

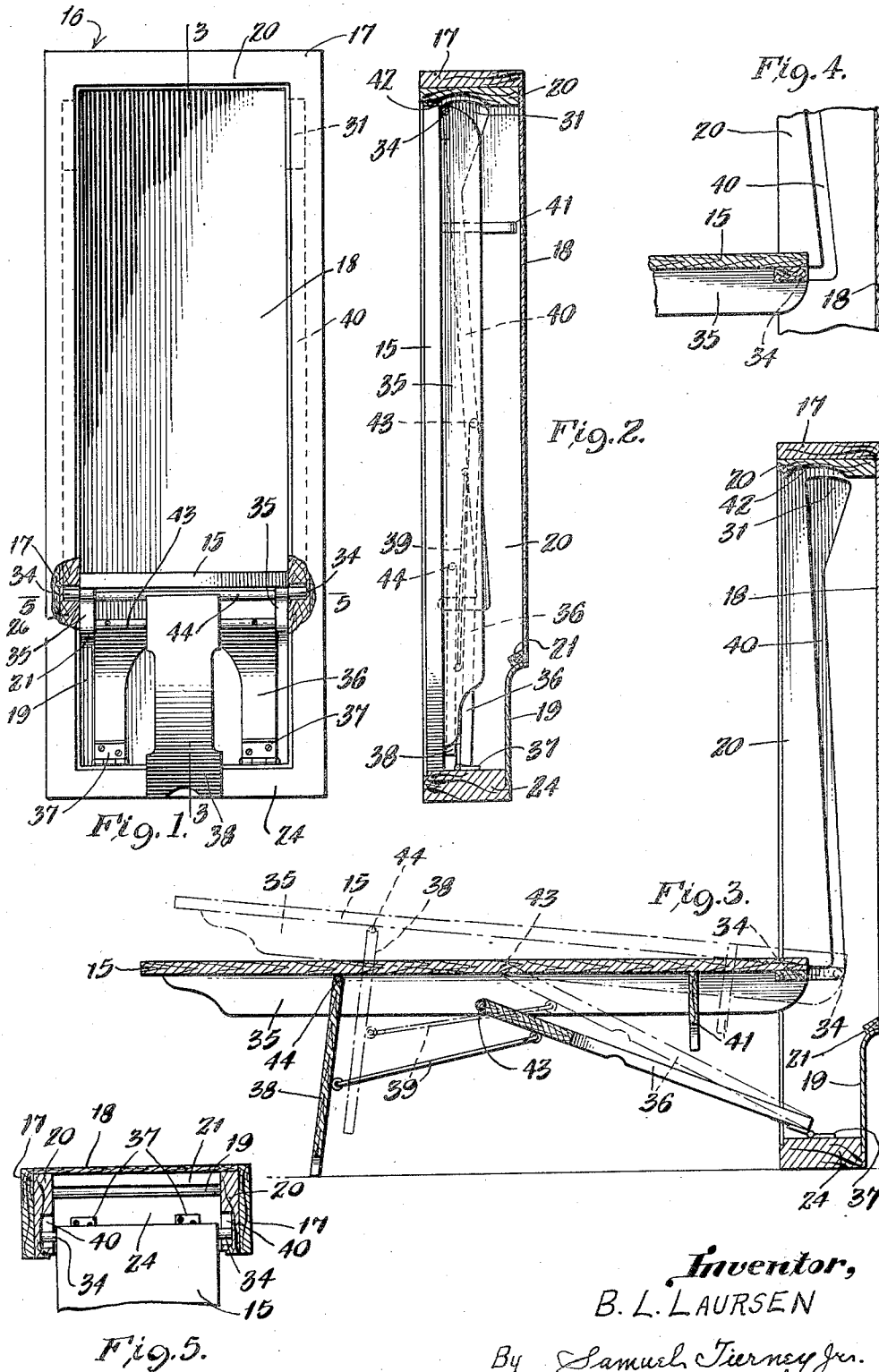
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FOLDING FURNITURE

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FOLDING FURNITURE

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My present invention pertains to folding furniture particularly seats.

