Aug. 21, 1923. 1,465,529

C. M. RUMBAUGH ET AL

DISAPPEARING STRUCTURE FOR CHAIRS, TABLES, AND THE LIKE

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Fig. 1

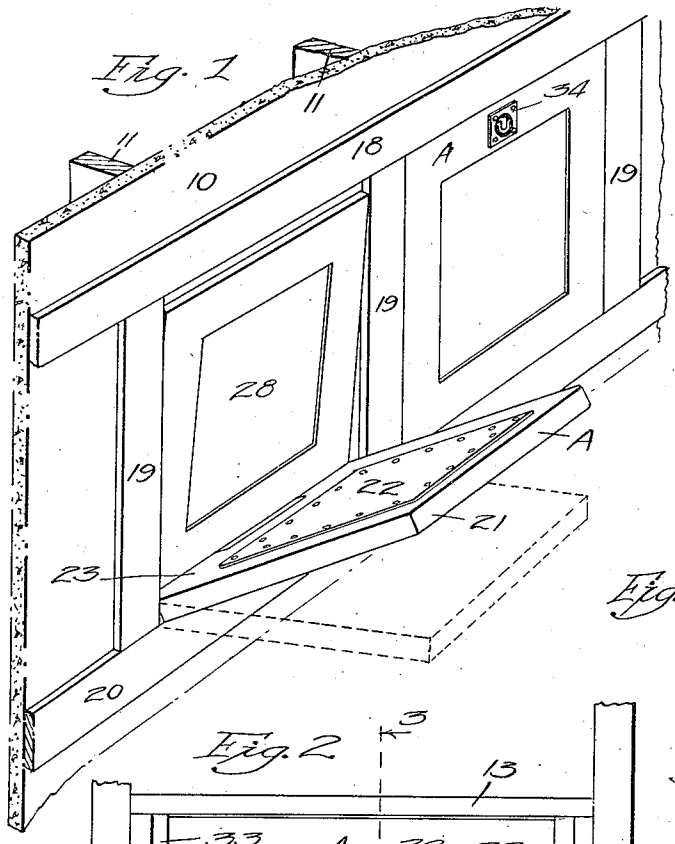


Fig. 3

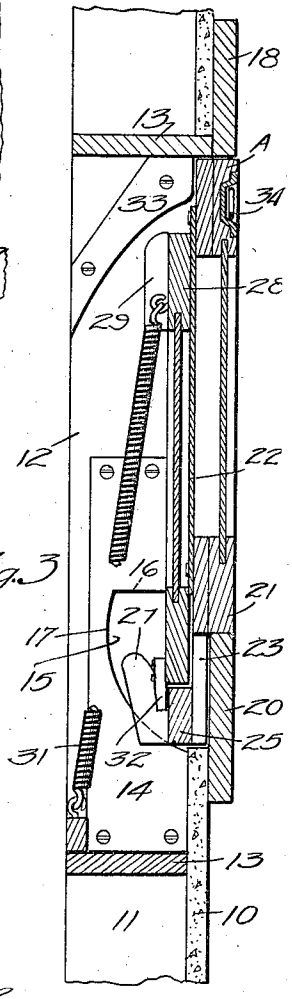
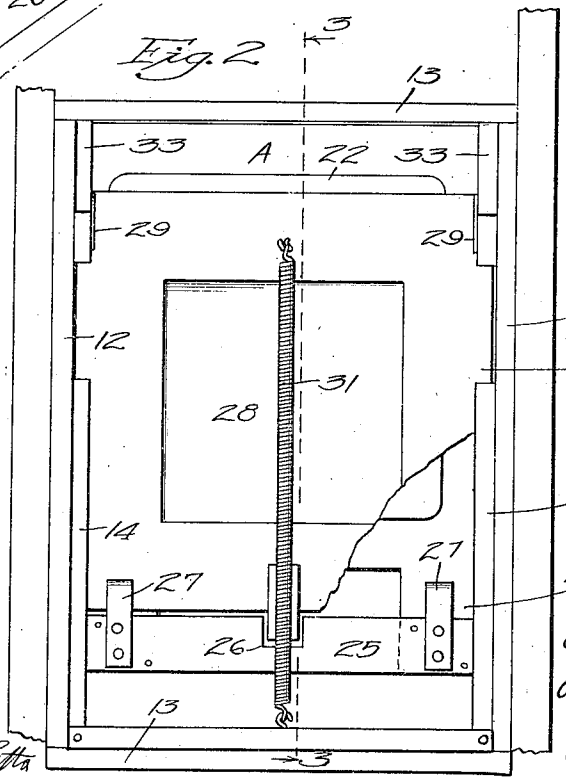


