

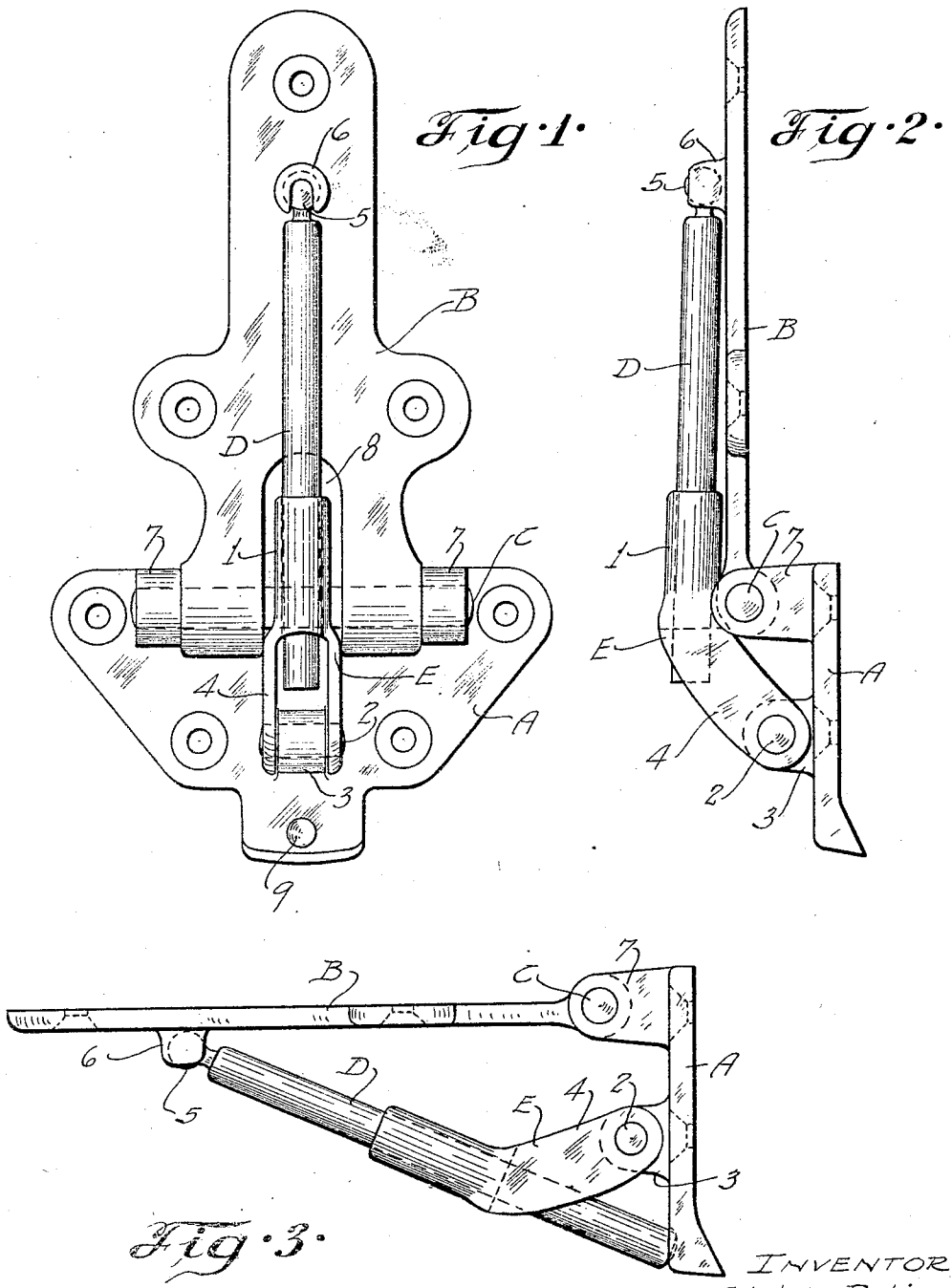
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COMBINED DOOR HINGE AND BRACE

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## COMBINED DOOR HINGE AND BRACE.

