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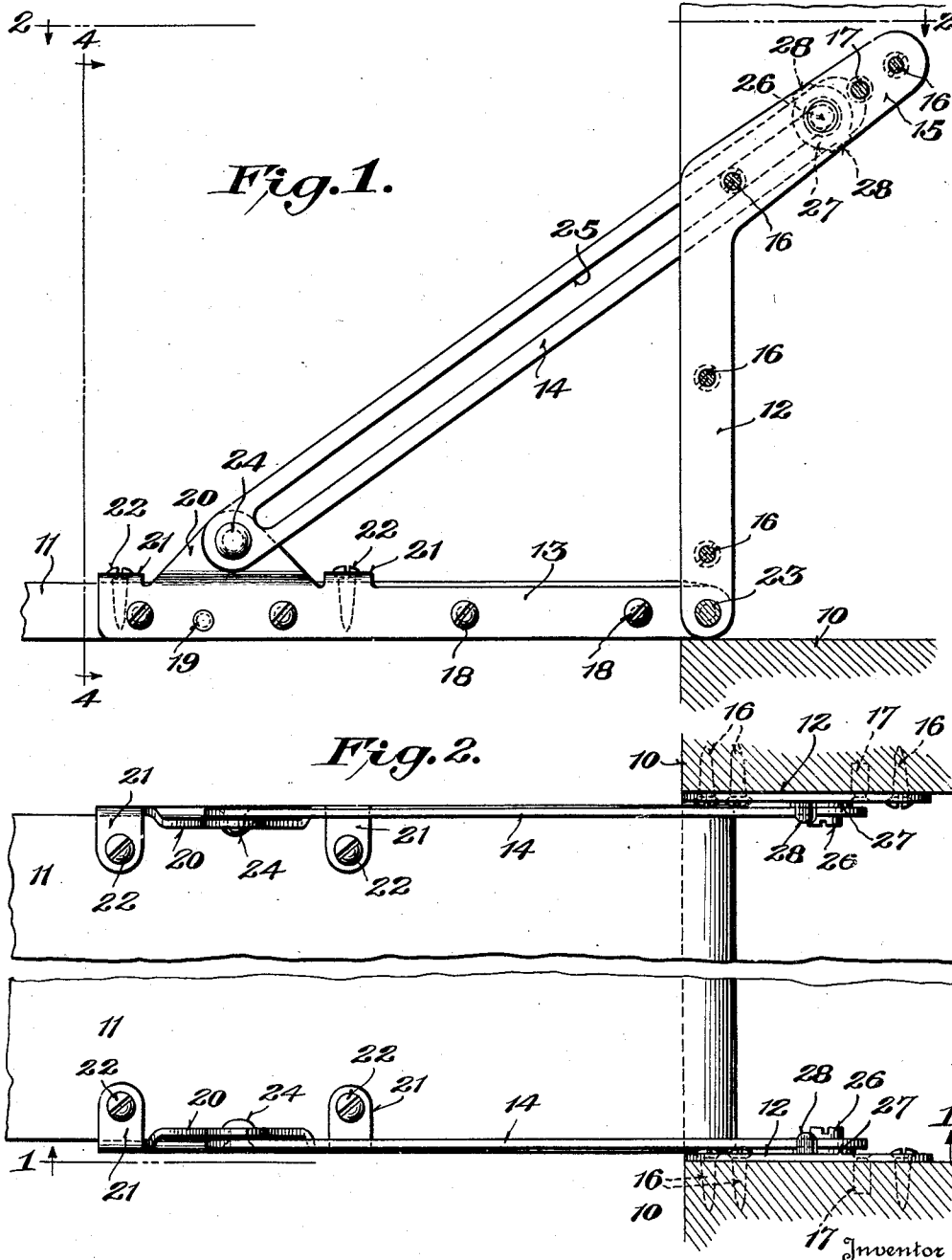
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COMBINED HINGE AND SUPPORT