Fig. 2



Witness
Lynn Latta

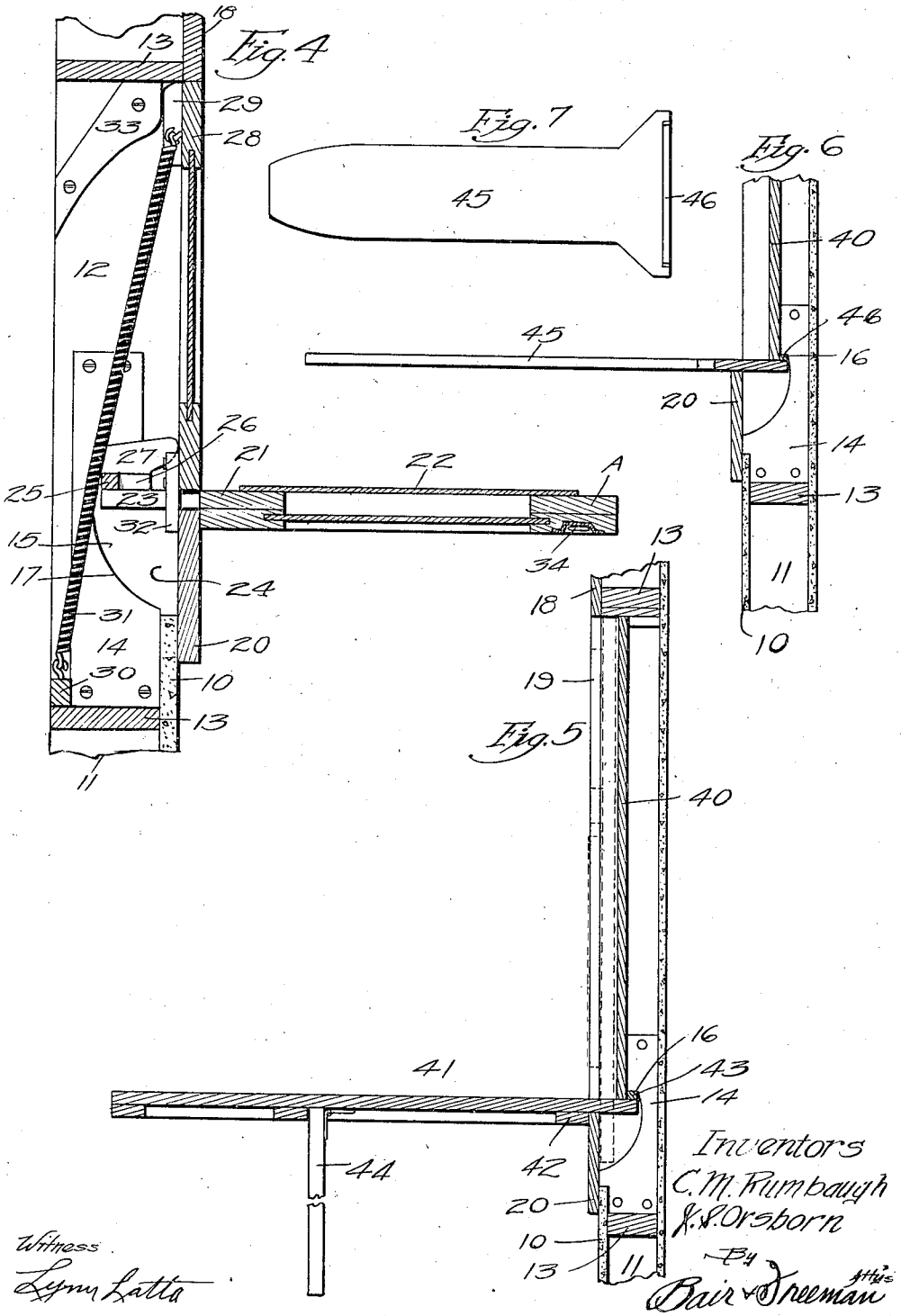
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DISAPPEARING STRUCTURE FOR CHAIRS, TABLES, AND THE LIKE

Filed Jan. 28, 1922 2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

CHARLES M. RUMBAUGH AND JOHN S. ORSBORN, OF DES MOINES, IOWA.

DISAPPEARING STRUCTURE FOR CHAIRS, TABLES, AND THE LIKE.

Application filed January 28, 1922. Serial No. 532,456.

