This invention relates to an improved door hinge and support providing means whereby the door can be mounted so that it can be opened and shut by turning it about a vertical axis or, if desired, the door can be opened and shut by sliding it in a direction substantially parallel to the wall of the building or structure to which the door is fitted.

According to this invention the improved door hinge and support comprises a leaf or hinge part and a link pivotally connected at one of its ends to the said leaf or hinge part and at its other end to a carriage or slider movable along a guideway or rail. Means are provided whereby the link can at times be prevented from turning about its pivotal connection to the carriage or slider.

In the accompanying drawings, which shows how the said invention can be conveniently and advantageously carried into practice.

Figure 1 is an elevation of the improved door hinge or door support in position upon a wall and door.

Figure 2 is a plan thereof.

Figure 3 shows a section on the line 3–3, Figure 2.

Figures 4, 5 and 6 are views, hereinafter referred to, showing the door in different positions to which it can be moved carried on the said hinge or support.

Figure 7 is a plan view of a modified form of hinge or support constructed in accordance with this invention.

Figure 8 is a view showing one hinge part made integral with the hinge pin.

Referring to Figures 1, 2 and 3, a is the wall of a building or other structure and b is a door supported thereon by the improved hinge which comprises a leaf or hinge part c affixed to the door. This leaf or hinge part is pivotally connected by a pin d to a link e which is also pivotally connected by a pin f to a carriage or slider g movable along a rail h secured to the wall or the like. A catch plate i secured to the building comprises hooks or lugs between which the link e can pass when the carriage g is brought to a suitable position and the link is turned about its pivot f. The link has lugs j formed as clearly shown in Figure 4 which can be engaged by the hooks or lugs of the catch plate i to prevent turning of the link e about the pivot f. The parts are shown in this position in Figure 1, and then the door can be opened by rotating the leaf or hinge part c on the pivot d the link e being held against movement by the catch plate. If the door b is moved away from the wall a from the position shown in Figure 1 to the position shown in Figure 4, this movement being permitted by the freedom of the carriage g to slide along the rails h, the link e can pass out of engagement with the catch plate i and be turned about the pin f on the carriage so that the door can be brought, for example, to the position shown in Figure 5. Further movement of the link e about the pivot f allows the door to be brought to the position with respect to the carriage in which it is shown in Figure 6, in which position further rotational movement of the link in this direction is arrested by a lug k provided thereon. The door can then be slid to and fro parallel to the wall, the carriage sliding along the rail h.

In the modified arrangement shown in Figure 7, the leaf or hinge part l is secured to the wall and the rail m is secured to the door. When the link n is held by the catch plate o on the door, the door can be opened by turning on the hinge pivot p, the door opening as indicated in broken lines m'.

By releasing the link from the catch plate, the link is set free to be swung into the position in which it is indicated in broken lines at F and then the rail m can be slid through the carriage g moving in a direction substantially parallel to the wall r.

As shown in Figure 1 a set screw or wing nut s may be provided so that the carriage can be clamped to the rail, if required.

The link is bent or offset in order that it can be brought close to the wall or door. The carriage and its guideway or rail may be of any suitable construction, for example, the guideway may be of box-like form, the carriage travelling inside this guideway and the link being carried on a part of the carriage projecting out of the guideway through a longitudinal slot. The guideway or rail may be provided with suitable stops to prevent the carriage from overrunning the ends of the same. If desired, the carriage may be provided with travelling wheels, rollers or other antifriction devices.

In the construction shown in Figure 8, instead of making the hinge leaf c separate from the pin d, a plate c' is formed integral with the hinge pin for use in those cases.
wherein the rail \( h \) cannot be conveniently supported laterally to the door opening.

I claim:

1. A hinge for supporting a door upon a wall, comprising a hinge leaf, a guideway, a carriage slidable along said guideway, a link having a pivotal connection at one end to the hinge leaf and a pivotal connection at the other end to the carriage, means for securing the carriage in adjusted position on the guideway, a lug on the link and a catch plate adjacent to the said guideway to engage the said lug.

2. A hinge for supporting a door upon a wall, comprising a guideway, a carriage slidable along said guideway, a link pivotally connected to the carriage, lugs on the link, a catch plate to engage said lugs and hold the link against movement on its pivotal connection to the carriage, and a hinge leaf pivotally connected to the link.

3. A hinge for supporting a door upon a wall, comprising a guideway, a carriage slidable along said guideway, a link pivotally connected to the carriage, lugs on the link, a catch plate arranged to engage the said lugs to hold the link in a position substantially parallel to the guideway, and a hinge leaf pivotally connected to the link.

4. A door hinge and support comprising a guideway attachable to a structure, a carriage slidable on the said guideway, a link pivotally connected to the said carriage, a hinge leaf pivotally connected to the link, and a lug integral with the link and projecting therefrom adjacent to the carriage to limit pivotal movement of the link on the said carriage.

5. A hinge for supporting a door upon a wall comprising a hinge leaf, a guideway, a carriage slidable along said guideway, a link comprising offset parts pivotally connected, respectively, to the hinge leaf and the carriage, lugs on the link adjacent to the hinge leaf, a catch plate fixed in position with respect to the said guideway to engage the said lugs, and a lug on the link adjacent to the carriage to limit pivotal movement of the link when the said lugs are free from the catch plate.

6. In a device of the character described, a stationary supporting bar adapted to be secured adjacent a door opening, a hinge element comprising a sliding member designed to be slidably mounted on said bar, a hinge leaf adapted to be secured to the door, and a plate body having hinge connection along one edge with said sliding member and at the opposite edge with said hinge leaf, substantially as and for the purpose described.

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