radius that its center will fall at approximately the midpoint of the slide 45 whereby any tilting of the slide 45 which may take place within the slot 46 will not appreciably alter the amount of swinging movement of the arms 40 on opposite sides of the centerline. The rounded end of each stop 45 is provided with a recess or notch 52 centered thereon which is complementary to the rounded pivoted end 54 of the associated arm 40 to permit maximum sliding movement of the stop and hence, maximum adjustability.

A short section of cylindrical rod or roller stock 55 is fixedly mounted on the longitudinal centerline and at the free end of each arm 40 and extends parallel to the pivotal axis of the arm on the underside of the arm to form a stop for locating the template laterally

of a door jamb or door edge as will be explained more fully hereinafter.

Each arm 40 is provided with a rectangular aperture 56 through which may be viewed indicia embossed or otherwise placed on the plate 42. It is preferable that indicia on the plate 42 be in terms of inches corresponding to the location of the side rails relative to the stops 55 (and hence from the side of the door or the edge of the door jamb) in various limits of pivotal movement of the arms 40. An arrow 57 or other appropriate reference mark is embossed or otherwise suitably placed on each arm adjacent the aperture 56 and extends along the longitudinal centerline of the arm for accurate location of the arm relative to the indicia on the plate 42.

After this template has been properly positioned on the edge of a door or the face of a door jamb, it is secured in place during the routing operation by means of the nails or brads 17 loosely mounted in sockets 19 so that they can be driven into the wood of the door or jamb and subsequently can be withdrawn when it is desired to move the template.

In the use of a template constructed in accordance with the invention to form hinge receiving recesses in a door 60, the template is located longitudinally thereof with the underside of the guide frames 12 resting against the door edge. The lateral stop 55 on each arm 40 is engaged with the face of the door as shown in Fig. 1, and the template moves laterally of the jamb until one of the lobes 44 engages the slide stop 45 to limit pivoting of the arm whereupon, by way of the example shown in Fig. 3, the inner side rail 13 will be located the selected distance laterally inwardly of the edge of the door. The distance that the side rail 13 is located laterally inwardly from the door edge is determined by prior adjustment of the slides 45 longitudinally of the template so as to limit movement of the arms 40 to a predetermined amount in either direction from their center positions aligned with the longitudinal centerline of the template. In this way the width of the hinge recess to be cut in the door edge is accurately predetermined. The length of the recess, of course, is determined by adjustment of the end plates 15.

The template is accurately positioned longitudinally of the door 60 by suitably adjusting the gage plate 30 and engaging the pivoted stop 32 with the top of the door as shown in Fig. 5. The positioning nails or brads may then be temporarily driven into the door to hold the template 10 in operative position. The router 62 is then positioned against the flat upper surfaces of the frames 12 and moved about as permitted by engagement of the bit sleeve 64 with the edges of the recess defined thereby. The bit 66 of the router 62 rotates within the sleeve 64 and extends below the frame a distance equal to the desired depth of the hinge receiving recesses in the door.

Following completion of the formation of the hinge receiving recesses on the door, the template is removed from the door and is placed against the face of a door jamb. The top of the stop 32 is engaged with the top of the door frame and by reason of its width automatically provides clearance between the top of the door and door frame when the door is hung. The stops 55 on the arms 40 are swung to the opposite sides of the frames 12 and are engaged with the edge of the door jamb as shown in Fig. 1 to position the template laterally of the jamb. Although the direction of pivoting of the arm is opposite from that occurring during location of the template on the door, the extent of movement of the arms, because of the symmetrical configuration of the lobes 44 of the arms and symmetrical rounded ends of the slides 45, will be identical with that occurring during the template location on the door. Thus, the opposite side rail 13 will be located laterally inwardly from the edge of the jamb, the same distance that the inner rail had been spaced from the side of the door in the previous routing operation and the hinge recesses will be identical. The template is then fastened in place by the nails 17, and the routing operation is carried out as before. After all the recesses have been formed on the door, the template is removed, and the hinges may be connected to the door and jamb.

It can thus be seen that the present invention provides a mortising template which may simply and conveniently be attached to a door jamb or door for accurately positioning router guide frames in a lateral direction relative to the jamb or door edge. The use of a template as described assures that the recesses in the jamb and door will be accurately related to each other to provide a proper fit when the door is hung, and the template may be conveniently and accurately positioned regardless of whether or not the jamb is provided with a jamb stop. The template is not reversed end-to-end when shifting from a jamb to a door or vice versa, thus providing added convenience and ease of use. The slide stops 45 for the locating arms 40, once adjusted for a particular hinge size, will not need to be further adjusted when shifting between a jamb or door and will continue to accurately locate the template for the particular hinge size until selectively adjusted for a different size hinge. Additionally, the template is rugged and durable and will assure a long and trouble-free service life.

