Oct. 1, 1957 R. G. PAPELIAN ET AL 2,808,308

ADJUSTABLE DRAWING BOARD AND SUPPORT

Filed May 10, 1954 3 Sheets-Sheet 1

Fig. 1

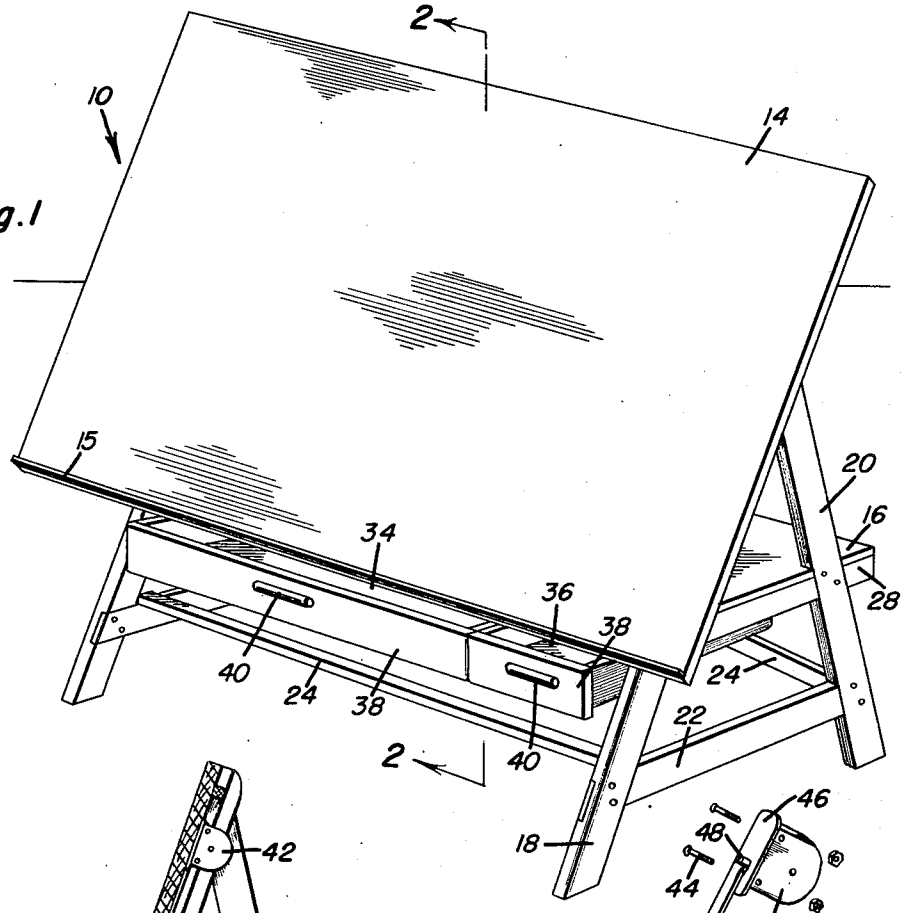


Fig. 2

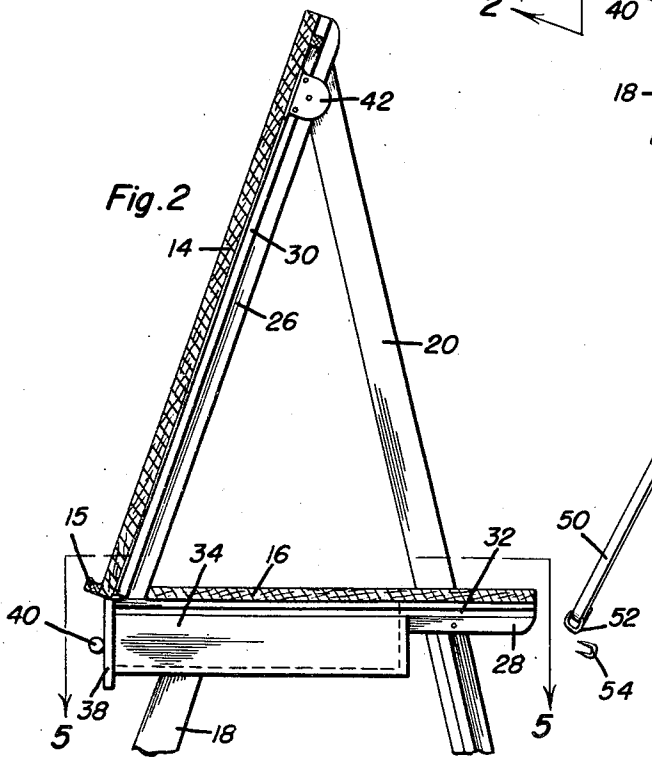


Fig. 3

Roger G. Papelian
Kenneth L. Giacomuzzi
Carl O. Engstrom

INVENTORS

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Oct. 1, 1957 R. G. PAPELIAN ET AL 2,808,308