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2 Sheets-Sheet 1



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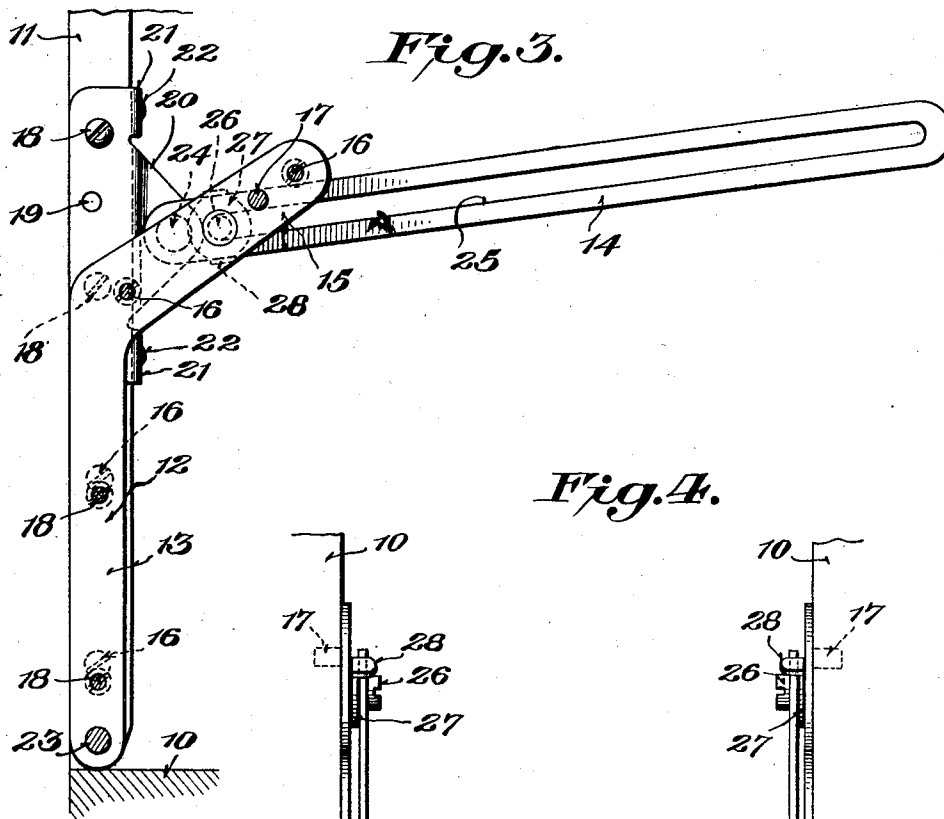
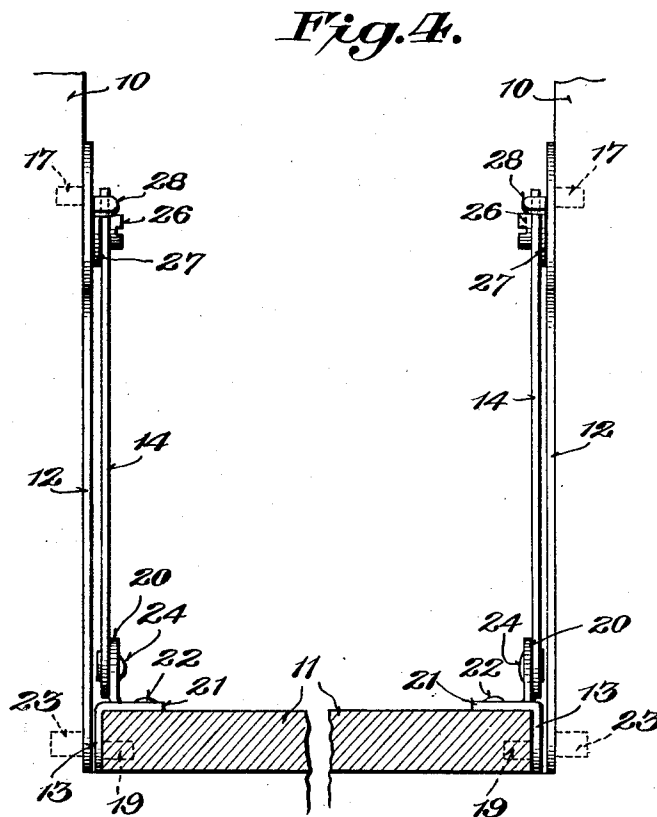
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2 Sheets-Sheet 2



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COMBINED HINGE AND SUPPORT

Application filed February 28, 1927. Serial No. 171,696.

This invention relates to hinges, and has for its object to provide an improved hinge which has means unitarily associated therewith to constitute a support for the hinged member.

Another object of this invention is to provide an improved hinge for members adapted to swing about a horizontal axis which is provided with means unitarily associated therewith for limiting the extent of such movement and supporting the hinged member in its open position.

Another object of this invention is to provide an improved hinge of simple rugged construction, which is inexpensive to manufacture, readily standardized, easy to install, and strong and durable in service.

