June 18, 1957 F. BRUCHTEL 2,796,115

SELF-ENCLOSED FOLDING TABLE AND BENCH SET

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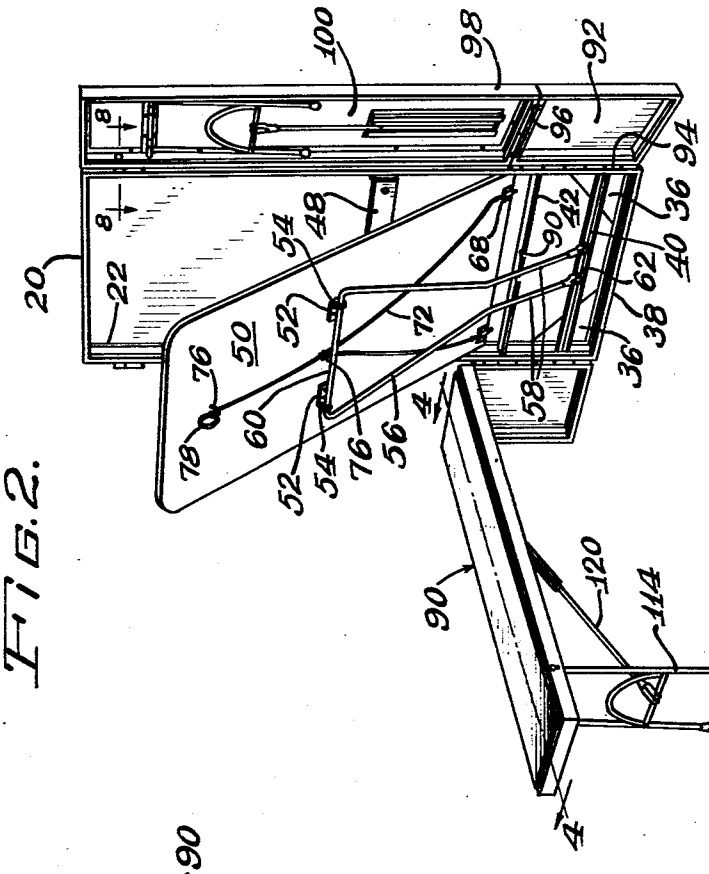


FIG. 2.

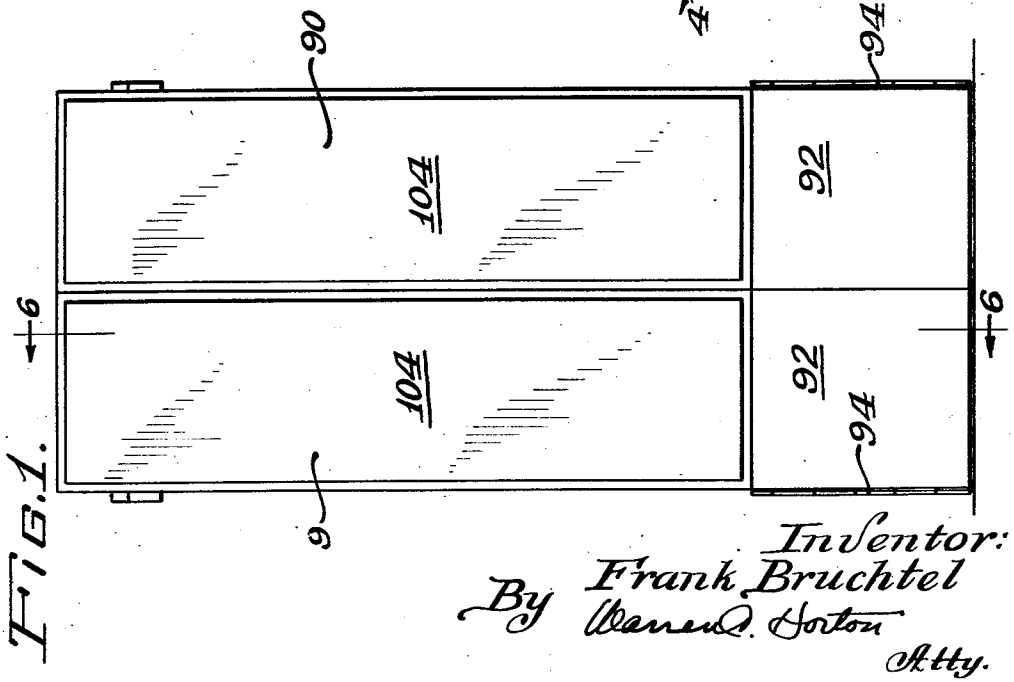


FIG. 1.