ADJUSTABLE DRAWING BOARD AND SUPPORT

Filed May 10, 1954

3 Sheets-Sheet 2

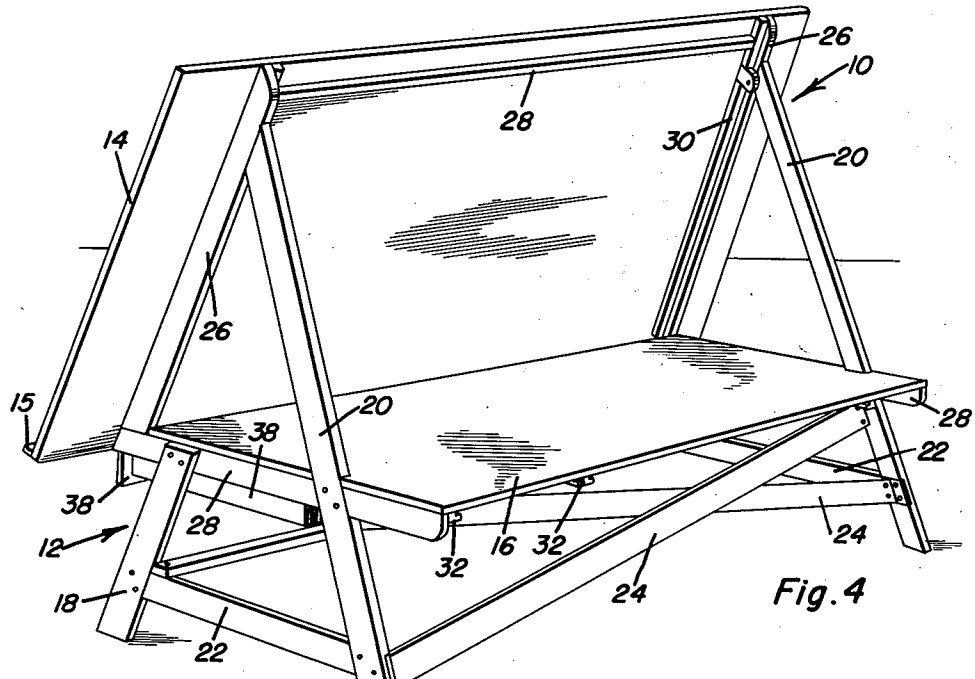


Fig. 4

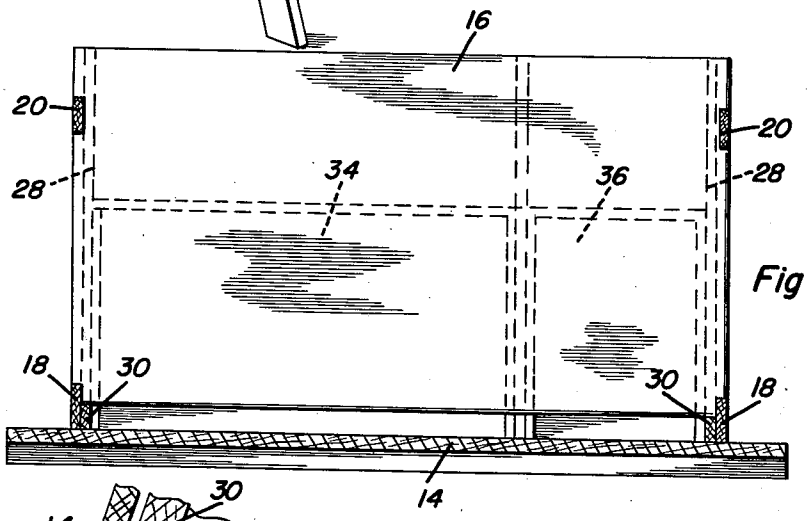


Fig. 5

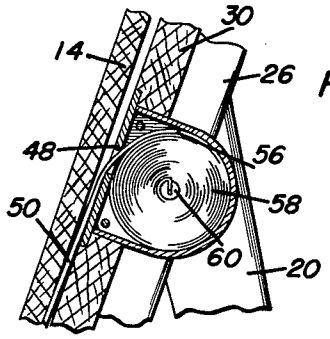


Fig. 6

Roger G. Papelian
Kenneth L. Giacomuzzi
Carl O. Engstrom

INVENTORS

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

Oct. 1, 1957 R. G. PAPELIAN ET AL 2,808,308

ADJUSTABLE DRAWING BOARD AND SUPPORT

Filed May 10, 1954 3 Sheets-Sheet 3

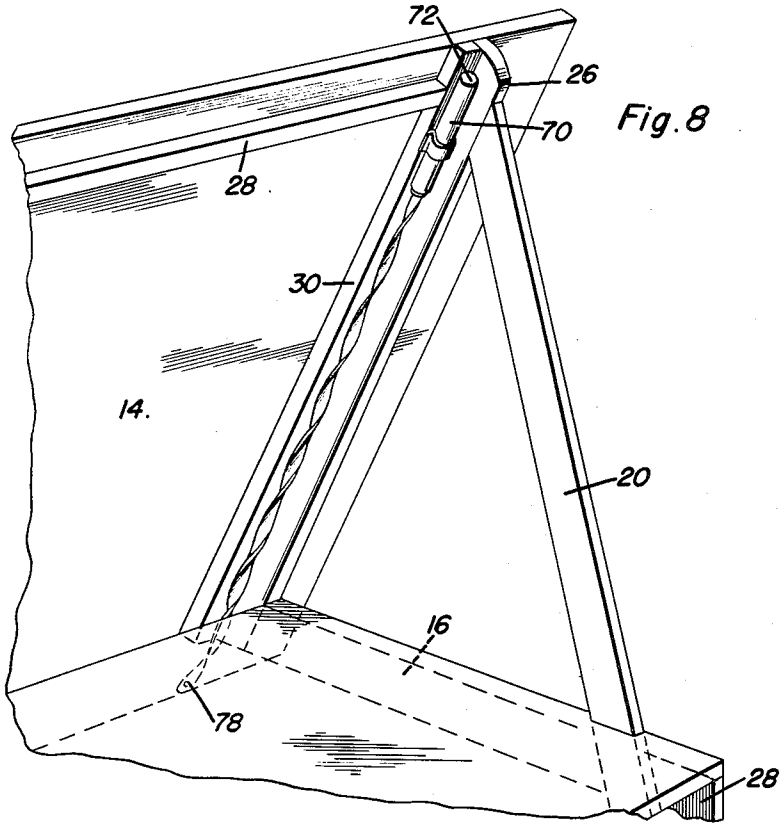


Fig. 8

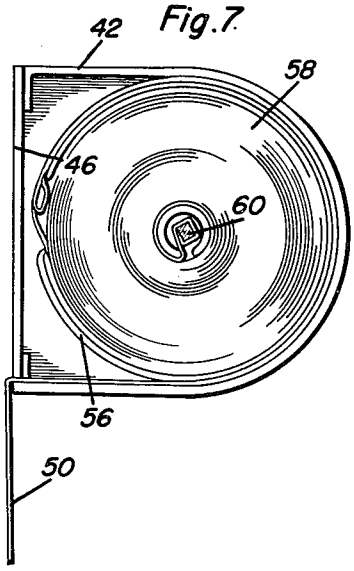


Fig. 7

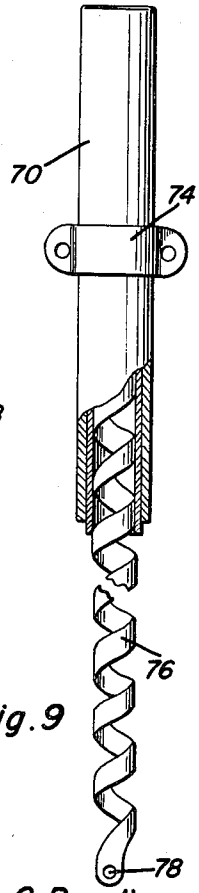


Fig. 9

Roger G. Papelian
Kenneth L. Giacomuzzi
Carl O. Engstrom
INVENTORS

BY Thomas A. O'Brien and Harvey B. Jacobson
Attorneys

United States Patent Office

2,808,308

Patented Oct. 1, 1957

2,808,308

ADJUSTABLE DRAWING BOARD AND SUPPORT

Roger G. Papelian and Kenneth L. Giacomuzzi, Milford, and Carl O. Engstrom, Leicester, Mass.; said Giacomuzzi and Engstrom assignors to said Papelian

Application May 10, 1954, Serial No. 428,404

3 Claims. (Cl. 312—231)

This invention comprises novel and useful improvements in a drawing board and more specifically pertains to an improved combination table and desk together with a drawing board mounted thereon in a novel vertically adjustable manner.

A primary object of this invention is to provide a combined table and desk and drawing or work board which shall have a particularly advantageous cooperation between the elements making up the drawing board and desk and thereby produce an improved article having a superior manner of functioning for either use.

A further object of the invention is to provide in a combined desk and drawing board an improved mounting of the drawing board whereby the latter may be readily vertically adjusted upon the desk with a minimum of effort and attention on the part of the user.

A still further object of the invention is to provide an article of the character above set forth in which the drawers of the desk may be readily accessible from either side of the same, whereby the desk may be utilized for its normal functioning and access may be readily had to the drawers during such use.

