Oct. 22, 1957 R. S. LARSEN 2,810,618

SUPPORT AND HOUSING FOR PANEL BOARDS

Filed June 10, 1954

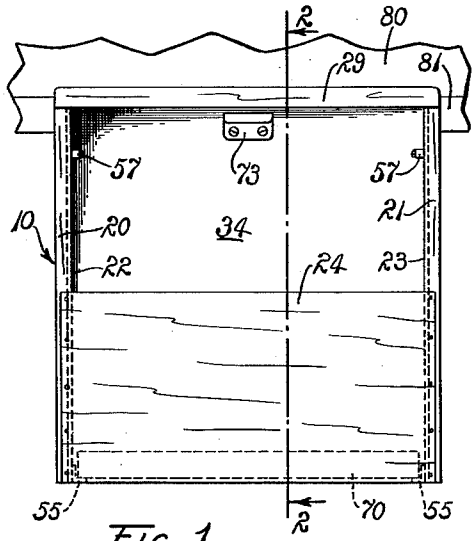


FIG. 1.

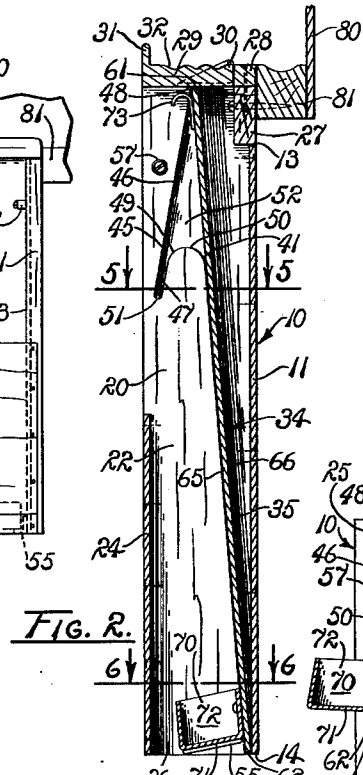


FIG. 2.

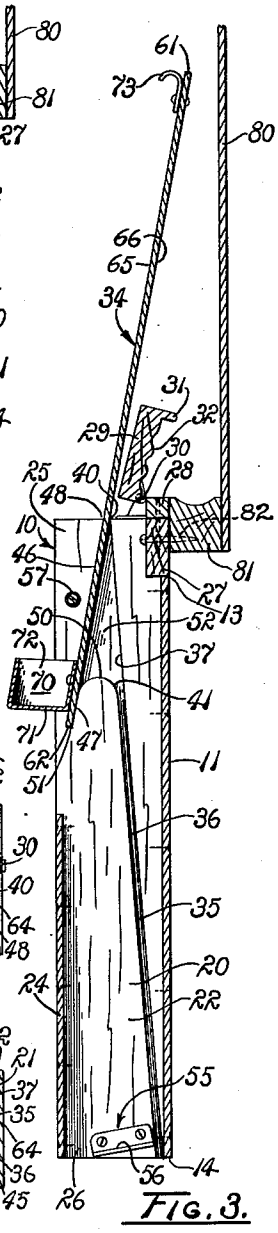


FIG. 3.

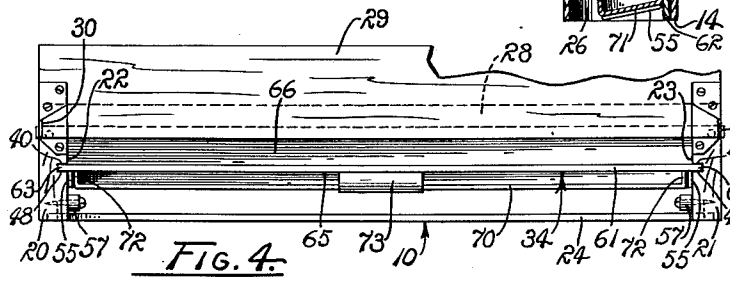


FIG. 4.

