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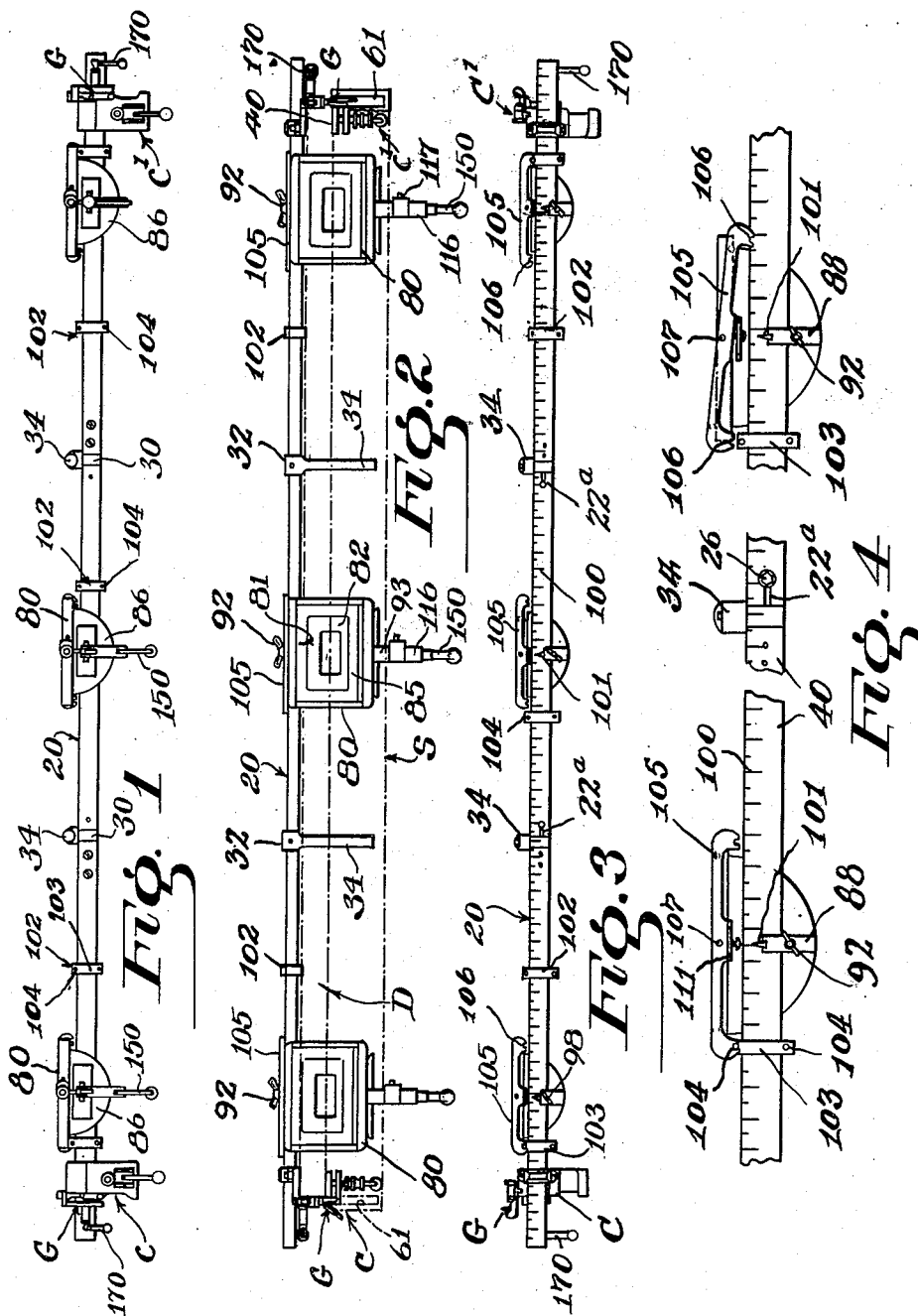
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WORK CLAMP AND TEMPLATE HOLDER FOR HINGE SEAT CUTTING

