Jan. 3, 1961 W. RAMIEN 2,966,815

TOOL FOR ATTACHING HINGES TO WINDOWS, DOORS, GATES AND THE LIKE

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Fig. 1

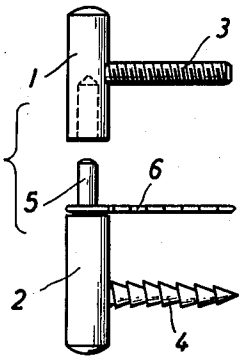

Fig. 2

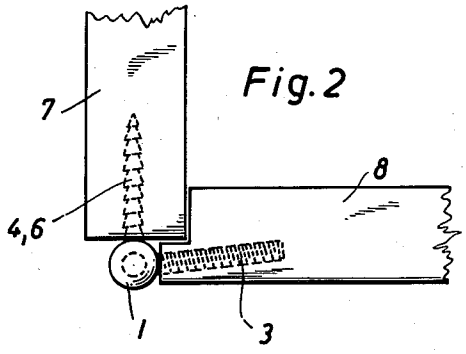

Fig. 3

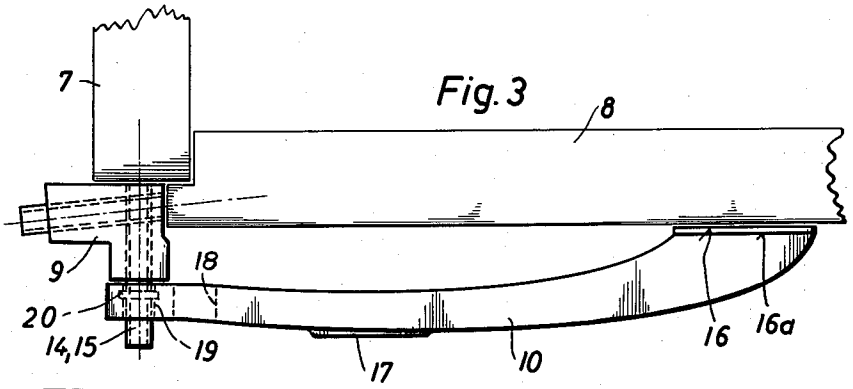

Fig. 4

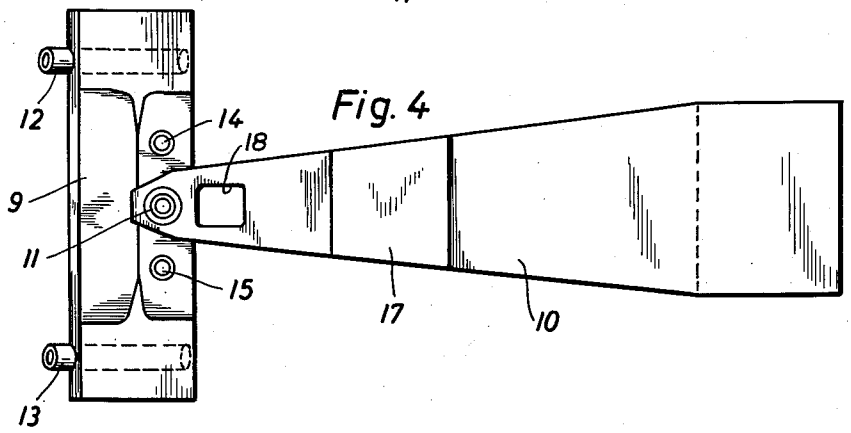

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Fig.5

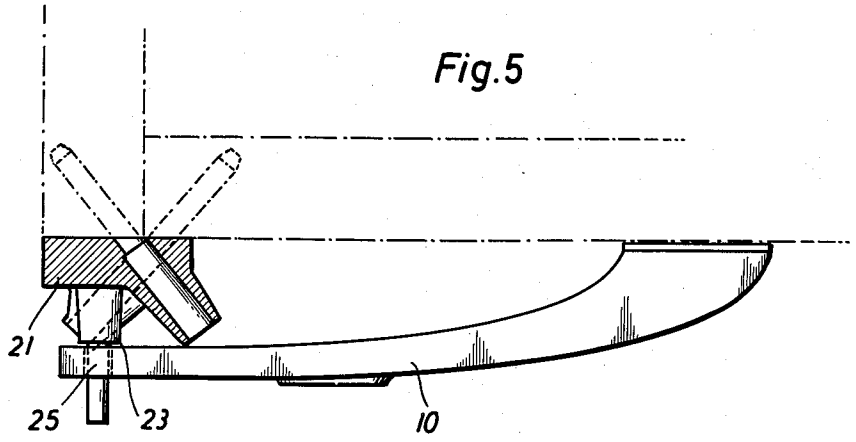
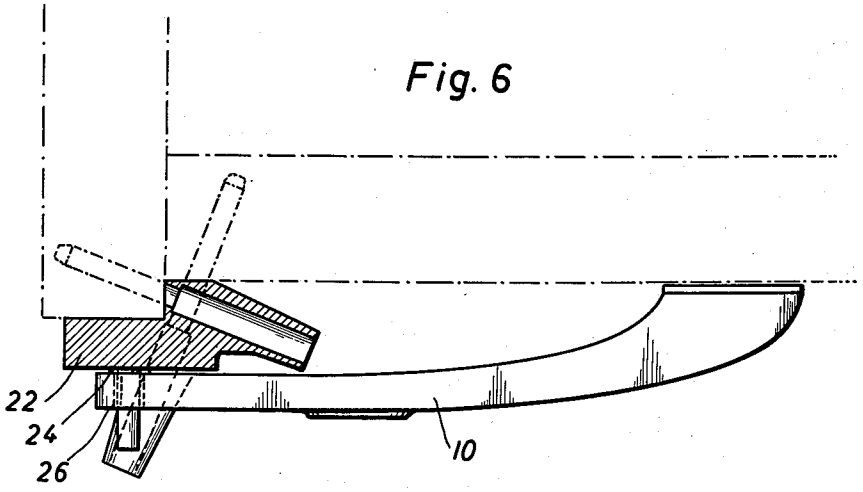


Fig. 6



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2,966,815

TOOL FOR ATTACHING HINGES TO WINDOWS, DOORS, GATES AND THE LIKE

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8 Claims. (Cl. 77—62)

This invention relates to a tool for attaching hinges to windows, doors of various kinds, gates and the like and is particularly concerned with hinges of the type which are provided with a pin, adapted to prevent rotation, in addition to the standard pin used as fastening means.

Tools for attaching hinges, particularly of the type having pins as fastening means, are known per se and are manufactured in a variety of designs. For example, a tool of this type may be provided with a long plate-like extension member which projects over the handle. However, in many cases such extension member is not long enough so that a lever-arm effect occurs which prevents the jig from being accurately placed in position. The jig must be grasped and held with one hand with the result that only one hand is available to produce the holes. Furthermore, prior art tools of this type necessitate the provision of two different jigs either for the top left and bottom right or for the top right and the bottom left. If the hinge is provided with a safety means in the form of an additional pin designed to prevent rotation, such pin must be driven into the material with the aid of a separate jig.

It is the object of the invention to overcome the disadvantages encountered in prior art tools for attaching hinges of the pin-fastened type. The invention is characterized by the fact that the jig receiving the bushings and the handle are two separate elements which are adapted to be pivotable towards, and releasably connected to, each other.