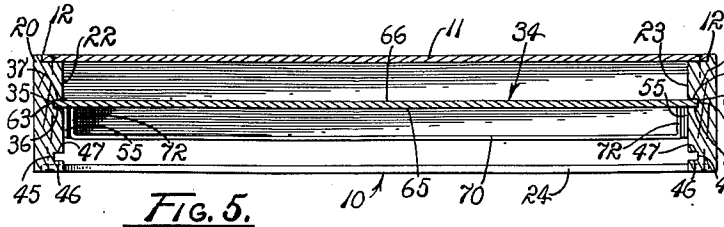


FIG. 5.

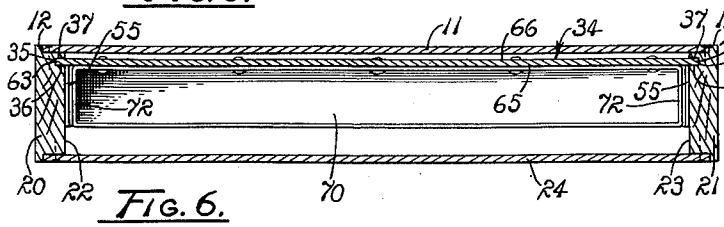


FIG. 6.

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United States Patent Office 2,810,618 Patented Oct. 22, 1957

2,810,618

SUPPORT AND HOUSING FOR PANEL BOARDS

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Application June 10, 1954, Serial No. 435,790

7 Claims. (Cl. 312—312)

The present invention relates to articles of furniture and more particularly to improvements in a support and enclosure member for easels, drafting boards, blackboards and like articles.

Artists easels, portable blackboards and many types of drafting boards of a portable nature have conventionally been supported by tripod arrangements or other cumbersome supporting frameworks. When not in use, such structures are incapable of compact storage and offer no protection for paintings, drawings and the like left unfinished on their panels or boards. Some conventional structures are detachable by removal of the supporting legs from the panels or boards thereof so that in this manner they are more easily transported. However, such separable structures are clumsy to handle and again, leave drawings and the like on the boards readily susceptible to damage. Further, in school room it is frequently desirable to employ paper or cardboard supporting panels or boards for pupil use without interfering with normal blackboard use. Such has been quite difficult to achieve in the limited classroom area available and with conventional easels or stands.

The foregoing problems indicate a need for a conveniently operable, combined support rack and housing for easel boards, blackboards, drafting boards and the like. Such a structure, as provided by the present invention, is designed adequately to protect the drawings or other materials on the panel boards when not being worked upon and further provides sturdy support for such boards when in use.

Therefore, an object of this invention is to provide a combined housing and support for easels, drafting boards, blackboards and the like.

Another object is to provide a collapsible structure for supporting and housing such items as noted in the foregoing paragraph.

Another object is to provide a housing for supporting a panel member selectively in retracted and outwardly extended positions.

Another object is to provide a housing for retaining a panel member in retracted position therein and supporting the panel in outwardly extended inclined position.

Another object is to provide a housing adapted slidably to receive a panel member in guided relation therein, further adapted for sliding movement of the panel to extended position wherein the panel is swingable into a constrained position of inclination.

Another object is to provide a panel such as an easel, drafting board, blackboard or the like slidably fitted in a casing for movement along an inclined plane between a retracted position interiorly of the casing and an extended position wherein the panel is swingable for further sliding movement along an inclined plane oppositely sloped from the first plane into an outwardly extended rested position.

Another object is to provide a housing for collapsibly mounting a panel member having an arrangement of grooves for selectively receiving the panel member

adapted to house the panel and to maintain the panel member in outwardly extended inclined position relative to the housing.

An additional object is to provide a device of the character described which is suitable for mounting on the chalk rails of the blackboards conventionally found in schoolrooms and the like.

Further objects are to provide such an arrangement as set forth in the preceding paragraphs which includes stop means limiting sliding movement of the panel, tray holding means for the panel and means for mounting the housing for the panel in an upright position.

These and other objects will become more fully apparent upon reference to the following description.

In the drawings:

Fig. 1 is a front elevation of the device of the present invention in retracted condition mounted on a chalk rail of a blavkboard, the latter being fragmentarily represented.