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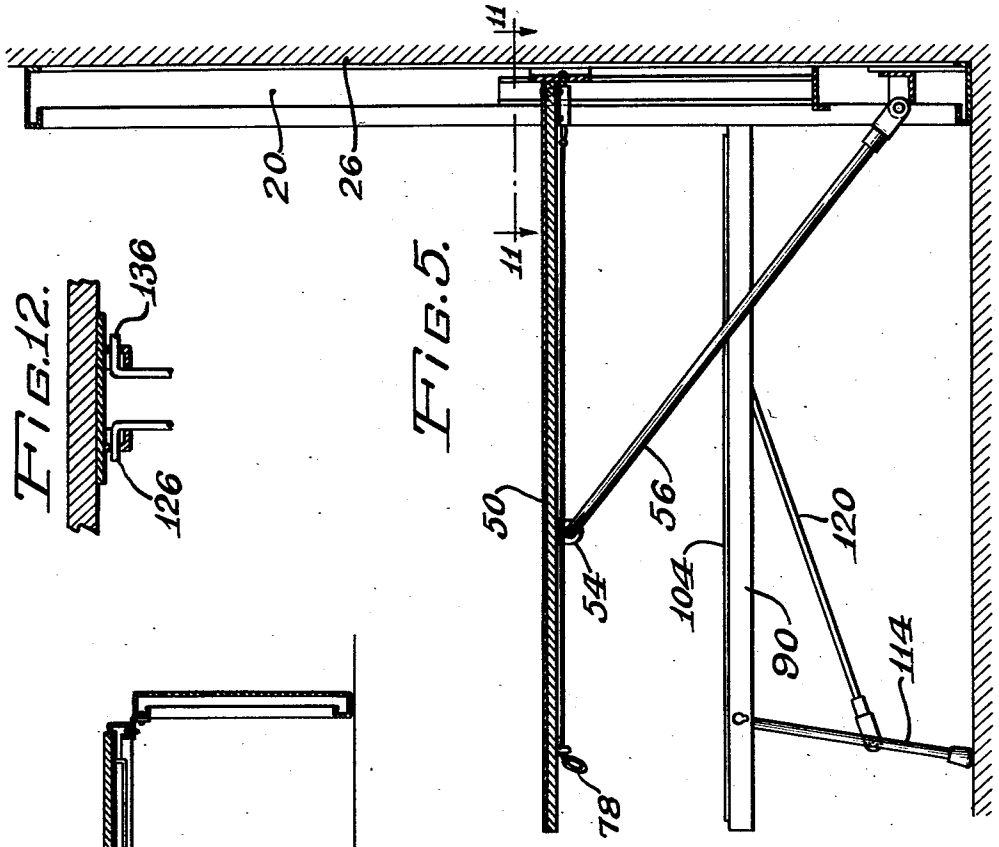


FIG. 5.

FIG. 12.

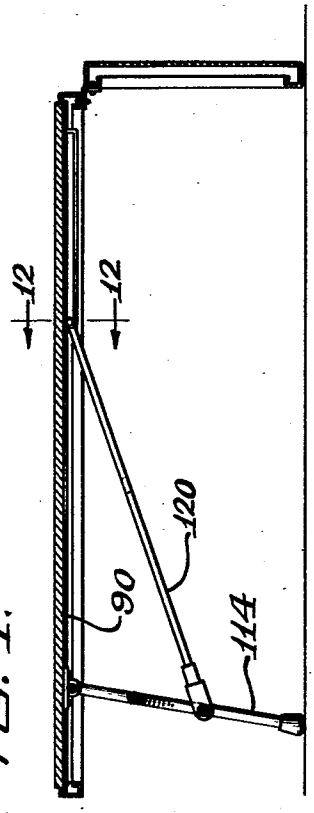


FIG. 4.

