July 17, 1928. 1,677,620

E. W. CUMMINGS

FOLDING BRACE

Filed Aug. 23, 1926

Fig. 1.

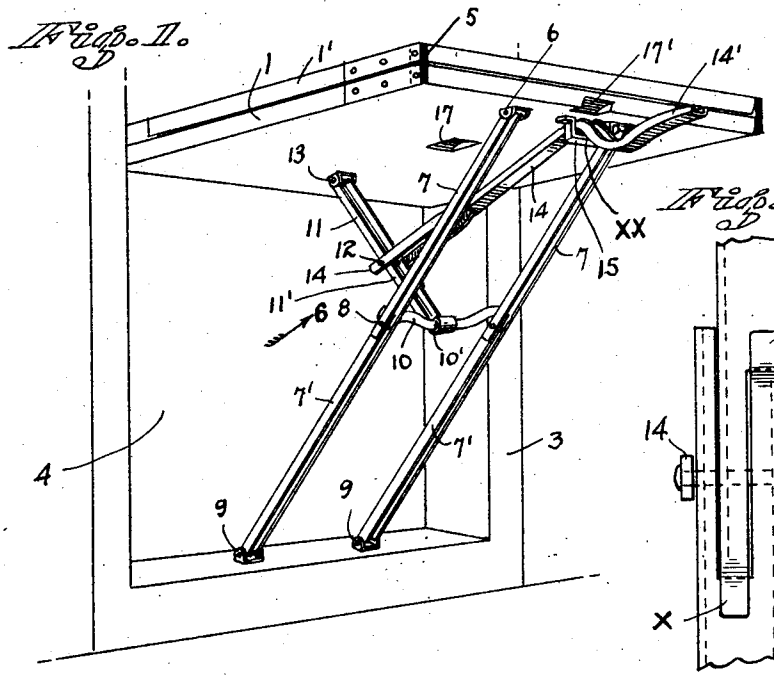



Fig. 2.




Fig. 3.

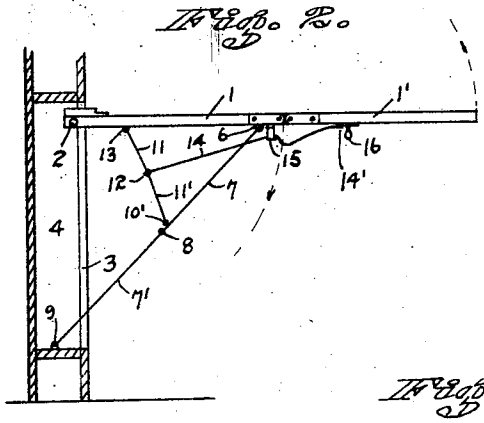



Fig. 4.

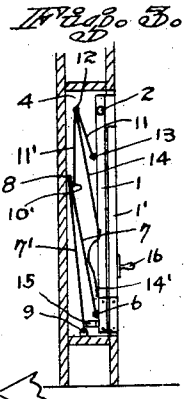



Fig. 4a.

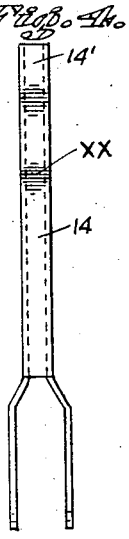
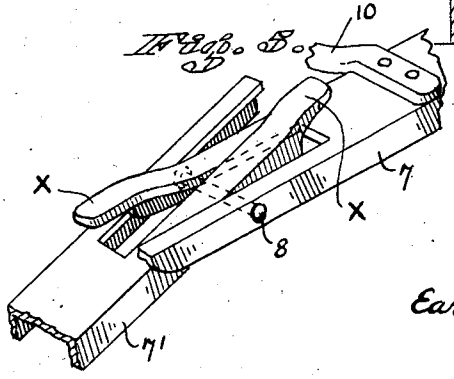



Fig. 5.




INVENTOR.
Earle W. Cummings
BY Miller & Boykan
ATTORNEYS.

Patented July 17, 1928. 1,677,620

# UNITED STATES PATENT OFFICE.

EARLE W. CUMMINGS, OF SANTA BARBARA, CALIFORNIA, ASSIGNOR OF ONE-HALF TO SANTA BARBARA LUMBER COMPANY, OF SANTA BARBARA, CALIFORNIA, A CORPORATION OF CALIFORNIA.

## FOLDING BRACE.

Application filed August 23, 1926. Serial No. 130,894.

This invention relates to folding braces as used with folding service boards such as wall tables, folding or hinged ironing boards, wall benches and the like and has for its object a brace of the strut type which tho of light construction is more rigid than others, gives a better support to the outermost of the service board section when the same is outfolded to horizontal extension, is firmly locked against displacement when in use, and which is easily operated. Other objects will appear in the following description.

