

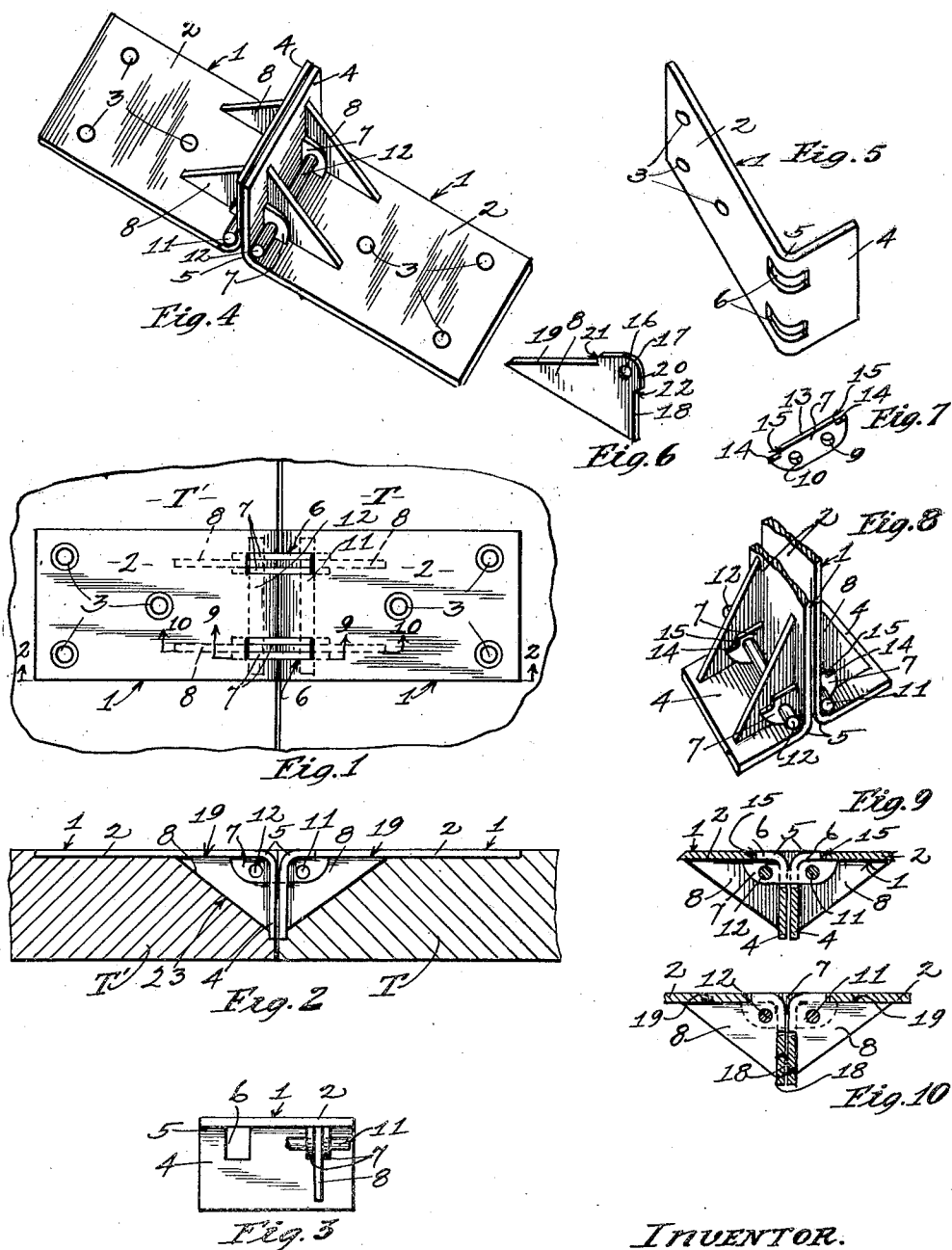
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HINGE

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HINGE.

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To all whom it may concern:

Be it known that I, RAY B. COX, a citizen of the United States, and a resident of Berkeley, in the county of Alameda and State of California, have invented new and useful Improvements in Hinges, of which the following is a specification.

This invention relates in general to hinges, and more particularly to a form of flush hinge adapted to be used for table tops and the like, where it is necessary and desirable that the hinge be positioned either below or flush with the upper surface of the table.

Another object is to provide a flush hinge of self-supporting character which in addition to performing the functions of a hinge, will also serve to support one member in horizontal alinement with another member, and thus eliminate the necessity for cleats, brackets, or other supports such as are used for table tops and the like.