Fig. 2 is a somewhat enlarged section taken on line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 2 but showing a panel member in outwardly extended inclined position, as for use.

Fig. 4 is a somewhat enlarged top view with a lid member thereof pivoted to open position.

Fig. 5 is a horizontal section taken on a horizontal plane indicated by line 5—5 of Fig. 2.

Fig. 6 is a horizontal section taken on a horizontal plane indicated by line 6—6 of Fig. 2.

Referring more particularly to the drawings:

In Fig. 1, a housing, rack or casing **10** is shown having a rear wall **11**. The rear wall provides a pair of side edges **12—12**, an upper edge **13** and a lower edge **14**.

A pair of side walls **20** and **21** are connected to the side edges of the rear wall and extend forwardly therefrom in spaced parallel relation. The side walls are provided with inner faces **22** and **23**, respectively. The housing further provides a forward wall **24** connected between the forward edges of the side walls and in spaced parallel relation to the rear wall. The forward wall is foreshortened relative to the rear wall, preferably being substantially one-half of the height of the rear wall, as seen in Figs. 1 to 3. The housing is open at its upper and lower ends, as at **25** and **26**, respectively. A mounting strip **27** extends between the side walls adjacent to the upper edge **13** of the rear wall. A molding strip **28** is attached to the mounting strip **27**. An elongated lid **29** is connected to the molding strip **28** by a pair of hinges **30—30**. The lid has an upwardly extended lip **31** along the forward edges thereof.

Each of the side walls **20** and **21** is adapted guidably to receive a panel or board **34** therein in a manner subsequently to be described. The panel board may be for a variety of functions as for example, a support for a painting canvas, drawings or other art materials such as used in drafting or may comprise a blackboard. Since the inner faces **22** and **23** of each side wall are similarly constructed, reference will be made only to side wall **20** in describing the mounting arrangement for the panel board.

Referring to Fig. 3, the inner face **22** of side wall **20** is provided with a forwardly inclined lower groove **35** extending from the rear corner of the lower edge of the side wall upwardly and forwardly to a position intermediate the front and rear corners of the upper edge of the side wall. This lower groove has parallel forward and rearward surfaces **36** and **37**, respectively. The lower edges of the forward and rearward surfaces both terminate at the lower edge of the side wall. Although the upper edge, indicated at **40**, of the rearward surface terminates at the upper edge of the side wall, the upper edge, indicated at **41**, of the forward surface is fore-

shortened somewhat and terminates approximately two-thirds of the way up the side wall.

A rearwardly inclined upper groove **45** having parallel forward and rearward surfaces **46** and **47**, respectively, is also provided in the side wall **20**. The forward surface **46** is inclined upwardly and rearwardly and has an upper edge **48** terminating in the upper edge of the side wall adjacent to upper edge **40**. The rearward surface **47** provides an upper edge **49**, joined to the upper edge **41** by an arcuate section **50**. The lower edges of the upper groove terminate in a blind or closed bottom **51**. A substantially V-shaped space **52** is defined between the forward surface **46** of groove **45**, the rearward surface **37** of groove **35** and the arcuate section **50**, for a purpose subsequently to be described.

Stated otherwise, the inner face of side wall **20** is provided with a groove having outer front and rear groove surfaces **46** and **37** and inner front and rear groove surfaces **47** and **36**, respectively, in spaced parallel relation to the outer front and rear groove surfaces. The outer groove surfaces provide upper ends terminating in the top edge of the side wall and lower ends downwardly divergent therefrom. The inner groove surfaces provide interconnected upper ends spaced below the upper ends of the outer groove surfaces.

A pair of angulated brackets **55** are mounted on the side walls **20** and **21** adjacent to the lower edges thereof and provide inwardly extending rearwardly inclined stop surfaces **56**. A pair of pins **57** are mounted on the side walls adjacent to their upper edges and extend inwardly thereof likewise constituting a pair of stop members.