Filed Feb. 6, 1948

4 Sheets-Sheet 1



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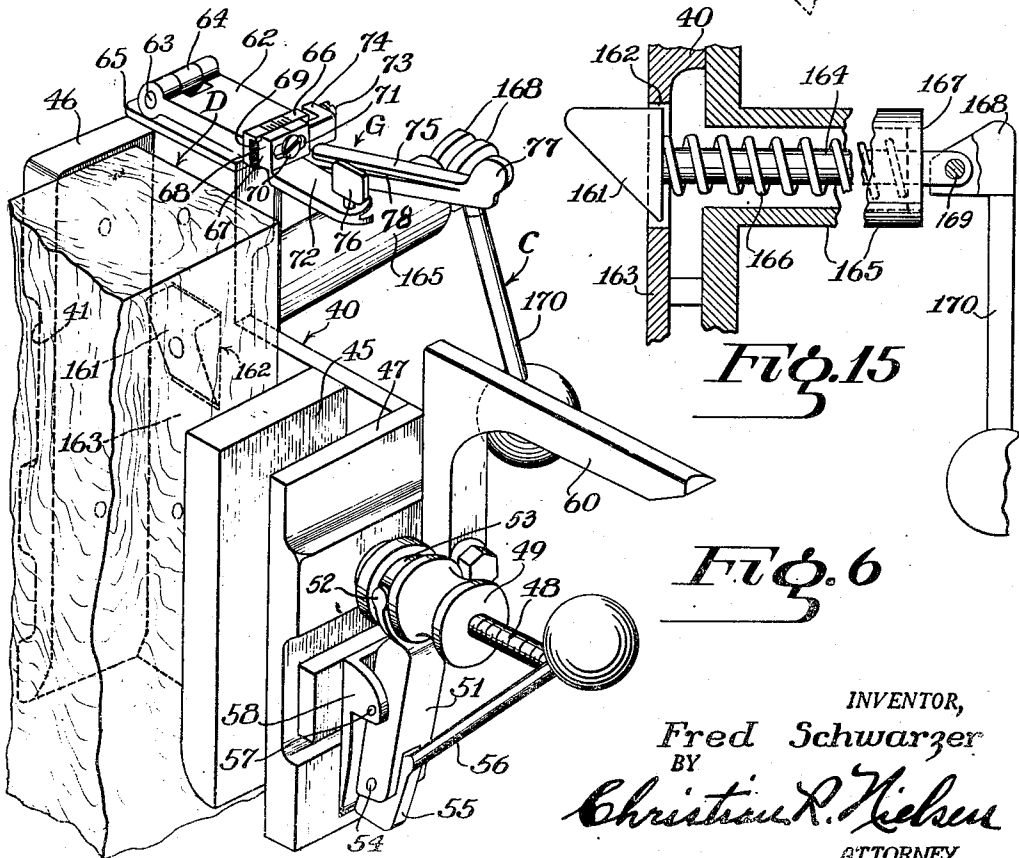
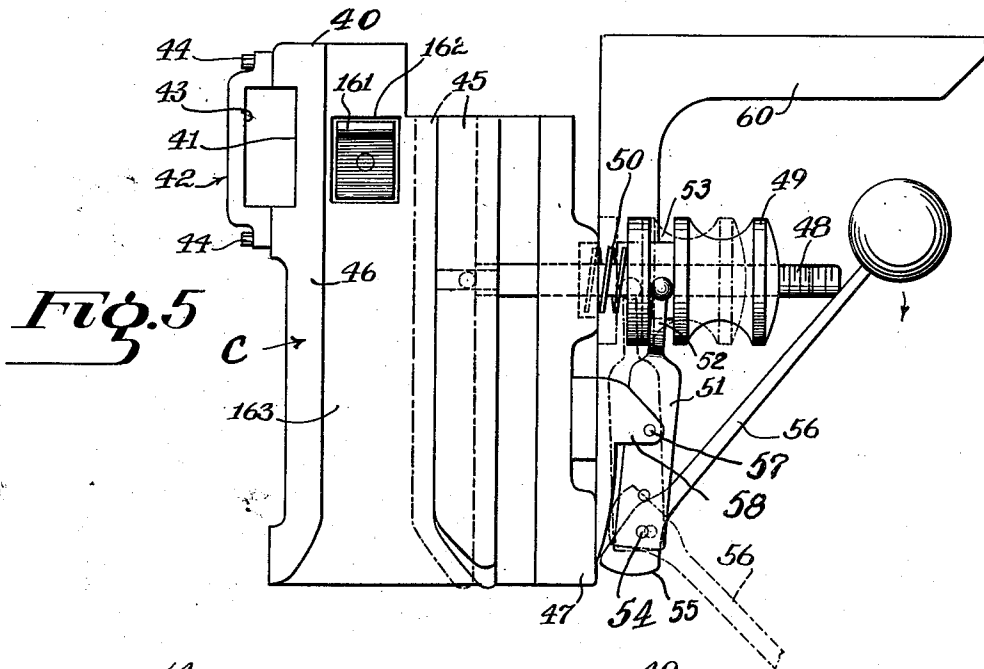
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4 Sheets-Sheet 2



