Oct. 30, 1928. 1,689,664

E. G. COVELL

HINGE

Filed Aug. 3, 1927

Fig. 4

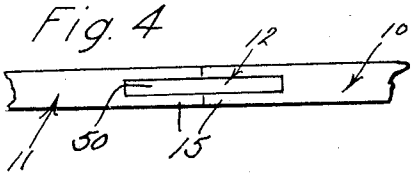


Fig. 5

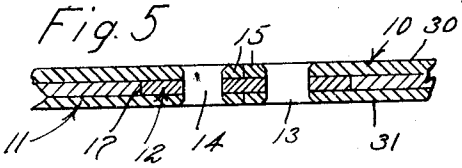


Fig. 6

Fig. 3

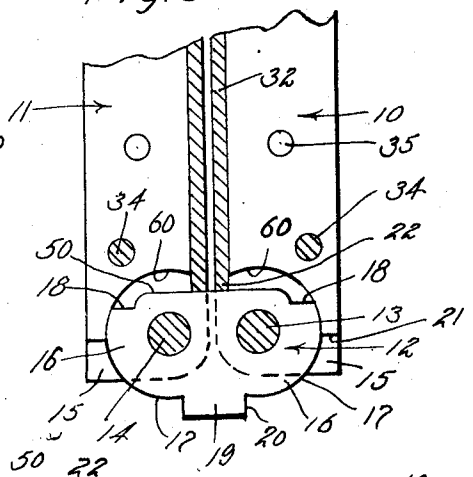


Fig. 2

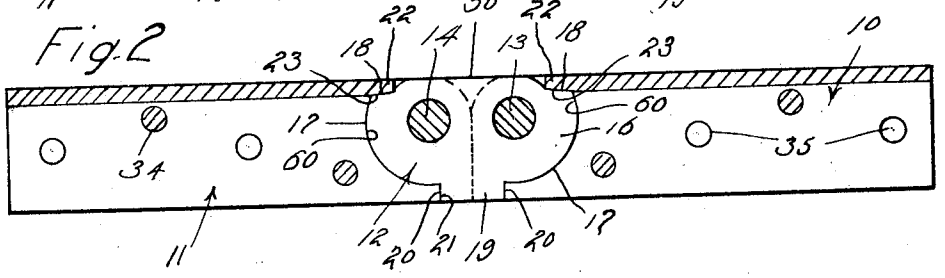


Fig. 1.

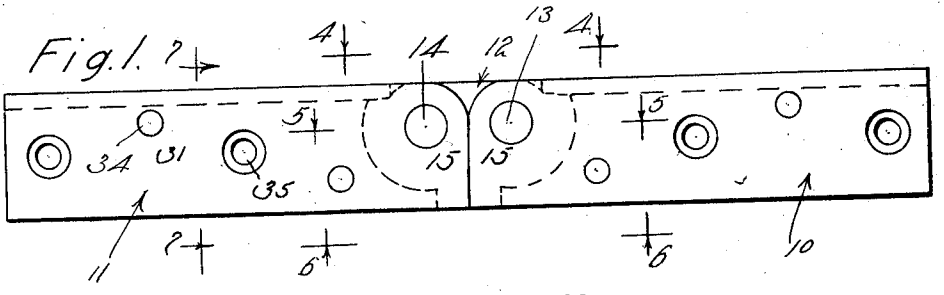


Fig. 7

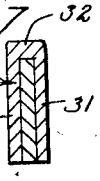
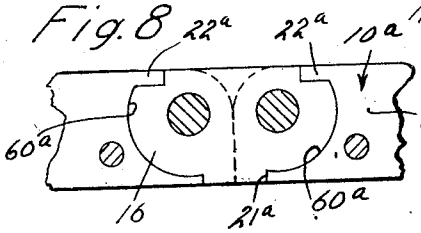


Fig. 8



Inventor
Ernest G. Covell
by [signature]
his Attorney.

Patented Oct. 30, 1928. 1,689,664

UNITED STATES PATENT OFFICE.

