Jan. 3, 1928. 1,654,786

J. F. CARSTENS

BUTT GAUGE

Filed April 9, 1924 2 Sheets-Sheet 1

Fig. 1.

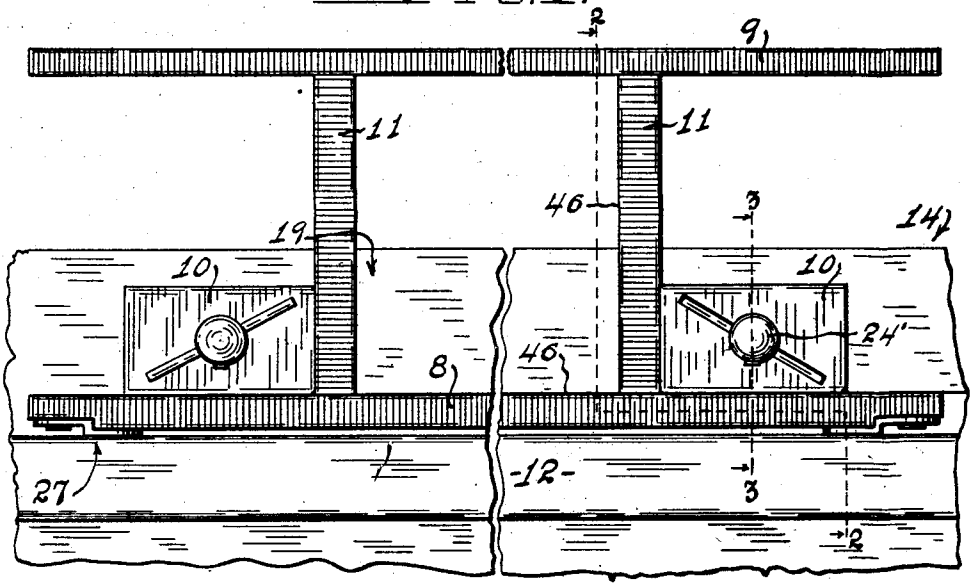


Fig. 2.

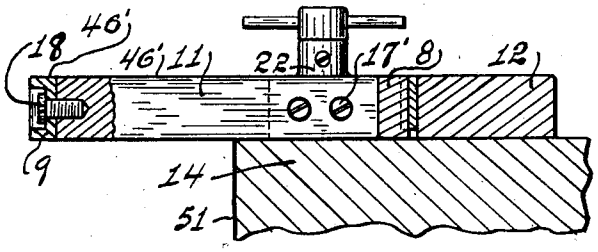


Fig. 3.

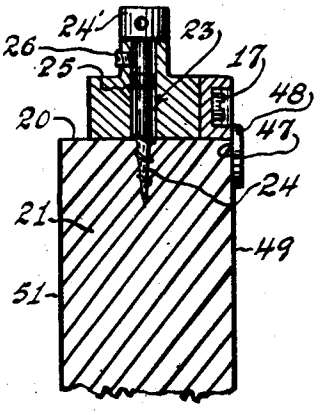


Fig. 4.

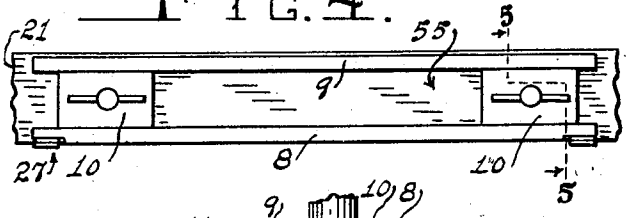
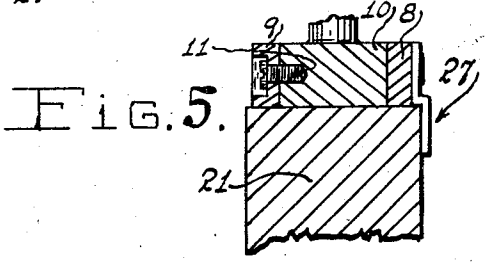


Fig. 5.



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Fig. 6

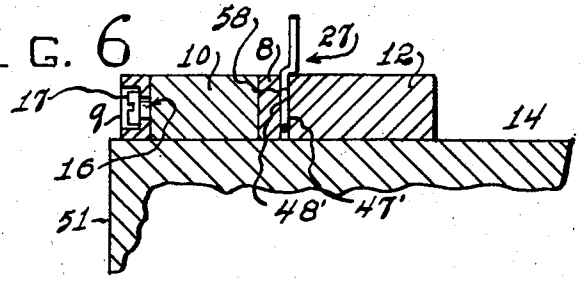


Fig. 7.

