April 16, 1940. A. ZIEMAN 2,197,286

HINGE AND BRACE FOR FOLDING TABLE LEGS

Filed April 4, 1939

Fig. 1.

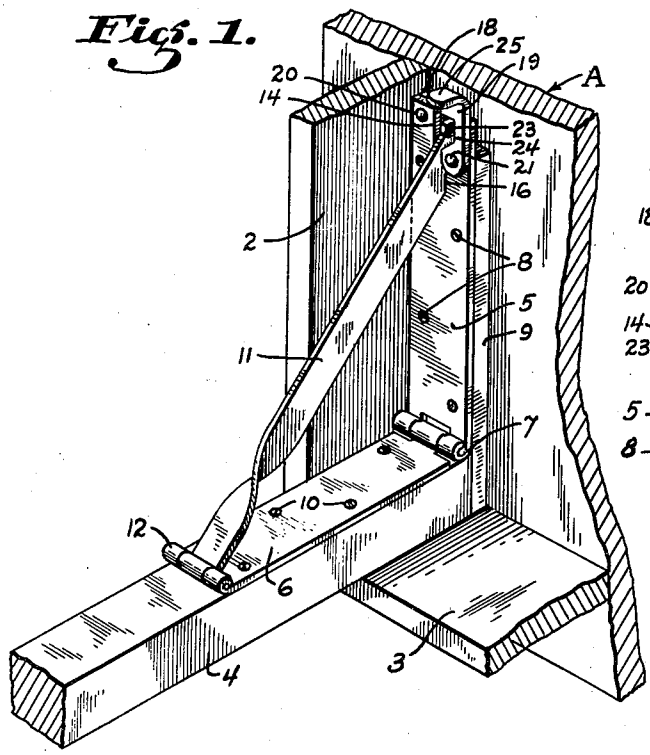


Fig. 2.

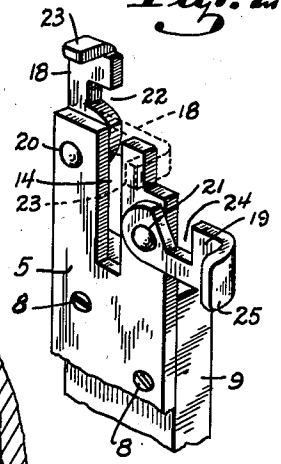


Fig. 3.

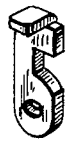


Fig. 4.

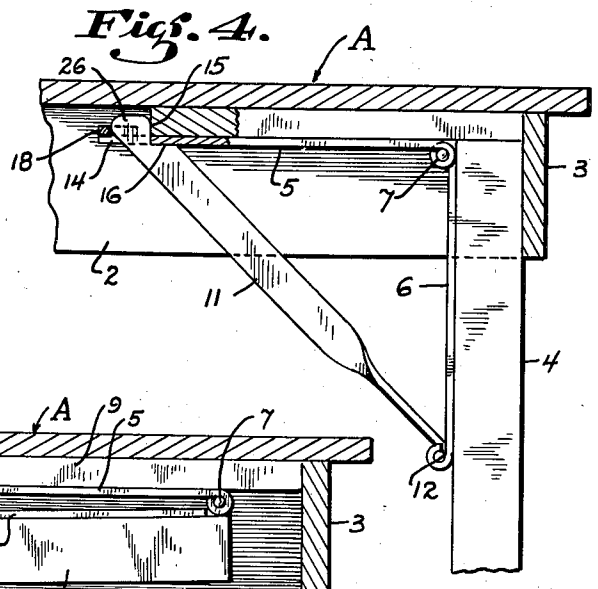


Fig. 5.