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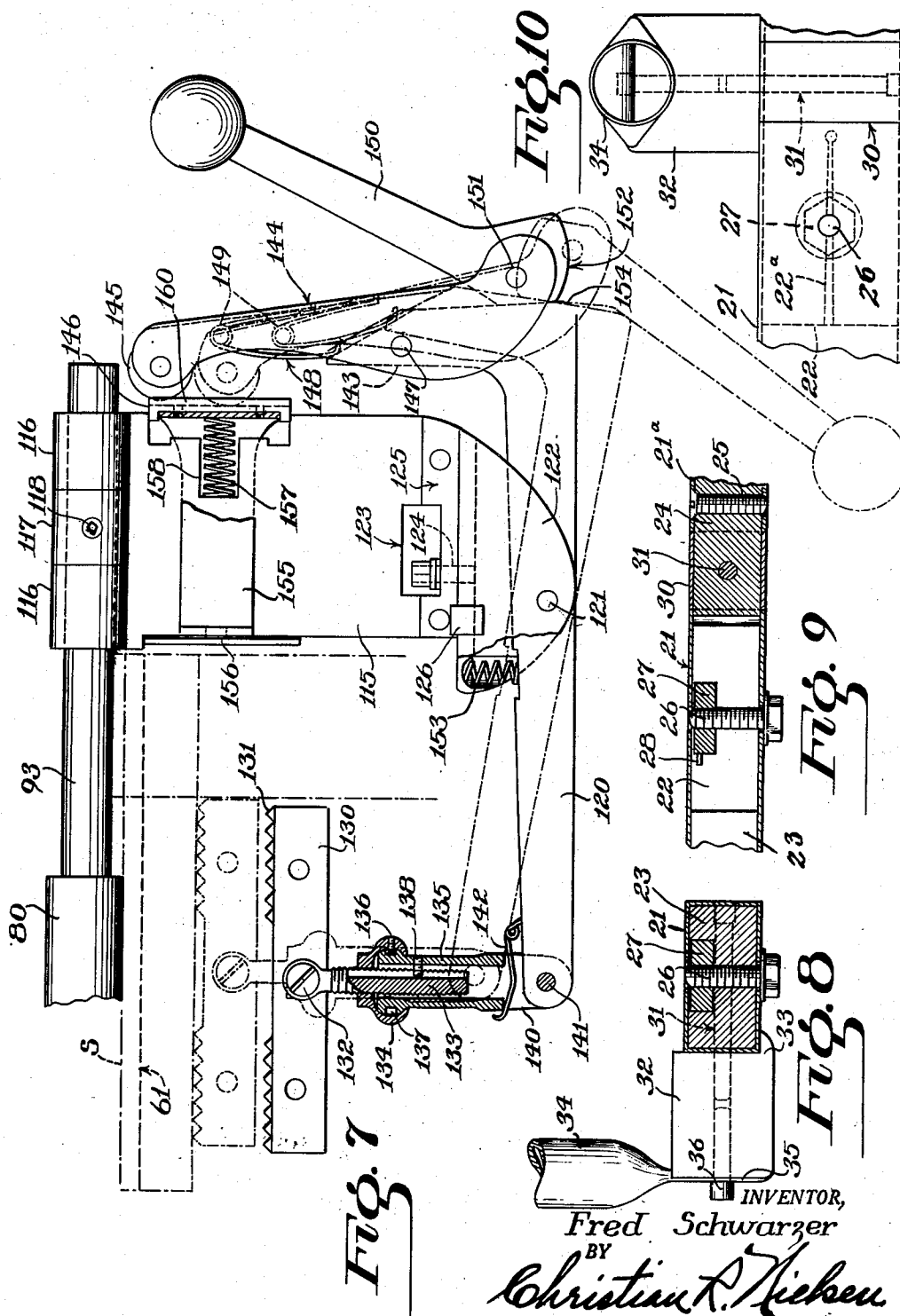
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WORK CLAMP AND TEMPLATE HOLDER FOR HINGE SEAT CUTTING

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4 Sheets-Sheet 3



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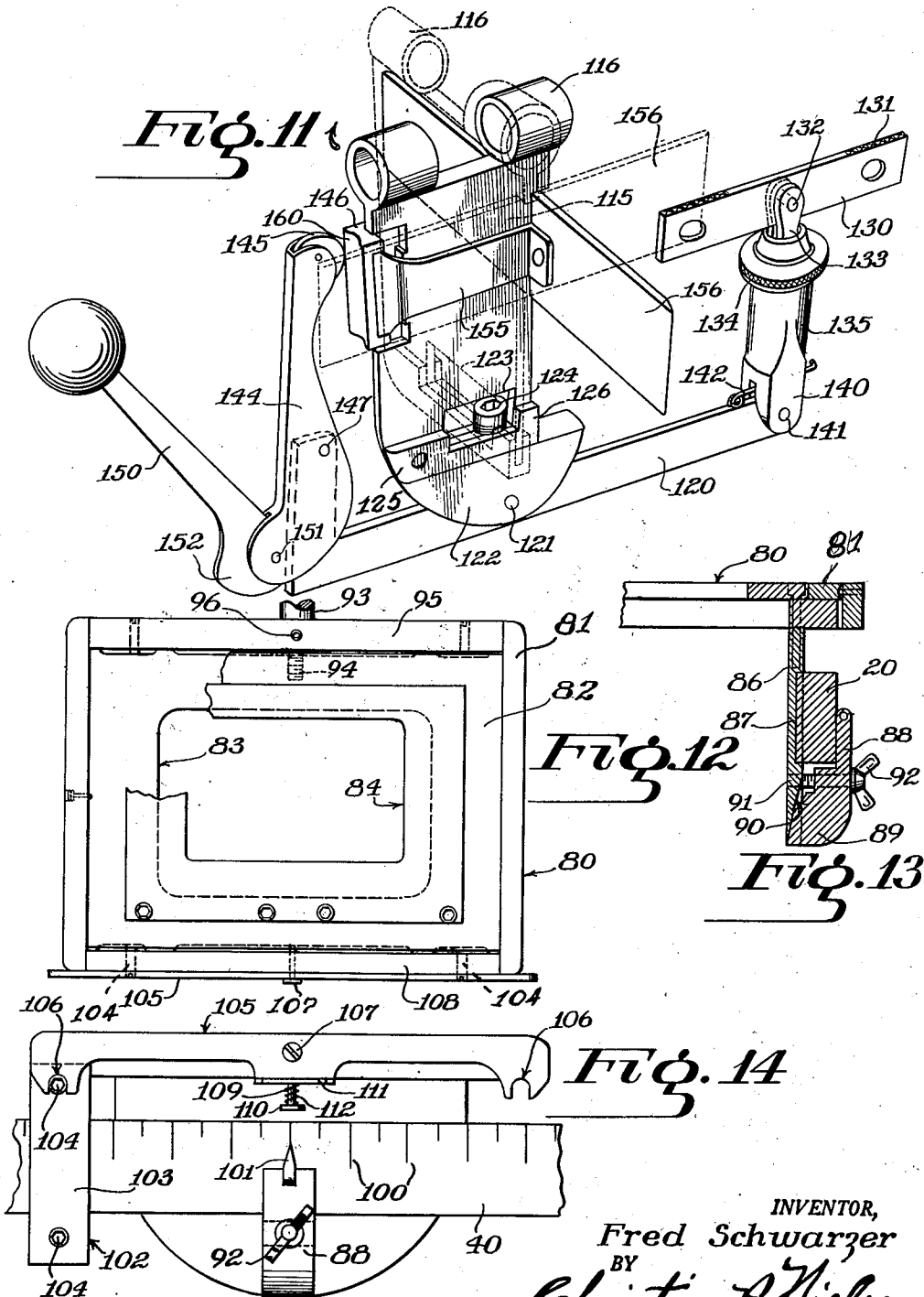
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WORK CLAMP AND TEMPLATE HOLDER FOR HINGE SEAT CUTTING