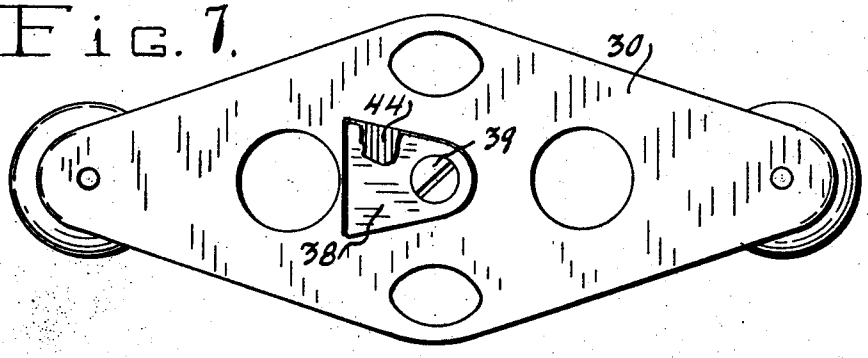
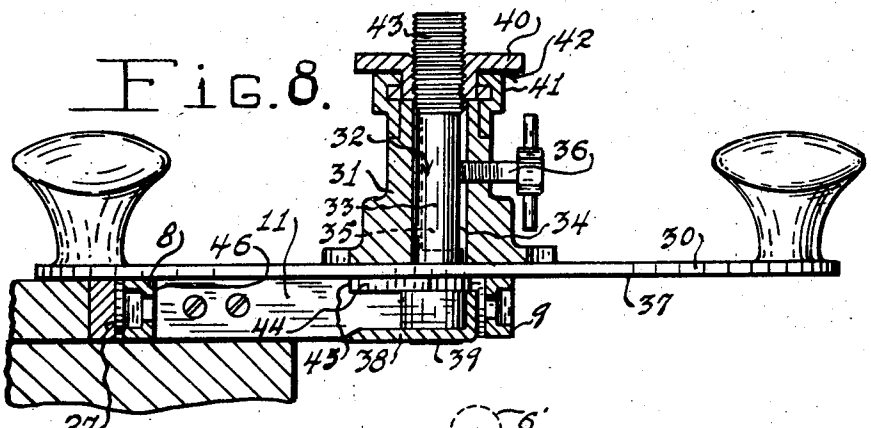


Fig. 8.



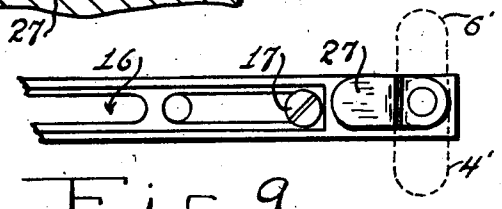


Fig. 9.

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Patented Jan. 3, 1928. 1,654,786

UNITED STATES PATENT OFFICE.

JOHN F. CARSTENS, OF SANTA MONICA, CALIFORNIA.

BUTT GAUGE.

Application filed April 9, 1924. Serial No. 705,365.

My invention relates to the practice of scoring and routing out areas on doors, jambs and the like, for the receipt of hinge butts, lock plates, strikes and the like.

The invention has for its principal object the provision of a simple, readily adjusted and accurate means for defining the rectangular area to be worked upon, and for efficiently guiding the workman's chisel or other instruments used.

Another object of the invention is to provide an adjustable rectangular gauge for the above described purpose, which is so constructed and provided with suitable attaching means that it may be temporarily held in a contiguous position with regard to the surface to be worked on, so that in using a chisel, the danger of undercutting or working beyond the prescribed limits, is eliminated.

Another object of the invention is to provide a gauge of the above described character, which is adapted for use in working on either a door or a jamb.

Another object of the invention is to provide a device of the above described character and for the above described purposes, which may also be converted or be employed in guiding the workman's tools in the act of routing out areas for the receipt of lock plates, strikes and the like.

Another object of the invention is to provide means whereby such rectangular areas may be marked and routed out with greater speed and with greater accuracy than heretofore.

Still other objects and advantages will appear hereinafter.

I have illustrated by the accompanying drawings a preferred embodiment of my invention, and in the said drawings,

Figure 1, is a plan view of the said embodiment as it would appear attached to a jamb preparatory to routing out an area for the receipt of a hinge butt.

Figure 2, is a view in section thereof seen on a line 2—2 of Fig. 1.