ERNEST G. COVELL, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO CAMEO REFRIGERATOR CORPORATION, OF LOS ANGELES, CALIFORNIA.

HINGE.

Application filed August 3, 1927. Serial No. 210,265.

This invention has to do with a hinge and it is a general object of the invention to provide a simple, inexpensive hinge construction capable of carrying considerable load.

It is an object of my present invention to provide a hinge embodying means operable to relieve the pintle of excessive strain.

It is a further object of the present invention to provide a hinge construction in which the connected parts are provided with cooperating shoulders operable to bear strain placed upon the hinge.

Another object of my invention is to provide an improved arrangement and formation of parts in a hinge.

The various objects and features of my invention will be best and more fully understood from the following detailed description of a typical form and application of the invention throughout which description reference is had to the accompanying drawings, in which

Fig. 1 is a side elevation of a hinge embodying my invention showing it in open position. Fig. 2 is a central longitudinal detailed sectional view of the hinge. Fig. 3 is a sectional view similar to Fig. 2 showing the hinge in the opposite or closed position. Fig. 4 is a view taken as indicated by line 4—4 on Fig. 1. Fig. 5 is a detailed sectional view taken as indicated by line 5—5 on Fig. 1. Fig. 6 is a view taken as indicated by line 6—6 on Fig. 1. Fig. 7 is a sectional view taken as indicated by line 7—7 on Fig. 1, and Fig. 8 is a view similar to Fig. 2 showing a somewhat different form of construction embodying the invention.

My invention provides primarily a hinge construction capable of carrying a considerable load when in the open or extended position. The invention is capable of embodiment in hinges of various forms. For purpose of example, I have chosen to set forth my construction as applied to or embodied in a link hinge suitable for use in constructions such as are set forth in my co-pending applications entitled "Folding seat" Serial No. 210,266 and "Folding table", Serial No. 210,267 filed on even date herewith.

In the drawings I have disclosed my invention as applied to a link hinge including, two main sections 10 and 11, and a center or connecting link section 12. The main section 10 is connected with one end of the link section 12 by a pintle or pivot pin 13, while the other section 11 is connected with the other end of the link section by pivot pin 14. With this arrangement, the main sections 10 and 11 are operable between an extended position where they are end to end as shown in Fig. 1 and a folded position where they are in adjoining relation parallel to each other, as shown in Fig. 3.

The relationship and cooperation between the center link section 12 and the two main sections 10 and 11 being the same, I will describe in detail the connection between the center link section 12 and one of the main sections, for instance, the section 10, it being understood that such description applies likewise to the connection between the center link section 12 and the other main section.

The link section 12 and the main section 10 overlap and have their overlapping parts connected by the pivot pin 13. In the particular construction illustrated in the drawings, the section 10 has spaced end parts 15 which form a yoke to receive the link section 12. The link section 12 has a projecting segmental part 16 which operates between the end parts of the section 10, the periphery 17 of the segmental part being concentric with the axis of the pivot pin 13. The end 18 of the segmental part 16 forms or presents a shoulder at one end of the segmental part while a projection 19 on the link section presents a shoulder 20 at the other end of the segmental part.

The end of the section 10 between the spaced end parts 15 has a concave portion 60 corresponding to the circumference 17 of the segmental part of the link section, has a shoulder part 21 at one end of the concave portion and has a projection 22 presenting a shoulder 23 at the other end of the concave portion 60. The concave portion 60 is of the same extent and curvature as the circumference 17 of the segmental part 16 and the shoulders 21 and 23 correspond in spacing to the shoulders 18 and 20. The parts are related and proportioned so that the pivot pin 13 connects the link section 12 and the main section 10 with the circumference 17 of the segmental part slidably fitting the concave part 60 and the various shoulders related so that the shoulder 20 engages the shoulder 21 and the shoulder 18 engages the shoulder 23 when the sections 10 and 12 are in the open or extended position, as shown in Figs. 1 and 2 of the drawings. The fitting

and cooperation of the parts just described will be clearly understood from Fig. 2 of the drawings from which it will be obvious that the shoulders cooperate to positively stop movement of the sections beyond the full open position in which they are end to end and how the shoulders operate to bear practically all of the load or strain placed upon the hinge when in this position. The pivot pin 13 operates mainly to hold the sections 10 and 12 pivotally connected while the shoulders above described cooperate to receive and bear practically all of the strain placed upon the construction.

