May 5, 1931. F. L. CASPER 1,803,545

TABLE LEAF SUPPORT

Filed March 14, 1929

Fig. 1.

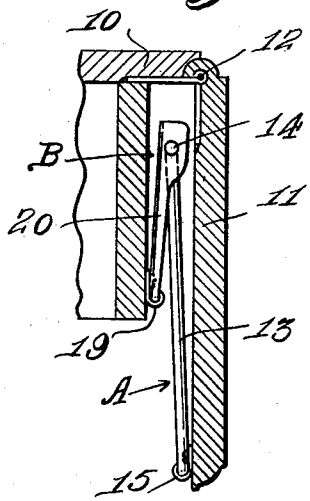


Fig. 2.

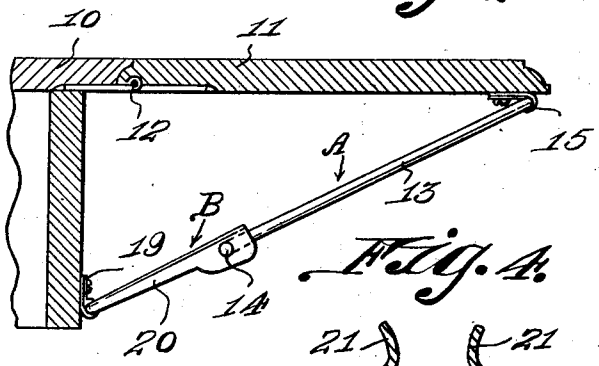


Fig. 4.

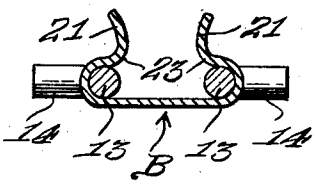


Fig. 3.

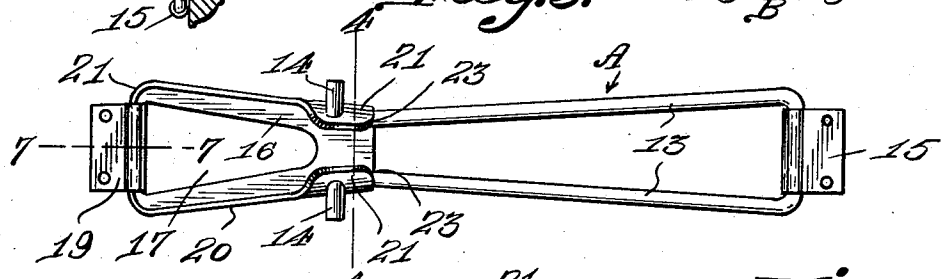


Fig. 5.

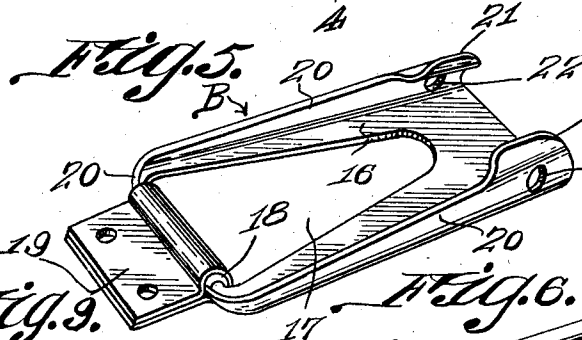


Fig. 7.

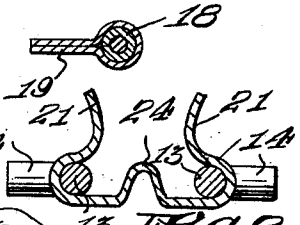


Fig. 9.

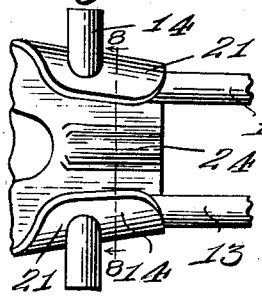


Fig. 6.

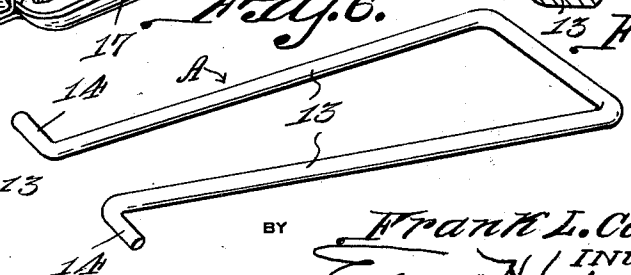


Fig. 8.

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UNITED STATES PATENT OFFICE

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TABLE-LEAF SUPPORT

Application filed March 14, 1929. Serial No. 347,092.