An object is to produce metal or wood furniture that may be compactly folded and set in a standard 4" wall flush with the plaster or wall surface or set against a wall or partition.

Another object is to provide a structure with a panel front closure, the face of which may be used as a seat and which is devoid of hinges, pulls, knobs or pushplates, thus adding to its attractiveness, usefulness and novelty without giving the slightest hint of its use when installed in a wall or partition.

Another object is to so design the structure that the various component parts will be automatic in action so that the panel front of the seat structure may be lowered with greater safety than in the case of present devices, from inoperative to operative position by pressing on the extreme top end of the panel front and returned with slight effort without the necessity of making any adjustments or use of any fastening devices whatsoever.

Another object is to provide a seat which will be automatically locked and non-collapsible in either its operative or inoperative position without the use of catches, hooks, springs or fasteners of any kind whatsoever.

Another object is to so construct the device as to provide an automatic retarding effect when its panels are moved into their operative position.

Another object is to so construct the movable parts of the device that they will be approximately self-balanced and safe even in the hands of children.

Further and other objects and advantages will be hereinafter set forth in the accompanying specification and claims and shown in the drawing, which by way of illustration shows what is now considered to be the preferred embodiment of the invention.

Fig. 1 is a front view of a cabinet structure showing the seat in operative position.

Fig. 2 is a cross-section on line 3—3 of Fig. 1 showing a seat structure in folded inoperative position.

Fig. 3 is a sectional view showing the seat structure in operative position; in addition showing by broken lines the structure ready to move into inoperative position.

Fig. 4 is a view showing the lower portion of the groove in the side members.

Fig. 5 is a cross-section on line 5—5 of Fig. 1.

Although my invention is suitable for a variety of furniture structures, I have chosen to illus-

trate and describe it as applied to a dinette seat.

The arrangement herein shown, referring to the drawing, comprises a seat 15. The seat is mounted in a cabinet 16 in such relationship that when the seat is not wanted for use it may be folded with very little effort into the cabinet 16. The cabinet 16 comprises a bottom member 24, back member 18 and a double member horizontal top and wall member 17. Inner horizontal member 20 has a groove 42 in the underside of its forward portion which will allow a slight rise of seat top 15, when moved into operative or inoperative positions. The inner member 20 and outer wall member 17 cooperate to form the support for the seat in all positions. In vertical position the seat top 15 forms the smooth panel front closure of the cabinet. The cabinet may be incorporated in or set against a wall or partition.

The cabinet end of seat 15 has fastened to it a cross bar 34 having trunnion ends engaging the grooves 40 in the cabinet wall members 20 (see Figs. 3 and 4). Each groove comprises a short forwardly extending portion, a long upward and forwardly directed portion 40 having at its top a wedge shaped terminal portion 31 clearly shown in Fig. 3.

The construction and operation of seat structure 15 may best be understood by referring to Fig. 3 showing the seat 15 in operative position. The seat top 15 serves as a closure member for cabinet when in inoperative position or folded position. On the underside of seat top 15 at its extreme top end is fastened a cross-bar 34 having trunnion ends which are overlapped by vertical brace members 35, fastened edgewise close to the outer edges of top 15. Secured to underside of top 15 is a cross-bar 41 which engages the cabinet back 18 when the top 15 is pushed inwardly to initiate the opening movement of said top into operative position. The strut member 36 is pivotally engaged at its top end to brace members 35 by round cross-bar 43 at a point rearward of its hinge 37, automatically holding the seat 15 in inoperative position without fasteners. The main supporting, short strut 38 is also pivotally fastened to brace members 35 by round cross-bar 44 and is guided automatically into both operative and inoperative positions by rod 39 which connects the struts 36 and 38. It is evident that due to the construction of this seat structure 15 an enormous weight can be placed upon it without danger of breaking or collapse thereof when it is in operative position, Fig. 3. The weight is supported by strut 38 which is fastened direct-