As will be apparent to persons skilled in the art, various modifications and adaptations of the structure above described will become readily apparent without departure from the spirit and scope of the invention, the scope of which is defined in the appended claims.

We claim:

1. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for spacing either side rail inwardly a preselected distance from a wall edge comprising a stop, means mounting the stop on the frame for limited movement transversely of the frame to positions on opposite sides of the center line of the aperture and means on the stop engageable in either of the said positions with a wall edge located between the stop and the opposite side of the frame.

2. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for spacing either side rail inwardly a preselected distance from a wall edge comprising a stop, means mounting the stop on the frame for movement transversely of the frame to opposite sides of the center line of the aperture adjustable means limiting movement of the stop to preselected positions spaced on opposite sides of the centerline of the aperture, and means on the stop engageable in said positions with a wall edge located between the stop and the opposite side of the frame.

3. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for spacing either side rail inwardly a preselected distance from a wall edge comprising an arm pivotally mounted on the frame for swinging movement transversely of the frame and having a stop on its outer end engageable with a wall edge on either side of the frame, and adjustable means limiting swinging movement of the arm to locate the stop at a preselected distance on either side of the centerline of the aperture.

4. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for spacing either side rail inwardly a preselected distance from a wall edge comprising an arm pivotally mounted on the frame having a pivot on the longitudinal centerline of the aperture and being pivotal transversely of the frame, a stop on the outer end of the arm engageable with a wall edge on either side of the frame, and a slide on the frame movable longitudinally of the frame and engageable with the arm to limit pivotal movement thereof to an equal distance on either side of the centerline.

5. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for

spacing either side rail inwardly a preselected distance from a wall edge comprising an arm pivotally mounted at each end of the frame on the longitudinal centerline of the aperture and being pivotal transversely of the frame, a stop on the outer end of each arm engageable with a wall edge on either side of the frame, and a setting member for limiting pivoting movement of each arm adjustable longitudinally of the frame, each arm having symmetrical lobes for engagement with the setting member.

6. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for spacing either side rail inwardly a preselected distance from a wall edge comprising an arm pivotally mounted at each end of the frame and having its pivot on the longitudinal centerline of the aperture, a stop on the outer end of each arm engageable with a wall edge on either side of the frame, and a setting member for limiting pivoting movement of each arm comprising a guideway at each end of the frame extending longitudinally of the frame, and a slide adjustably mounted in each guideway having means for engagement with the arm and limit pivoting movement thereof.

7. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for spacing either side rail inwardly a preselected distance from a wall edge comprising an arm pivotally mounted on the frame for swinging movement transversely of the frame and having a stop on its outer end engageable with a wall edge on either side of the frame, adjustable means for limiting swinging movement of the arm in either direction from the centerline of the aperture, a viewing aperture in the arm, and indicia on the frame cooperable with said viewing aperture to measure the distance of the stop from the side rails of the frame.

8. A mortising template comprising a plurality of frames having rectangular apertures of variable length, means adjustably inter-connecting the frames in longitudinally spaced relationship, an adjustable gage plate adjustably attached to one of the end frames to locate the template longitudinally with respect to the upper edge of a door or door jamb, and means for locating the template laterally of the door or door jamb comprising an arm pivotally mounted on each frame having a pivot at the centerline of the aperture thereof and adapted to pivot transversely of the frame, a stop on the outer end of each arm engageable with a wall edge at either side of the frame, and adjustable means to limit pivoting movement of each arm to a preselected distance from the centerline of the aperture.



9. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for spacing either side rail inwardly a pre-selected distance from a wall edge comprising an arm pivotally mounted on the frame for swinging movement transversely of the frame and having a stop on its outer end engageable with a wall edge on either side of the frame, and a setting member for limiting pivoting movement of each arm comprising a guideway extending longitudinally of the frame and a slide adjustably mounted in said guideway having an arcuate end for engagement by the arm to limit swinging movement thereof in either direction.

10. In a mortising template, a frame having an aperture defined by spaced apart parallel side rails, and means for spacing either side rail inwardly a preselected distance from a wall edge comprising an arm pivotally mounted on the frame and having a pivot on the longitudinal centerline of the aperture, a stop on the outer end of the arm engageable with a wall edge on either side of the frame, a guideway in the frame extending longitudinally thereof, a slide adjustably mounted on the guideway for movement toward and away from the pivot of the arm, the arm having surfaces for engaging the end of the stop to limit pivoting movement of the arm in either direction, the end of the stop engaged by the arm being formed as an arc having a radius approximately equal to the distance to the midpoint of the slide.

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