The panel board **34** is of substantially rectangular shape and of relatively hard or stiff material and is mounted for slidable movement in and out of the housing **10**. The panel board provides an upper edge **61**, a lower edge **62** and side edges **63** and **64**. Further, the board has a forward surface **65** and a rearward surface **66**. A tray **70** comprising an elongated channel member closed at both ends having a somewhat inclined lower surface **71** and end walls **72** is attached to the panel board on the forward surface **65** thereof adjacent to the lower edge **62**. A handle **73** of any convenient type is mounted on the forward surface **65** adjacent to the upper edge **61**.

The panel board **34** is mounted between the side walls **20** and **21** with the side edges **63** and **64** slidably fitted in either the upper or lower grooves, **45** or **35**, as desired. These grooves are adapted to guide the panel board for slidable movement between a retracted position within the housing, as seen in Fig. 2, wherein the panel board is fitted in the lower grooves and an upwardly extended position, as seen in Fig. 3, wherein the panel board is rested in the upper grooves. Because of the inclination of the grooves, the panel board assumes a position of forward inclination relative to the rear wall **11** when in the retracted position and a position of rearward inclination when in the upwardly extended position. In the upper position, as seen in Fig. 3, the lower end of the board rests in the blind bottom **51** and against the rearward surface **47** of groove **45** while a central portion of the board rests against the upper edges **40**.

Operation

The operation and utility of the present invention is believed readily apparent and is briefly summarized at this point. When not in use, the panel board **34** is normally retained in retracted position within the housing **10**, as best shown in Fig. 2. The housing, including panel **34**, is of sufficiently lightweight and compact size that it may be conveniently transported. Alternatively, it may be rigidly attached in upright position to a support surface. An example of this latter mounting is shown in Figs. 1 to 3 wherein the device of the present invention is combined with a conventional blackboard, indicated at **80**. The housing is attached to a chalk rail **81**, molding strip, or other mounting surface on the blackboard by extension of screws, as **82**, through the mounting strip **27** and into chalk rail **81**. Any number of the devices may be attached inwardly adjacent along the length of the blackboard. Even when portable, the mounting strip may be provided with hooks, not shown, or other mounting means for ready attachment to a wall or the like. While for classroom use, chalk rail mounting is regarded as highly advantageous, it will be understood that the device may simply be stood on a supporting table or dsek or affixed to any suitable support member in the manner illustrated in the drawing.

If mounted in the manner shown in Fig. 2, the lid **29** is pivoted to its downward position when the panel **34** is not in use and cooperates with the molding strip **81** of the blackboard to hold erasers, chalk and the like thereon. In this position, lip **31** prevents such articles from falling off the lid.

In order to employ the board **34** for supporting a canvas, drawing or for writing upon the board in the event of its use as an auxiliary to the blackboard **80**, the lid **29** is lifted into a position, as shown in Fig. 3, and the board **34** is lifted in the housing by the handle **73**. The lower grooves **35** guide the upward sliding movement of the panel through the upper open end **25** and when the end walls **72** of tray **70** hit the upper stop members **57**, further upward sliding of the panel is precluded. In this position, however, the lower portion of the board is disposed within the V-shaped space **52** and with lower edge **62** above the arcuate section **50**. By pushing rearwardly on the upwardly extended portion of the board, it may be swung or pivoted around that portion of the board lying between the upper edges **40** and **48** of the grooves. These edges **40** and **48** act as a fulcrum for the pivotal movement of the board. The swinging motion of the board is limited when it abuts against the forward surfaces **46** of upper grooves **45** whereupon the board may be slidably lowered in grooves **45** between forward and rearward surfaces **46** and **47** until it rests in the blind bottoms **51** of the upper grooves. Because of the rearward inclination of the upper grooves, the board is held in an upwardly extended, rearwardly inclined position with a portion of the board maintained between edges **40** and **48**, as best seen in Fig. 3. In this position, the board is ready for use as an easel, blackboard or drafting board. Further, the tray **70** is conveniently disposed for use in the normal manner with the board for holding brushes, paints, chalk, erasers and the like. When used with a permanent blackboard, as **80**, the board is readily available to display charts, graphs, maps and the like or may be used as a support for writings, paintings, or drafting, as above described, for many and various educational and entertainment purposes.