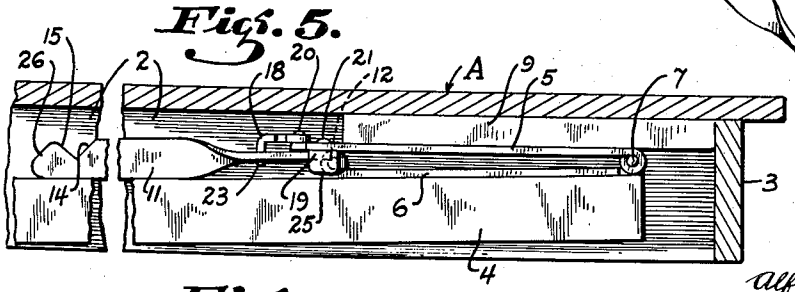
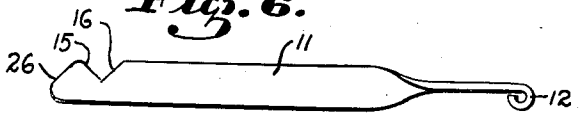


Fig. 6.



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HINGE AND BRACE FOR FOLDING TABLE LEGS

Alfred Zieman, San Francisco, Calif.

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3 Claims. (Cl. 16—138)

This invention relates to a combination hinge and brace for securing the folding legs of tables and other articles of furniture and the like in extended position.

Many articles of manufacture, such as card tables, display stands, stepladders, etc., are provided with folding legs, and toggle links or braces of varying types are employed to secure the legs when in extended position. Most of the braces and other devices employed are not altogether dependable, as they are too easily or accidentally released, and in addition thereto the braces are too flimsy to provide sufficient rigidity.

The object of the present invention is generally to improve and simplify the construction and operation of hinges and braces of the character described; to provide a brace which can not be accidentally or easily released; to provide a brace which insures both stability and rigidity of the legs when extended; and further and more particularly stated, to provide a metal hinge for securing the leg to a table or other article of manufacture to which the leg is applied, and in addition thereto, a rigid brace which is hingedly secured to one leaf of a metal hinge, and provided with means for securing the other end of the brace to the other leaf of the metal hinge when the leg is swung to extended position.

The invention is shown by way of illustration in the accompanying drawing, in which

Fig. 1 is a perspective view, partially broken away, of the inside of one corner of a table, said view showing the folding leg in extended position, and said view also showing the brace secured in bracing position;

Fig. 2 is an enlarged perspective view of the outer end of one leaf of the hinge, said view particularly showing the two latches whereby the free end of the brace is secured in bracing position;

Fig. 3 is a perspective view of the latch indicated at 18;

Fig. 4 is a sectional longitudinal view of one end of a table, showing the leg extended and the brace in bracing position;

Fig. 5 is a sectional view similar to Fig. 4 showing the leg folded and under the table; and

Fig. 6 is a side elevation of the brace.

Referring to the drawing in detail, and particularly to Fig. 1, A indicates a portion of a table top, 2 and 3 indicate portions of one side and end of a table frame, and 4, a table leg.

Four legs are usually provided for a table, but as the construction and operation of the hinges and braces employed in connection with all the legs are identical, the illustration of one leg together with the hinge and brace applied thereto is thought sufficient. The leg illustrated in the present instance is hingedly secured to the table by a hinge comprising two leaf sections 5 and 6, which are connected by a pintle 7. The leaf 5 is secured to the under side of the table top by screws 8 or the like, a spacer block 9 being interposed between the leaf and the table top for purposes hereinafter to be described. The other leaf 6 of the hinge is secured to the leg 4 by screws 10, and the leg may accordingly be extended as shown in Figs. 1 and 4, or folded in under the table as in Fig. 5.

When the leg is extended it must be braced and positively secured to insure stability and rigidity. This is accomplished by the use of a brace arm 11 which is hingedly secured as at 12 to the outer end of the hinge leaf 6. The opposite end of the brace is received in a slot 14 formed in the outer end of the hinge leaf 5, and a pair of shoulders are formed on the brace as at 15 and 16. The shoulder 15 limits inward movement of the brace in the slot 14, while the shoulder 16 engages the lower surface of the leaf 5 and forms a support or seat for the brace. When the brace is inserted in the slot, means must be provided for securing it against accidental release or removal, as such release might cause collapse of the table or other fixture to which the legs are applied. Two latches are employed for this purpose, one latch to engage and force the brace into the slot, and the second latch to engage and secure the first latch against release. These latches are shown at 18 and 19. Both latches are pivotally secured to the outer end of the leaf 5, latch 18 being pivoted as at 20 at one side of the slot while the latch 19 is pivoted as at 21 on the opposite side of the slot. Latch 18 is notched as at 22 to straddle and engage the brace when swung crosswise of the slot, and it is retained and secured in this position by a lug 23 which is engaged by the notched portion 24 of the latch 19, said latch 19 being provided with a lug 25 whereby it may be readily grasped to swing it into and out of engagement with the lug 23.

