Dec. 10, 1929. J. A. HOEGGER 1,738,705

CONCEALED DOOR HINGE AND STOP

Filed April 3, 1928

Fig. 1.

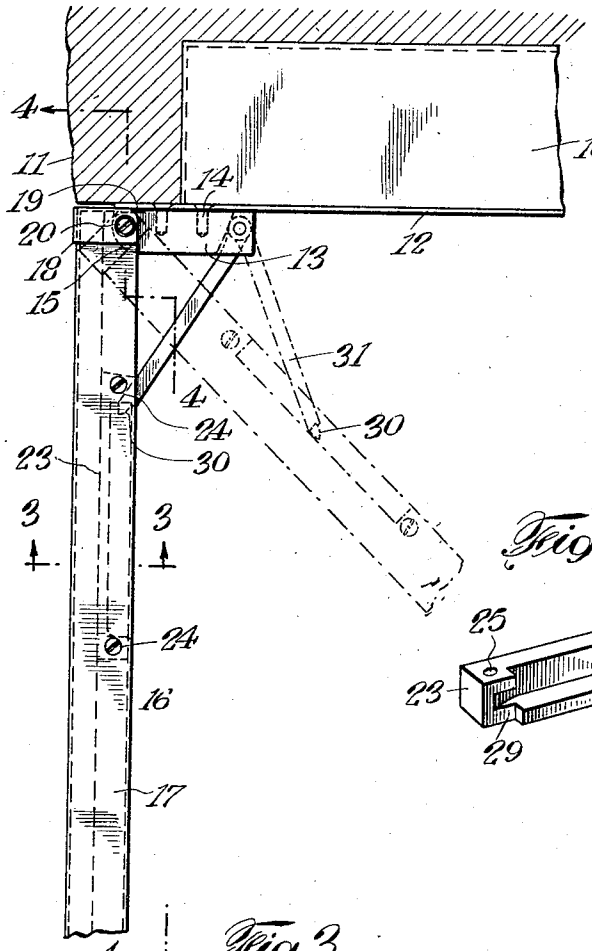


Fig. 2.

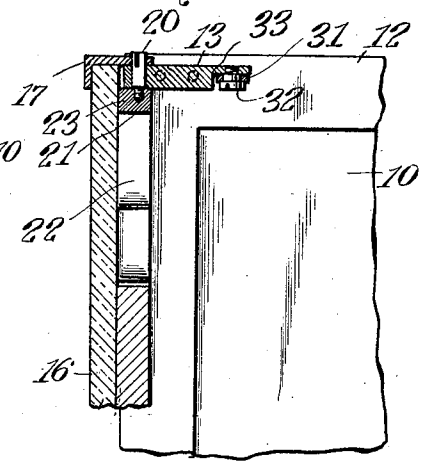


Fig. 5.

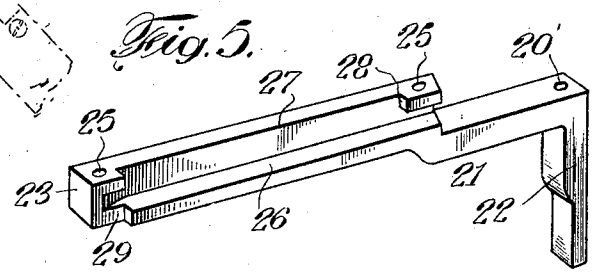


Fig. 3.

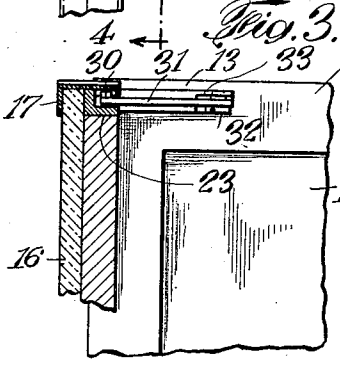
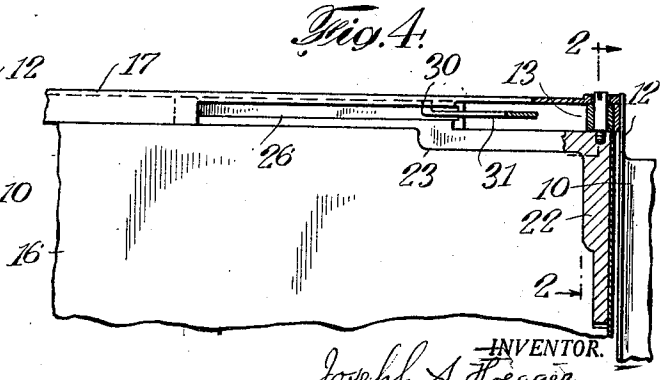


Fig. 4.



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UNITED STATES PATENT OFFICE

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CONCEALED DOOR HINGE AND STOP

Application filed April 3, 1928. Serial No. 266,884.

My invention relates to improvements in door hinges and stops, and the object of my invention is to produce a very cheap, simple and strong structure which enables the door to be swung in such a way that the hinges are concealed, the door will lie flat when closed against the article with which it is connected, and the stop will be arranged so as to positively and easily limit the opening movement of the door. The feature of the link stop such as I show is not broadly new, but the practical way in which it is applied is believed to be novel.