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4 Sheets-Sheet 4



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UNITED STATES PATENT OFFICE

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WORK CLAMP AND TEMPLATE HOLDER FOR
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12 Claims. (Cl. 144—27)

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This invention relates to an apparatus for clamping a door onto a stile of a door frame for cutting hinge seats.

An object of the invention is the provision of an apparatus for clamping a door to a stile of a door frame in such a manner that templates may be shifted and positioned in spaced relation along a bar of the device running the length of the stile in order that a workman may cut readily hinge-seats of the proper depth in both the stile and an edge of the door.

Another object of the invention is the provision of an apparatus for clamping a stile of a door frame to a door so that templates arranged along the device may be employed as guides for cutting hinge-seats in the door and stile, a bar running the length of the stile carrying the templates and a pair of clamps which are adapted to fix securely the door to the bar while supporting and positioning the stile, a clamp carried by each template being adapted to press the stile against the under face of a template holder so that the stile will be held rigidly in place in the holder during the operation of forming the hinge-seats on the stile and edge of the door.

A further object of the invention is the provision of an apparatus for clamping a door in an operative position on a stile of a frame for cutting hinge-seats in the stile and in an edge of the door, said apparatus including a metal bar running the length of the stile and provided with adjustable templates and clamping devices adapted to secure the door to the stile, each of the other clamping devices being suspended from a template holder and having a pivoted jaw engageable with the under face of the stile for forcing the stile rigidly against the under face of the template holder, said jaw being carried by an arm which is pivoted on one end of a rotatable member, said member having pivotal connections with the lower end of a bracket or body supported by a template holder, a manually operated cam oscillating the rockable member for causing the jaw to adjust itself automatically for pressing the stiles against the template.

The invention consists in the novel construction, arrangement and combination of parts hereinafter more particularly described and claimed.

In the drawings:

Figure 1 is a longitudinal side view of an apparatus for clamping a door to a stile of a frame.

Figure 2 is a plan view of the complete clamping apparatus.

Figure 3 is a longitudinal opposite side view of the apparatus.

Figure 4 is an enlarged fragmentary view of the side illustrated completely in Figure 3.

Figure 5 is an inner side view of a clamping device for holding the door in place on a supporting bar of the apparatus.

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Figure 6 is a view in perspective of the clamping device shown in Figure 5.

Figure 7 is an enlarged side view of a clamping device for forcing the stile in snug engagement with the door and with the underface of a template holder.

Figure 8 is a transverse vertical section through the connected ends of a pair of sections of a longitudinal bar which supports the various elements of the apparatus.

Figure 9 is a fragmentary longitudinal horizontal section through the connections shown in Figure 8.

Figure 10 is an enlarged view in elevation of the connections shown in Figures 8 and 9 together with a supporting handle.

Figure 11 is a view in perspective of the clamping device illustrated in Figure 7.

Figure 12 is a top plan view of a template holder with the template partly broken away.

Figure 13 is an enlarged fragmentary vertical section of the template holder and clamping means for the holder.

Figure 14 is an enlarged fragmentary side view of the supporting bar of the apparatus and the means for indicating the proper position of the template holder, and

Figure 15 is a fragmentary side view with parts broken away to show an ejector for the door.

Referring more particularly to the drawings, 20 designates a longitudinal metal bar which extends beyond the full length of the stile of a door frame. The bar is formed of two or more sections connected together by interfitting portions shown in Figures 8 and 9. The adjacent ends of the sections are each provided with an integrally formed sleeve 21 or 21-a. An end 22 of a bar 23 rectangular in cross section is split at 22-a and is received by the rectangularly shaped sleeve 21 of one section of the bar. The other end 24 of the connecting bar 23 is received by the sleeve 21-a on the other section of the bar 20. Bolts 25 connect the sleeve 21-a with the bar 23 while a bolt 26 received by passages in the sleeve 21 and the end 22 of the bar 23 is threaded into a nut 27 set in a pocket between the split portions of the bar. The nut is held against rotation by a lug 28 on the nut and disposed between the split portions of the bar.

