Dec. 16, 1930. E. A. REGAN 1,785,362

HINGE STRUCTURE

Filed Jan. 3, 1928

Fig. 1.

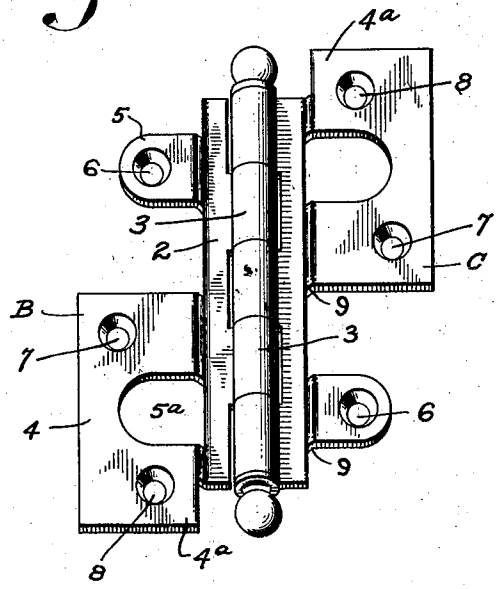


Fig. 2.

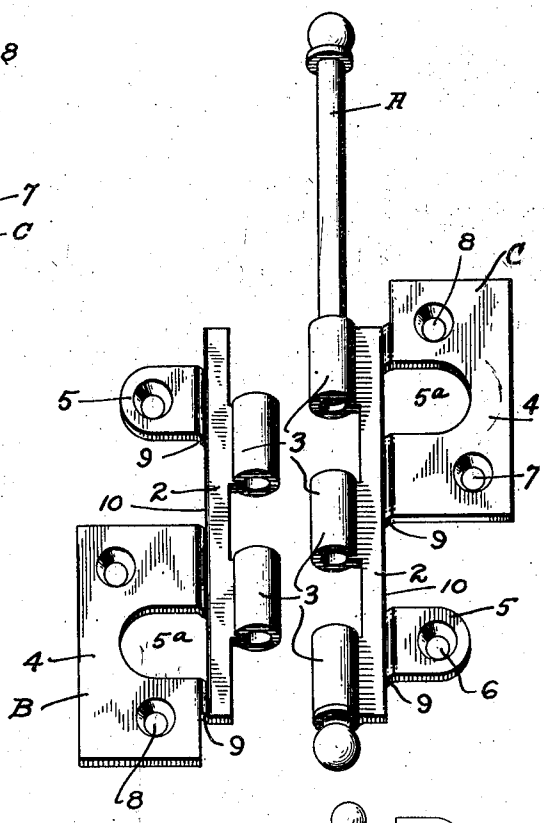


Fig. 3.

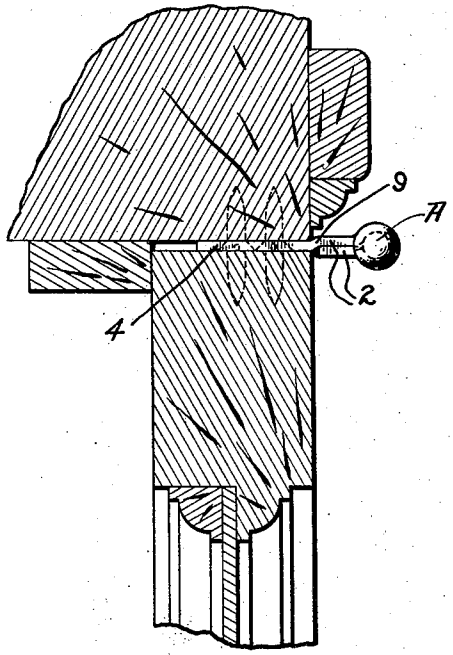
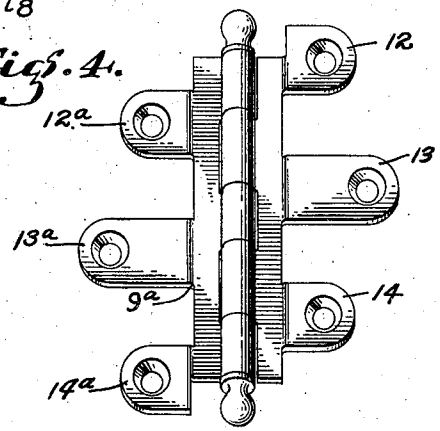


Fig. 4.



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UNITED STATES PATENT OFFICE

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HINGE STRUCTURE

Application filed January 3, 1928. Serial No. 244,155.

This invention relates to hinges such as employed for doors, cabinets, etc., and especially to an improvement on the hinge shown in my Reissue Patent No. 17,292, issued May 14, 1929.

The object of the present invention is to generally improve and simplify the construction and operation of hinges of the character described; to provide a hinge in which the leaves are substantially identical in form but reversed with relation to each other when assembled on a pintle; to provide a hinge in which the leaves are formed of two or more connected sections interspaced with relation to each other longitudinally of the leaf so as to provide a large spacing between the screw holes; and further to provide a hinge in which the interspaced sections of the leaves will align on a common plane when the hinge is closed.

The hinge is shown by way of illustration in the accompanying drawings in which:

Fig. 1 is a perspective view of the hinge,

Fig. 2 is a perspective view showing the hinge sections separated,

Fig. 3 is a sectional view showing the manner in which the hinge is applied and aligned with relation to a door and jamb,

Fig. 4 is a perspective view showing another form of the invention.