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*To all whom it may concern:*

Be it known that I, ADOLPH RUBIN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Combined Door Hinges and Braces, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to door hinges of the type that are provided with a brace for resisting the movement of the door in one direction when the door is open.

The object of my invention is to provide a combined door hinge and brace that is neat and attractive in appearance, inexpensive to manufacture and of such construction that the co-operating parts of same will not stick or bind during the operation of opening or closing the door.

Figure 1 of the drawings is a front elevational view of a combined door hinge and brace constructed in accordance with my invention.

Figure 2 is a side elevational view of same; and

Figure 3 is a side elevational view, showing the movable member of the hinge in the position which it occupies when the door is open.

Referring to the drawings which illustrate the preferred form of my invention, A designates the stationary member of my improved hinge, B designates the movable member of the hinge and C designates the pintle that pivotally connects the movable member B to the stationary member A. I have herein illustrated my invention embodied in a hinge designed for use with an ice box door that is adapted to be swung downwardly into a horizontal position so as to serve as a shelf or supporting structure, but I wish it to be understood that my improved hinge is not limited to use with ice box doors, or with a door that swings on a horizontal axis. An extensible brace or strut is combined with the members A and B in such a way that when the member B is moved into a certain position, during the operation of opening the door, said brace or strut will become operative to resist further movement of the door in this direction. If the door is of the type that is adapted to be swung downwardly into a

horizontal position, so as to serve as a shelf, said brace or strut will sustain the load imposed on the door when it is being used as a shelf or supporting structure.

The extensible brace or strut above referred to is composed of two elements D and E pivotally connected at their opposite ends to the members A and B of the hinge and joined together in such a way that the movement of the door into its open position causes one of said elements to move relatively to the other element and come into direct engagement with the hinge member to which said other element is pivotally connected, thus causing the load on the door to be transmitted directly to the stationary hinge member solely by said element. In the hinge herein shown one element of the extensible brace or strut consists of a rod D and the other element consists of a lever E provided with a tubular portion 1 in which the rod D is telescopically arranged. The lower end of the lever E is pivotally connected by a pivot 2 to a lug 3 on the stationary member A of the hinge which is embraced by a bifurcated portion 4 of the lever E, and the upper end of said rod D is joined by a ball and socket joint to the movable hinge member B, the rod D being preferably provided at its extreme upper end with a ball 5 that fits in a socket piece 6 on the movable member B of the hinge.

As shown in Figure 2, the movable hinge member B is offset slightly with relation to the stationary member A, said stationary hinge member being provided with a pair of forwardly-projecting ears 7 that embrace the movable hinge member B and receive the pintle C that joins the two members of the hinge together. In order to compensate for the offset of the two members of the hinge, the lever E is curved slightly or made slightly angular-shaped in outline so that when the door is closed the rod D will be disposed in parallel relationship with the door. In the hinge herein shown the bifurcated portion 4 of the lever E is disposed at a slight angle to the tubular portion 1 of said lever through which the rod D passes, and is made long enough so that the tubular portion 1 will clear the movable member B of the hinge when the door is in its closed position. If desired, the hinge member B can be slotted or cut away at 8, as shown in Figure 1, so as to eliminate the possibility of the

lever E rubbing against said hinge member during the operation of opening or closing the door. When the door is closed the movable member B of the hinge stands in an upright position, as shown in Figure 2, and the lower end portion of the rod D is positioned in the tubular guide 1 on the lever E. When the door is swung downwardly into its open position the rod D slides in the tubular portion 1 of the lever E, thereby causing the lower end of said rod to come into direct contact with the stationary member A of the hinge, as shown in Figure 3, and thus serve as a solid strut that transmits the load on the door directly to the stationary member A of the hinge. If desired, the member A of the hinge can be provided with a recess 9, shown in Figure 1, that receives the lower end of the rod D when the door is in its fully open position.

