June 4, 1940. J. L. STENQUIST 2,203,474

COMPARTMENT DRAWING BOARD

Filed April 11, 1938 2 Sheets-Sheet 1

Fig. 1.

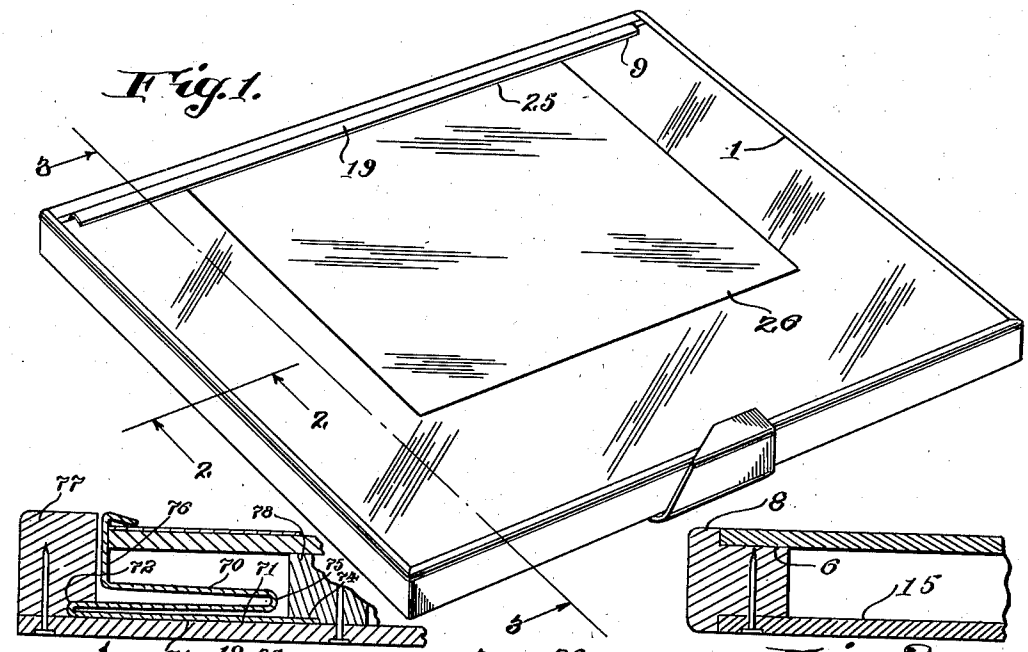


Fig. 1a.

Fig. 2.

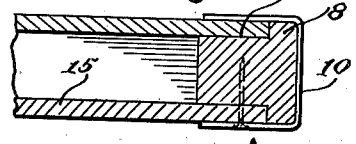


Fig. 3.

