Feb. 17, 1925. 1,526,546

L. N. HOLM

DOOR HINGE

Filed Nov. 27, 1923

FIG. 1

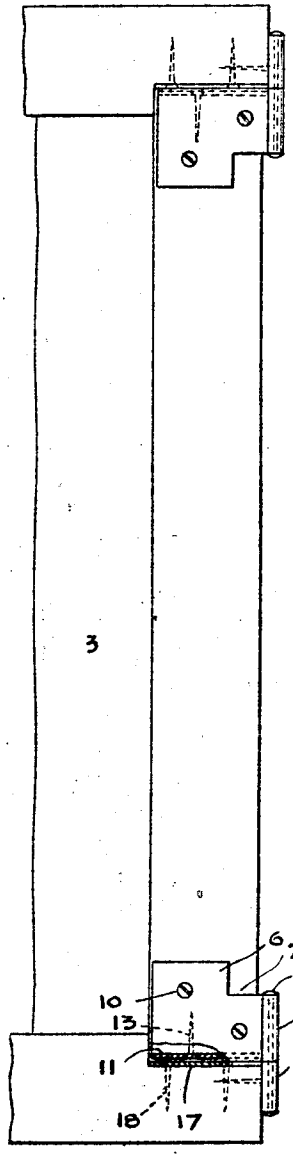
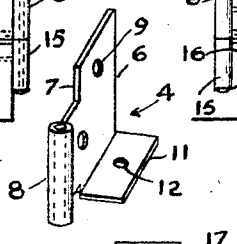


FIG. 3



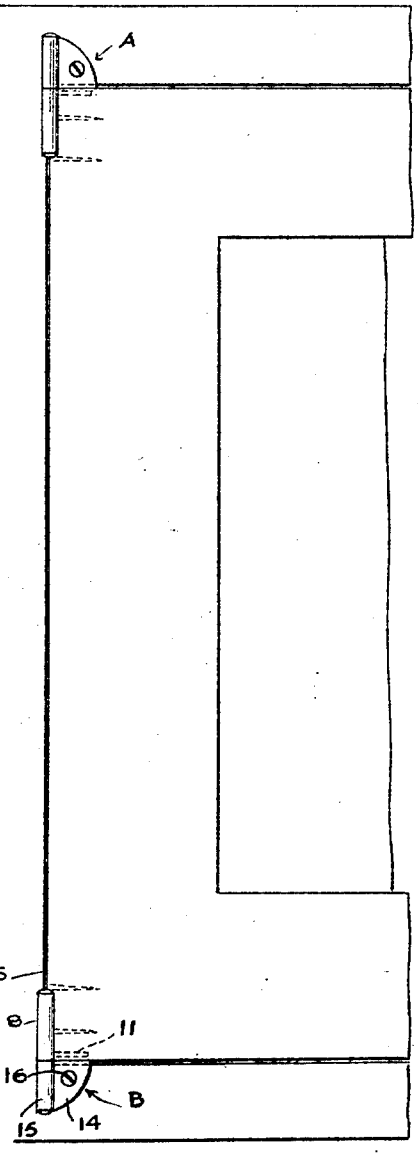


FIG. 2

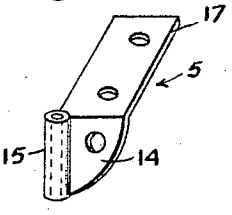


FIG. 4

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Patented Feb. 17, 1925. 1,526,546

UNITED STATES PATENT OFFICE.

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DOOR HINGE.

Application filed November 27, 1923. Serial No. 677,218.

To all whom it may concern:

Be it known that I, LAURISS N. HOLM, a citizen of the United States, residing at San Mateo, in the county of San Mateo and State of California, have invented new and useful Improvements in Door Hinges, of which the following is a specification.

This invention relates to improvements in hinges and resides in the provision of a simply constructed, small, compact, strong, durable and comparatively inexpensive hinge which may be more quickly and easily installed than the ordinary hinge and which does not require the mortising of the door and door frame as does the ordinary hinge.

An object of the invention is to provide a hinge of the character described which though particularly designed for cabinet doors may be used for hanging other types of doors as well, the construction and use of the hinge being such that the door will not sink or sag and the strain on the hinge pins is considerably reduced.

Another object of the invention is to provide a hinge of the character described which may be made of light material and cheaply, and in which the hinge leaves are thin but of such thickness that adequate space is left between the frame and door to provide for clearance of paint and insure against the sticking of the door in the frame.

A further object is to provide for ease of adjustment and installation and to insure a smooth action of the hinge.

With the above mentioned and other objects in view, the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings, and set forth in the claims hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Referring to the drawing:

Fig. 1 represents an edge view of a door showing the door frame broken away and the hinge in elevation.

Fig. 2 represents a fragmentary front elevation of a door with the hinges in front elevation.

Fig. 3 represents a perspective view of one hinge member.

Fig. 4 is a perspective view of the other hinge member.