The present invention comprehends the provision of a collapsible brace for a hingedly mounted member, such as a table leaf extension or the like, and its general application, wherever found useful or desirable is contemplated by the claims.

The invention has for its chief object a brace construction for the above mentioned purpose, including companion members which are automatically and effectively latched in end to end relation for use, and which can only be collapsed or folded by force in one direction, thereby absolutely eliminating possibility of accidental displacement or collapsing of the support under any and all conditions.

It is my purpose to construct a brace of the above mentioned character, which can be manufactured at a nominal cost, comprising but few parts, and yet which brace possesses maximum strength and durability.

Another and important object of the invention resides in providing one of the companion members with a stop to limit the inward movement of either or both of the limbs of the other companion member, while said members are being extended for use, or collapsed, and thereby prevent casual derangement or separation of said members under any and all conditions.

The nature and advantages of the invention will be better understood when the following detail description is read in connection with the accompanying drawing, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawing forming part of this application like numerals of reference indicate similar parts in the several views and wherein:

Figure 1 is a fragmentary sectional view of a table showing the hinged member folded in a vertical position with the brace collapsed.

Figure 2 is a similar view showing the hinged member of the table extended, and the companion members of the brace arranged in end to end relation.

Figure 3 is a bottom plan view of the brace.

Figure 4 is a sectional view on line 4—4 of Figure 3.

Figure 5 is a perspective view of one member of the brace.

Figure 6 is a similar view of the other member of the brace.

Figure 7 is a sectional view on line 7—7 of Figure 3.

Figure 8 is a transverse sectional view through Figure 9.

Figure 9 is a fragmentary plan view of a modified construction.

The invention for the purpose of illustration is shown in connection with a table leaf extension, although as above stated, its use with other hingedly mounted members wheresoever found or desirable is contemplated by the claims. In the drawing 10 represents a table while the leaf extension thereof is indicated at 11 and hingedly mounted as at 12. The collapsible brace constituting the subject matter of the present invention comprises two companion members constructed and associated so that said members are automatically and effectively latched when arranged in end to end relation for use, and capable of being easily and quickly unlatched by force in one direction.

The member A includes spaced limbs 13 terminating to provide offset extremities 14, and while this member may be formed from any suitable material, it is preferably formed from a single length of wire into the configuration illustrated in Figure 6, possessing the necessary or desired degree of resiliency for a proper functioning of the brace in the manner to be hereinafter described. The member A is pivotally mounted in a suitable bracket 15 secured to the under side of the table leaf 11 as illustrated.

The member B may also be constructed from any suitable material, but is preferably stamped from a single blank of material into the shape or configuration illustrated in Figure 5. While the member B may vary in design, it is preferably of triangular contour in plan as illustrated, the body 16 of the member being provided with an opening of similar contour 17 which extends throughout the major portion of the length of the member. A part of the body portion is rolled upon itself as at 18, to provide the member

B with a cross member substantially cylindrical in cross section at its widest end, and which member is pivotally received within a suitable bracket 19 adapted to be secured to the adjacent side of the table 10. The member B is formed with flanges at two sides and one end thereof, the flange 20 at the end meeting the rolled part 18 of the body portion in the formation of the cross member above referred to. The flanges 20 at the sides of the member B are tapered, increasing in width toward the small end of the member, and from an appropriate point in their length, the flanges 21 are curved toward each other to provide channels for the reception of the adjacent limbs 13 of the member A. The flanges 21 are formed with aligned openings 22 which intersect the channels above referred to, and the offset extremities 14 of the member A are both pivotally and slidably received by these openings. The flanges 21 are also extended to provide spaced cam-like surfaces 23 located at opposite sides of each openings 22 which cooperate with the adjacent limbs 13 of the member A, whereby the companion members are automatically and effectively latched when moved in end to end relation, and quickly and conveniently unlatched by force in one direction.

It will be noted upon inspection of Figures 3 and 4, that the offset extremities 14 of the member A pass through openings in the member B directly beneath the cam-like surfaces 23, and that when the companion members are arranged in end to end relation, the limbs 13 of the member A are received by the channel-like portions of the member B resting upon the adjacent end of the body of said member B. When the hinged member 11 is in its lowered or folded position, the brace is collapsed, and the companion members assume the position shown in Figure 1. When the table leaf extension 11 is swung outwardly to a horizontal position, the companion members of the brace are arranged in end to end relation, and incident to the pivotal movement of the members A and B at their point of connection with each other, the limbs 13 of the member A pass over the cam-like surface 23, the resiliency of the limbs 13 allowing the latter to move toward each other, until they pass off the cam-like surfaces, whereupon the limbs 13 snap into the channel-like portions of the member B. When the parts are arranged in this relation as illustrated in Figure 2, the brace can not be accidentally displaced or collapsed by any amount of weight or pressure exerted upon the extension 11, nor by careless handling of the table or other article of which the hinged member 11 forms part. In other words the construction provides a brace possessing maximum strength and durability at the point of connection between the companion members, when the latter are arranged in end to end relation for use, and the brace can only be collapsed to permit folding of the extension 11, by force against the brace in an upward direction. When this force is applied the joint between the members A and B is broken, the cam-like surfaces 23 again moving across the limbs 13 of the member A, moving them toward each other until they pass off the cam-like surfaces, whereupon they are allowed to spread or separate as the members A and B assume folded positions substantially parallel.