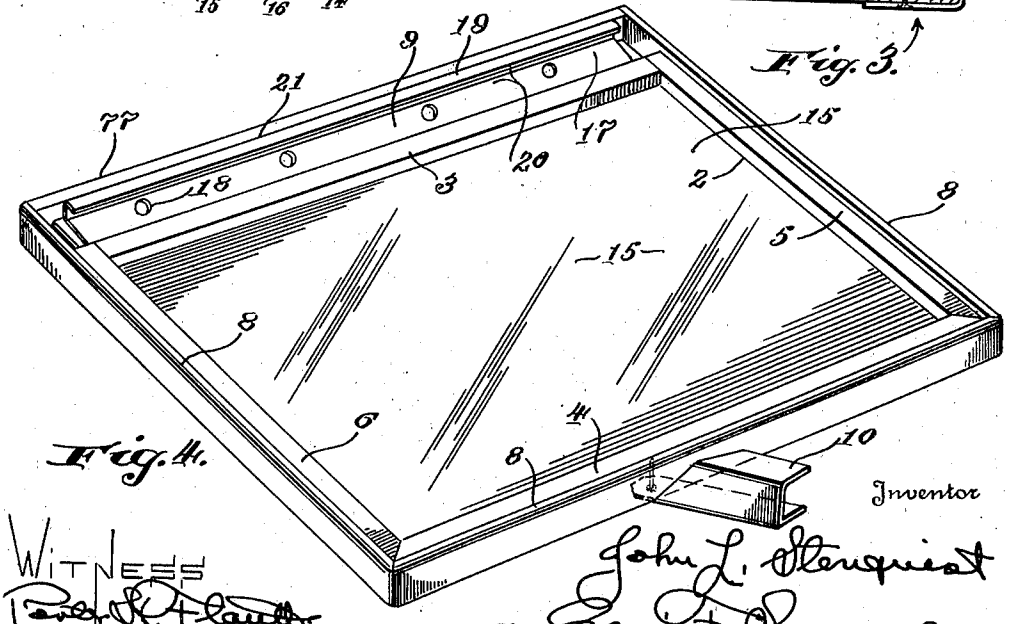


Fig. 4.

Witness

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COMPARTMENT DRAWING BOARD

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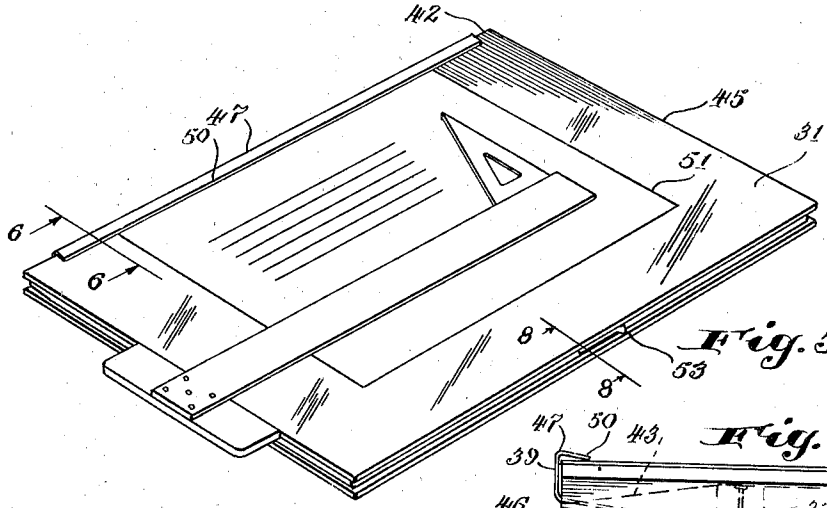


Fig. 5.

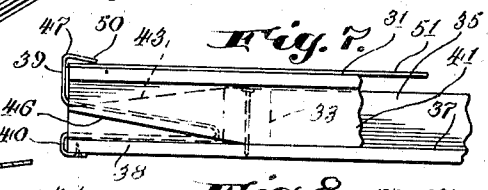


Fig. 7.

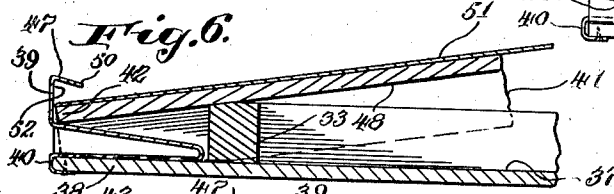


Fig. 6.

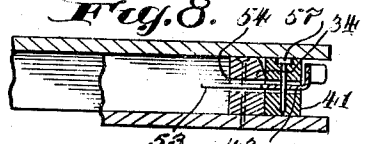


Fig. 8.

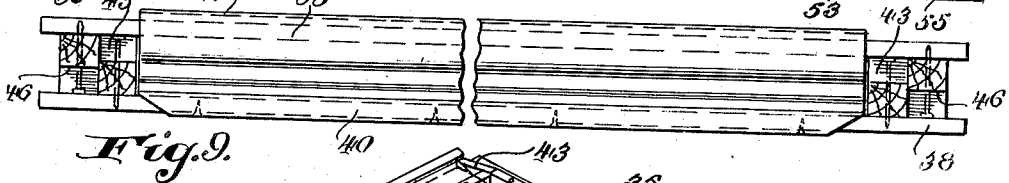


Fig. 9.