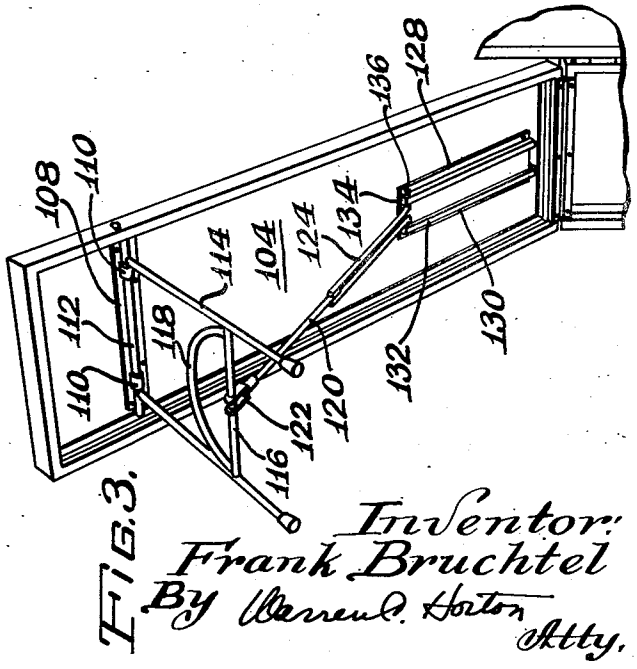


FIG. 3.

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SELF-ENCLOSED FOLDING TABLE AND BENCH SET

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Fig. 6.

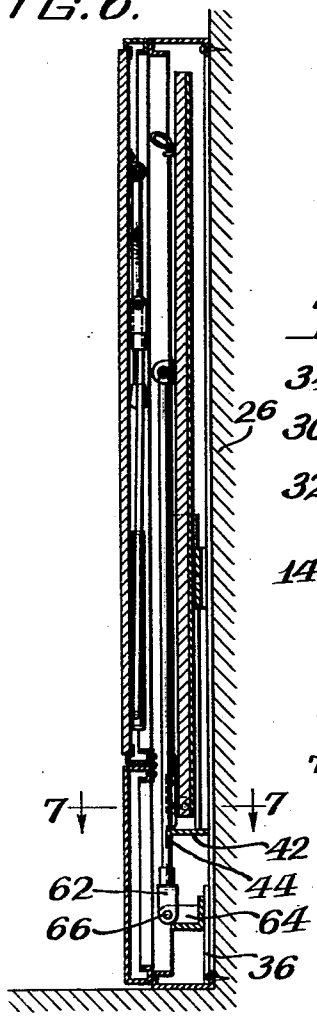


Fig. 8.

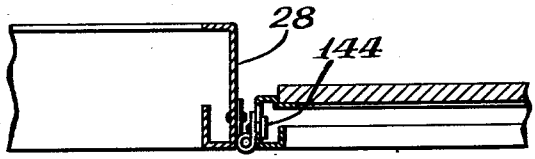


Fig. 9.

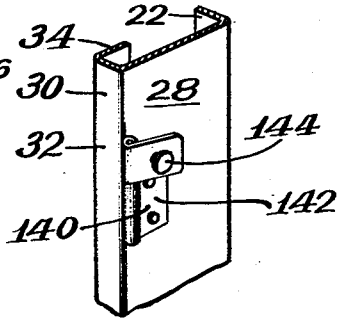


Fig. 10.

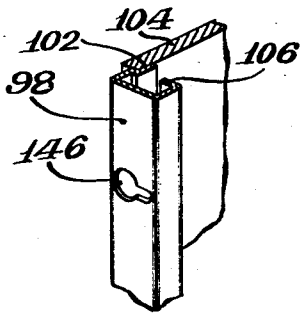


Fig. 11.

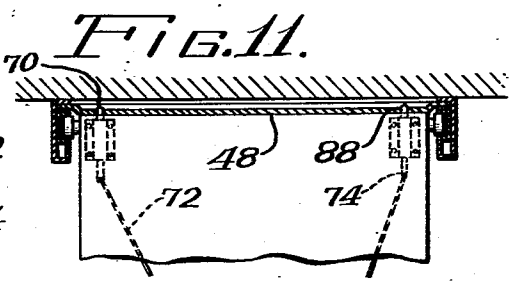
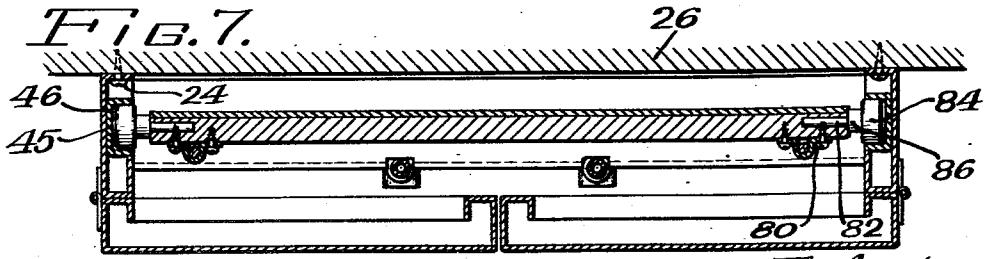


Fig. 7.



