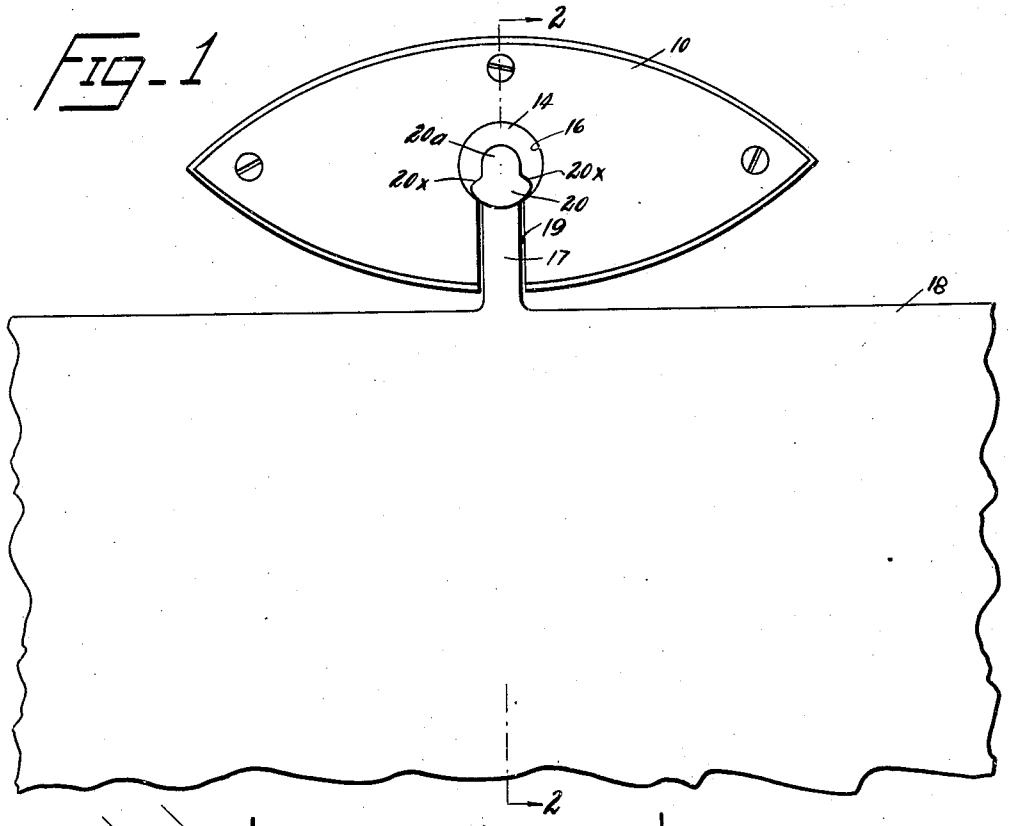
April 15, 1947. F. CROUCH 2,418,968

INTERLOCKED BRACKET AND SUPPORT

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FIG. 1



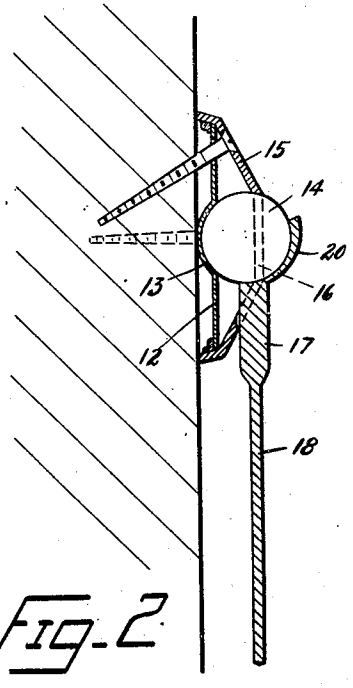


FIG. 2

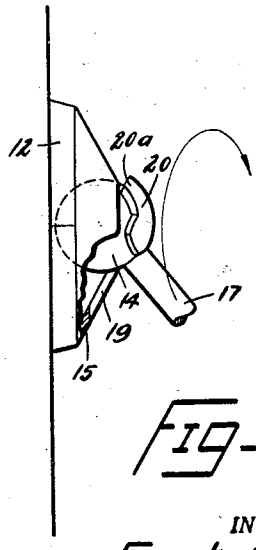


FIG. 3

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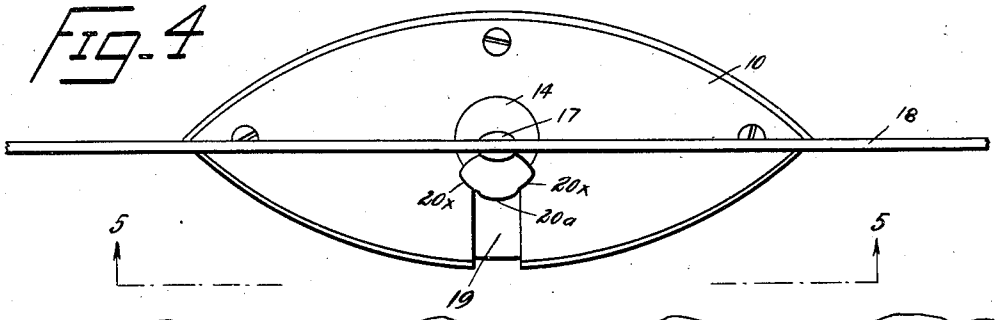
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Fig. 4