A collar 30 is received by the bar 23 and disposed in abutting relation with the free ends of the sleeves 21 and 21-a. A bolt 31 not only secures the collar in place but attaches a block 32 to the collar (Figures 8, 9 and 10). A lip 33 engaging one face of the sleeve 21 prevents turning of said block. A handle 34 has a flattened end 35 received by a socket formed in the outer end of the block 32. A bolt 36 secures the handle in place. It will be noted in Figures 1 and 2

that two handles are provided for lifting the bar 20 and the instrumentalities mounted thereon.

A clamping element at each end of the bar 20 and designated generally by the letters C and C-1 is employed for attaching a door D (Fig. 2) to the bar temporarily. The clamping elements have substantially the same construction except for the reversal of parts to provide a left-hand and a right-hand clamping element. Each clamping element, Fig. 5, has a body 40 having a horizontal groove 41 at the front vertical face which receives the bar 20. A clamping plate 42 has a recess 43 which cooperates with the groove 41 for supporting the clamping element on the bar 20. Bolts 44 are drawn up tight for fixing the clamping elements on the rod.

A movable jaw 45 (Figures 5 and 6) is shiftable between parallel vertically disposed flanges 46 and 47 formed integrally with the body 40. A reciprocating rod 48 mounted in a horizontal passage in the flange 47 has its inner end secured rigidly to the movable jaw 45. A nut 49 is threaded on the outer end of the rod and a coil spring 50 on the rod and located between the nut 49 and the flange 47 tends at all times to move the nut outwardly from the flange 47 and the jaw 45 toward said flange.

An operating means for the jaw 45 includes an arm 51 having a yoke 52 received by an annular groove 53 in the nut 49. The arm is pivoted at 54 on a cam 55 projecting from the lower end of a lever 56. The intermediate portion of the arm is pivoted at 57 on a bracket 58 secured to the outer face of the flange 47. When the lever 56 is rocked downwardly (Fig. 5), as indicated by the arrow, the lower end of the arm 51 is moved outwardly by the cam 55 so that the nut and rod 48 are moved inwardly, causing the jaw 45 to clamp the door D, Fig. 6, against the flange 46 and for retaining the bar 20 on the door.

A rest 60 is secured rigidly to the flange 47 and extends inwardly from the body 40 of the clamping element. Since a clamping element is located at each end of the bar 20, the rests 60 provide a support for the ends of the stile S of a door frame. The stile is properly positioned on said rest in a manner which will be explained presently.

A gage member generally indicated by the letter G is adapted to be received by a transverse groove 61 at the end of a stile (Fig. 2). Each gage member (Fig. 6) includes a leaf 62 pivoted on a pin 63 carried by a bearing 64 rising from a plate 65 secured to the top of the body 40 of each clamping member C and C-1. The free end of the leaf has a right-angular flange 66 upon which is mounted a slide 67. The slide has a reduced portion 68 riding in a cut-out portion 69 in the flange 66. A bolt 70 is received by a slot 71 in the slide and is threaded into a passage in the flange 66 for retaining the slide and an outwardly projecting finger 72 in a predetermined position. When the bolt is loosened, a set-screw 73 in a lateral extension 74 of the slide bears against the adjacent end of the flange 66 for adjusting the slide horizontally. A finger 75 has its inner end pivoted on the slide at the inner end of the stationary finger 72. Finger pieces 76 and 77 on the respective fingers 72 and 75 permit the workman to force the fingers toward each other so that said fingers may be received by the groove 61 in the stile. A spring 78 has arms pressing against the fingers 72 and 75 for maintaining the free end of finger 75 away

from the finger 72 so that said fingers will exert pressure against the sides of the groove 61 to retain the fingers in the groove.

Template holders 80 are spaced along the bar 20 (Fig. 2) and are preferably secured thereto. Each holder consists of a rectangular metal frame 81 having a depressed seat to receive neatly a template 82. The frame must have an opening 83 of greater dimensions than the opening 84 in the template (Figures 12 and 13) since the dimensions of the opening in the template will vary in accordance with the kind of work to be done. Furthermore, the opening in the template is off center with the narrow side edge 85 of the template being located inwardly (Fig. 2). This narrow side portion may be placed outwardly toward the bar 20 when necessary. A semi-circular flange 86 depends from the underface of the frame 81 (Figures 1 and 13), and has a horizontal groove 87 adapted to receive the bar 20. A clamp 88 has an enlarged lower end 89 adapted to fit into a slot 90 in the lower end of the flange 86. A bolt 91 threaded into a passage in the flange 86 and received loosely by a passage in the clamp 88 has a winged head 92 for turning the bolt to tighten or loosen the clamp. A rod 93 has a reduced inner end 94 threaded into a passage in the inner side bar 95 of the template holder 80 (Fig. 12). A set screw 96 retains the rod in place.

In Figure 14 is illustrated a means for properly positioning the template holders. The bar at the outer face is provided with graduations 100 and a pointer 101 is pivoted on the clamp 88 and is adapted to ride over the graduations. The operator can determine just where to position the template holders in accordance with the length of the door, the positions being calculated previously and indicated on a chart.

A collar 102 embraces the bar 20 at points along said bar where the holders 80 are to be positioned. These collars have a loose member 103 which is tightened against the bar 20 by set screws 104, the heads of which project outwardly from the face of the member 103.

A rockable member 105 has a depending catch 106 at each end. One of said catches is adapted to engage the head of the set screw 104 for aiding in preventing sliding movement of the template holder 80. The member 105 is pivoted at 107 on the outer side portion 108 of the template frame 81. A bolt 109 having a head 110 is threaded into a passage formed in the bottom of the side member 108 of the frame 81. A plate 111 has a central opening received by the bolt 109. A coil spring 112 on the bolt is engaged between the head 110 of the bolt and the plate 111 so that the spring and plate will tend to maintain the rockable member 105 in a horizontal position.

