

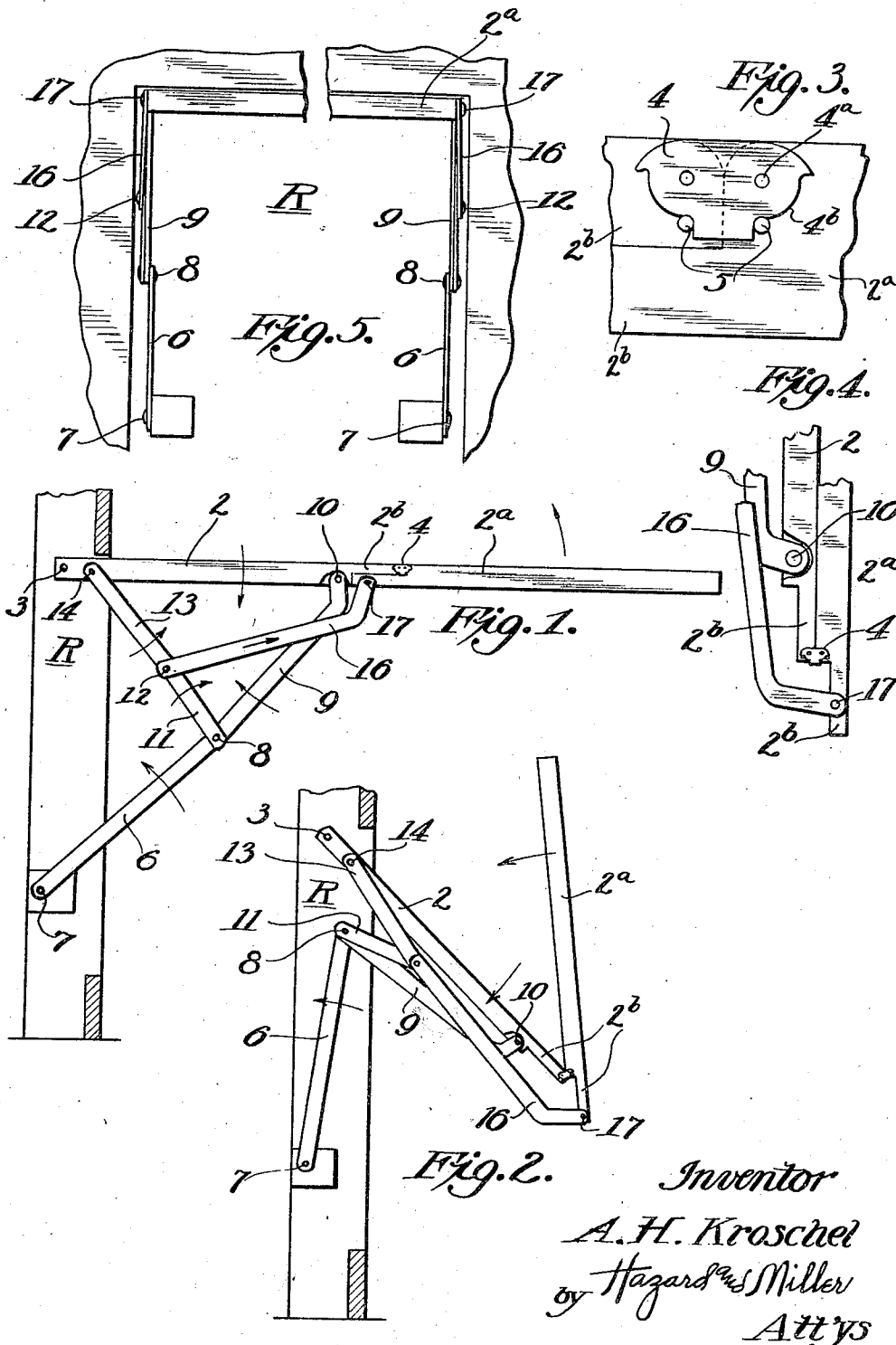
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SELF LOCKING HINGE

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SELF-LOCKING HINGE.

Application filed May 18, 1923. Serial No. 639,933.

To all whom it may concern:

Be it known that I, AUGUST H. KROSCHER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Self-Locking Hinges, of which the following is a specification.

The present invention relates to folding apparatus, and more particularly to folding tables and ironing boards adapted to be mounted in wall recesses or cabinets and to be swung from a concealed or vertical position to a horizontal, serviceable position. An object is to provide a substantial and readily operable, collapsible and extensible bracket or supported structure.

Other objects and advantages will be made manifest in the following specification of an embodiment of the invention illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of the extended board structure and a vertical section of a portion of a cabinet or wall in which the board structure is adapted to be vertically collapsed.

Fig. 2 is a side elevation of the parts in collapsing position.

Fig. 3 shows abutted ends of extended or unfolded elements forming a table or ironing board.

Fig. 4 is a side elevation of the collapsed, connected ends of the board sections and showing fragments of the collapsed bracket links.

Fig. 5 is an end elevation of the extended board.