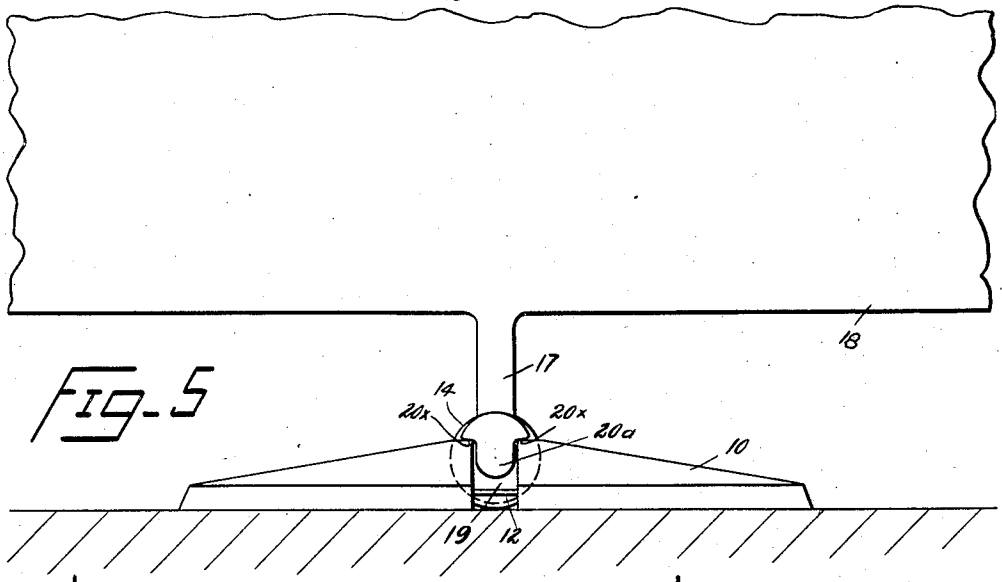


Fig. 5

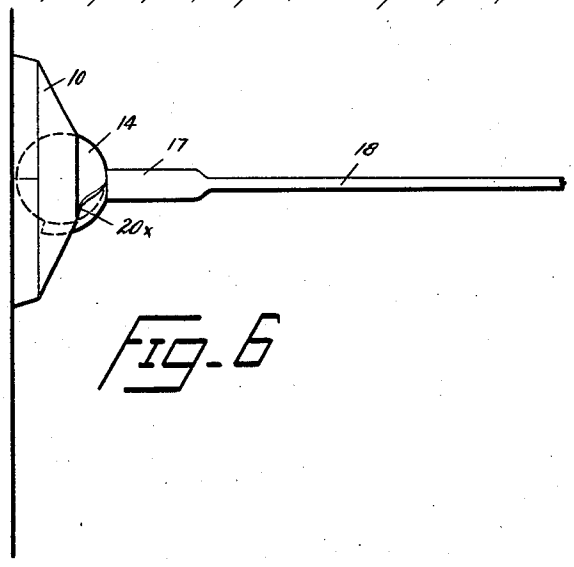


Fig. 6

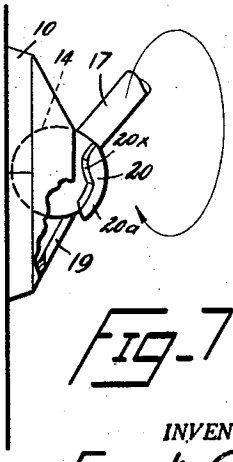


Fig. 7

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UNITED STATES PATENT OFFICE

2,418,968

INTERLOCKED BRACKET AND SUPPORT

Frank Crouch, Rockport, Mass.

Application October 23, 1945, Serial No. 624,035

2 Claims. (Cl. 248—223)

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This invention relates to means for interconnecting two members and for supporting one of said members from the other in a plurality of positions.

An object of the invention is to provide a simple, practical and efficient device of the kind described.

Another object of the invention is to provide a device of the kind described wherein one member is capable of assuming one position relative to the other when in use and a different position relative to the other when not in use.

Another object of the invention is to provide a device of the above mentioned kind in which the movement of one member from one position relative to the other may be limited to movement in a given direction in a given plane, whereas from another position the first member will be capable of movement and rotation in a plane 90° removed from said first mentioned plane.

Other objects of the invention will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, arrangements of parts, and in the several steps and relation and order of each of said steps to one or more of the others thereof, all as will be pointed out in the following description, and the scope of the application of which will be indicated in the following claims.

The invention will best be understood if the following description is read in connection with the drawings, in which,

Figure 1 is a front elevation of one embodiment of the invention shown in collapsed or non-working position;

Figure 2 is a transverse sectional view taken on the line 2—2 of Figure 1;

Figure 3 is an end view, partly broken away, showing the commencement of the movement of the supported member of the device from non-working toward working position;