Other objects will appear as the description of the invention proceeds.

The invention is capable of receiving a variety of mechanical expressions, one of which is shown on the accompanying drawings, but it is to be expressly understood that the drawings are for purposes of illustration only and are not to be construed as a definition of the limits of the invention, reference being had to the appended claims for that purpose.

Referring in detail to the drawings, wherein the same reference characters are employed to designate corresponding parts in the several figures,

Fig. 1 is an elevation of a hinge embodying the present invention and showing the hinged member in open position;

Fig. 2 is a plan view, taken from the line 2-2 of Fig. 1 and looking in the direction of the arrows, showing a hinged member with right and left hand hinges associated therewith;

Fig. 3 is an elevation showing the hinge in the closed position of the hinged member; and

Fig. 4 is an elevation, taken from the line 4-4 of Fig. 1 and looking in the direction of the arrows, showing the hinged member with its right and left hand hinges in face views.

In the form shown, 10 designates any suitable support, as a cabinet, and 11 designates

any suitable hinged member, as a door, adapted to swing from a vertical position, as shown in Fig. 3, to a horizontal position as shown in Figs. 1, 2 and 4, about a substantially horizontal axis.

In conformity with the present invention, the member 11 is provided with a pair of hinges with which is unitarily associated, means for limiting the extent of movement of said member 11 and for supporting, or aiding in the support of, said member in its open position.

The two hinges so provided are of the same construction except that one is provided for the left hand edge of the member 11 and the other is provided for the right hand edge of the member 11, and therefore the left and right hand hinge elements are so formed as to cooperate properly with the respective right and left hand edges of the hinged member and the respective adjacent portions of the support which carries the hinged member. As the two hinges are thus identical in construction except in the respect noted, the description of one will be sufficient.

Referring particularly to Figs. 1 and 3 which show the right hand hinge, said hinge is composed of three major elements, a stationary leaf 12, a movable leaf 13 and a link 14. The leaf 12 takes the form of a relatively long narrow strip provided at its outer extremity with an angularly directed extension 15, and is adapted to be secured to the right hand wall bordering an opening in any suitable way, as by a number of screws 16. The extension 15 may also be provided with a pin 17 for engagement in a properly located hole in said support 10 to facilitate the proper positioning of the leaf 12. Said leaf is preferably secured in face contact with the wall of the support, although it may be spaced therefrom in any suitable way, if desired.

The leaf 13 also takes the form of a relatively long narrow strip which is designed to be secured in any suitable way to the edge of the hinged member 11, as by a plurality of screws 18, and said leaf 13 may also be provided with a pin 19 adjacent its outer extremity for engagement in a properly lo-

cated hole in the hinged member to facilitate positioning of said leaf. Adjacent its outer extremity the leaf 13 is provided with an upstanding lug 20 which is preferably deflected so as to be in a plane spaced laterally from the plane of said leaf, to provide a clearance for the link 14 as will hereinafter appear. Leaf 13 is also preferably provided with a pair of right angularly extending lugs 21, apertured to receive screws 22 or other suitable attaching means, to strengthen the attachment of the leaf 13 to the hinged member 11. Leaf 13 preferably has face contact with the edge of the member 11, or it may be set into said member or spaced therefrom in any suitable way without departing from the spirit of the invention. Similarly, the lugs 21 are shown as designed to engage the face of the hinged member 11, but they may be inset into the face of said member to the end that said lugs may have their exterior surfaces flush with the surface of said member, if desired.

The adjacent or inner extremities of the leaves 12 and 13 are pivotally connected together in any suitable way to provide the axis of the hinge. In the form shown, the two leaves are pivotally connected by a pivot pin 23, which may also be extended so as to project into an aperture in the wall of the support, said pivot pin passing through aligned apertures in the leaves 12 and 13.