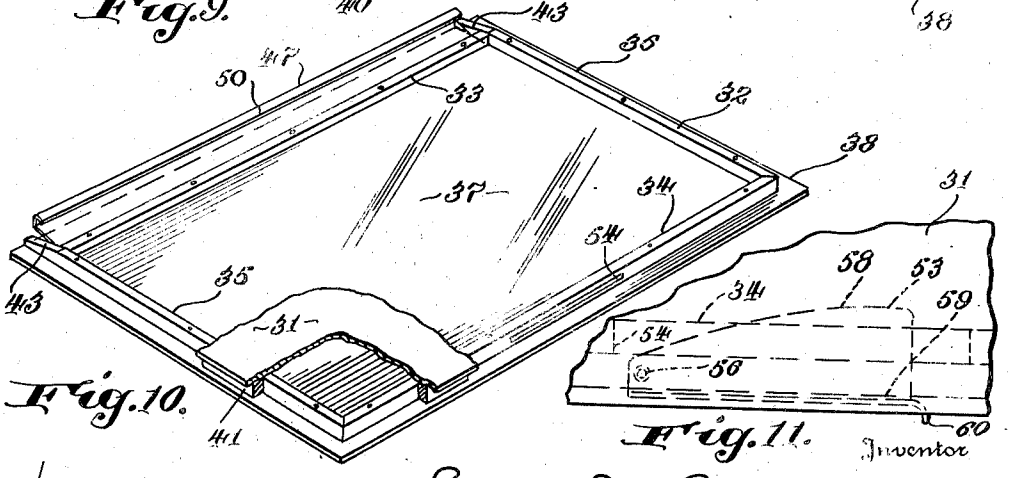


Fig. 10.

Fig. 11.

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UNITED STATES PATENT OFFICE

2,203,474

COMPARTMENT DRAWING BOARD

John L. Stenquist, Baltimore, Md.

Application April 11, 1938, Serial No. 201,249

6 Claims. (Cl. 45—131)

The invention relates to a combined drawing or writing board, paper holder and compartment for instruments, paper and the like, one form of the invention being adapted to have drawing instruments, such as triangles, squares, etc. attached to one side of the drawing board proper or cover which is inverted to close the compartment with the instruments inside the compartment. This type is also adapted for use as a drawing or writing board, one side of the board being available for this purpose independently of the instruments which are then enclosed inside the board, and it has the further advantage that the board is reversible so that it can be used on either side, as, when one side becomes damaged by indentations and the like incident to long use, accidents or mis-use.

It is an important advantage that the paper holder, or clamp is automatically operated as the compartment is closed, the board acting as a cover.

In the accompanying drawings, I have illustrated a preferred and a modified form of the invention including a reversible and non-reversible board and various forms of paper and hinge clamp.

In the drawings:

Fig. 1 is a perspective view of the compartment drawing board in the preferred form.

Fig. 2 is a section on the line 2, 2 in Fig. 1.

Fig. 3 is a section on the line 3, 3 in Fig. 1.

Fig. 4 is a perspective view looking at the top of the compartment the board or cover being removed.

Fig. 5 is a perspective view of a modified form of board and compartment, fully assembled, ready for use with a T-square triangle, and paper, the latter being clamped in position thereon.

Fig. 6 is a fragmentary section, one line 6, 6 in Fig. 5 showing the board rocked to partially open position.

Fig. 7 is a fragmentary view looking from the left in Fig. 5 showing the compartment closed, with the paper clamped in position for working.

Fig. 8 is a section on the line 8, 8 in Fig. 5 showing the compartment closed and illustrating the latch, the view being of a fragmentary nature for convenience of illustration.

Fig. 9 is a rear view looking at the paper clamp from the outside.

Fig. 10 is a perspective view corresponding to Fig. 5 showing the compartment closed by the board which is mainly broken away for convenience of illustration, but shown fragmentarily.

Fig. 11 is a fragmentary top plan of the assembled board and compartment Fig. 2 showing the latch in broken lines.

Fig. 12 is a section corresponding to Fig. 3 showing a modified form.

Referring to the drawings by numerals, each of which is used to indicate the same, or similar parts, in the different figures and having particular reference to Figures 1, 2, 3 and 4, the drawing board proper or cover indicated by reference character 1 is, in this instance, made reversible, being plain and flat on both sides and of substantially uniform thickness. This board may be of fibre, or plywood, or any suitable material, being preferably laminated to avoid warping.