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SELF-ENCLOSED FOLDING TABLE AND BENCH SET

Frank Bruchtel, Berwyn, Ill.

Application September 7, 1954, Serial No. 454,286

5 Claims. (Cl. 155—123)

My invention relates to a folding table and bench combination, and more specifically to a combination table and bench which constitutes an integral unit which may be secured to a wall-type surface and which may be unfolded outwardly from the surface to provide a table top with benches on either side thereof or which may be folded back against the surface to give the appearance of an inconspicuous, attractively enclosed, shallow cabinet.

In modern dwellings, where space is at such a premium, collapsible dining furniture which can be pulled down into a kitchen for use and folded attractively and flatly up against a wall when not in use, is a highly desirable piece of equipment. Its use, of course, is not limited to the specific instance of a dinette set in a kitchen, but may provide eating space in any room of the dwelling or in such limited living quarters as house trailers and yachts may provide. Nor is its use limited to dining purposes. Wherever table and seating space is desired, as for games in a recreation room, etc., the table and bench combination of my invention will find use.

A primary object of my invention may therefore be stated to be to provide a combination table and bench in an integral unit which may be secured to a wall and wherein the table and benches may be unfolded to stand out from the wall for purposes of use and folded back against the wall to clear space in the room.

Another object of my invention is the provision of such a combination wherein the normally attractively finished upper sides of the bench seats are employed as the front facing of the combination when in its folded or storage position to take the general appearance of cabinet doors to convey the impression of a shallow cabinet affixed to the wall.

Another object of my invention is the provision of such a combination unit wherein the accommodation of the table top and benches and the movement of the parts between their storage position and their utility position is contrived in a highly ingenious fashion.

Another object of my invention resides in the fashion in which the benches are employed both for their nominal function and their cabinet enclosing function in storage position.

There are many other features of my invention arising in the construction of my combination unit which are novel and ingenious and the provision of which may be regarded as further objects of my invention. Among these may be mentioned the particular provision for supporting the table top in both storage and utility positions and for the movement thereof between such positions, the manner in which the benches are supported, the leg and bracing provisions for both the benches and the table top and the means for locking such parts when in the utility position.

Other objects and advantages of my invention will be apparent from the following description and drawings of which:

Fig. 1 is a front elevation of a folded dinette illustrative of my invention;

Fig. 2 is a perspective of the unfolded dinette taken from the front and right illustrating the parts thereof in various positions of unfolding;

Fig. 3 is a perspective of the underside of one of the bench members shown in the process of being lowered for use;

Fig. 4 is a longitudinal vertical section through one of the bench members and may be regarded as being taken substantially along the line 4—4 of Fig. 2 looking in the direction of the arrows;

Fig. 5 is a central vertical section through the dinette with the table and bench in unfolded utility position;

Fig. 6 is a vertical section through the folded dinette and may be regarded as being taken along the line 6—6 of Fig. 1 looking in the direction of the arrows;

Fig. 7 is a section which may be regarded as being taken along the line 7—7 of Fig. 6 looking in the direction of the arrows;

Fig. 8 is an enlarged horizontal section through the upper hinges connecting the bench members to the cabinet and may be regarded as being taken along the line 8—8 of Fig. 2;

Fig. 9 is a perspective of the cabinet frame carrying the hinge of Fig. 8;

Fig. 10 is an enlarged perspective showing the bench frame portion cooperating with the hinge of Fig. 9;

Fig. 11 is a section which may be regarded as being taken along the line 11—11 of Fig. 5 looking in the direction of the arrows; and

Fig. 12 is an enlarged fragmentary section through the leg latch for the bench members and may be regarded as being taken along the line 12—12 looking in the direction of the arrows.