The board **34** is returned to its retracted position by lifting upwardly on the handle **72** whereupon the board is lifted from the blind bottom **51** of the upper groove **45** until tray **72** hits stop pins **56**. Thus the board is again held in spaced position above the arcuate portion **50**. The board is then swung rearwardly into the lower groove **35** whereupon it is eased downwardly in sliding manner between forward and rearward surfaces **36** and **37** of the lower groove. When the lower surface **71** of the tray **70** abuts against the stop surfaces **56** of brackets **55**, further downward sliding movement of the board is prevented. Thus, the tray not only serves its normal function as a container but further acts, in cooperation with stop members **55** and **57**, to limit upward sliding movement of board **34**, and to limit and retain the board against downward sliding movement holding it in proper housed relation. In this position the board is fully retracted within the housing and any art materials such as unfinished paintings, drawings or writings left on the board are protected against damage or erasure by the forward and side wall to **24**, **20** and **21** of the housing. As an added measure of protection against dust and

the like from above, the lid **30** may be pivoted to its downward position to close partially the upper end of the housing.

From the foregoing, it will be apparent that a collapsible article of furniture useable as an easel, drafting board or blackboard has been provided. The structure described is portable in nature and provides for a sturdy and rigid support rack for a panel board as well as a convenient protective housing for the panel board when not in use.

The invention is not to be limited to the specific inclination or arrangement of grooves **35** and **45**. It is quite apparent that the construction of the grooves could be modified to accommodate various shapes of boards as well as other controlled movements thereof. Further, although grooves have been shown and described, other guiding means for accomplishing a similar purpose are to be included within the scope of this invention.

Although the invention has been herein shown and described in what is conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of the invention, which is not to be limited to the details disclosed herein but is to be accorded the full scope of the claims so as to embrace any any all equivalent devices and apparatus.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An article of furniture comprising a housing having a rear wall defining an upper edge, a lower edge and a pair of side edges, a pair of side walls substantially perpendicularly extended from the side edges respectively of the rear wall, a substantially rectangular panel having a pair of side edges, an upper edge and a lower edge and being mounted for slidable movement in the housing with the side edges thereof being disposed adjacent to the side walls of the housing, means on the side walls for guiding the movement of the panel between a forwardly inclined retracted position within the housing and a rearwardly inclined extended position outwardly of the housing with the upper edge thereof rearwardly displaced from the lower edge, a tray mounted along the lower edge of the panel, and stop means mounted on the side walls laterally extending inwardly thereof and cooperating with the tray to limit slidable movement of the panel in both the retracted and extended positions of the panel.

2. An article of furniture comprising a housing having a rear wall providing a pair of side edges, a pair of side walls forwardly extended in parallel relation from said side edges respectively, the side walls having therein a lower pair of opposed corresponding grooves in the side forwardly inclined relative to the rear wall, an upper pair of opposed corresponding grooves rearwardly inclined relative to the rear wall and individually connected with the lower pair of grooves of their respective side walls, a substantially rectangular panel mounted in the grooves of the housing selectively positionable between a retracted position within the housing and a rearwardly inclined extended position, the panel having a pair of side edges slidably received in the lower pair of grooves when the panel is in a retracted position and in the upper pair of grooves when the board is in an extended position.

3. An article of furniture comprising a housing having a rear wall defining an upper edge, a lower edge and a pair of side edges, a pair of side walls substantially perpendicularly extended from the side edges of the rear wall and a forward wall extending between the side walls in spaced parallel relation to the rear wall and being foreshortened relative thereto, a substantially rectangular panel having a pair of side edges, an upper edge and a lower edge and being mounted for slidable movement in the housing with the side edges thereof being disposed adjacent to the side walls of the housing, groove means on the side walls for guiding the movement of the board between a forwardly inclined retracted position in the housing and a rearwardly inclined upwardly extended position out of the housing, handle means mounted adjacent to the upper edge of the panel for positioning the panel in either the retracted or extended positions thereof, a tray mounted adjacent to the lower edge of the panel, stop means mounted on the side walls of the housing and extending inwardly thereof for abutment against the tray to limit sliding movement of the panel in both the retracted and extended positions thereof, and the groove means providing for swingable movement of the panel when the tray is in abutment with the upper stop means between said position of forward and rearward inclination.