In the drawings Figure 1 is a perspective view showing the under-side of a folding wall table with my brace in position and with the outermost section of the folding table folded back on top of the inner section or the section pivoted at one end to the wall or cabinet set therein or attached thereto.

Figure 2 is a reduced size side view with board extended and shows the brace in diagrammatic form to illustrate more clearly the pivotal relation of its parts.

Figure 3 shows the elements of Figure 2 in folded position within the cabinet or wall.

Figure 4 is a plan view of the bracing arm for the outermost section of the board.

Figure 5 is an enlarged view in perspective showing the stop joint of the folding struts, and Figure 6 is a plan view taken in direction of the arrow in Figure 1 showing the similar joint of the toggle links which brace the struts, and it illustrates the offset relation of the link sections and pivot passing through the flanges thereof.

In further detail the drawings show a folding service board (in this particular instance a table) having an inner section 1 pivoted at one end as at 2 to the wall or cabinet 3 forming a recess 4 in the wall, and at the other end at 5 to an outer section 1′ adapted to fold over the inner section as indicated in Figure 1.

To the under-side of the inner section 1 is pivoted at 6 the upper ends of a pair of folding struts comprising the sections 7 and 7′ pivoted to one another at 8 and to the wall or lower end of the cabinet at 9.

Secured to and spacing the upper sections 7 of the struts is a transversely extending bar 10 to which is pivoted at 10′ the lower end of section 11′ of toggle links comprising the sections 11′ and 11, pivoted together at 12 and the upper end of section 11 being pivoted at 13 to the under-side of the board at a point adjacent the wall so that the toggle links will extend therefrom at an angle to brace the struts.

The sections of the struts and toggle links are preferably made of channel iron with ends notched and fitted one within the other in offset relation as indicated in Figures 5 and 6 with the pivot pins 8 and 12 passing through the legs or side flanges of the metal, while the ends of the web are extended into fingers as at X so as to overlie the web of the adjacent member and form a stop to the pivotal movement of the members when in bracing position. The fingers X of the toggle links 11 and 11′ being preferably bent outwardly sufficient to permit the joint going slightly beyond the center as indicated in Figure 2 of the drawings.

Also embracing the pin 12 of the toggle links is an auxiliary bracing arm 14 extending upwardly at an angle for support in a bracket 15 secured to the under forward end of inner board section 1 and projecting beyond the bracket to form a support at 14′ for the outer board section 1′, the supporting end of the arm being arranged to come against a metal plate forming part of a handle 16 secured to the outer board for lifting the folded boards from the cabinet space.

This auxiliary arm 14 is also preferably of channel iron construction, split at the lower end where it engages the pin 12 and formed at XX in such a manner that it will seat in the bracket 15 against rearward withdrawal and thus lock the toggle links slightly beyond their dead center.

To release the toggles and collapse the parts it is first necessary to fold the board section 1′ over the section 1, and to then lift and push inwardly on the end 14′ of the arm, and which will collapse the toggle links and struts so that the folded boards may swing downwardly against the wall or into the cabinet recess to the position indicated in Figure 3.

Upon lifting the board by means of the handle 16 from folded position in the cabinet

all the bracing elements are automatically thrown into locked bracing position as shown in Figure 1.

When designing the parts for upmost compactness the under-side of board section 1 may be notched as at 17 and 17′ for clearance of parts of arm 14.

While there has been considerable detail in the above description, it is all such construction which aids in making my brace a very satisfactory one in use, and I therefore include such detailed structure in my appended claims.

I claim:

1. In a folding article of the character described, a folding strut brace comprising two channel sections arranged in endwise mortised relation and transversely pivoted through the legs of the channels, the extreme ends of the webs of both sections overlying the webs of the opposed section when the sections are unfolded to bracing position.

2. In a folding article of the character described, a folding strut brace comprising two channel sections arranged in endwise mortised relation and laterally offset whereby the legs of one channel section lie to the same sides of the respective legs of the other channel section, the legs of the two sections transversely pivoted together, and the end of the web of one section being offset to lie upon the web of the other section when the sections are unfolded to bracing position.

3. A folding service board of inner and outer sections hinged together and provided with a folding strut brace pivoted to the under-side of the inner board, an auxiliary brace pivotally extending from said strut to the under-side of the inner board, and an arm pivoted to said auxiliary brace extending forwardly beyond the inner board for supporting the outer section thereof, a depending bracket on the forward portion of the inner board slidably sustaining said arm, and means on said arm engaging the bracket against sliding when the outer section of the board is supported on said arm, and whereby the bracing system is locked and releasable only upon lifting the outer board.

EARLE W. CUMMINGS.