The dinette of my invention may be regarded and understood as a flat, shallow cabinet, oriented vertically, the back of which is adapted to be secured to a wall and the front of which is closed by a pair of vertically hinged doors folding in from each side or adapted to be opened back against the wall.

The dinette consists of a shallow but large rectangular frame 20 composed generally of flanged structural members which afford a continuous back flange 22 through which screws or other appropriate securing means 24 may be passed to secure the frame to a wall 26 or other upright flat surface. The entire frame may be constructed on structural members having the same cross section characterized by the simple flange 22 on one side of the web 28 (Fig. 9) and a rebent flange 30 on the forward edge thereof to provide a front face 32 and an inside lip 34. The frame may have corner braces 36 in the lower corners thereof (Fig. 2) a short distance above the bottom 38 of the frame.

A transverse angle iron 40 is secured at each end to the back flanges 22 of the frame uprights. A short distance above the angle iron, a second transverse member, a brace 42, having a downward flange 44 thereon is secured at each end to the frame uprights between lip 34 and back flange 22. The bottom 45 of vertically oriented channel members 46 are secured to the inside of the web 28 with one edge of the channel member abutting smoothly against the edge of lip 34 and the lower end of the channel members abut against brace 42. Approximately 30" above the floor, a third cross member, a latching bar 48, is provided which also extends transversely and is secured at its ends to the back flanges 22 of the upright.

The table top 50 proper is contained within the frame 20. A pair of brackets 52 are secured to the underside of the table top somewhat more than half way of the table top length away from the end of the table top secured to the frame 20, and have outstanding ends 54 bored to receive a brace 56 which may be a single tube having slightly spaced parallel free ends 58 which diverge away from

their free ends to provide a relatively wide base portion **60**, the base portion being supported by the brackets **52**. The free ends of the base **58** have transversely bored yokes **62** secured thereto. The angle iron **40** has a pair of forwardly projecting vertical ears **64** secured centrally thereof which are bored at their forward ends. The yokes **62** embrace the forward ends of the ears **64** and a pin **66** completes a pivotal interconnection.

A pair of spring latches **68** are also secured to the underside of the table top **50** with the latching pin ends **70** spring-biased to extend out beyond the bottom or inside end of the table top. Cords or wires **72** are connected to the inside ends **74** of the latch pins **70** and are guided by screw eyes **76** or similar means under the bottom **60** of the brace **56** to a ring **78** adjacent the outer end of the table top. By pulling on the ring **78** the latch pins may be retracted to a position behind the bottom or inner edge of the table top **50**. Such latches are conventional and have not been illustrated in detail. The latches are secured to the underside of the table top by screws **80**.

The table top has a pair of short transverse bores in the sides thereof adjacent the bottom or inner end. Stub axles **82** are contained in these bores and extend out to the side of the table top to mount rollers **84** which are housed within the vertical channel members **46**. The bores containing the stub axles are positioned to intercept one of the screws **80** holding the pin latches to the table top and the stub axle **82** is notched so that the screw **80** accomplished the double function of securing the pin latch to the table top and likewise anchoring the stub axle **82** within its associated bore.

Spacers **86** are provided between the roller **84** and the edge of the table so as to afford good clearance between the table and the frame edges and at the same time maintain the rollers **84** properly within the channel members **46**.

The latching bar **48** has a pair of holes **88** therein spaced to receive the latch pins **70**.

The functioning of the table top and its movement between the folded closed position and unfolded utility position will be apparent from the foregoing description.

The table top **50** is normally housed within the frame vertically with the rollers **84** adjacent the bottom of their track as defined by the channel members **46** and the brace **42**. The table brace **56** lies substantially flat against the underside of the table. Notches **90** are formed in the frame **44** of the cross member **42** to receive the brace **56** to prevent its being outwardly bulged when the table is in folded position.

When it is desired that the table be used, the cabinet doors are opened and the upper edge of the table simply pulled down. Pulling down of the outer table edge will cause rollers **84** to move upward in their tracks **46** and the table top will swing downwardy and outwardly to its horizontal position. Toward the end of the travel of the table top, the ring **78** is pulled to retract the latch pins **70**, and finally the table top movement is continued to bring the inside edge of the table opposite the latching bar **48** so that the latch piins **70**, upon release of ring **78**, engage in the holes **88** in the latching bar. In this way, the table is firmly supported in its horizontal position.