The compartment 2 is in the form of a shallow box having four side walls of short vertical dimension, the side walls being indicated by reference characters 3, 4, 5 and 6. In the closed position, the drawing board proper or cover to said box, 1, rests directly on these side walls, being positioned and held by upright edge portions 8 at the two ends and means at the front respectively, the rear being in the form shown, closed by the clamping member 9, to be further described.

At the front, preferably at the centre, there is a latch 10, which in this form, is of U-shape in cross section, and pivoted at 11 to swing outwardly. In closed position it is adapted to take over the bottom of the box and the top of the board. The raised edge portions, 8, are of just sufficient height to accommodate the thickness of the drawing board so that it lies flush with the top of these edge portions in closed position.

The hinge and paper clamp 9 is of particular importance. It may be referred to broadly as a hook spring or clamp, and in the preferred form shown, it may be further described as of Z-shaped cross section, the Z-shape being desirable, but not essential to the operation of the invention in all its conceivable modifications. The hinge and paper clamp 9 is illustrated in section in Figs. 3 and 4, and also in Figs. 6, 7, and 12, in a modified form. As shown in Figs. 3 and 4, it is an elongated plate extending substantially across the rear of the compartment, though its extension across the entire length of the box is not essential to all uses of the invention.

As suggested, the form shown in Figs. 3 and 4 and also in Figs. 6 and 7, is of Z-shaped cross section, and in Figs. 3 and 4, etc. the bottom leg of the Z at 14 is secured to the floor 15 of the box by means of rivets 16. The middle leg of the Z at 17 is apertured at 18 to provide for convenient setting of the rivets. The rear portion of the middle arm 17 of the Z-cross section and the upper arm 19, form a hook 20, shown as extending the entire length of the plate, though this is not essential. Beyond the hook is a strip of

wood 21 extending the length of the rear side of the board or box by which the hook clamp is concealed. The moulding 21 is shown as overlying the top of the rear edge portion of the floor 15, and secured thereto. The floor being caused to protrude beyond the compartment proper 2 for this purpose is indicated.

In use, the board is attached to the compartment as a cover for the same, and in drawing or writing position, has its rear edge 24 inserted into the hook 20. The forward edge 25 of the arm or plate 19 is deflected downwardly toward the bottom of the box to give a paper clamping contact. To secure a sheet of paper 26 in writing or drawing position, the rear edge of the paper is inserted with the board 1, and on top of the same, into the hook 20 beneath the depending edge 25; the board, for this purpose, being inclined with its front edge 28 elevated. As the board is rocked, bringing the forward edge downwardly into the closed position of the board with the top surface level with the top of the edge portions 8, the rear edge of the board is forced upwardly against the edge 25 of the hook, clamping the paper between the board and the edge of the hook. The board being then fastened by the clip, or fastening 10, the board, compartment and paper are thus assembled ready for use for writing or drawing.

It will be easily apparent that with this type of construction, various drawing instruments adapted to be attached to the board in accordance with the existing practice, may be fastened to one surface of the board, and when this surface is turned in and the compartment is closed, the instruments are thus packed within the compartment and protected for carrying, or other transportation. It will also be understood that papers, and other work, pencils, etc., essential to the use of the board and other drawing instruments not attached to the board, may be conveniently enclosed within the compartment, and that the entire weight and thickness of the board and compartment, as thus closed, is less than those of the ordinary wooden drawing board in general use.

In Figs. 5 to 11, I have illustrated a modified form of the compartment drawing board. This comprises a board, or cover having a drawing surface, indicated by reference character 31 and corresponding to the board or cover 1 in the construction previously described. This cooperates with the compartment member 32, which corresponds to the compartment member 2 in Figs. 1 to 4. This compartment member is shown as having four side walls, 33 at the rear, 34 at the front and 35 and 36 at the sides. The floor 37 of the compartment member or box extends rearwardly of the rear wall 33 and this extension 38 supports a spring hinge and paper clamp 39, similar to the corresponding member 9 of the previous construction, though, as shown, it is secured by crimping the lower rear edge at 40 about the rear edge of the floor, or bottom wall, 37.

