W. A. NOACK.

DISAPPEARING STRUCTURE.

APPLICATION FILED NOV. 4, 1920.

1,412,367.

Patented Apr. 11, 1922.

FIG. 2.

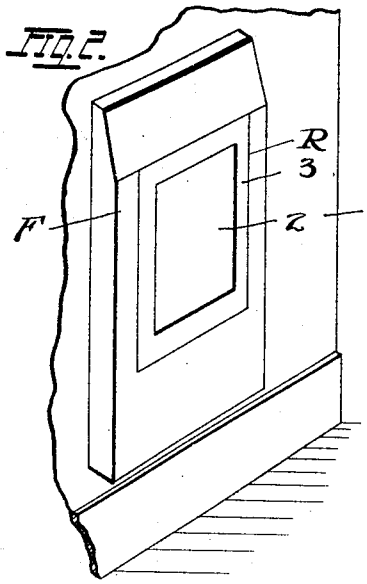


FIG. 1.

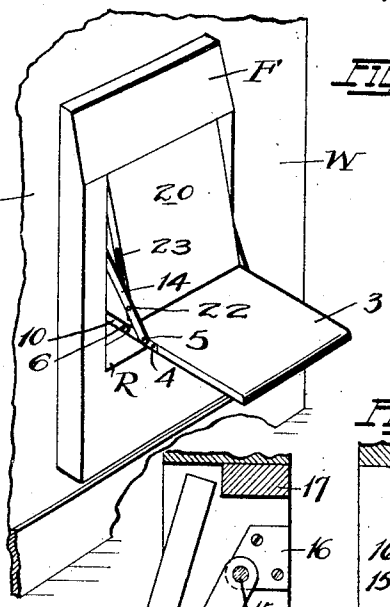


FIG. 4.

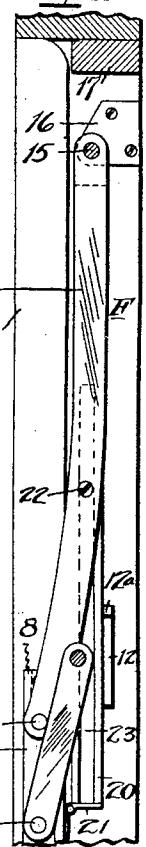


FIG. 5.

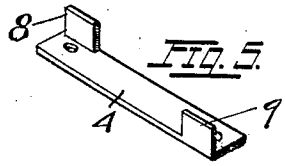


FIG. 3.

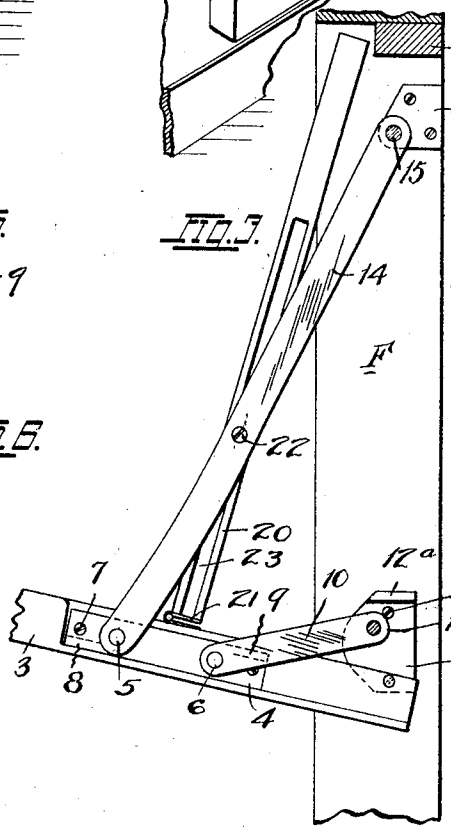
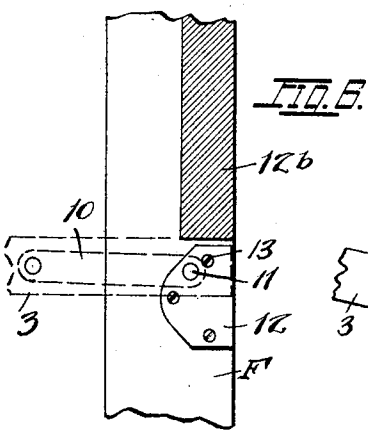


FIG. 6.