The embodiment of the invention shown in the drawing is applied to a cabinet door, mounted in the door frame 2 of a cabinet, part of which is shown at 3 (Fig. 1). The door is hung by two hinges shown at A and B, at the upper and lower corners of the door, it only being necessary to employ the two hinges as shown instead of the customary three, whether using the hinges for cabinet or other doors.

The hinges are of angular construction and those attached to the door are corner fitting with portions thereof extending over the horizontal edges of the door as well as along the vertical edge. The door frame carried hinges are of angular construction and have substantially horizontal portions extending over the sills so as to form bearings for the correspondingly disposed portions of the door hinges. Each hinge of my invention comprises two hinge members 4 and 5 and a pin 5′, each member being formed of a single piece of suitable metal, being drawn, cast or stamped. The hinge member 4 is for the door and comprises a flat thin leaf 6 cut away as at 7 at the upper and lower outer corners and having a barrel 8 formed on the outer upright edge or tongue provided by said cuts. This leaf has screw holes 9 through which screws 10 are inserted and turned into the rear edge of the door to hold the hinge member on the door. Extending laterally from the lower edge of the leaf is a flange 11 which engages the bottom or lower edge of the door. This flange has a countersunk screw hole 12 for a screw 13, to fasten it securely to the lower edge of the door. Preferably the flange extends nearly across the lower edge but may be varied as to dimensions, as desired.

The frame hinge member 5 comprises a flat leaf 14 which may have curved edges as shown, to give it an ornamental appearance. This leaf has a barrel 15 on one end, which barrel is adapted to aline with the barrel 8. The leaf 14 is secured to the face of the sill of the door by a screw 16. A flange 17 extends laterally from the upper edge of the leaf 14 and over the sill of the door, being fastened by screws 18. The flanges 11 and 17 are disposed one over the other when the hinges are assembled so as to be slightly spaced from one another

although, in some instances, a light contact may take place on swinging of the door on wear of the hinge barrels where they engage one with the other. These flanges will contact with one another and provide for a smoother action in swinging the door on the hinges than would be the case were the door permitted to slide against the sill. To provide for spacing of the flanges and yet establish them in sufficient close relation to insure light contact on wearing of the hinge barrels and lowering of the door, the hinge 11 may be inclined downwardly and outwardly slightly out of a horizontal position, so that the outer edge thereof is closer to the flange 17 but still slightly spaced therefrom. The flanges of the hinge members at the upper end of the door are not adapted to contact with one another under any circumstances but provide for a more secure and rigid fastening of the hinge members to the door and door frame to the extent that mortising of the hinge members in the door and door frame is not required inasmuch as the strain on the fastening screws for the hinge leaves is relieved by the construction provided. The hinge members at the lower end of the door likewise have the screws for fastening the leaves relieved to considerable extent, of the weight of the door because of the flanges extending over the sill and horizontal edge of the door respectively, and being fastened thereto. In the ordinary hinge the hinge leaves are mortised in the door and door frame providing for relief of the weight of the door on the hinge leaf fastening screws, whereas with my invention this relief of the strains on the screws for fastening the hinge leaves is provided by the flanges and the manner of fastening them to the door and frame and it is unnecessary to mortise the leaves in the door and frame. This provides for strength of construction and permits of the use of light, thin metal in making up of the hinges. It also effects a saving in time and labor in installing the hinges.

Usually the ordinary hinge consists of three hinge barrels on each leaf as this is necessary to provide adequate door service and strength to insure free movement of the door. With my invention but one barrel on each leaf is necessary and no sacrifice of strength or smooth bearing provision is had.

I claim:

1. The combination with a door and door frame, of hinge members attached to the corners of the door at the inner edge of the door, portions on said hinge members extending over the horizontal edges of the door near said corners, hinge members fastened to the door frame adjacent to certain of its corners, hinge pins joining said door and door frame hinge members, and portions on the frame carried hinge member extending over the sills being located opposite to and slightly spaced from said portions of the other hinge member.

2. The combination with a door and door frame, members attached to the corners of the door at the inner edge thereof, portions on said hinge members extending over and being fastened to the horizontal edges of the door near said corners, hinge members fastened to the door frame adjacent to certain of its corners, hinge pins joining said door and door frame hinge members, and portions on the last named hinge members extending over and being fastened to the sills at points opposite said portions of the other hinge members one of said portions being inclined from the horizontal.

3. A door hinge comprising a door carried hinge member consisting of a hinge leaf adapted to be fastened to the rear edge of a door, a flange on the leaf adapted to extend over a horizontal edge of the door and to be fastened to said edge, a door frame carried hinge member comprising a leaf adapted to be attached to a face of the sill of the door frame, a flange on the last named leaf adapted to extend over a sill of the door frame at a point opposite the flange on the door carried hinge member, a barrel carried by the last named leaf alined with and engaging one end of the first named barrel so as to slightly space said flanges from one another, said flanges being adapted to contact on wear of said barrels where engaged with one another and a hinge pin extending through said barrels.

LAURISS N. HOLM.