To refold the table, the ring **78** is pulled which releases the inside end thereof and thereafter the outer edge of the table may simply be pushed up and back to restore the table to its folded position.

The benches **90** constitute the doors to the cabinet. Short framed sections **92** are secured by vertical piano hinges **94** to the bottom portion of the vertical edge of the frame **20**. The hinge leaves of the hinges **94** are on the outside of both the sections **92** and the frame **20** when the benches **90** are folded together to enclose the cabinet. The height of the sections **92** are such as to constitute an appropriately sized bench support. The sections **92** have other horizontal piano hinges **96** on their top horizontal edge secured to the frame of the section **92** in any appropriate fashion. The other hinge leaf of the hinges **96** is connected to the lower or inner portion of the frame **98** of the bench tops **100** proper. The section of the framing **98** of the bench top may be best seen in Fig. 10. The framing may be considered to be of generally channel-shaped section with deep flanges, one flange of which is offset as at **102** to support a plywood bench seat **104** and the other flange is inbent through a second 90° angle as at **106** to provide a smooth under surface for the bench frame. The bench seat **104** may be secured to the offset flange portion **102** by riveting, screws or any other appropriate means.

A transverse member **108** is secured to the underside of the seat **104** adjacent its outer end. The member **108** possesses a pair of loops **110** which hold rotatably an upper cross-bar **112** of a leg assembly **114**. A lower cross brace **116** also interconnects the legs at a point close to the feet thereof. Other bracing structure **118** may be incorporated to make the legs hold firm and to improve the appearance thereof.

A rod **120** is connected at one end to the central portion of the cross brace **116** by means of a bracket **122**. The other end of the rod has rigidly secured thereto as by welding or riveting a pair of arms **124** on either side of the rod. The extremities of the arms **124** are bent oppositely away from each other through a right angle to constitute latching ends **126**. A second plate **128** is also secured to the underside of the seat **104** longitudinally thereof and toward the lower or inner end. This plate has a pair of longitudinal angle sections **130** standing upward therefrom with the free flanges **132** directed in toward each other and closed in at their ends **134** to define U-shaped enclosing tracks for the latching ends **126** of the arms **124**. Adjacent the upper or outer end of these tracks, holes **136** are provided into which the latching ends may snap so as to fix those ends firmly in a fixed position relative to the underside of the bench seat **104**.

The operation of the bench resembles somewhat the operation of the table. In their folded position, the bench tops **104** stand vertically and folded in against the frame **20** to constitute doors for a blind cabinet. The upper surface of the bench tops **104** constitute the outside surface of the doors and consequently the same attractive appearance normally provided in a bench seat will characterize the appearance of the closed cabinet. The legs **114** are folded down against the bench seat **104** and within the bench frame **98**. The latching ends **126** of the arms **124** are slidably contained at the lower or inner end of the tracks **130**.

When it is desired to use the dinette, the cabinet is opened and the table lowered as described above. The benches, being turned back substantially parallel to the wall, are then simply pulled part way down, the legs **114** pulled out until the latching ends **126** lodge in the holes **136**, so supporting rigidly the legs in their correct supporting position and the bench lowered the remainder of the way until the legs reach the floor. To collapse the benches, all that is required is that the arms **124** be squeezed together which will remove the latching ends **126** from the holes **136** whereupon the legs may be refolded, the bench top raised, and the cabinet closed.

It is desirable that means be provided whereby the bench tops can be secured to the sides of the cabinet or frame **20** upwardly of the sections **92** to support them in vertical position for pivotal movement. To this end the structure illustrated in Figs. 8, 9 and 10 is employed. A special hinge **140** is affixed to the outside of the frame **20** adjacent its upper end. A conventional hinge leaf **142** is attached to the frame **20**. The other leaf of the hinge, however, carries an outstanding button **144**. The opposite portion of the bench frame **98** has a keyhole **146** therein, the large part of which will pass the head of the button **144**.

Upon elevating the bench to its vertical position, the button **144** is fitted into the large end of the keyhole **146** and the bench top thereupon pushed slightly farther back in order that the head of the button **144** be held by the

narrow portion of the hole **146**. This provides a quickly detachable hinge connection between the bench seat **104** and the side of frame **20** so that the benches in their function as cabinet doors may be easily pivotally moved for closing or opening, and the bench tops are detachably supported in an upright vertical position when the cabinet is open as, for instance, while lowering the table.