Another object of the invention is to produce a structure of this kind which enables the door hinge and stop to be easily removed when for any reason it is necessary, without disturbing the structure to which the door is applied. In the accompanying drawings I have shown the door applied to a wall cabinet, a use to which it is particularly applicable, but the invention is in nowise limited to such use.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a broken plan view of the improved structure.

Figure 2 is a vertical section on the line 2—2 of Figure 4.

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is a section on the line 4—4 of Figure 1, and

Figure 5 is a detail perspective view of a brace used at the corner of the door which is hinged.

In the drawings I have shown the upper corner of a door and its connections, but it will be understood that the lower corner is identical and so it is needless to show both, as the door is hinged at the upper and lower corners.

Without limiting it to this use, I have shown the door applied to a cabinet 10 which is mounted in a recess in the wall 11, and has a border flange 12 lying against the wall around the opening therein. To the upper and lower parts of the flange at one side of the cabinet corresponding to the upper and lower corners therof, are attached blocks 13 to support the door. These are rigidly secured, and I have shown the upper one fastened by screws 14. Its outer end is rounded as shown at 15 to permit the door to swing easily.

The door 16 can be of any usual or preferred type or style, and is adapted to close the opening of the cabinet 10 and lie flat against the wall. It is provided with a border frame 17 preferably of channel iron, and at the upper and lower hinge corners it can be reinforced as at 18 in Figure 1 to give additional strength. The inner corner portions of the door are preferably rounded slightly as at 19 (see Figure 1) to facilitate easy opening and closing.

The door is hinged on the screw studs 20 which extend through a part of the frame 17 (see Figures 2 and 4) the body of the stud serving as a pivot for the door and the lower extremity being screw threaded and extending into a tap 20′ in the angle brace 21. I will describe this brace as applied to the upper corner of the door, and it will be understood that the same arrangement will obtain at the lower corner.

The brace 21 has a vertical arm 22 extending along one edge of the door within the frame 17, and a horizontal and longer arm 23 extending along the door top within the top of the frame 17. It will be understood that the edge of the door will be recessed to receive this brace. The brace is fastened to the door frame by the screws 24 or the like extending through the top part of the frame and into corresponding threaded holes 25 in the top of the arm 23. The inner end of the arm 23 is also shaped to fit beneath the block 13. Lengthwise of the arm 23 is a way 26, the wall of which is cut away at the top as at 27, and at one end it has a shoulder 28, and at the opposite end the arm is slightly reduced as at 29 to permit the abutment 30 of the limiting link 31 to be inserted in the way easily when the structure is assembled.

The link 31 limits the opening movement of the door. The inner end of the link is attached by a screw 32 to the reduced part 33

of the block 13. It will be seen, therefore, that when the door closes, the abutment 30 will slide along the way 26 and permit the door to close snugly over its opening, and when it is opened the abutment 30 will strike the shoulder 28 and limit the opening movement.

It will be noticed that the structure which I have described is very strong and simple, and that it dispenses with a hinge proper, as the studs 20 serve this purpose and the blocks 13 and angle braces make the corner connection very strong. A particular advantage, also, is that by removing the screws 20 and 32 at the top of the door, and the corresponding ones at the bottom, as the structure here will be identical, the door can be readily taken off whenever it is necessary without disturbing the part to which it is attached. It will also be noticed that the blocks 13 can be produced and attached in any convenient way, the essential thing being to have these blocks or ledges rigid on the part to which they are attached so as to make a firm support for the door. It will also be observed that when the door is shut the door closes over the blocks 13 which fit in the corresponding part of the braces 22 at the top and bottom of the door.

I claim:—

1. A concealed door hinge and stop comprising rigid door supporting elements, a door hinged to swinging over and concealing said elements, a limiting link pivoted to the supporting elements and sliding in ways in the door, and detachable fastening elements, one set serving as pintles for the door and extending through the outer part of the door into the supporting elements, and the other serving to attach the links to the supporting elements.

2. A concealed door hinge and stop comprising rigid supporting elements, a door hinged to closing over and concealing said elements, an angle brace in the upper and lower corners of the door, said brace having slideways therein, and limiting links pivoted to the supporting elements and carrying abutments which run in the slideways.

3. A door corner and link construction comprising a rigid supporting element, a door having a border frame hinged on and closing over the supporting element so as to cover and conceal it, an angle brace fitting in the door corner and within the border or outer part of the door, said brace having a way therein, and a link pivoted to the supporting element and having an abutment running in the aforesaid way.

4. The herein described door corner and stop construction comprising a rigid supporting element, a door having a border frame, an angle brace fitting within the frame at the door corner and having arms extending at right angles from each other within the frame, a slideway in the horizontal arms of the brace, a pintle extending through the border frame, the supporting element, and into the brace, and a limiting link pivoted to the supporting element and having an abutment running in the aforesaid way.

5. The combination with a wall having a door opening with rigid supports near one edge and the upper and lower corners of the door opening, of a door pivoted directly on the supports and arranged to close over and conceal the supports, and stops arranged on the inner side of the door and slidably connecting the aforesaid supports and the door to limit the opening movement of the latter.

6. The combination with a wall having a door opening, of rigid supports at one side and near the upper and lower corners of the door opening, a door having parts disposed to cover and conceal said supports and pintles extending through the upper and lower part of the door and into the aforesaid supports, and stops slidably connecting the supports and the door to limit the opening movement of the latter.

In testimony whereof, I have signed my name to this specification this 30th day of March, 1928.

JOSEPH A. HOEGGER.