In Figures 8 and 9 I have illustrated a modified construction, wherein means is provided to prevent casual derangement or separation of the companion members under any and all conditions. For instance, when the companion members A and B are extended into end to end relation for use, or while being collapsed, the limbs 13 of the member A move toward each other while passing over the cam-like surfaces 23, and if for any reason one of the limbs would not release easily, the other limb might move to such extent to separate the offset extremity thereof from the member B. In order to obviate any casual separation of the parts, I provide a means for limiting the inward movement of the limbs 13 of the member A, while the members are being either extended or collapsed as above stated. While various constructions of means may be employed for this purpose, I have illustrated in the specific embodiment of the invention disclosed, a stop 24 carried by the companion member B and located between the limbs 13 of the member A, so that the inward movement of either or both limbs is limited. While the stop 24 can be attached to the member A in any suitable manner, it preferably forms an integral part of the member B, the body portion 16 thereof being stamped upwardly to form the stop as clearly shown in Figures 8 and 9.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily understood, I desire to have it known that I do not limit myself to what is herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What is claimed is:

1. The combination with a hingedly mounted member and its support, of a brace comprising companion members pivotally mounted on said hinged member and support, one of said brace members having spaced resilient limbs terminating to provide offset extremities, the other member having openings to both slidably and pivotally receive said offset extremities, and spaced cam-like surfaces located at opposite sides of each opening and cooperating with said limbs, whereby said members are effectively latched when

moved in end to end relation, and adapted to be unlatched by force in a direction perpendicularly to said offset extremities.

2. The combination with a hingedly mounted member and its support, of a brace comprising companion members pivotally mounted on said hinged member and support, one of said brace members having spaced resilient limbs terminating to provide offset extremities, the other of said brace members being stamped from a single piece of material and having openings to both pivotally and slidably receive said offset extremities, and spaced cam-like surfaces formed on said second mentioned member located at opposite sides of each opening and cooperating with said limbs, whereby said members are effectively latched when moved into end to end relation, and adapted to be unlatched by force applied perpendicularly to said offset extremities.

3. The combination with a hingedly mounted member and its support, of a brace comprising companion members pivotally mounted on said hinged member and support, one of said brace members having spaced resilient limbs terminating to provide offset extremities, the other of said brace members being stamped from a single blank of material and including a body portion having longitudinal flanges, each flange being extended to provide spaced cam-like surfaces, and provided with an opening located between said surfaces to slidably and pivotally receive said offset extremities, whereby said limbs cooperate with said cam surfaces to effectively latch said members when moved in end to end relation, and require force perpendicularly to said offset extremities to unlatch said members.

4. The combiantion with a hingedly mounted member and its support, of a brace comprising companion members pivotally mounted on said hinged member and support, one of said brace members having spaced limbs terminating to provide offset extremities, the other of said brace members being stamped from a single blank of material and including a body portion having longitudinal flanges, said flanges being curved toward each other adjacent one end of the body portion to provide channels, and each having an opening intersecting the channel to both slidably and pivotally receive the offset extremities of the adjacent limb, and said curved portions of said flanges being extended to form spaced cam-like surfaces located at opposite sides of each opening and cooperating with said limbs, whereby said members are effectively latched when moved into end to end relation, and adapted to be unlatched by force applied perpendicularly to said offset extremities.

5. The combination with a hingedly mounted member and its support, of a brace comprising companion members pivotally mounted on said hinged member and support, one of said brace members having spaced resilient limbs terminating to provide offset extremities, the other of said brace members being stamped from a single piece of material and having openings to both pivotally and slidably receive said offset extremities, spaced cam-like surfaces formed on said second mentioned member at opposite sides of each opening and cooperating with said limbs, whereby said members are effectively latched when moved into end to end relation, and adapted to be unlatched by force applied perpendicularly to said offset extremities, and said second mentioned member being formed with a projection constituting a stop to limit the inward movement of either or both of said limbs for the purpose specified.

In testimony whereof I affix my signature.

FRANK L. CASPER.