A further object is to provide in a hinge of the character described, a pair of main hinge members similar in form and character to ordinary strap hinges, which are pivotally connected together at their inner ends at spaced points, instead of at a single point as in the case of the ordinary strap hinge. In other words, it is an object to provide a linked connection between the fulcrums of the two straps of the hinge, so that when the said straps are folded together, their adjacent faces may be in contact.

Still another object of this invention is to provide a pair of straps, each of which is provided with right angular abutments for contact with each other, a plurality of links pivotally held on and connecting said straps, and a plurality of depending and abutting members adapted to be fixedly held in the adjacent portions of the members to which the hinge is attached, so that when one of said members is extended relative to the other, the upper surfaces of both members will be flush.

Other objects will appear as the description progresses.

I have shown one practical embodiment of my invention in the accompanying drawings, in which:

Fig. 1 is a plan view of my improved hinge shown in connection with a fragment of two table members which are hinged together thereby.

Fig. 2 is a section of the same on line 2—2.

Fig. 3 is an end view of the hinge with one set of the connecting links and abutments omitted.

Fig. 4 is a perspective view of the lower side of the hinge in extended position.

Fig. 5 is a perspective view of one of the hinge straps dis-assembled.

Fig. 6 is a perspective view of one of the abutments dis-assembled.

Fig. 7 is a perspective view of one of the hinge links dis-assembled.

Fig. 8 is a perspective view of the hinge in folded position.

Fig. 9 is a section of the hinge on line 9—9 of Fig. 1.

Fig. 10 is a section of the same on line 10—10 of Fig. 1.

By reference to the said drawings it will be observed that my hinge includes a pair of straps 1, 1, each of which has elongated flat members 2, 2, adapted to be secured to opposite members T and T' of a table or the like, by means of screws which may be inserted through a plurality of holes 3, 3, etc., therein. Members T and T' of a table shelf or the like are relatively foldable so that, for instance, the member T' may be folded backwardly over the upper surface of the member T by means of my hinge. The members 1, 1, also have depending flat members 4, 4, which are integrally formed with and are disposed at right angles to the portions 2, 2, of the hinge, the members 1 being bent as shown in Fig. 5 to form the portions 2 and 4, as shown.

At the bent portion 5 of the members 1, I provide a pair of elongated apertures 6, 6, which are transversely spaced apart and are also spaced inwardly from the outer edges of members 1, 1. Said apertures are of such width to accommodate a pair or more of links 7, as shown in Fig. 7, and one or more of the abutments 8 such as is shown in Fig. 6. The links 7 are slightly elongated and have spaced bores 9 and 10 therein which are adapted to receive hinge pins 11 and 12 respectively. Said links also have an elongated central portion 13, and reduced portions 14, 14, at the ends thereof, whereby shoulders 15, 15, are provided at the ends of the portion 13.

The abutments 8 are of triangular form and constitute ribs for bracing the opposite

members 1, 1, against each other. Said members have bores 16 formed therein and an enlargement 17 partially surrounding said bore, while the right angular edges 18 and 19 of member 8 is cut away below the edges 20 and 21 of said enlargement, so as to provide shoulders 22, 22, at the extremes of said enlargement, and the bore 16 is adapted to receive the hinge pins 11 or 12, as the case may be.

The hinge pins 11 and 12 are inserted in the bores 9 and 10 of the link 7 and the bores 16 of the abutments 8, one of said abutments being positioned between a pair of said links on each of the pins 11 and 12, and a complete set of said members including a pair of links and a single abutment is mounted on each of the members 1, and near the outer edges thereof, as shown, the links 7 being extended through the openings 6, 6, in the members 1, and the portions 4, 4, of members 1, 1, being positioned in abutting relation, as shown.

Now, when the straps 1, 1, are extended as shown in Fig. 1, the edges 13 of links 7, and the edges 21 of abutments 8 will be held in the openings 6, 6, in the straps and flush with the upper surface of the straps, and the shoulders 15, 15, of the links, and 22, 22, of the abutments will rest almost or not quite against the edges of the openings 6, 6. Likewise the edges 19 of the abutments will engage the lower surface of the portions 2, 2, of the hinges, while the edges 18 thereof will engage the depending portions 4, 4, and thus serve to hold the hinge together, so that the members 1, 1, may be adjusted relative to each other without dis-assembling the hinge, and the links 7 and abutments 8 will at all times be held in the position shown when the members 1, 1, are moved into any position about the axis of the pins 11 and 12.