A particular form of clamping device is provided for not only retaining the stile in position under the templates but for forcing the stile into rigid contact with the door and at right angles to said door. Such clamping device is illustrated in Figures 7 and 11 and includes a main frame or flat body 115 suspended from the rod 93 projecting from the rear of the template holder 80 by spaced hangers 116 which receive neatly the rod 93. A collar 117 secured adjustably to said rod by a set screw 118 is disposed between the sleeve-like hangers 116 for retaining the body in an adjusted position on the rod 93.

A rockable member or crank 120 is pivoted on a pin 121 carried by a subframe or saddle 122

which straddles the member 120. The lower end of the body 115 has an opening 123 which forms a pocket for the head of a pin 124 which passes through a bar 125 bolted to the lower end of the body. Said pin is threaded at its lower end into a vertical passage in the top of the saddle 122. A stop 126 is secured to the saddle and is adapted to engage the bar 125. By this construction, the body 115 may be rotated on a vertical axis from the position shown in Figure 7 to the dotted line position illustrated in Figure 11 for a purpose which will be presently explained. The stop 126 will retain the body in either position.

A jaw 130 has its upper edge provided with teeth 131 for engagement with the under face of the stile S (Fig. 7). Said jaw is pivoted at 132 on the upper end of a bolt 133 threaded into a nut 134 which is rotatable upon the upper end of a sleeve 135. A set screw 136 is mounted radially in the nut and has its free end projecting into an annular groove 137 in the upper enlarged end of the sleeve 135. This construction permits an upward or downward movement on the bolt. A set screw 138 mounted radially in the sleeve 135 is adapted to engage the bolt 133 and prevent movement thereof after the proper position of the jaw 130 has been determined for the work encountered. The lower end of the sleeve is provided with spaced ears 140 pivoted at 141 on the inner end of the rockable member 120. A spring 142 secured to the member 120 passes between the ears 140 and presses upon the lower end of the sleeve 135 for retaining said sleeve in a vertical position. Said sleeve, in effect, performs the function of an oscillatable rod for controlling the positions of the jaw 130.

A right angularly disposed toe 143 projects upwardly from the other or outer end of the rockable member 122. This toe is received between the side walls of a lever 144 which is U-shaped in cross section. The upper end of the lever is provided with a roller 145 adapted to press against a cross head 146. The intermediate portion of said lever is pivoted at 147 on the toe 143. A V-shaped spring 148 has a coil 149 at its apex housed within the lever 144. One leg of said spring presses against the bridging portion of the U-shaped lever 144. A cam lever 150 is pivoted at 151 on the lower end of the lever 144. A cam 152 on the lower end of the lever 150 is adapted to engage the outer end of the rockable member 120 for causing rocking of said member and for causing shifting and rocking of the lever 144. A coil spring 153 between one end of the saddle 122 and the rockable member 120 aids in returning said rockable member to an inoperative position after the cam 152 has been moved away from the outer end 154 of the member 120.

The cross head 146 (Figures 7 and 11) is rigidly attached to the outer ends of a pair of arms 155 which embrace opposite sides of the body 115. The inner ends of said arm are rigid with a jaw or presser foot 156 disposed at right angles to the body 115. A coil spring 157 seated in a pocket 158 in the body presses outwardly against the cross head 146 tending to move the foot 156 against the inner vertical edge of the body 115. Said cross head is provided with a vertical groove 160 (Fig. 11) in which the roller 145 rides so that when the lever is oscillated the cross head will be forced inwardly while the presser foot or jaw will engage the side edge of the stile S and force the stile into rigid contact with the door D.

Each clamping device C and C-1 has an ejector

for the door after the operation of the cutting of the hinge-seats has been completed. This ejector (Figs. 6 and 15) includes a presser foot 161 projecting through an opening 162 in a flat end wall 163 of the body 40 of each of the clamping devices. It will be noted that the foot is in the shape of a cam having an inclined face with the thicker portion of the cam being located at the top. The foot is secured to a plunger 164 slidably mounted in a barrel 165 projecting at right angles from the body 40. A coil spring 166 between the foot 161 and the closed end 167 of the barrel 165 tends to force the foot 161 outwardly from the wall 163 of the body 40. A cam 168 pivoted at 169 on the outer projecting end of the plunger 164 is adapted to coact with the closed end when operated by a lever 170 for withdrawing the foot 161 within the opening 162. At this time, said lever has been moved to a position which is diametrically opposite that shown in Figure 15.

The operation of my device is as follows: The door D is placed on a support so that one longitudinal edge may be received by brackets (not shown) for retaining said door in a vertical position. The bar 20 upon which the various instrumentalities are supported is carried by the handles 34 and placed over the upper edge of the door. At this time the levers 170 of the clamping devices C and C-1 are in the upper vertical positions for withdrawing the presser feet 161 so that the opposite ends of the door will be received by the space between the flange 46 and the movable clamp 45 of each clamping device. The clamping devices are adjusted along the bar 20 so that the ends of the door will be in abutting relation with the end wall 163 of each clamping device. The bolts 44 (Fig. 5) are screwed up tight so that the plates 42 will secure the clamping devices in position on the bar 20.