The link 14 is pivotally connected to the projection 20 on leaf 13 in any suitable way, as by a rivet 24, and is provided throughout the major portion of its length with a long parallel sided slot 25. Received in said slot 25 and projecting from the angular extension 15 of leaf 12, approximately midway of its length, is a pin 26, which may take the form of a screw threaded into the leaf 12. In order to space the link 14 from the leaf 12 a washer 27 may be interposed between said link and said leaf or the projection 15 may be provided with a boss integral therewith or suitably attached thereto, to receive the pin 26. The washer 27 is so designed that its face will lie in a plane parallel to the plane of the inner face of the projection 20 on leaf 13, but spaced therefrom by the thickness of the link 14. Washer 27 may also be provided with a pair of upstanding lugs 28 to cooperate with the edge of the link 14 and guide the same in its movements, in which event the washer should be free to turn around the axis of the pin 26 to provide for the change in the angularity of the link 14. Slot 25 is of such length that when the hinged member is in its desired open position, which is shown as a horizontal position although such is not essential, the end of the slot 25 will engage the pin 26 and limit the movement of said link over said pin. In this position the pin 26 cooperates with the end of the slot in link

14 to support the member 11 in its open position.

The member 11 being provided with right and left hand hinges of the construction hereinbefore described, with the axes of the pivot pins 23 in alignment, the hinged member 11 may be moved from the position shown in Fig. 3, to the position shown in Fig. 1, during which movement the leaves 13 move pivotally with respect to the leaves 12 upon the axis 23, and links 14, by reason of their attachment at 24 to the projections 20 on leaves 13, are pulled outwardly, until the pins 26 engage the ends of the slots 25, in which position further outward movement of the hinged member 11 is prevented and the links 14 by their connection to levers 13 and their engagement with pins 26 on leaves 12 constitute a support for the member 11. In moving the member 11 from the position shown in Fig. 1 to the position shown in Fig. 3, the leaves 13, at their connections to the links 14, exert a thrust on said links and push the same inwardly, to the position shown in Fig. 3, the links sliding over the pins 26 by reason of the slots 25.

It will thus be perceived that a simple, strong and rugged hinge has been provided which has associated unitarily therewith means for both limiting the relative movement of the hinge leaves and for supporting the hinged member in its open position. The component elements are easy to manufacture because of their simplicity, and said elements may also be readily assembled. Hence the standardization of this construction of hinge is facilitated and when locating pins 17 and 19 are employed and the pivot pin 23 is also designed to be received in an aperture formed in the support as heretofore described, three points of location for each hinge are afforded, one at the axis and one adjacent the opposite extremity of each of the leaves. For any standard size of hinge, the holes for these pins may be readily located in advance, and the attachment of the hinge is thereby facilitated, as the unit composed of the two leaves and the interposed link may be readily applied to the support and hinged member, and then secured to these parts by the introduction of the screws 16 and 18.

While the embodiment of the invention illustrated on the drawings has been described with considerable particularity, it is to be expressly understood that the invention is not restricted thereto, as the same is capable of receiving a variety of mechanical expressions, some of which will now readily suggest themselves to those skilled in the art, while changes may be made in the details of construction, arrangement and proportion of parts without departing from the spirit of this invention. While the invention has been described as applied to a member adapted to swing about a horizontal axis, the invention

may also be employed where the hinged member is designed to swing about an axis that is inclined to the horizontal and it is to be understood that in referring to a horizontal axis in the specification and claims, an axis inclined to the horizontal is to be expressly understood as included therein. Reference is therefore to be had to the claims hereto appended for a definition of said invention.

What is claimed is:

1. In combination with a member adapted to swing about a horizontal axis and a support, a hinge member including a pair of pivotally-connected leaves attached respectively to the edge of said member and to said support, projections on said leaves adjacent their pivots and adjacent the opposite extremities of said leaves for locating said leaves on said member and said support, an angular extension on one of said leaves, a stop carried thereby, and a link pivotally-connected to the other leaf and having a slot to receive said stop.

2. In a hinge for a member adapted to move about a horizontal axis, a pair of pivotally connected leaves adapted to be attached respectively to said member and its support, one of said leaves having an angular extension and a stop carried thereby, and a slotted link pivotally connected to the other of said leaves and cooperating with said stop.

3. In a hinge for a member adapted to move about a horizontal axis, a pair of pivotally connected leaves adapted to be attached respectively to said member and its support, each of said leaves having a lateral projection, a stop on the projection of one of said leaves, and a link pivotally connected to the projection on the other of said leaves and having a slot which receives said stop.

4. In a hinge for a member adapted to move about a horizontal axis and including a pair of pivotally connected leaves adapted to be attached respectively to said member and its support, a stop carried by one of said leaves, and a link pivotally connected to the other of said leaves and cooperating with said stop for supporting said member in open position, projections carried by said leaves and adapted to engage in holes in said member and support for locating said leaves thereon in the position in which they are to be attached thereto.

In testimony whereof I have signed this specification.

WILLIAM B. STEVENSON.