Referring to the drawings in detail and particularly Figs. 1 and 2, A indicates the pintle pin of the hinge, and B and C the leaf sections of the hinge. Each hinge section is substantially identical in construction and the description of one should accordingly suffice. By referring to Fig. 2, it will be noted that each hinge consists of a bearing plate 2 on which is formed pintle bearings 3, the pintle bearings being offset with relation to each other as is the usual practice so as to align for the reception of the pintle pin A when the hinge is assembled. The pintle bearings are formed along one longitudinal edge of the bearing plate while the leaf sections B and C are attached to or formed integral with the opposite edge of the bearing plate. The leaf sections are in this instance constructed of two or more attaching plate sections or attaching extensions, such as indicated at 4 and 5, these sections being interspaced longitudinally of the leaf so as to provide a large spacing between the screw holes indicated at 6, 7 and 8. The leaf sections 4 are cut away as indicated at 5*a* to receive the leaf sections 5 when the hinge is closed. In fact, the receptive leaf sections assume a common plane, as shown in Fig. 3 when the hinge is closed, and a portion of one leaf will, accordingly, lie within the cut away portion of the opposite leaf when the hinge is closed. To make it possible for the leaf sections to assume a common plane, it is necessary to swedge or offset the leaf sections with relation to the bearing plates 2. The offset is indicated at 9 and the extent of the offset is equal to one-half the thickness of the metal from which the leaves or hinge members are formed. The leaves are offset in opposite direction, as shown in Fig. 3, and as such will assume a common plane when the hinge is closed.

One of the important features of the present invention is the large spacing which is obtained between the endmost screw holes indicated at 6 and 8, this spacing being obtained, first, by providing the leaf sections 5, and secondly, by extending the leaf sections 4 as indicated at 4*a* to a point beyond the ends of the pintle pin A. The distance that the leaf sections 4 are extended may be considerable and the greater the extension, the greater the spacing between the screw holes 6 and 8.

Another important feature of the present invention is the cutting away of the leaf portions 4, as indicated at 5*a*, to receive the leaf sections 5; and the offsetting indicated at 9 of the leaf sections with the bearing plates 2 is also important, as it permits the leaf sections to assume a common plane and at the same time permits the leaf section of one hinge to fold into the cut away portion of the opposite hinge.

Still another important feature obtained by the offsetting is the formation of a continuous shoulder, such as indicated at 10, on the outer edge of the bearing plate. This shoulder bears against the edge of the door jamb and to that extent strengthens the fastening between the hinge sections and the door jamb, and it furthermore insures posi-

tive alignment of the separable hinge sections with relation to the door and jamb, thereby eliminating the use of squares and other tools when attaching the hinges.

Another feature which should be considered is the provision of hinges which are the same in form but reversed with relation to each other when assembled on the pintle pin. This is an ideal arrangement, as it permits spacing between the leaf sections 4 and 5 longitudinally of the hinge; it permits folding of one hinge section into the other so that they will occupy a common plane; and it furthermore permits a balanced symmetrical assembly with the largest spacing possible between the screw holes.

By referring to Fig. 4 it will be noted that another form of the hinge is shown. In this instance each leaf is divided into three sections, such as indicated at 12, 13, 14, 12*a*, 13*a*, and 14*a*. These sections are spaced longitudinally and when the leaves are assembled on the pintle pin, as shown, they assume a staggered positon with relation to each other, i. e., the sections 12*a* and 13*a* will lie between the sections 12, 13 and 14 and the section 14*a* will lie below the section 14. The leaf sections are offset, as indicated at 9*a*, and the result is that when the hinge is closed, the leaf sections will lie between each other and on a common plane.

While certain features of the present invention are more or less specifically described, I wish it understood that various changes may be resorted to within the scope of the appended claims. Similarly, that the materials and finishes of the several parts employed may be such as the manufacturer may decide or varying conditions or uses may demand.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:—

1. In a hinge of the character described, a pair of leaves each having a bearing plate. a plurality of spaced pintle bearings formed on one edge of each bearing plate, a pintle extending through the said bearings, a plurality of attaching plates connected to each bearing plate, one of said attaching plates on each leaf having a cut-out portion and diagonally spaced from the corresponding plate of the other leaf, and the other attaching plate of each leaf being of reduced size to fit within the cut-out portion of the wider plate in the opposite leaf, the attaching plates of one leaf being offset from the plane of their bearing plates such distance that when the hinge leaves are moved to closed position, the attaching plates will all lie in end-to-end relation.

2. A hinge comprising a pair of leaves each having a bearing plate, axially spaced pintle bearings formed on said bearing plates, a pintle extending through said bearings, and a plurality of axially-spaced attaching extensions connected to each bearing plate, the attaching extensions of one leaf being staggered axially of the pintle relative to the attaching extensions of the other leaf to permit the various attaching extensions to lie in interspersed relation when the hinge is closed, and the attaching extensions of one leaf having a vertical spread substantially equal to the vertical spread of the attaching extensions of the other leaf and being offset from the plane of their associated bearing plate such distance that when the hinge leaves are moved to closed position the attaching extensions will all lie in end-to-end relation.

3. A hinge comprising a pair of pivotally connected leaves, said leaves having lateral attaching extensions thereon, each leaf having an extension disposed substantially at one end thereof and having an extension disposed adjacent the other end thereof but slightly removed from such end, the extensions of the respective leaves being alternately arranged in staggered relationship so as to be adapted to lie generally in the same plane when the hinge is closed, the distance between the points of attachment of the end extensions of the respective leaves being substantially equal.

EUGENE A. REGAN.