In this form of the invention, the board or cover 31 is provided on its under side with a downwardly projecting rim 41, which extends around 3 sides of the board, being omitted at the rear edge 42 of the cover 31, which enters and cooperates with the paper clamp 39 substantially in the manner already described in connection with the hinge and paper clamp 9 of the construction described in connection with Figs. 1 to 4. In this instance, however, the rear ends of the end walls 35 and 36 of the box, or compartment 32, extend beyond the rear wall 33 overlying the extension 38 and are of a reducing taper rearwardly, the top surfaces of these walls at 43 being downwardly inclined toward the rear as best shown in Fig. 10, and the rim 41 of the board proper is similarly and oppositely inclined at the rear ends of this trim, which as already pointed out, is U-shaped, extending around 3 sides of the board, i. e. the front and the two end edges 44 and 45. The incline, which is upward to the rear, is best illustrated at 46 in Fig. 7.

The projecting rim 41 of the board in the assembled position of the complete board and in the closed position of the compartment takes over and encloses the front and end side walls 34, 35 and 36 of the box, or compartment member 32 resting on the protruding edges 38 of floor 37.

To assemble the board and close the compartment, the rear edge 42 of the cover 31 is advanced into hook 47 of the clamp 39; the inclined surfaces 46 resting on the top of the projecting portion 38 of the floor 37 of the box, of compartment, which, incidentally, projects outwardly beyond the walls 34, 35 and 36, and the inclined surface 43 of the side walls 35 and 36 at their rear ends, engaging the bottom surface 48 of the board 31 near the rear and outside of the depending rim 41, particularly the inclined portions 46 thereof. These inclines provide for the convenient rocking of the rear portion of the board on the rear portion of the box, whereby the rear edge 42 of the board, the bottom surface of which at 48 also rests on the top of the rear wall 43 of the box, swings upwardly against the depending edge 50 of the hook 47, and a sheet of paper 51 placed on the board in working position is thus securely clamped to the rear edge portion of the board and held with its edges parallel with the corresponding edges of the board, assuming that the paper is rectangular and the board is likewise rectangular, and that the paper is thrust backwardly against the rear inside upright surface 52 of the hook 47 which serves to position the paper with its edges parallel to the edges of the board as already described.

Any suitable fastening may be provided to cooperate with the clamp 39 to hole the compartment, and the board or cover and compartment in assembled relation with the compartment closed. Such a fastening is illustrated at 53 in broken lines in Fig. 11. The fastening shown cooperates with a slot 54 in the front wall 34 of the box and a slot 55 in the rim 41 at the front being pivoted at 56 in the latter by means of a pin 57. The latch 53, as shown, consists of a plate 58, having a front flange 59 at right angles thereto, which flange projects and is turned forwardly at 60 forming a finger-hold. As already pointed out, any suitable latch may be substituted for the latch 53, as the latch 10 in Fig. 4. An ordinary ball and socket, or similar fastening, may be used.

The operation of the device will be fully understood from the description and preamble.

The board or cover 1, shown in Figs. 1 to 4, has the advantage that it is reversible, and also that the drawing instruments may be attached to one side of the board and be faced upwardly for use, or the board may be reversed to enclose the instruments in the compartment.

In Fig. 12 I have shown a clamp or fastening 70 which corresponds to the clamps 9 and 39

differing therefrom in that the bottom arm 71 is turned at the rear at 72 and continued forwardly at 73 extending forwardly of the Z-bend 75 at 74, the bend 72 is also extended rearwardly of the hook 76. The rear bend 72 is secured under a rear strip 77 corresponding to strip 21 and the end 74 is secured beneath the rear wall of the compartment at 78. This gives an additional resiliency due to the extra turn of the spring and a convenient and secure method of installation.

