June 25, 1940. C. H. LINDSAY 2,205,484

EXTENSION HINGE

Filed Nov. 24, 1939

Fig. 1

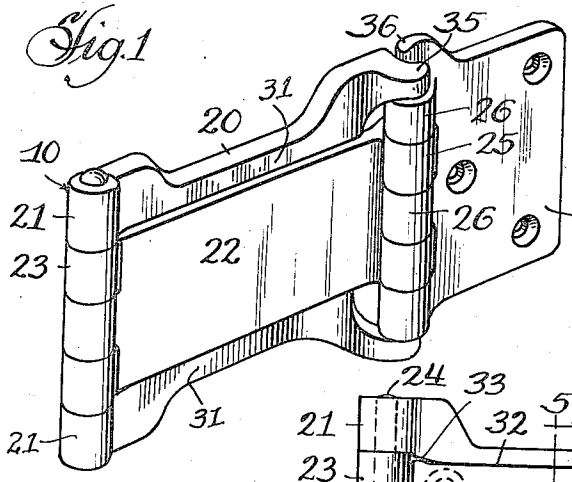


Fig. 4

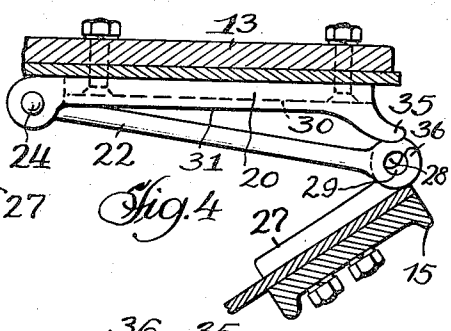


Fig. 2

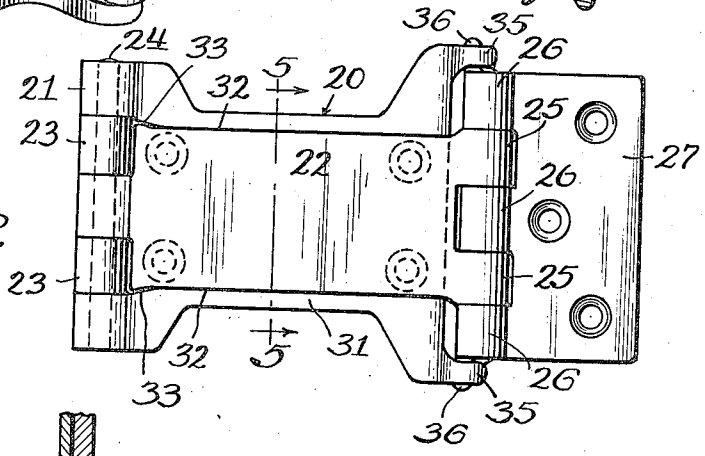


Fig. 5

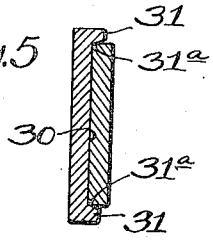
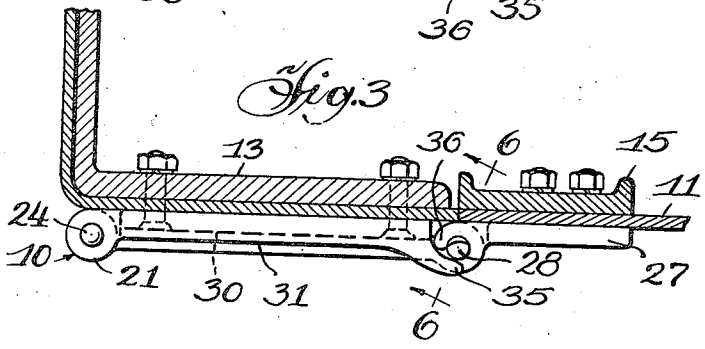


Fig. 3



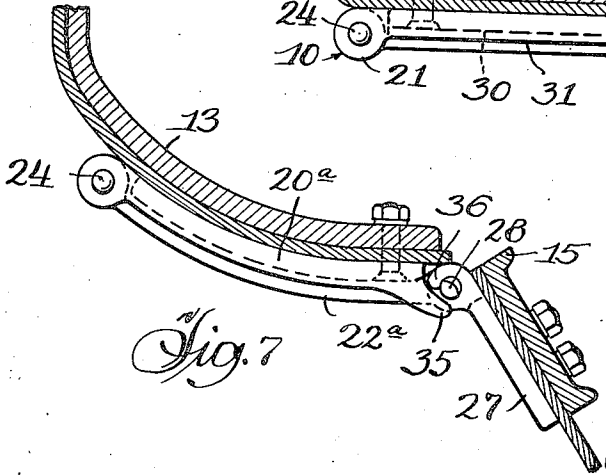
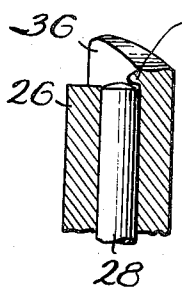


Fig. 7

Fig. 6.