The present invention is shown as embodying a board or table structure consisting of an inner section 2, the inner end of which is pivotally supported at 3 within a wall or cabinet recess R, in which the collapsed section 2 is adapted to hang vertically and from which it is adapted to be extended to a horizontal position, as shown in Figure 1. Attached by suitable hinge plates 4 to the outer end of the board section 2 is an outer section 2^a. The hinged sections of the board are each rebated transversely, and thus form overlapping ends 2^b when the board sections are unfolded. The hinge connection 4, of which there is one at each side of the board, consists of a plate having pivot pins 4^a, provided in the sides of the boards, and these plates have quarter

turn recesses 4^b, the end shoulders of which are adapted to engage stop pins 5, provided in the respective upper sections.

A feature of the present invention consists of a novel suspending and bracing or bracket means for supporting the board members in extended, horizontal position, and such means include sets of links, one set being arranged at each side of the board and including a lower bracket and toggle link 6, pivoted at 7 on suitable supports in the recess R, and the upper end of each link 6 is pivoted at 8 to the lower and contiguous end of an upper toggle and bracket link 9, which in turn is recessed into and pivotally connected at 10 to the outer swinging portion of the board section 2. The knuckle pivot 8 of each set of links is connected to an intermediate or folding link 11, extending inwardly and upwardly in the position of the parts in Figure 1, and being pivoted at 12 to the lower end of the suspension link 13, which is pivoted at its upper end by a pivot 14 to the rear end portion of the board 2.

It will be seen that the links 6, 9, 11 and 13 form a substantially Y-shaped bracket in the extended position, the upper arms of which are connected to the board section 2.

To lock the toggle links 6—9 and the connected links 11—13 against collapse in the extended position of the board section 2, actuating links 16 are shown as connected by the pivots 17 to the sides of the tongue portion of the outer board section 2^a so that, when this board section 2^a is tilted on the hinge connection 4 as to the board section 2, the tongue portion of the section 2^a acts as a crank or lever arm and thus swings the pivot connections 17 of the links 16 in an arc about the axis of the hinge plate 4. This swinging movement causes the link 16 to shift in the direction of the arrow and to pull the brace links 11—13 upwardly and forwardly, thus breaking their alignment, and at the same time the links 11 will break the substantial alignment of the brace or toggle links 6—9 and these will be caused to swing inwardly and upwardly, as indicated by the respective arrows.

After the link alignments have been broken and the bracing pairs of links started on a collapsing action, the board section 2 may be swung downwardly, as is clearly shown in Figure 3, with the concurrent, fur-

ther collapsing of the several pairs of brace links, as clearly shown. When the board sections are finally brought into vertical and overlapping position in the recess R, the
5 several links will occupy a relatively close and more or less parallel position, as indicated in Figure 4.

It will be seen from the above that I have provided a self-locking hinge and
10 bracket structure of extremely simple and inexpensive form, and one which provides a rigid brace and support for the extended table or ironing board sections.

In the effective, supporting position of
15 the parts, the link pivot 8 of each set passes beyond a center line running from the pivot 7 to the pivot 10, and this, therefore, prevents the links 6—9 from reversing under load and causing the link sets to collapse.

In a companion application entitled
20 "Hinge constructions for folding ironing boards and the like," I have shown, described and claimed the hinge for connecting the two board sections, and I do not
25 wish to make such claims herein.

Further embodiments, modifications and variations may be resorted to within the principle of the invention.

What is claimed is:

30 1. In combination, a foldable table or ironing board structure including a pivotally supported, inner section and an outer board section hinged to the outer end of the inner section, a pair of toggle links at each side
35 of the inner section and attached to the outer end thereof and attached pivotally to primary supports below the pivoted end of the inner section, pairs of brace links connected to the inner end of the inner section
40 and to the intermediate pivots of the toggle links, and actuating links connected to the intermediate pivots of the brace links and to the outer board section so as to be operated thereby to dis-align the extended links
45 when the board is folded from the horizontal position.

2. A table or ironing board structure comprising an inner board section having an inner end pivotally connected to the primary
50 support, an outer board section hingedly

connected to the swinging end of the inner section and adapted to be folded over flatwise upon the outer face thereof, a pair of toggle links connected to each side of the inner board section and adjacent to the
55 outer end thereof and pivoted to the primary support and at a position below the pivots of the inner section, a pair of brace links at each side of the inner board section and contiguous to the pivoted end thereof
60 and attached to the intermediate pivots of the toggle links; the links of the bracing pairs being adapted to swing substantially into alignment and thrust the links of the toggle pairs substantially into alignment
65 when the inner board section is extended into horizontal position, and actuating links attached to the outer board section and to the connecting pivots of the brace links.

3. A table or ironing board structure comprising a inner board section having an inner end pivotally connected to the primary support, and having its outer end rebated across its end face, an outer board section
70 hingedly connected to the swinging end of the inner section and adapted to be folded over flatwise upon the outer face thereof and having a projecting tongue portion matching the rebated end of the inner section, a pair of toggle links connected to
80 each side of the inner board section and adjacent to the outer end thereof and pivoted to the primary support and at a position below the pivots of the inner section, a pair of brace links attached at each side
85 of the inner board section and contiguous to the pivoted end thereof and attached to the intermediate pivots of the toggle links; the links of the bracing pairs being adapted to swing substantially into alignment and
90 thrust the links of the toggle pairs substantially into alignment when the inner board section is extended into horizontal position, and actuating links attached to the sides of the said tongue portion and to the connecting
95 pivots of the brace links.

In testimony whereof I have signed my name to this specification.

A. H. KROSCHER.