The manner of clamping the paper, in both instances, is similar, being due to the rocking of the board around the rear edge of the box, or compartment, as it is brought to horizontal position in closing the compartment; thus, a considerable leverage is exerted and the pressure applied to the paper is only limited by the tension of the spring which may be determined to suit the fastening pressure desired. In each instance, the board is positioned by the edges of the box. In the first form, however, it fits inside the extreme top edges of the box and in the second form it is provided with a rim which preferably encloses the sides of the box. In either instance, the board or cover 1, 31 is accurately positioned as to all four edges and it will be noted that the board may be either flush with the sides of the box, as illustrated in Figs. 1 to 4, or may project beyond these sides as illustrated in Figs. 5 to 11. The board or cover may be made of fibre board, plywood or any suitable material, and the construction has the advantage not only that it provides an easy, quick and accurate positioning and clamping of the paper, but in that it provides a board having all the rigidity of a solid board, and with a compartment amply sufficient for the work and instrument within the board without increase of thickness or weight.

I have thus described a preferred and modified form of my invention, the description being specific and in detail in order that the manner of constructing, applying and using the invention may be fully understood; however, the specific terms herein are used descriptively rather than in a limiting sense, the scope of the invention being defined in the claims.

What I claim as new and desire to secure by Letters Patent is:

1. A compartment drawing board of substantially the thickness of an ordinary solid drawing board, the same comprising a shallow box and a cover having a drawing surface, a spring clamp at the rear of the box adapted to yieldably depress the rear edge of the cover, the compartment having means for engaging the rear edge of the cover and clamping the edge of the paper thereon, and to be closed by rocking into engagement with the top of the box to close the same the box having a rear wall forwardly of said spring clamp on which the rear portion of the cover rests and about which it is rocked, and fastening means for the board at the front of the box.

2. A compartment drawing board of substantially the thickness of an ordinary solid drawing board, the same comprising a shallow box and a cover having a drawing surface, a Z-shaped spring clamp at the rear of the box said spring clamp having a hook adapted to admit and encompass the rear edge of the cover and to clamp the edge of the paper thereon, the spring being adaptable to yieldably depressing the edge of the cover and the covering being adapted to be closed by rocking it into engagement with the top of the box to close the same, a support at the rear of the box, about which the cover rocks in engagement with said spring and fastening means for the board at the front of the box.

3. A compartment drawing board comprising a shallow box of drawing board dimensions and a cover there for having two plane flat unobstructed surfaces each of said surfaces being adapted for use as a paper support for drawing or writing means at one edge of the box for fastening the corresponding edge of the cover to the box and the paper there on in drawing or writing position simultaneously with the closing of the cover and means at the opposite edge of box for fastening the opposite edge of the cover to the box, the cover when unfastened being free of the box and adapted to be removed and reversed and replaced in reversed position so either surface can be used for drawing or writing.

4. A compartment drawing board comprising a shallow box and a cover, the latter providing a paper supporting surface adapted for use in drawing, the box being of substantially the dimensions of a solid drawing board and the cover being relatively thin, a spring hook clamp at one edge of the box having the hook opening disposed inwardly toward the center of the box and wider than the thickness of the covering and the hook having a depending edge to engage the cover or paper thereon means for supporting the edge portion of the cover adjacent the hook but spaced therefrom providing for rocking the cover to a closed position about said latter means whereby the edge portion of the cover is pressed against said depending edge as it is closed and additional means for fastening the portions of the cover remote from the hook.

5. In an article of the character described comprising, a shallow box having a bottom and side wall members, a substantially rigid movable top cover member adapted to support a sheet of paper on the outer surface thereof, a spring clamp located along one edge of said box for contacting the outer surface of the said top cover when the said cover is normally closed upon the said box for holding one edge of said paper, means associated with the said box for supporting the said cover inwardly from the edge to be contacted by said clamp, whereby the said cover may be pivoted upon said support for engaging and disengaging the said cover with the said clamp and means for securing an edge of the cover remote from said clamp to the box.

6. In an article of the character described comprising, a shallow box having a bottom and side wall members, a substantially rigid movable top cover member adapted to support a sheet of paper on the outer surface thereof, a spring clamp at one edge of said cover for contacting the outer surface of said top cover when the cover is held normally closed upon said box for holding one edge of the said paper sheet means rockably supporting the cover adjacent said edge whereby said clamp is automatically opened and closed as the cover is raised and lowered and means for fastening the said cover in closed position.

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