The template holders 80 are next adjusted along the bar 20 and fixed in place by the clamp 88 (Fig. 14) after said holders have been properly positioned in accordance with the pointer 101 and the scales 100. The holders will then be disposed over the upper longitudinal edge of the door. Two holders are employed normally but the third holder is used when a third hinge is required for heavier doors. The sleeves 102 are clamped in place adjacent each holder so that one of the catches 106 may engage a head of a bolt 104 for retaining the holders in adjusted positions.

The stile S is properly positioned with respect to the door D by the gage members G carried by the clamping devices C and C-1. The spring-pressed hinged finger 75 is moved into engagement with the stationary finger 72 of the gage. The stile is shifted along the supports 60 until the transverse groove 61 therein is positioned below the fingers which have been swung out of the way on the pivot 63. The leaf 62 is then lowered so that said fingers may be placed in the groove 61 and released and finger 75 will move against one wall of the groove while the stationary finger 72 will contact the other wall. The stile, when both gages are in operative relation in the grooves 61 at the opposite ends of the stile will be ready for the application of the clamping devices shown in Figures 7 and 11.

The stile S is now placed upon the brackets 60 (Figures 5 and 6) and moved into engagement with the door. The stile-clamping and positioning members shown in Figures 7 and 11 are operated next. The stile (Figure 7) is disposed above

the rockable clamping elements 130. When the lever 150 is moved downwardly the roller 145 presses against the cross head 146 forcing the clamp 156 horizontally against the outer longitudinal edge of the stile for forcing the inner edge of the stile against the door. At the same time, the jaw 130 is moved upwardly at substantially right angles to the horizontal movement of clamp 156 by the inner end of the member 120 which is rocked by the cam 152 on the lever 150. Since the jaw not only oscillates on the sleeve 135 but is also oscillated by the sleeve, said jaw will move upwardly into gripping relation with the under face of the stile and will not only force the stile against the under face of the template holder but will force the stile inwardly in cooperation with the presser foot 156 to cause the stile to contact the door firmly so that no space will be left between the door and stile. The movement of the operating lever 150 from its full-line position in Fig. 7 to its broken-line position moves the cam surface 152 from a position below the pivot 151 in the disengaged position of the clamping assembly to a position above the pivot 151 in the engaged or clamping position. This over-center movement of the operating lever 150 reverses the direction of application of the force of the spring 157 on the operating lever 150 to hold the clamping assembly in the clamping position.

The operator will cut out the hinge seats with the proper tools and will be guided by the rectangular openings in the selected template. When the seats have been completed, the levers 150 (Fig. 7) will be released so that the stile may be removed. The levers 56 (Figs. 5 and 6) are raised while the levers 170 are lowered to the positions shown in Figures 6 and 15. This last action causes the feet 161 to press downwardly on the opposite ends of the door whereby the bar 29 will be raised from said door.

The templates may be changed to suit the type of work done. In other words, a template may be employed for directing the operator in forming mortises or gains in the edge of the door to receive the lock. A template may also be used for cutting a socket in the stile for the reception of the bolt of the lock.

As has been stated, the clamp device shown in Figures 7 and 11 may be rotated to a right angular position so as to facilitate removal of the stile S.

While I have shown and described a preferred construction of the device, this is by way of illustration only, and I consider as my own all such modifications in constructions as fairly fall within the scope of the appended claims.

I claim:

1. In a device of the class described, a longitudinal supporting bar, means on the bar adapted to clamp a door onto the bar, a template holder connected to the bar, means for clamping a stile at right angles to a longitudinal edge of the door comprising a body member suspended from the holder, a rockable member pivoted intermediate the ends thereof on the lower end of the body member, a movable jaw mounted on one end of the rockable member adapted to engage the underface of the stile, a cam, an operating lever projecting from the cam and means pivotally mounted on the other end of the rockable member for pivotally supporting the cam in close association with the said other end of the rockable member for causing rocking of said member and for forcing the jaw inwardly towards the

bar and also upwardly to clamp the stile against the door and template holder.

2. In a device of the class described, a longitudinal bar, means on the bar adapted to clamp a door onto the bar, a template holder projecting laterally from the bar, means for clamping a stile at right angles to a longitudinal edge of the door comprising a body member swingably supported from the holder, a rockable bar mounted on the body member, a rod pivoted on one end of the bar and rising vertically therefrom, a jaw pivoted on the upper end of the rod and engageable with the under face of the stile, a cam engaging the other end of the rockable bar, means bearing against the body and having pivotal connections with the second-mentioned end of the rockable bar, and means pivotally connecting the cam with the last-mentioned means so that when the cam is actuated the bar will be rocked for causing the jaw to force the stile not only against the under face of the holder but to force an edge of the stile against the door.

3. In a device of the class described, a longitudinal bar, means on the bar clamping a door thereto, a template holder carried by the bar, means clamping a stile at right angles to an edge of the door comprising a body member depending from the holder, a clamp slidable in the body and adapted to retain the stile against the door, a rockable member swingably supported on the body, a clamping element having limited oscillating movement on one end of the rockable member and engageable with the under face of the stile for forcing said stile against the door and holder, operating means between the other end of the rockable member and the slidable clamp and means actuating the operative means for causing simultaneous movements of the slidable clamp and the clamping element.