It is of advantage for the handle to engage the jig at a point located on an imaginary line passing through the centres of the bushings which are intended as guides for the holes in the frame. The pivot for the clamping handle consists of a mandrel or directly of a bushing. The bushings or bore holes for the left hand and right hand door wing are arranged in the jig in symmetrical relation to the mandrel or bushing constituting the pivot of the clamping handle. In the context of this invention, the clamping handle is the member which engages both the jig and the door, the entire assembly being then clampingly pressed against the door frame with the aid of a suitable tool, for example the conventional carpenter's clamp. If convenient, the clamping handle may also be held by hand. In both cases the pivotability of the jig and the clamping handle relative to each other facilitates positioning of the clamping handle in any desired direction depending upon the availability of space so that safe manipulation and positioning of the jig and of the door wing can always be accomplished with one tensioning operation, i.e. in one step. Positioning and clamping of the jig can always be effected in the best possible way irrespective of whether the hinge is to be mounted on the left or on the right or whether the jig must be placed against the top or bottom portion of the door. A further advantage of the two-member construction of the fastening tool in accordance with the invention is that the same clamping handle can be used for

different types and sizes of jigs and pin-fastened hinges. This results in considerable simplification, both for the manufacturer and the dealer, because a smaller variety of parts must be produced and kept in stock to meet all requirements.

It is convenient to provide that end of the clamping handle which bears against the work, i.e. the door, with an abutting surface. The upper side of the clamping handle is similarly provided with a flat surface to enable a clamp, referred to above, to be placed in position on the handle. The distance of the latter surface from the pivot is advantageously shorter than its distance from the abutting surface mentioned above. By arranging the clamp-receiving surface on a section of the handle away from its centre it is possible for the greater part of the pressure exerted by the clamp to act upon the jig. Furthermore, one or more holes may be provided in the clamping handle adjacent the pivot in order that, no matter what the position of the handle relative to the jig, the guide bushings for a rotation-preventing pin which may be provided if desired, are readily accessible and not covered by the handle. This facilitates unimpeded manipulation of the fastening tool in accordance with the invention.

The jigs which are adapted to be interchangeably connected to the clamping handle may be of different size and can vary in design depending upon the manner in which the hinges are to be attached to a door or the like. They may be jigs suitable for use on straight or bent hinges which are to be attached to flush, recessed and projecting doors, windows and the like.

The invention will now be described with reference to the accompanying drawings illustrating, by way of example, one embodiment of the tool proposed by the invention.

In the drawings:

Figure 1 shows a form of construction of a hinge of the pin-fastened type;

Figure 2 is a top plan view showing the hinge illustrated in Figure 1 attached to a door of the type where a portion of the door jamb fits into a recess of the door wing;

Figure 3 is a view similar to Fig. 2 showing a side view of a fastening tool in accordance with the invention placed in position preparatory to drilling holes for mounting the hinge as disclosed in Fig. 2;

Figure 4 shows a plan view of the tool illustrated in Figure 3;

Figure 5 shows a further embodiment of the tool in accordance with the invention used to mount a flat hinge plate; and

Figure 6 illustrates a similar view, the hinge plate to be mounted being, however, bent at right angles so as to be adapted for attachment to a recessed door.

The fastening tool in accordance with the invention is constructed to be suitable for use in conjunction with the example of a hinge of the pin-fastened type as illustrated in Figures 1 and 2. A hinge of this type comprises members **1** and **2** carrying pins **3** and **4** respectively. One of the two hinge members, for example the lower member **2**, is equipped with a hinge pin **5** and a further pin **6** which, when mounted, is designed to prevent rotation of the assembly. The hinge is mounted on the door in such a way that the pin **4** penetrates into, and is held in position in, the frame **7** while the pin **3** is driven in the door proper as indicated at **8**. The pin **6**, designed to prevent rotation, is also driven into the wood of the frame.

According to the invention, the fastening tool comprises the jig **9** and a clamping handle **10**. These two elements are pivotably and releasably connected. To facilitate such connection the jig **9** is provided with a

pivot pin 11 upon which is placed the clamping handle 10. It is of advantage if the pivot pin 11 is so designed as simultaneously to serve as a bushing for the pin 4. The other two bushings 12 and 13 are provided to assist in producing the hole required for the reception of pin 3, bushing 12 being used when the pin is mounted on the left while bushing 13 serves for mounting the pin on the right. The bushings 14 and 15 are respectively used for left and right hand side mounting of the rotation-preventing pin 6 and serve as guides for the drill.