When the hinge is closed as shown in Fig. 3 the outer end of projection 22 engages the edge 50 of the link section to positively stop the parts in the closed position. This causes the hinge to be rigid or firm when in the folded position.

In the construction illustrated in Figs. 1, 2, 3, 6, and 7 of the drawings, the main section 10 is formed of two pieces of material, one bent to be U-shaped in cross section so that it presents spaced side parts 30 and 31 connected by a web 32, while the other is a plain flat strip 33 carried between the side parts 30 and 31. The parts 30, 31 and 33 may be secured together by rivets 34 or other suitable means and may be provided with screw holes 35. When embodying this construction, the ends of the side parts 30 and and 31 may be allowed to extend beyond the end of the center part 33 to form the spaced end parts 15 which receive the center section. Further, with this construction the concave portion 60 and shoulder 21 of the section 10 may be formed on the end of the center part 33 while the projection 22 with its shoulder 23 may be provided by allowing the web 32 to extend somewhat beyond the end of the center part 33 as clearly shown in Fig. 2. The construction just described is desirable in many cases as it makes a neat, sightly construction, particularly when viewed as shown in Fig. 4 of the drawings.

In Fig. 8 I disclose a little different formation of parts. In this case the section 10^a is formed of two side parts having a center part 33^a inserted between the side parts. In this case the projection 22^a as well as the concave part 60^a and shoulder 21^a may be formed on the end of the center part 33^a as shown in the drawings.

Having described only a typical preferred form of my invention I do not wish to limit myself to the specific details set forth, but wish to reserve to myself any changes or variations that may appear to those skilled in the art or that may fall within the scope of the following claims.

Having described my invention, I claim:

1. A hinge including two sections, one having a segmental part, the other having a part projecting from its end, a pivot pin connecting the segmental part and projecting part, the end of said other section having a concave portion fitting the segmental part, shoulders at the ends of the segmental part, and shoulders at the ends of the concave portion, the shoulder on the two sections being related to engage simultaneously to stop movement of the sections.

2. A hinge including two sections, a pivot pin connecting the sections, one section having a segmental part coaxial with the pivot pin, a shoulder at one end of the segmental part, a projection at the other end of the segmental part, the other section having a concave portion to slidably receive the segmental part, a shoulder at one end of the concave portion, and a projection at the other end of the concave part, the projections and shoulders being related so that the projection on one section engages the shoulder on the other section when the projection on said other section engages the shoulder on the said one section.

3. A hinge including two sections having overlapping parts, a pivot pin connecting the sections, two spaced shoulders on one section, and two spaced shoulders on the other section, the shoulders of the two sections being related to engage simultaneously to stop movement between the sections, one of the sections being formed of a U-shaped part and a center part held between the sides of the U-shaped part.

4. A hinge including two sections having overlapping parts, a pivot pin connecting the sections, two spaced shoulders on one section, and two spaced shoulders on the other section, the shoulders of the two sections being related to engage simultaneously to stop movement between the sections, one of the sections being formed of a U-shaped part and a center part held between the sides of the U-shaped part, one of the shoulders of the last mentioned section being formed by the web of the U-shaped part.

5. A hinge including two sections having overlapping parts, a pivot pin connecting the sections, two spaced shoulders on one section, and two spaced shoulders on the other section, the shoulders of the two sections being related to engage simultaneously to stop movement between the sections, one of the sections being formed of a U-shaped part and a center part held between the sides of the U-shaped part, one of the shoulders of the last mentioned section being formed by the web of the U-shaped part and the other being formed on the center part.

In witness that I claim the foregoing I have hereunto subscribed my name this 1st day of July, 1927.

ERNEST G. COVELL.