Figure 4 is a front elevation showing the supported member after its movement from working to non-working position has been completed;

Figure 5 is a bottom plan view of the device taken on the line 5—5 of Figure 4, with the members related as shown in Figure 4;

Figure 6 is an end view of the device as shown in Figure 4; and

Figure 7 is an end view of the device, partly broken away, showing the supported member after it has been moved out of working engagement with the supporting member and in position to be rotated through 180° into non-working or collapsed position.

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For the purpose of disclosing herein a specific embodiment of the invention I have shown a supporting member 10 in the form of a bracket adapted to be attached to a surface, such for example as a wall of a room, and a member 18 adapted to be interconnected with and supported by the member 10, and which in the embodiment of the invention illustrated herein is adapted itself to serve as a supporting surface or shelf when in work position, as shown in Figures 4–6.

The member 10 comprises the backing 12 which is preferably made with a concave portion 13 to provide a suitable seat for a ball member 14 which is retained in rotatable position against the seat 13 by the front bracket member 15, the central portion of which is spaced from the backing 12 and is provided with a circular cut out 16, of somewhat less width than the diameter of the ball 14 to permit a portion of the ball to protrude through the said cut out forwardly of the member 15, said front bracket member 15 forming with the backing 12 an effective cage for rotatably mounting the ball 14.

Protruding radially from the ball 14 is a projecting arm 17 the other end of which is connected in any suitable way to the member 18 to be supported. The member 18 may differ widely in form and purpose. In the embodiment of the invention illustrated herein the member 18 is shown as a shelf.