The abutments 8 are adapted to be inserted in kerfs or grooves cut in the members T and T', as at 23 in Fig. 2, and the straps 1, 1, are adapted to be counter-sunk in the upper surfaces of members T and T' as in the case of ordinary strap hinges. Thus, it will be seen as shown in the drawings, that the opposite members 1, 1, of the hinge are pivotally connected together by means of the links 7, 7, and the hinge pins 11 and 12 at two spaced points, and the hinge when extended as shown in Fig. 4 will be held in the position shown by means of the shoulders 15, 15, on the links 7 which engage the ends of the apertures 6 in the straps.

The braces 8 are held between a pair of the links 7 as shown, and the shoulders 22 thereon also engage the ends of the openings 6. Now, when the hinge is attached to two relatively movable members, as at T and T', said members may be extended into horizontal alinement as shown in Figs. 1

and 2, and held without any braces other than the members 8, 8, etc., which serves to reinforce the hinge and hold the leaves of a table or extensible shelf in extended position.

It will be readily apparent that I may form the hinges of any suitable or necessary width and that I may provide as many of the members 7 and 8 as may be necessary to accomplish the objects of my invention.

While I have shown my improved hinge in connection with a table top, I may also use my hinge in other cases where a flush hinge is required and where it is necessary to provide, or desirable to do so, a rigid firm support for an extensible member.

As shown in Fig. 8 it will be observed that the members 1, 1, may be folded backwardly into contact so that the members T and T' which are connected by the hinge may be folded in like manner.

What I claim is:

1. A hinge having a pair of straps provided with corresponding right angular abutments and a plurality of spaced openings, a plurality of links hingedly connecting said straps together on opposite sides of said abutments, and a plurality of supporting members intermediate said links, hinge pins connecting said links and said supporting members, said supporting members having right angularly formed faces for engagement with said straps and said abutments.

2. A hinge having a pair of straps provided with parallel spaced hinge pins, links held on said pins for pivotally connecting said straps together, supporting members intermediate said links on each of said hinge pins and having portions underlying said straps, and relatively right angular depending portions, said straps having abutments for engagement with said depending portions.

3. A hinge having a pair of straps provided with parallel spaced hinge pins, links held on said pins for pivotally connecting said straps together, supporting members intermediate said links on each of said hinge pins and having portions underlying said straps and relatively right angular depending portions, said straps having abutments for engagement with said depending portions, said supporting members being arranged in pairs, one member of each pair being carried on each of said straps, as described.

4. A hinge including a pair of strap members having corresponding attaching portions and correspondingly formed abutting portions formed at right angles thereto, a plurality of openings being formed in said strap members at the junction of said attaching portions and said abutting portions, a plurality of links extended through the openings of said strap members and carry-

ing spaced parallel hinge pins, and a plurality of supporting members carried on said hinge pins for bracing said attaching portions and abutments, said links and said supporting members having enlargements extending into and for engagement with the edges of said openings.

5 5. A hinge including a pair of like members having relatively right angular attaching members and abutments formed of sheet metal, with spaced openings extending through said abutments and said attaching portions, a plurality of links extended through said openings, a pair of spaced hinge pins carried in said links on the corresponding sides of each of said abutments and having enlargements extended into the openings in said attaching members, and a plurality of supporting members carried on said hinge pins and having relatively right angular portions engaging said attaching members and said abutments.

10 6. A hinge including a pair of like members having relatively right angular attaching members and abutments formed of sheet metal, with spaced openings extending through said abutments and said attaching portions, a plurality of links extended through said openings, a pair of spaced hinge pins carried in said links on the corresponding sides of each of said abutments

and having enlargements extended into the openings in said attaching members, and a plurality of supporting members carried on said hinge pins and having relatively right angular portions engaging said attaching members and said abutments, said supporting members having enlargements extended into the openings of said attaching members.

7. The combination of a pair of relatively foldable members, a right angularly bent strap held on each of said members with the upper surface thereof flush with the surface of said member and provided with relatively abutting portions extended downwardly over the adjacent edges of said members, a plurality of braces held in kerfs formed in said members and provided with right angularly formed portions engaging the lower surfaces of said straps and the inner surfaces of said abutting portions, a hinge pin extended through the supporting members and each of said folded members interiorly of said abutting portions, and a plurality of links extended through the abutting portions of said straps and pivotally held on said pins for operatively connecting said foldable members together.

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Witnesses:

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