The clamping handle 10 is constructed in bow-shaped fashion and is at such a distance from the surface against which it is placed, for example the door proper, that it can comfortably be held with one hand. Its abutting surface 16 engages the door or the like and can have secured thereto a friction-increasing layer of material 16*a*, for example felt, rubber or the like, which at the same time protects the surface engaged by it, from damage, for example scratching. A flat, offset surface 17 serves to receive a clamp of the type used by carpenters. The hole 18 renders the bushings 14 and 15 accessible if, in certain cases, it should be necessary to position the clamping handle 10 so as to be at an acute with respect to the jig 9. The clamp-receiving surface 17 is preferably positioned more closely to the pivot 11 than to the abutting surface 16 so that the greater part of the pressure exerted by the clamp acts upon the jig 9. The pivot or, as the case may be, bushing 11 is surrounded by a bushing 19 of the clamping handle 10, the latter bushing being preferably larger than the bushing 11 in order to provide a certain amount of clearance between the two parts which will enable them to adjust themselves to varying degrees of swingover of the door proper. In order clampingly to retain the pivotable parts 9 and 10 in position relative to each other there is inserted a locking ring 20. The bushings 12 and 13 are arranged obliquely in order to enable the pins to penetrate more deeply into the wood of the door.

Figures 5 and 6 illustrate a slightly modified type of jig which is used in conjunction with a door which is either flush with the frame or recedes or projects relative to the frame. In the examples shown, the jigs 21 and 22 are each provided with a special shoulder 23 and 24 respectively carrying a mandrel 25 and 26 respectively which serves as a pivot for the clamping handle when placed in position on the jig and may be identical in construction to that of jig 9 illustrated in the previous example. In accordance with the altered position of the door proper relative to the frame, the bushings for pins 3 and 4 are, in part, disposed in another direction.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows.

I claim:

1. A jig assembly for locating the drill holes for mounting pin-fastened hinges comprising a jig having a pair of angularly related intersecting surfaces each engageable with a surface through which a hole will be drilled, at least one pair of angularly related drill holes extending through said intersecting surfaces to provide a guide for a drill bit, a pivot member on said jig extending away from one of said intersecting surfaces, and a clamp handle journaled at one end on said pivot member for angular movement thereabout, said handle including a terminal abutting surface at one end extending in a direction opposite said pivot member for engaging a point spaced from that through which a hole will be drilled, said handle including a clamp surface intermediately between said pivot member and abutment surface and extending in the same direction as said pivot member for receiving a clamp thereon to retain said jig in a fixed position relative to the surfaces to be drilled.

2. The structure of claim 1; said handle being detachably connected to said pivot member.

3. The structure of claim 1; said jig including a pair of spaced drill holes extending through one of the intersecting surfaces, a second pair of spaced drill holes extending through the other of said intersecting surfaces, and said pivot member being interposed between the pairs of drill holes and comprising still another drill hole through said other of said intersecting surfaces.

4. The structure of claim 1; said clamp surface being located out of the plane of said abutment surface and closer to the pivot member than the terminal end of said clamp handle.

5. The structure of claim 1; said clamp handle being detachably connected to said pivot member, and a lock ring retaining said clamp handle on said pivot member.

6. The structure of claim 1; said clamp handle including a transverse aperture therethrough offset from said pivot member for permitting access to at least one drill hole when said clamp handle is angularly disposed relative to said jig.

7. The structure of claim 1; said drill holes being disposed obliquely relative to said intersecting surfaces.

8. The structure of claim 1; said jig comprising one of a set of jigs in which each includes means for drilling surfaces for a different hinge.

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