The supporting member 10 is provided with a recess illustrated herein as a slot 19 extending radially downward from the circular cut-out 16 in the face of member 15. On the ball 14, adjacent the arm 17 and below the member 18, when the latter is in work position, is a projection or portion of increased diameter 20, having a central portion 20^a, approximately equal in width to the width of the slot 19, extending beyond the laterally extending shoulders 20^x. When the member-to-be-supported, 18, is in work position the downwardly projecting portion or tongue, 20^a, of projection 20 on ball 14, extends into the recess provided therefor by the slot 19, and the engagement of the projection in the said recess limits rotation of ball 14 in the plane of the work position of member 18, and the shoulders 20^x, which project laterally in both directions from 20^a and extend over the surface of the front member 15 of bracket member 10 adjacent the recess or slot 19, constitutes stop means serving to limit rotation of ball 14 downwardly with respect to member 10. Thus member 18 is posi-

tioned in a stable work position from which it can be moved only upwardly with respect to member 10. With the projecting tongue portion 20a of the projection 20 seated in the recess or slot 19 the member 18 is thus adapted to provide a dependable supporting surface and any objects placed thereon will add to the gravity lock tending to hold member 18 in its relative position with respect to member 10.

When it is desired to unlock member 18 and to move it into non-working position it is only necessary to move member 18 upwardly, thus causing ball 14 to rotate within bracket member 10 in a plane at right angles to bracket 10, until the tongue portion 20a of projection 20 has moved out of recess or slot 19 after which ball 14 may be rotated in either direction through 180° to bring member 18 from the position shown in Figure 7 to the non-working or collapsed position shown in Figure 1. The arm 17 adjacent its point of union with ball 14 is preferably made of a size so that when member 18 is in fully collapsed, non-working position, as shown in Figure 2, it will, along a portion of its length, extend between and be engaged by the walls of the recess or slot 19 thereby locking the member 18 against accidental displacement from its collapsed or non-working position.

In order to move member 18 from non-working to working position it is only necessary to raise member 18 slightly, thus causing rotation of ball 14 to disengage arm 17 from the recess or slot 19, at which time the parts will be in the relative position shown in Figure 3, from which position member 18 may be moved into working position by being rotated through approximately 180° in either clockwise or counter-clockwise direction, whereupon the tongue portion 20a will again seat in the recess or slot 19 thereby causing member 18 to be again positioned in working position, and locked against displacement except in an upward direction to initiate the return of member 18 from working position to fully collapsed non-working position.

In its collapsed or non-working position the device is adapted to occupy a minimum of space. It may be very quickly and readily moved into working position when desired. For example, in the specific embodiment of the invention illustrated herein the member 10 may be utilized as a wall bracket and secured to a wall, such for example as the wall of a lavatory and the member 12 may be utilized as a folding or collapsible shelf which is adapted to lie flat against the wall, out of the way, when not in use, and which may be readily positioned for use, and employed as a shelf, as for example for supporting toilet articles and the like. Many obvious applications of the device will suggest themselves, such for example as the employment of the device where space is very limited as for example in a train or plane sleeping room or lavatory.

It will thus be seen that there has been provided by this invention an article in which the various objects hereinabove set forth together with many thoroughly practical advantages are successfully achieved. As various possible embodiments might be made of the mechanical features of the above invention and as the are herein described might be varied in various parts, all without departing from the scope of the invention, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

What I claim is:

1. Support means comprising a bracket having two surfaces separated to receive a ball between them, one of said surfaces being cut away to permit a portion of said ball to project outwardly of said cut away surface, said cut away surface also having a slot extending radially from the cut out through which the ball projects, a member to be supported, a ball connected with said member and rotatably engaged between said surfaces and protruding through said cut out, and a projection on said ball adapted in one position of the ball to seat in said slot and to thereby limit rotation of said ball from one position of the ball while permitting rotation of the ball in a plane 90° removed from said first plane.

2. Support means comprising a bracket having front and rear surface portions which are separated to receive a ball between them, a ball rotatably engaged between said surfaces, said front surface having a cut away portion aligned with said ball permitting a portion of the ball to project beyond said surface, a member to be supported connected to the ball, a clover leaf projection protruding from the portion of the surface of the ball which projects beyond said front surface, said front surface having means adapted to engage said projection, when the ball is rotated in one plane, to thereby limit rotation of the ball except in a direction to disengage said projection, without preventing rotation of the ball through 360° from an unlocked position in a plane at right angles to said plane.

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