To all whom it may concern:

Be it known that we, CHARLES M. RUMBAUGH and JOHN S. ORSBORN, citizens of the United States, and residents of Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Disappearing Structures for Chairs, Tables, and the like, of which the following is a specification.

The purpose of our invention is to provide a disappearing structure for chairs, tables and the like of simple, durable and inexpensive construction.

More particularly, it is our object to provide for instance a structure, whereby a chair, such as is used in breakfast rooms and other places where it is important to save space, may be contructed and arranged, so as to be folded into a wall, when desired, and may be opened out for use conveniently and easily.

A further object is to provide a peculiar structure for such a device, whereby the chair or table is firmly supported when in its open position.

With these and other objects in view, our invention consists in the construction, arrangement and combination of the various parts of our device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in our claims, and illustrated in the accompanying drawings, in which:

Figure 1 shows a perspective view of a wall and a folding structure installed thereon.

Figure 2 shows a rear elevation of the disappearing structure.

Figure 3 shows a detailed, sectional view taken on the line 3—3 of Figure 2.

Figure 4 shows a similar view with the chair seat lowered.

Figure 5 shows a similar view of a slightly modified form of our invention, in which a table instead of a chair is used.

Figure 6 shows a similar view illustrating the arrangement of the parts with an ironing board; and

Figure 7 shows a plan view of the ironing board.

We will describe a disappearing structure, comprising a device adapted to serve as a chair or seat in a breakfast room or the like. The device is designed to be made to fold into a wall having substantial thickness.

In Figure 1, we have used the reference numeral 10 to indicate generally the front surface of the wall having the studding 11. The other surface of the wall has not been shown. Each chair or table or the like is arranged between two studding 11.

We preferably build each disappearing structure as a unit in a rectangular frame, comprising the upright members 12 and the cross members 13. Secured to the inner faces of the upright members 12 near the lower parts thereof are opposite upright guides 14. The guides 14 may be made of suitable material, such for instance as inch-boards, each having in its forward edge a slot 15. The guide 14 has at the upper edge of each slot a horizontal surface 16 from the rear end of which the material is cut out to form a downwardly and forwardly curved guide surface 17, as shown for instance in Figure 3.

It will be understood that the wall at the front of the frame described has an opening, which is filled by the chair seat or table or the like when the disappearing device is folded up.

Around the edge of the opening, we arrange frame members as shown in Figure 1, the upper frame members being indicated at 18, the side frame members at 19 and the bottom frame member at 20.

It may be mentioned that the frame member 20 substantially overlaps the opening, as illustrated for instance in Figures 3 and 4.

Where the disappearing structure forms a chair or chair seat, we provide a suitable seat, such as A, which may be in the form of a rectangular frame 21, having the seat 22 of leather or the like.

The member of the frame 21 which stands adjacent to the frame member 20 has the extension 23, which projects into the opening 24 in the wall.

When the seat is in its raised position, the extension 23 stands behind the frame member 20 as shown in Figure 1. The extension 23 is only substantially half the thickness of the frame 21, so that when the seat is in its raised position, the frame 21 rests on the frame member 20 as shown in Figure 3. Secured to the extension 23 is a cross bar 25, which is provided substantially mid-way between its ends with a notch 26, shown in Figure 2.

Mounted on the cross bar 25 and project-

ing upwardly and rearwardly therefrom, when the chair seat is in raised position, are two guide lugs 27, shown in Figures 2 and 3.

We provide a rectangular panel 28 for closing the opening 24 when the chair seat is lowered. The panel 28 when the seat is raised rests on the cross bar 25 just back of the seat, as shown in Figure 3 and is held between the guide member 14 and the chair seat.

On the back of the panel 28 at the upper part thereof near the side edges of the panel are filler blocks 29. Connecting the upright frame members 14 just above the lower cross frame member 13 is a bar 30. A coil spring 31 is secured to the bar 30 and to the upper rear part of the panel 28.

Secured to the rear surface of the panel 28 is a short plate or bar 32, which when the seat is raised, is received in the notch 26, as shown in Figure 2.

Secured to the inner adjacent faces of the upright frame members 12 at the upper parts thereof are guide members 33.

Assuming the parts to be in the position shown in Figure 3, and that it is desired to lower the chair seat to position for use, the engaging member 34 in the outer face of the chair is grasped and the upper portion of the chair seat is pulled downwardly and forwardly. The chair seat is shown in its midway position in Figure 1.

The chair seat moves on the upper edge of the frame member 20 as a pivot, and is moved to horizontal position when the extension 23 rests on the frame 20, as shown in Figure 4.