4. In a device of the class described, a longitudinal bar, means on the bar clamping a door thereto, a template holder carried by the bar, means clamping a stile at right angles to an edge of the door comprising a body member depending from the holder, a clamp slidable in the body and adapted to retain the stile against the door, a rockable member swingably supported on the body, a clamping element having limited oscillating movement on one end of the rockable member and engageable with the under face of the stile for forcing said stile against the door and holder, an arm pivoted on the other end of the rockable member and having a free end acting on the slidable clamp, a cam pivoted on the arm and engaging the second-mentioned end of the rockable member and a lever for rocking the cam so that the cam will cause simultaneous actuation of the arm and rockable member and the clamp.

5. In a device of the class described, a longitudinal bar provided with a scale along one face, means on the bar for clamping a longitudinal edge of a door on to the bar in predetermined relation to the scale, a template holder adjustable on the bar relative to the scale, means clamping the holder in a horizontal position over the edge of the door, means carried by the holder for applying clamping pressure to a longitudinal edge of a stile to clamp the opposite edge thereof in rigid contact with the door and for simultaneously applying clamping pressure to a face of the stile to clamp the opposite face thereof against the underface of the holder, a pointer on the clamping means cooperating with the scale for indicating the position of the holder for cutting

hinge seats in the door and stile, a projection on the first clamping means and a spring-pressed finger both engageable with the stile and cooperating with each other for determining the correct position of the stile relative to the door.

6. In a device of the character described, a longitudinal bar, spaced means for clamping a longitudinal edge of a door to the bar, each clamping means comprising a body member having a flange adapted to engage one face of the door, a movable clamp engageable with the opposite face of the door, means for tightening said clamp, a support projecting from said body member for supporting a stile horizontally so that the upper face of the stile will be flush with the longitudinal edge of the door, and fingers carried by said body member for positioning the stile relative to the adjacent end of the door.

7. In a device of the character described, a longitudinal bar, spaced means for clamping a longitudinal edge of a door to the bar, each clamping means comprising a body member having a flange adapted to engage one face of the door, a movable clamp engageable with the opposite face of the door, means for tightening said clamp, a support projecting from said body member for supporting a stile horizontally so that the upper face of the stile will be flush with the longitudinal edge of the door, fingers carried by said body member for positioning the stile relative to the adjacent end of the door, said body member having a slot, a toe having a cam face pivotally mounted in the slot and adapted to engage an end of the door, and a lever connected to the toe for rocking the toe to eject the door from the body member when the movable clamp has been released.

8. In a device of the class described, a longitudinal bar, spaced means on the bar for clamping a door to the bar, each means including a body member having a vertical channel therein to receive an end of the door, the channel being defined by a rigid end wall, a rear wall and a movable wall forming a clamping element, means for tightening the clamping element, the end wall having a slot, a cam carried by said body member and disposed within the slot, and a lever connected to the cam for projecting the cam from the slot to engage the end of the door for forcing the door from the channel, when the clamping element has been released.

9. In a hinge jig assembly for a stile and a door, means including a clamping assembly for clamping the stile against the door in position for a routing tool to be guided with respect to the stile and the door, said means including a frame member engaging the door and having a support extending over and above the stile, said clamping assembly comprising a body member depending from said support in spaced relation with the door and the stile, a clamping member slidable relative to said body member for moving the stile into clamping position against the door, a crank pivoted intermediate its ends from said body member, one end of said crank forming a clamping element movable upwardly into engagement with the stile for pressing it against the frame support disposed thereabove, means including an operating lever having a cam surface movable relative to said crank and operatively associated with said slidable clamping member for first rotating said crank in a direction to lift the

clamping element and the stile until brought to a standstill against said overlying frame support and for thereafter moving said slidable member against the stile to press it tightly against the door, a spring for opposing the clamping movement of said operating lever, the pivotal support of said operating lever being disposed with respect to said cam surface for movement of said cam surface from a position below said support in the disengaged position of said clamping assembly to a position above said support in the clamping position to reverse the direction of application of the force of the spring on said operating lever to hold said clamping assembly in the clamping position.

10. The combination set forth in claim 9 in which said body member of said clamping assembly includes a main frame and a subframe, said subframe being pivoted to said main frame of said body member for rotation of the crank arm, the operating lever and associated parts about a vertical axis for movement of the clamping element outwardly and away from its stile-supporting position, said clamping assembly being rotatably mounted on said support for rotation of the clamping assembly as a whole about a horizontal axis upwardly and in spaced relation with the upper edge of the door.

11. A clamp for woodworking apparatus comprising a body member having a slidable jaw, a rockable member pivotally secured intermediate its ends to said body member and in spaced relation with said jaw, said rockable member pivotally carrying at one end a clamping element having limited oscillating movement, operating means between the other end of said rockable member and said slidable jaw, and means for actuating the operating means for causing simultaneous movements of said slidable jaw and said clamping element, said movements being substantially at right angles to each other.

12. A clamping device comprising a body member, a clamp horizontally slidable relative to said body member, a rockable member, a saddle pivoted to said body member for pivotally supporting said rockable member, said rockable member having a clamping element pivotally carried by one end thereof and a handle pivotally carried adjacent the other end of said rockable member for moving said rockable member into and out of its clamping position, said body member and said saddle having engaging stops for locating said rockable member in position at right angles to its clamping position, and means on said body member for bodily rotating said clamping device as a whole about a pivotal support.

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