WITNESS

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UNITED STATES PATENT OFFICE.

WILLIAM A. NOACK, OF ALAMEDA, CALIFORNIA, ASSIGNOR OF ONE-HALF TO MURPHY DOOR BED COMPANY, OF SAN FRANCISCO, CALIFORNIA, A COPARTNERSHIP CONSISTING OF WILLIAM L. MURPHY AND WILLIAM K. WHITE.

DISAPPEARING STRUCTURE.

1,412,367. Specification of Letters Patent. Patented Apr. 11, 1922.

Application filed November 4, 1920. Serial No. 421,762.

To all whom it may concern:

Be it known that I, WILLIAM A. NOACK, a citizen of the United States, and a resident of Alameda, county of Alameda, and State of California, have invented a new and useful Disappearing Structure, of which the following is a specification.

The present invention relates to disappearing structures such as wall or closet shelves, tables, ironing-boards, and seats with or without backs.

It is an object of the present invention to provide an extremely simple, practicable and substantial form of disappearing structure involving an element or member movable from a concealed position to a serviceable horizontal position. It is a further object of the invention to provide a disappearing shelf or table-like member that is not only very easily operable, but which is so mounted and constructed and is provided with such hardware and mounting devices as will secure the necessary degree of strength particularly when the unfolded or extended member is to be subjected to heavy loads.

It is an object of the invention also to provide hardware equipment for disappearing members enabling the ready mounting of the disappearing members in any suitable cabinet, closet or wall structure with great facility and which hardware also may include means for limiting the movement of the movable members from one position to another.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be made manifest in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood that it is not intended to limit the invention to the embodiment shown by the said drawings and description as variations may be adopted within the scope of the invention as set forth in the claims.

Referring to the drawings:

Figure 1 is a perspective view of the device constructed in the form of a disappearing chair having a folding back.

Fig. 2 is a perspective view of a wall structure showing the chair in concealed position.

Fig. 3 is a detail sectional view and partial edge elevation of the extended seat.

Fig. 4 is a sectional view of the seat and back in the concealed position.

Fig. 5 is a perspective view of the re-enforcing tenon side strip.

Fig. 6 is a detail sectional view showing a modified form of motion limiting stop.

The present invention consists of a folding or disappearing member substantially in the form of a leaf that may serve as a desk, table, shelf, ironing-board or seat as may be desired and will be constructed in dimensions accordingly, and the invention further consists of means including hardware elements that may be readily attached to the folding member and to the structure upon which it is to be supported which latter may consist of a portable or stationary cabinet, a wall closet, or a wall or panel recess. The invention further consists of constructing the folding device so that it may serve in its concealed or folded position as a closure for the recess in which it is disposed when not in use.

The illustrated embodiment of the invention typifies a disappearing seat with a folding back, the whole being mounted upon a convenient wall or partition having a slight or shallow, vertical recess into which the back and the seat member may be folded to vertical position.

The wall or partition W is provided with a recess R that may be surrounded with a suitable frame F to harmonize with the ornamental front 2 of a seat member 3 when the latter is in the concealed or folded position, Fig. 1.

The folding member or seat 3 has countersunk in its side edges, adjacent the rear corners, side pivot strips 4, metal pivot pins 5 and 6 thereof being provided for attachment of suitable supporting links to be described. Each side strip 4 while being countersunk in the edge of the seat 3 is secured by screws 7 and is provided with lateral angular tenons 8 and 9 to fit mortises in the sides of the seats for the purpose of greatly increasing the load carrying capacity of the seat. The lugs 8 and 9 are

shown as disposed at diagonally opposite corners of the side strip 4 and thus embrace between themselves a very considerable thickness or portion of the longitudinally extending stock of the seat.

To the pivot pins 6 are attached short side links 10 whose opposite ends are mounted on fixed pivots 11 provided on suitable supporting portions at the sides of the recess R of the cabinet or wall structure. Preferably the pivot pins 11 are provided on substantial pivot plates 12 that may be countersunk in the uprights at the sides of the recess and secured by screws 13. On the pivots 5, provided on the strips 4 are attached the lower ends of side links 14 whose upper ends are mounted on pivots 15 provided in pivot plates 16 screwed to the uprights at the sides of the recess R.