Figure 3, is a view in section seen on a line 3—3 of Fig. 1, showing the embodiment attached to the end of a door for guiding a tool in the act of routing out an area for the receipt of a hinge butt.

Figure 4, is a plan view of the embodiment adjusted and attached to the end of a door preparatory to routing out an area for the receipt of a lock plate or the like.

Figure 5, is a view in section seen on a line 5—5 of Figure 4.

Figure 6, is also a view seen on the line 5—5 of Fig. 4, but showing the device as it would appear attached to a jamb preparatory to routing out for a strike.

Figure 7, is a view in bottom elevation of an improved tool for use in conjunction with the guage.

Figure 8, is a view in vertical section thereof showing its operative relation to the gauge.

Figure 9 is a view in front elevation of one end of a part hereinafter known as the front gauge bar.

More specifically, my improved gauge in the embodiment shown comprises essentially a front gauge bar 8, a back gauge bar 9, rectangular adjustable means 10, 10, and transverse members or bars 11, 11.

The front gauge bar in plan is of a width corresponding to the standard distance at which an edge of a hinge butt is spaced from the stop 12, commonly found on door jambs 14. The rear bar is of a less commonly used standard of thickness. Both bars are interchangeable with one another and alike in all respects, except for thickness. The bars are preferably of a channel form and are provided with a plurality of spaced elongated apertures 16. Screws 17, passing through said apertures into the members 10, 10, hold said members to said bar in adjusted relationship. Each of the transverse members is detachably secured to the corresponding adjustable member by screws 17′, while the rear gauge bar is attached jointly to the ends of the transverse bars as by screws 18. It will be apparent now that the bars 8, 9, 11 and 11, all unite to define and encompass a rectangular space 19, and all bars are capable of being disposed contiguous with the surface, such as 20 of the door 21.

Each of the adjacent members 10 is provided with a vertical boss 22, centrally located, and through each boss a vertical bore 23 extends. In each bore a wood screw 24 is fitted, and an extension to said screw passes upward through the bore and terminates in an enlarged end. Adjacent the lower end of the extension, slightly above the screw portion, a ring 25 is pressed on to provide a shoulder or stop. By means of a set screw 26 carried by the boss, and which is disposed to interfere with the ring, the screw

is held against being withdrawn accidently from the bore.

One of the salient features of my invention resides in a shim 27 provided at each end of the front bar. In order to fasten the gauge to a surface of a door jamb or the like, it is properly positioned, and each screw head is driven slightly into the wood. Subsequent turning of the screws cause them to further embed themselves farther in the wood and so draw the gauge forcibly down upon said surface. Thereby the gauge is quickly attached and is held securely in place while being used. Other suitable well known means may be employed for temporarily attaching the gauge to a surface. The screws are simple in construction and operation and leave a comparatively small hole in the surface which may be obscured by putty; just as all similar marks are obscured when a door or the like is being finished.

In Figures 7 and 8, an improved router plane is shown which is particularly adapted for use in connection with my improved gauge. Said plane includes a base 30, which carries a vertical boss 31, provided with a vertical bore 32. In said bore a slidable stem 33 is fitted. The stem is provided with two flat sides 34 and 35, disposed at right angles to one another. A set screw 36 engages the flat side which is presented to it and precludes turning of the stem. The lower end of the stem protrudes from the smooth under surface 37 of the base and a common router-plane blade 38 is attached thereto, as by a screw 39. An annular member 40, provides a revoluble extension to the boss, and said member is held to the boss by means of another annular member 41, which engages a slot 42 in the member 40. The member 40 is internally threaded, and the upper portion 43 of the stem is accordingly threaded and screwed into said member. Now it will be apparent that when member 40 is rotated the stem cannot turn and will therefore be positively raised or lowered, as the case may be, in the boss. Thus the blade is adjusted toward or away from the under surface of the base of the plane.

Another of the salient features of my invention resides in a stop 44, which is practically identical in outline with the blade. As will be apparent hereinafter, this stop precludes any undercutting on the part of the blades, and its comparatively thick edges 45 coact with the inside margins 46 of the bars to limit the cutting stroke of the blade. As to the general cooperation of my improved plane and gauge, it will be seen from reference to Fig. 7, that the plane may be slidably moved along the top surfaces 46 of the bars. The blade is lowered until the distance between its extreme cutting edge and the under surface of the plane is slightly greater than the depth of the bars. Thus the depth of the "cut", allowed for the blade, is determined. As the plane is operated in the manner common to such planes, that portion of the material which is encompassed by the gauge is gradually planed or shaved off and a particularly smooth, efficient and well defined depression is provided where the material is removed.