ly under top 15, the cross bar 34 resting in the forward portions of grooves 40. It is also evident that when seat 15 is in operative position the cross bar 34 is held absolutely stationary in the forward extending portion of grooves 40 regardless of the amount of weight that may be placed upon any point of the seat surface. The strut 36 is the guiding member and does not carry any weight placed upon top 15 as strut 38 and cross bar 34 serve to support seat 15 and the weight of the persons seated thereon.

To bring seat 15 from the inoperative position shown in Fig. 2 into operative position shown in Fig. 3 simply press on the extreme upper portion of top 15; this motion slightly raises the top end of seat 15 into groove 42 provided on the underside of cabinet top member 20 and the member 34 moves into the upper wedge-shaped portion of grooves 40 and the cross bar 41 engages the cabinet back 18 rocking the seat top 15 over its center of gravity causing it to open outwardly at its lower end. In this position, it is evident that the top 15 is overbalanced and guided by member 34 running in the grooves 40 will move downwardly automatically or with very little effort into its operative position. The forward surface of cross bar 34 in the downward movement will bear against the front sides of grooves 40. As these grooves are sloped rearwardly from the top downwards an important retarding effect is produced and this braking action prevents the seat 15 from lowering under its own weight too quickly.

The operator moves seat 15 into folded position by lifting the outer free end slightly and pushes cross bar 34 rearwardly into the vertical portion of groove 40. When in this position he gives seat 15 a slight upward lift at its inner end and it slides automatically into folded position and does not require any fasteners to keep it closed.

The inter-relationship of the members of the structure is such that they all fold compactly into the space between front closure top 15 and the back 18 of the cabinet 16 substantially as herein described.

It is to be understood that the invention is not limited to the constructions herein specifically illustrated but is intended to include all arrangements coming within the scope of the following claims. What I claim and desire to secure by Letters Patent is:

1. A cabinet structure comprising a rear member, bottom member, vertically disposed side members and a top member secured to the upper

ends of said side members, a closure panel adapted to substantially extend between the top, bottom and said side members, a trunnion piece secured to said panel and having its ends projecting beyond the sides thereof, each of said side members having a groove into which one end of said trunnion piece extends, each of said grooves having a substantially horizontal portion near its lower end, and a long straight portion which inclines rearwardly from the top downwardly, said incline retarding the downward movement of the closure member and a curved portion connecting the bottom of said straight portion to said horizontal portion and shaped to form a stop for the trunnion piece when positioned in said horizontal portion, and the straight portion terminating at its upper end in an enlarged, wedge shaped portion whereby the upper end of said closure panel may be moved rearwardly to initiate the opening thereof.

2. A cabinet structure comprising a rear member, bottom member, vertically disposed side members and a top member secured to the upper ends of said side members, a closure panel adapted to substantially extend between the top, bottom and the said side members, a trunnion piece secured to said panel and having its ends projecting beyond the sides thereof, each of said side members having a groove into which one end of said trunnion piece extends, each of said grooves having a long straight portion which is inclined rearwardly from top to bottom, said incline retarding the downward movement of the closure panel and said groove terminating at the bottom in a forwardly extending, straight horizontal portion, in which the said trunnion piece is seated when said closure panel is in horizontal position, and the straight portion terminating at its upper end in an enlarged wedge shaped portion whereby the upper end of said closure panel may be moved rearwardly to initiate the opening thereof, and means for supporting said closure panel in a horizontal position whereby it may serve as a seat.

3. The device of claim 2 having a transversely extending brace member secured to the rear of its front closure panel at a distance from its upper end whereby said brace member engages said rear member when the upper end of said closure panel is pushed inwardly to initiate the opening movement of said panel into its operative, horizontal position.

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