The lower ends of the side links 14 are bowed slightly forwardly so that when the seat 3 is thrown to the upright position and engages with a stop 17 the outer surface or bottom of the seat will properly aline with the frame F of the recess and stand in a substantially vertical position. By disposing the pivots 15 of the upper ends of the links 14 in a vertical plane rear of the vertical plane in which the pivots 5 of the strips 4 rest the seat 3 will remain stationary in its upright position under force of gravity.

When the seat 3 is thrown to its horizontal position as shown in Fig. 3 it is carried by the links 14 whose pivots 5 are somewhat in advance of the rear transverse edge of the seat. Any suitable means may be utilized to limit the movement of the seat as it approaches the horizontal position and preferably such means comprises stop lugs 12^a extended angularly from the base of the pivot plate 12 these lugs being designed to engage the rear upper portion of the seat 3 at its horizontal position. It will therefore be seen that this hardware serves not only as a pivot carrying part but also as a stop device. However, if the plate 12 has no stop lugs then a suitable transverse piece or strip 12^b, Fig. 6, may be utilized as a stop.

While the member 3 has above been referred to as a seat it is obvious that it could be utilized as a shelf, desk, table, or ironing-board, according to its dimensions. However, when used as a seat it may be provided with a folding back 20, of suitable length and height and which is here shown as attached to the top surface of the member 3 by hinges 21 with their pivots disposed at the front portion of the back 20 so that as the seat is folded from horizontal to upright position to be concealed, the back 20 and the top of the seat move into juxtaposition. Such movement may be secured automatically with the folding of the seat 3 conveniently by control means provided on the side links 14. Such control means comprises a pivot pin or screw 22 arranged in each side link and having its end extending into a longitudinal guide-way or slot 23 in the contiguous sides of the folding back 20. It will be seen that as the seat member 3 is moved toward and from its vertical position a guide or control pin 22 will operate in the slot 23 of the sides of the back.

What is claimed is:

1. A disappearing seat, ironing-board, table or the like structure including a folding member, side-strips secured on the sides of the said member and each having longitudinally spaced tenons embedded in the said member to increase the carrying strength thereof, and pairs of side links pivotally connected to said strips.

2. A disappearing seat, ironing-board, table or the like structure, including a folding member, side strips mortised and tenoned into said member, and a pair of supporting links pivotally attached to each of said strips.

3. A disappearing seat, ironing-board, table or the like structure, including a folding member, side strips mortised and tenoned into said member, and supporting, tension links connected to each of said strips.

4. A disappearing seat, ironing-board, table or the like structure, including a folding member, a pair of suspension links at each side of the member, and brackets on which certain of said links are pivoted and having means for limiting the unfolding movement of said member at its horizontal position.

5. A disappearing seat, ironing-board, table or the like structure, including a folding member, a pair of suspension links at each side of the member, and link pivoting brackets having inturned stop lugs engageable by the rear corners of said member at its horizontal position.

6. A disappearing seat structure including a seat member, links attached at their swinging ends to and for foldingly supporting said member in open and concealed positions, and a folding back operative with the seat member, and maintained in upright position by the links only.

7. A disappearing seat structure including a seat member, means for foldingly supporting said member in open and concealed positions, and a folding back operative with the seat member and supported upright by said means, the back being covered by the seat when the latter is moved to one of its positions.

8. A disappearing seat structure including a seat member, means including pairs of suspension links for foldingly supporting said member in open and concealed positions, and a folding back hinged at its lower end to and operative with the seat member, and held upright by said means.

9. A disappearing seat structure including a seat member, suspension link means for foldingly supporting said member in open and concealed positions, and a folding back pivotally connected to the seat member, and slidingly connected to the supporting means.

10. A disappearing seat structure, including a seat member, link means supporting the said member, and a back foldingly attached at its lower end to the seat member slidingly connected to and controlled by said links its upper end being free.

11. A disappearing seat structure, including a seat member, link means supporting the said member, and a back foldingly attached at its lower end to the seat member and slidably attached to and controlled by said links.

In testimony whereof, I have hereunto set my hand.

WILLIAM A. NOACK.