It will be apparent from the foregoing description that the illustrated embodiment of my invention is capable of being varied in many details and structural alternatives employed. I prefer therefore that my invention be regarded as being limited only as set forth in the following claims.

I claim:

1. A folding table and bench combination comprising a frame adapted to be secured to a wall, a table top pivotally secured at one end in said frame to be moved between a vertical position within said frame and an outwardly extending horizontal position, means adapted to lie flat against said table when said table is in said vertical position for supporting said table in said horizontal position, a bench end hingedly connected to a lower portion of a vertical edge of said frame to be movable through a straight angle, a bench top hingedly connected to the top of said bench end, said bench top and end being movable between a position covering said frame and a position beside said frame, releasable hinging means independent of said hinged connection between said bench end and said frame connecting said bench top to said frame upwardly of said bench end and adjacent the upper end of said frame for said pivotal movement, and means for supporting the other end of said bench top.

2. A folding table and bench combination comprising a frame adapted to be secured to a wall, a table top mounted in said frame for pivotal movement to a vertical position within said frame and a horizontal position, and including means for supporting said table in said horizontal position, and a pair of bench ends hingedly connected to the lower end of the vertical sides of said frame, bench tops hingedly secured to the upper edge of said bench ends, said bench tops having supporting means on the underside thereof, hinging means independent of said hinged connection of said bench ends to said frame releasably connecting said bench tops adjacent the upper end of said frame to said frame, said bench tops and bench ends being movable on said hinged connections to enclose said frame, the upper side of said bench tops facing out as said benches enclose said frame.

3. In a folding bench and table combination including a frame adapted to be secured to the wall, a bench end hingedly connected to the lower part of a vertical edge of said frame and a bench top hingedly secured at one end to the top of said bench end and detachable hinging means detachably connecting said frame edge and said bench top upwardly of said first-mentioned hinged connection, said hinging means comprising a hinged joint associated with one of said detachably connected parts as between said frame edge and bench top, a free leaf connected to said joint, said leaf having an outstanding button thereon, and a keyhole in the other of said parts adapted to fit over and lock on said button.

4. In a folding bench and table combination including a frame adapted to be secured to the wall, a bench end hingedly connected to the lower part of a vertical edge of said frame and a bench top hingedly secured at one end to the top of said bench end and detachable hinging means connecting said frame edge and said bench top upwardly of said first-mentioned hinged connection, said detachable hinging means comprising a two-leafed hinge having one leaf secured to said frame, the other leaf of said hinge being free and having an outstanding headed button thereon, and said bench top having a keyhole

formed in the edge thereof in which said button is adapted to be inserted and contained.

5. A table and bench combination movable between a position of seats at opposite sides of a table and a storage position relative to a recess having a rectangular doorway and upright frame members along opposite sides of said doorway, said combination comprising a pair of rectangular doors together adapted completely to cover said doorway and having lower door portions adapted to be hingedly connected along an upright edge of each lower door portion to lower end portions of said frame members, respectively, for swinging through straight angles to open and cover a lower portion of said doorway and upper door portions hingedly connected at the lower ends thereof to the upper ends of said lower door portions, respectively, for swinging relative to the respective lower door portions between upright positions at opposite sides of said doorway and spaced horizontal positions at seat level and substantially normal to the plane of said doorway and, while in said upright positions, for swinging with the respective lower door portions through said straight angles to open and cover the portion of said doorway above said lower portion thereof, collapsible means operable to cooperate with said lower door portions for supporting said upper door portions in their horizontal positions at seat level, whereby said upper and lower door portions and collapsible means provide a pair of benches, with said upper door portions extending outwardly from and normal to the plane of said doorway at opposite sides thereof, and providing horizontal bench tops at seat level when said upper door portions are in said horizontal positions, a table top having a horizontal position at table-top level relative to and between said bench tops, the width of said table top being less than that of said doorway, the length of said table top being substantially the same as that of said bench tops and less than the height of said doorway but greater than the distance between said table-top level and the upper end of said doorway, and table-top mounting means for pivotally and slidably connecting an end of said table top to and between said frame members for pivotal movement of said table top, independently of said bench tops in their horizontal positions, between said table-top level and an upright position and, during said pivotal movement, for sliding movement of said end of said table top along said frame members between said table-top level and a level sufficiently lower than said table-top level to enable the swinging of said table top through said doorway to an upright position within said recess.

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