The lower edge of the panel 28 is held by the cross bar 25, the extension 23 and the guide lugs 27 against displacement, and during the lowering movement of the seat is raised upwardly.

The guide lugs 27 and the guide members 33 guide and direct the panel 28 upwardly and forwardly until it rests on the extension 23, as shown in Figure 4. The member 32 then projects downwardly and stands back of the frame 20 and thus prevents undue forward movement of the lower part of the panel 28.

The guide lugs 27 engage the back of the lower part of the panel and hold it in position, forcing it forwardly a proper distance.

The spacer blocks 29 at the upper end of the panel 28 slide against the guide members 33 and stand just in front of the upper portions thereof, as shown in Figure 4, when the seat is lowered.

The spring 31 prevents the upper part of the panel from moving forwardly out of the opening 24.

It will be noted that the panel 28 when the chair seat is lowered rests upon the chair seat and substantially abuts against the upper frame member 18 and thus helps to hold the seat snugly and rigidly supported.

As the seat swings from its upper position downwardly to horizontal position, the cross bar 25 travels in the guide slot 15 in the guide member 14 until it engages the horizontal surface 16, and it will thus be seen that the seat is held supported on the frame member 20, while the cross bar 25 engages the surface 16.

The seat is held against outward, sliding movement by means of the plate 32.

The seats, which we have built, work very easily and are properly balanced. The outer or under surface is paneled to give the appearance of a paneled wall.

The movable panel 28 serves the double function of helping to hold the chair seat rigidly in its lowered position and of forming a back of a chair and filling up the opening 24. It also serves as a weight to hold the chair in its raised position and to swing it upwardly after the chair has passed center on its upward movement.

It will be noted that there are no metal hinges or joints. It will also be noted that by pulling the upper edge of the panel front forwardly, the spring 31 may be readily released and the panel and seat may be readily removed to permit access to any of the parts.

It will also be noted that by simply making the parts in the proper proportions, the seat may be given the form of a table.

In Figure 5, we have shown a slightly modified form of our invention, in which the panel or member 40 is fixed and a table 41 is provided, which has on its outer surface, the cross member 42 and on its inner surface the cross member 43. The cross member 43 when the table 41 is lowered rests against the surface 16 of the guide member 14 and also against the rear surface of the member 40. The table 41 has on its under or forward surface, a hinged leg 44, which when the table is folded up, swings against the forward surface of the table and forms what is apparently a part of a panel wall.

In Figure 6, we have shown an ironing board 45 substituted for the table 41.

In Figure 7 is shown the upper side of the ironing board 45, having at its inner end, the cross strip 46.

Changes may be made in the construction and arrangement of the various parts of our improved disappearing structure without departing from the real spirit and purpose of our invention, and it is our intention to cover by our claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

We claim as our invention:

1. A disappearing structure designed to be supported as part of a wall, comprising a frame, guide members on said frame at the opposite sides thereof having slots, guide members spaced above said first guide members, a chair seat having at its lower, inner edge an extension of less thickness than the seat, a cross member on said extension, guide lugs on said cross member, a movable panel adapted to rest on said cross member when the seat is raised, said panel being provided at its lower inner portion with a downwardly projecting member, a spring connected with the upper part of said panel and with said frame.

2. In a device of the class described, a frame, a disappearing structure operated on said frame comprising a supporting member arranged in upright position to close and fill the opening in the frame, said member having a projection extending downwardly inside the frame when the supporting member is raised, said projection being adapted to rest on the lower part of the frame when the supporting member is lowered, stop members on the frame for engaging the said projection when the supporting member is lowered, a movable panel and coacting means on said frame and supporting member and panel for moving it to position received within the frame for closing and filling the opening in the frame when the supporting member is lowered, said means including members for loosely guiding the upper portion of said panel and yielding device for connecting said upper end with said frame.

3. In a device of the class described, a frame, a disappearing structure operated on said frame comprising a supporting member arranged in upright position to close and fill the opening in the frame, said member having a projection extending downwardly inside the frame when the supporting member is raised, said projection being adapted to rest on the lower part of the frame when the supporting member is lowered, stop members on the frame for engaging the said projection when the supporting member is lowered, a movable panel and coacting means on said frame, supporting member and panel for moving it to position received within the frame for closing and filling the opening in the frame when the supporting member is lowered, said means including members for loosely guiding the upper portion of said panel, a yielding device for connecting said upper end with said frame, for supporting and guiding the lower edge of said panel without fastening connection thereto.

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JOHN S. ORSBORN.