4. An article of furniture adapted for use with blackboards providing article support surfaces thereon comprising a housing having a rear wall defining an upper edge, a lower edge and a pair of side edges, means for mounting the housing along the upper edge of the rear wall to the support surface of the blackboard, a pair of side walls substantially perpendicularly extended from the side edges of the rear wall, a forward wall extended between the side walls in parallel spaced relation to the rear wall, a substantially rectangular panel having a pair of side edges, an upper edge and a lower edge and being mounted for slidable movement in the housing with the side edges thereof being disposed adjacent to the side walls of the housing, means on the side walls for guiding the movement of the panel between a forwardly inclined retracted position in the housing and a rearwardly inclined upwardly extended position out of the housing, a tray mounted along the lower edge of the panel, upper and lower stop means extended inwardly from the side walls cooperating with the tray to limit upper and lower sliding movement of the panel, and a lid hingedly attached to the side walls adjacent to the upper edge of the rear wall and having an upwardly extended front lip, the lid being adapted for pivotal movement between an open position permitting slidable movement of the panel outwardly of the housing and a closed position defining an extension to the article support surface of the blackboard.

5. An article of furniture comprising a pair of spaced interconnected walls having upper and lower ends and front and rear portions, the walls having opposed corresponding groove means providing outer front and rear groove surfaces having adjacent upper ends defining a groove opening therebetween and divergently downwardly extended lower ends, the groove means further providing inner front and rear groove surfaces respectively in adjacent spaced relation to the outer front and rear groove surfaces, the inner groove surfaces meeting in upper ends spaced below the upper ends of the outer groove surfaces; and a panel having opposite edges slidably received in the groove means for movement between a rear position fitted in the inner and outer rear groove surfaces and a front position fitted in the inner and outer front groove surfaces, the panel being slidably extendible through the groove opening and swingable about the upper ends of the outer groove surfaces acting as a fulcrum to facilitate movement of the panel into said front and rear positions.

6. An article of furniture comprising a pair of spaced interconnected walls having top and bottom edges and front and rear edges, the walls having opposed corresponding groove means providing outer front and rear groove surfaces having closely spaced upper ends terminating at the top edge of the walls and divergently downwardly extended lower ends, the lower ends of the front groove surfaces terminating above the lower ends of the rear groove surfaces, the groove means further providing inner front and rear groove surfaces respectively in adjacent spaced relation to the outer front and rear groove surfaces, the inner groove surfaces meeting in upper ends spaced below the upper ends of the outer groove surfaces, and a panel having opposite edges slid-

ably received in the groove means for movement to an extended position fitted between the inner and outer front groove surfaces and to a retracted position between the inner and outer rear groove surfaces, the adjacent upper ends of the outer groove surfaces forming a fulcrum around which the panel is swingable to facilitate movement between said extended and retracted positions.

7. An article of furniture comprising a pair of elongated walls having top and bottom edges, front and rear edges, and front and rear grooves, means interconnecting the walls in parallel spaced relation with the grooves in corresponding opposed facing relation, the rear grooves having rear surfaces extended the full length of the walls terminating in the top and bottom edges and forward surfaces extended upwardly from the bottom edges terminating at upper ends spaced below said top edges, the forward grooves having forwardly inclined front surfaces extended downwardly from said top edges having upper ends adjacent to the rear surfaces of the rear grooves and terminating at lower ends below the upper ends of the forward surfaces of the rear grooves, the forward grooves further having forwardly inclined rear

surfaces extended from adjacent to the upper ends of the forward surfaces of the rear grooves downwardly and terminating at lower ends adjacent to the lower ends of the front surfaces of the forward grooves; a panel having side edges slidably received in the grooves of the walls for movement between a retracted position between the forward and rearward surfaces of the rear grooves and a position endwardly extended from the walls swingable in said extended position around the adjacent front surfaces of the forward grooves and the rear surfaces of the rear grooves so as to be rested in inclined position in the forward grooves; and stop means extended from the walls for limiting movement of the panel in said retracted position.

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