The purpose of the spacing block 9 should now be obvious; however, suffice it to say that it provides space to permit free movement and accessibility of the two latches employed, and it also provides space for the outermost end 26 of the brace arm 11.

The combination hinge and brace is here illustrated as applied to a folding table leg. It should, however, be understood that it is equally applicable to the legs of step-ladders, display stands,

folding cots, and other articles; and other uses and applications will obviously present themselves. A folding leg applied in this manner is, first of all, rigidly secured to the article to which it is applied; that is, the leaf **5** is for instance secured to the table while the other leaf **6** is applied to the folding leg or member employed. The brace arm proper is hingedly secured at one end to the leaf **6**, and the other end of the brace arm is inserted in the slot **14** and there secured by the two latches **18** and **19**.

The structure is simplicity itself, all parts being connected; that is, the hinge proper serves the purpose of a hinge, but in addition thereto it functions as a support for the brace arm and the latches whereby the brace arm is secured. No parts can be lost, as all are connected pivotally to the leaves of the main hinge. Wear and tear is reduced to a minimum, as all parts employed are made of metal and the usual pintle pins connect them.

In actual operation, if the leg or hinged member is extended as shown in Figs. 1 and 4, and it is desired to release the brace and fold the leg, for instance, under the table, it is only necessary to grasp the lug **25** so as to swing the latch **19** out of engagement with the lug **23** of the latch **18**. This latch is then free to swing away from the brace arm by the means of the lug **23**. The moment the brace arm is released it will fall by gravity into a position parallel with the leg, and the leg may then be swung in towards the table, where it will be secured by means of a spring latch or the like, not shown. Due to the fact that all the parts employed are made of metal, and that they are rigidly secured to the parts they connect, it is obvious that stability and security are obtained. Any danger of the brace becoming released accidentally or otherwise is obviously out of the question, as the brace is locked when applied by the two latches employed.

While certain features of my invention have been more or less specifically described, I nevertheless wish it understood that changes may be resorted to within the scope of the appended claims, and that the materials and finish of the various parts may be in accordance with the desire of the maker.

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

1. A combination hinge and brace for folding parts comprising a metal hinge having first and second pivotally connected leaf sections, a brace member hingedly secured at one end to the first leaf section, said second leaf section having a slot formed in its outer end to receive the opposite end of the brace member, a shoulder providing a seat on the brace member engageable with an adjacent face of the second leaf section when the end of the brace member is positioned in the slot, and releasable pivot latch means for securing the brace against removal from the slot.

2. A combination hinge and brace for folding parts comprising a metal hinge having first and second pivotally connected leaf sections, a brace member hingedly secured at one end to the first leaf section, said second leaf section having a slot formed in its outer end to receive the opposite end of the brace member, a shoulder providing a seat on the brace member engageable with an adjacent face of the second leaf section when the end of the brace member is positioned in the slot, a latch member pivotally mounted on the outer end of the second leaf section and engageable with the brace member to secure the shoulder in engagement with the face of the second leaf section, and a second latch member engageable with the first latch member to secure the latter against release.

3. A combination hinge and brace for folding parts comprising a metal hinge having a pair of pivotally connected leaf sections, a brace member hingedly secured at one end to one of said leaf sections, the outer end of the other leaf section being bifurcated to receive the other end of the brace member, a shoulder on the brace member engageable with an adjacent face of said latter leaf section when the end of the brace member is positioned between the furcations of said latter leaf section, a latch pivoted to one of the furcations of the latter leaf section and movable from a position out of engagement with the outer end of the brace member to a position wherein its medial portion engages said outer end of the brace member, and a second latch pivoted to the other furcation of the latter leaf section and movable from a position out of engagement with the first latch to a position of engagement with the outer end of the latter when the latter is in engagement with the brace member.

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