When a door end is to be routed for a hinge butt (not shown), the shim is turned downward so that surface 47, of portion 48 thereof, abuts the face 49 of the door. The rear bar is held, by the transverse bars, well away from the other surface 51 of the door, inasmuch as the area to be routed out for a hinge butt intersects the said surface and the cutting edge of the bit begins its work immediately it strikes said surface.

The foregoing also applies to the act of routing out an area on a door jamb (see Fig. 2), except for the changed position of the shim. In this case the shim is turned so that its major axis parallels the front bar and thereby adds to the effective thickness of the bar. Thus the inside surface of the front bar is disposed away from the stop a distance slightly greater than the distance at which it is shown removed from the face of the door in Fig. 3. This is in conformance with standard practice.

In order to use the gauge for routing out areas for the insertion of a lock plate (not shown), or a strike (not shown), the transverse bars are dispensed with. Now, in the case of a lock plate on the end of a door, the area to be routed out is indicated by 55 (see Fig. 4). In this case it will be seen that the routed area is disposed midway between the opposed faces of the door and does not intersect either edge. The shim on the front gauge bar is turned down, as shown, so that the front bar extends over the adjacent edge of the door. This brings the rear bar flush with the other face of the door. Thereby the area encompassed by the front bar, rear bar, and end members 10 is exactly midway of the opposed faces.

When the gauge is to be used on a jamb having its usual stop, the shims are turned to stand vertically, so that the surface 56 of the shim only abuts the stop. Thereby the location of the area encompassed by the gauge is midway of the edge 58 of the stop, and the edge 59 of the jamb.

In either of the immediately foregoing cases the area encompassed by the bars and members 10, 10, may be routed out by the plane in the following manner:—The blade is turned at right angles to the position in which it is shown in Fig. 8. It is adjusted so that its cutting edge will scrape the surface to which it is applied before the under surface of the plane will abut the top surfaces of the gauge parts. Forward strokes

will send the cutter into one end of the area being worked. Subsequent lowering of the blade is resorted to until that end of the area is cut to the required depth. The plane is turned and worked in the opposite direction until the remainder of the material to be removed has been planed out.

It will be seen now that I have provided a simple and readily adjusted gauge which may be arranged to define and correctly locate an area to be routed on a door end for the insertion of a hinge butt, an area on a jamb for the insertion of a hinge butt, an area on a door's end for the insertion of a lock plate, and an area on a jamb for the insertion of a strike. It will also be seen that my improved gauge prevents going beyond the prescribed limit and precludes under-cutting. The simple movable shim which I provide takes care of the correct location of the area to be defined in all cases, and withal it will be seen that I have provided a simple and quickly adjusted gauge for defining any area to be routed and for carrying out all the objects set forth. Obviously, the gauge may be used in connection with a common chisel or any other suitable tool (not shown), and in such case under cutting is guarded against, because all under surfaces of the bars are contiguous with the surface being worked.

While I have shown a specific construction and arrangement of parts, it has been done only by way of example in order that the features of my invention may be made clear to those skilled in the art, and I do not limit myself to any specific construction or arrangement of parts, and may alter the construction and arrangement of parts as I desire without enlarging the scope of my invention within the appended claims.

I claim:

1. In combination, a gauge having a horizontal top surface and providing an opening defined by vertical inside margins, all portions of the top surface being on a common horizontal plane; said gauge having a bottom surface adapted to be disposed contiguously with a surface to be routed, and a plane including a flat plate capable of bridging the opening, a horizontal cutting blade spaced below and carried by said plate; said blade having a forward cutting edge terminating at each side in sharp cutting corners, and a stop carried by said plate above said blade; said stop having a front and side abutment edges, respectively, conforming in outline to, and in vertical registration with, the corresponding cutting edges and corners, respectively, of the blade; said blade vertically movable with regard to said plate to dispose the blade below the bottom surface of the gauge.

2. In combination, a gauge having a horizontal top surface and providing an opening defined by vertical inside margins; all portions of the top surface being on a common horizontal plane; said gauge having a bottom surface adapted to be disposed contiguously with a surface to be routed, and a plane including a flat plate capable of bridging the opening, a horizontal cutting blade spaced below and carried by said plate; said blade having a cutting edge, and a stop carried by said plate above said blade; said stop conforming in outline to, and in vertical registration with, the cutting edges of the blade; said blade vertically movable with regard to said plate to dispose the blade below the bottom surface of the gauge.

JOHN F. CARSTENS.