A combined hinge and brace of the construction above described is of neat and ornamental appearance; it is inexpensive to manufacture and the co-operating parts of same will not stick or bind during the operation of opening or closing the door, due to the fact that the brace or strut is an extensible structure pivotally connected at its opposite ends to the two members of the hinge. In other words, the brace or strut of my improved hinge is not formed by a single element pivotally connected at one end to one of the hinge members and arranged so that its opposite end slides in a guideway formed in the other member of the hinge, but, on the contrary, the brace or strut is formed by two co-operating elements permanently connected at their outer ends to the respective members of the hinge and joined together in such a way that one element is capable of moving longitudinally with relation to the other to shorten the brace and convert it into a solid strut whose opposite ends bear directly against the stationary and movable members of the hinge.

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

1. A combined door hinge and brace, composed of a stationary hinge member, a movable hinge member, and an extensible brace pivotally connected at its opposite ends to said hinge members and composed of a plurality of relatively movable elements, one of which is arranged in such a way that the opposite end portions of same will be in direct engagement with both members of the hinge when the door is in its open position.

2. A combined door hinge and brace, comprising a stationary hinge member and a movable hinge member pivotally connected together, and an extensible brace composed of two elements pivotally connected at their outer ends to integral portions on the respective hinge members and having their

inner end portions arranged in telescopic engagement with each other, one of said elements being so arranged that the free end of same will bear directly against the hinge member to which the other element is pivotally connected when the door is moved into its open position.

3. A combined door hinge and brace composed of a stationary hinge member and a movable hinge member pivotally connected together, a strut pivotally connected at one end to said movable hinge member, and means on the stationary member of the hinge for maintaining said strut in approximately parallel relationship with said movable hinge member when the door is closed and for causing the free end of said strut to come into direct contact with said stationary hinge member when the door is in its open position, thereby causing the load imposed on the door to be transmitted directly to said stationary hinge member.

4. A combined hinge and brace, comprising a stationary hinge member, an offset movable hinge member pivotally connected to said stationary member, a lever pivotally connected to said stationary hinge member, and a rod pivotally connected to said movable hinge member and arranged in sliding engagement with a guide on said lever, said lever being of such shape that said rod will be disposed in parallel relationship with said movable hinge member when the door is in its closed position.

5. A combined hinge and brace, comprising a stationary hinge member, a pivotally mounted, movable hinge member arranged in offset relation with said stationary member, a rod pivotally connected at one end directly to said movable member, and a lever pivotally connected directly to said stationary member provided with an angularly-disposed guide in which said rod is reciprocatingly mounted.

6. A combined hinge and brace, comprising a stationary hinge member, a pivotally mounted, movable hinge member arranged in offset relation with said stationary member, a rod pivotally connected at one end to said movable member, and a pivotally mounted lever on said stationary member provided with an angularly-disposed guide in which said rod is reciprocatingly mounted, said lever being bifurcated so that the inner end of said rod can move into engagement with the stationary hinge member when the door is moved into its open position.

7. A combined hinge and brace, comprising a stationary hinge member, a movable hinge member pivotally mounted on said stationary hinge member and arranged in offset relation with same, a bifurcated lever pivotally connected to a lug on said stationary hinge member and provided with an

angularly-disposed, tubular portion, and a rod reciprocatingly mounted in said tubular portion and connected by a ball and socket joint to said movable hinge member.

5 8. A combined hinge and brace, comprising a stationary hinge member and a movable hinge member pivotally connected together, an extensible brace on the front side

of said hinge members composed of a rod and a tubular guide that surrounds one end 10 of said rod, a ball and socket joint between the outer end of said rod and one of said hinge members, and a pivotal connection between the tubular guide and the other hinge member.

ADOLPH RUBIN.