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EXTENSION HINGE

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5 Claims. (Cl. 16—163)

This invention relates to improvements in double pin or extension hinges of the type used adjacent cove corners or in similar places where it is desirable to have the door clear, when open, a corner wall or projecting wall portion.

One of the difficulties heretofore common with extension hinges of the character named is that of holding the door properly and fully closed at the jamb side, due to the ordinary double pin construction of the hinge which usually permits the door to gap open a little way along the hinge side when the door is closed. Another difficulty with such hinges is that of sag between the fixed hinge leaf and the extension leaf, resulting from wear on the hinge parts.

Among the objects of my invention is to provide an improved, simple and durable construction for hinges of the character named, which insures complete closure of the door along its hinged side. A further object of the invention is to overcome the effects of sagging of the hinge parts, by keeping them in horizontal alignment during operation of the hinge. Other objects of the invention will appear as the following description proceeds.

The invention may best be understood by reference to the accompanying drawing, in which

Figure 1 is a perspective view showing an extension hinge constructed in accordance with my invention.

Figure 2 is a front face view of the hinge shown in Figure 1.

Figure 3 is a view illustrating the hinge as applied adjacent the corner of an automobile body or the like, and showing the door in fully closed position.

Figure 4 is a fragmentary section of the hinge, showing the door and door plate swung to fully opened position, permitting the extension hinge to be swung away from the base plate.

Figure 5 is a detailed section taken on line 5—5 of Figure 2.

Figure 6 is an enlarged detailed section taken on line 6—6 of Figure 3.

Figure 7 shows a modified form of extension hinge having a curved base plate and extension leaf as applied to a curved or cove corner of an automobile body or the like.

Referring now to details of the embodiment of my invention illustrated in Figs. 1 to 5 of the drawing, a hinge 10 is shown as applied to a door 11, adjacent a corner post 13 which may for example be at the rear of a conventional automobile truck body. Each of said hinges comprises a fixed leaf or base plate 20 suitably secured to the corner post 13 adjacent the door frame 15 and provided with a plurality of eyes 21 along the outer end thereof which is farthest from the door. An intermediate or extension leaf 22 is provided with a plurality of eyes 23 at one end thereof hinged to the eyes 21 of base plate 20 by a hinge pin 24. The extension leaf 22 also has a plurality of eyes 25, 25 at its opposite end registering with eyes 26, 26 forming part of the door plate 27 and hinged to the latter by hinge pin 28. The hinge pin 28 may be retained in the hinge connection by any suitable means such as for instance provision of partial webs 29, 29 that may be formed at the upper and lower ends of the door plate by upsetting the metal adjacent the outer ends of the eyes 26, 26 as shown in Fig. 6.

The base plate and extension leaf are arranged for longitudinal inter-engaging support when the hinge is in closed and partially closed position, in the form shown this interengagement being provided by forming one of the members, as for instance the base plate, with a longitudinally extending recess 30 defined by upper and lower projecting ribs 31, 31 between which the upper and lower edges 32, 32 of the other member, herein the extension leaf, are confined when the hinge is in fully closed position as shown in Figs. 1, 2 and 3. In the preferred form shown, the inner edges of the ribs 31, 31 are chamfered as indicated at 31^a, 31^a to assist in guiding the extension leaf into its fully closed position. As a further means for guiding the extension leaf into seated relation the extreme ends of ribs 31, 31 are each flared outwardly adjacent the hinge connection between the base plate 20 and the extension leaf 22 as indicated at 33, 33. This forms tapered cam surfaces which are especially effective for guiding the members into inter-engagement when the hinge connection becomes worn between the eyes and around the pin. Due to the nesting relation of the two leaves already described, the sagging of the extension leaf relative to the fixed base plate is entirely overcome when the door is in closed position, and twisting stresses and resulting wear on the hinge connection are greatly reduced.

The fixed base plate 20 and the door plate 27 have interlocking fastening means effective when the door plate is swung into fully closed position. Said interlocking connection comprises one or more retaining lugs 35, 35, as herein shown two in number, extending outwardly from the base plate at top and bottom thereof, and overhanging the ends of the door plate adjacent the axis of its hinge pin 28. The door plate 27 is provided

with a pair of complementary locking lugs 36, 36 at top and bottom thereof which are disposed eccentrically of the hinge pin axis, and are adapted to engage the under faces of the respective retaining lugs 35, 35 on the base plate when the door is in fully closed position, as shown in Figure 3. It will be observed that the locking lugs 36 on the door plate consist of integrally formed longitudinal extensions of the eyes 26, 26 which are a part of the hinge connection with the extension leaf 22, and that said lugs are curved on the same radius as said eyes so as to form an especially simple and compact construction for the intended purpose.

The locking lugs 36, 36 on the door plate are arranged to be swung away from the retaining lugs 33 when the door plate is swung toward its open position on hinge pin 28, and when said door plate with its door is in fully opened position as shown in Fig. 4, the locking lugs 36 are free to pass beyond the ends of the retaining lugs 35 so as to permit the extension leaf 22 to swing outwardly and away from the base plate.

With the arrangement just described, it will be observed that in closing the door it is necessary to have the door plate 27 swung to partially open position relative to the extension leaf 22 to permit the locking lugs 36 to pass the retaining lugs 35, before the extension leaf can be swung into fully closed position relative to the base plate. After the locking lugs have passed beneath the retaining lugs, however, the closing action of the door and door plate 27 causes the locking lugs to engage beneath the under surface of the retaining lugs with a cam-like motion so as to draw the extension leaf into fully closed and nested position against the base plate, thereby insuring the complete closure of the door along its hinged side.

Figure 7 shows a modified form of extension hinge as applied to a curved or cove corner of an automobile truck body. With such a construction the base plate 20^a and extension leaf 22^a are curved to conform with the surface of the cove corner, but in other respects the construction of the hinge may be substantially the same as described in connection with the straight form of hinge shown and described in connection with the preceding figures.

Although I have shown and described certain embodiments of my invention, it will be understood that I do not wish to be limited to the exact construction shown and described, but that various changes and modifications may be made without departing from the spirit and scope of my invention as defined in the appended claims.

I claim as my invention:

1. An extension hinge comprising a base plate, an intermediate extension leaf hinged to said base plate, a door plate hinged to said extension leaf, a retaining lug on said base plate, and a locking lug on said door plate eccentric of its hinge connection and movable into interlocking engagement with said retaining lug to lock said extension leaf relative to said base plate by swinging said door plate into closed position, substantially in alignment with said extension leaf, said locking means being releasable by swinging said door plate into opened position so as to permit said door plate and extension leaf to swing away from said base plate.

2. An extension hinge comprising a base plate, an intermediate extension leaf hinged to said base plate, a door plate having hinge connection with its said extension leaf, a retaining lug on said base plate, and locking means including a lug formed integrally with said door plate eccentrically of its hinge connection and movable into interlocking engagement with said retaining lug on said base plate to lock said extension leaf relative to said base plate when said door plate is in closed position substantially in alignment with said extension leaf, said locking means being releasable by swinging said door plate into opened position so as to permit said door plate and extension leaf to swing away from said base plate.

3. An extension hinge comprising a base plate having a retaining lug thereon, an intermediate extension leaf hinged to said base plate, a door plate having hinged connection with said extension leaf, said hinge connection including a hinge pin passing through an eye on said door plate, said eye having an outwardly extending lug thereon substantially in longitudinal alignment therewith offset from said hinge pin and movable into interlocking engagement with the retaining lug on said base plate to lock said extension leaf relative to said base plate when said door plate is in closed position, said locking means being releasable by swinging said door plate into opened position so as to permit said door plate and extension leaf to swing away from said base plate.

4. An extension hinge comprising a base plate, an intermediate extension leaf having hinged connection with said base plate, and a door plate having hinged connection with said extension leaf, said base plate and extension leaf having longitudinally extending inter-engaging abutments affording vertical support for said extension leaf independent of said hinged connection when said extension leaf is swung into proximity to said base plate, the abutments on one of said members having an outwardly tapered portion adjacent the point of hinge connection with the other of said members to assist in guiding the surfaces of said abutments into proper inter-engaging alignment with each other when the extension leaf is swung into proximity to said base plate.

5. An extension hinge comprising a base plate, an intermediate extension leaf hinged to said base plate, and a door plate hinged to said extension leaf, the aforesaid hinge parts being arranged so that in closed position said door plate extends in substantially the same direction as the other two parts, a retaining lug on said base plate, and a locking lug associated with the hinge connection between said door plate and said extension leaf, said locking lug being movable into interlocking engagement with said retaining lug by swinging said door plate into closed position.

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