Yet another object of the invention is to provide an article as set forth in the foregoing objects in which the drawing board is mounted upon the desk structure in such a manner as to enable the user to vertically adjust the same by the simple touch of a finger thereon, the drawing board being supported and resiliently maintained in vertical adjustment by an improved construction and mounting of various types of springs.

Still another object of the invention is to provide an article in conformity with the preceding objects in which commercially available and known conventional types of spring devices such as spring reels, torsion springs and the like may be provided for supporting a drawing board in a manner wherein the springs will be compactly and unobtrusively mounted, yet will most effectively apply their supporting tension to the drawing board.

And a final specific object of the invention to be specifically enumerated herein is to provide a combined drawing board and desk combination which may be fabricated from inexpensive materials, yet will be exceptionally sturdy in construction, attractive in appearance and highly satisfactory in performance.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of a combined desk and drawing board constructed in accordance with the principles of this invention, the view being taken from the front view of the drawing board and showing the manner in which the latter is available for use at all times, the desk drawers being open below the board to show the accessibility of drafting materials which may be received therein;

Figure 2 is a vertical transverse sectional view taken substantially upon the plane indicated by the section line 2—2 of Figure 1 and showing certain structural details of the desk and the manner in which the drawing board is mounted thereon;

Figure 3 is a perspective view of the resilient supporting and adjusting means for the drawing board;

Figure 4 is a perspective view similar to Figure 1 but showing the rear side of the drawing board and the manner in which the desk is available for use at all times;

Figure 5 is a horizontal sectional view taken substantially upon the plane indicated by the section line 5—5 of Figure 2 and indicating in dotted lines the position of the drawers of the desk;

Figure 6 is an enlarged detail view in vertical section showing the manner in which the resilient spring reel is mounted upon the desk rail structure supporting the drawing board;

Figure 7 is an enlarged detail of a spring device which is of a commercially available spring reel type;

Figure 8 is a fragmentary perspective view of a portion of the construction of Figure 4, but showing a different spring device applied thereto; and,

Figure 9 is a perspective view, parts being broken away of a spiral spring construction employed in the assembly of Figure 8.

In the accompanying drawings the numeral **10** designates generally the improved combined desk and drawing board in accordance with the principles of this invention, the same including a desk or table structure indicated generally by the numeral **12** and upon which is adjustably mounted in a manner to be subsequently set forth a drawing board **14**. The drawing board may be of any known and conventional design having a pencil tray **15**, the invention being especially applicable to a relatively large drafting board of such size as to customarily require the draftsman to change his position and to alternately stand, stoop or sit during his use of the same.

Referring first to the table and desk unit **12** of the improved article, it will be seen that the desk includes a flat table or desk top **16** of any suitable character and which is supported at the upper ends of a pair of front legs **18** and which is also supported intermediate the ends of a pair of inclined members **20** constituting rear legs of the desk and supports for the drawing board structure as set forth hereinafter. A pair of leg braces **22** connect the lower portions of the leg members **18** and **20**, and any suitable system of cross-bracing as at **24** is secured to the previously mentioned members for the purpose of rigidifying and strengthening the same.

Although the invention is not limited thereto, it is particularly advantageous to form the framework of the article of suitable wooden pieces with mortise and tenon joints, bolts and/or any other suitable fastening means as desired.

A pair of rails **26** have their lower ends secured to cross members **28** which are secured to the underside of the desk surface **16** and adjacent the side edges of the same, and have their upper ends secured to the upper ends of the members **20**.

As will be best apparent from Figure 4, a transverse bracing bar **28** is connected at the upper portions of the rails **26** and a pair of side members **30** are secured to the sides of the rails to increase the width of the upper inclined face of the same.

It will thus be seen that the members **26**, **28** and **30** form a substantially rectangular framework lying in an inclined plane and which support the undersurface of the work board **14** in an inclined position for the convenience of the user.

Slidably mounted upon the upper surface of the desk or table **16**, as by supporting rails **32**, are a pair of trays

or drawers **34** and **36**. One of these drawers will conveniently serve to support sheets of tracing paper or the like for the use of the draftsman, various drafting equipment and tools, and the other drawer may serve any other similar useful purpose.

Although as shown in Figures 1, 2 and 4, the drawers **34** and **36** have flanged front faces **38** thereon, together with drawer pulls **40**, it is to be understood that these drawers may be so constructed that they may be opened from either or both sides of the desk. By this means the draftsman, with the drawing board disposed in its uppermost position as shown in Figures 1, 2 and 4, can have convenient access to the drawers and to the equipment disposed therein; while when the desk is being employed, from the right side of the showing in Figure 4, the drawers will be accessible from that side whether the drawing board is raised or lowered. The drawers thus serve the dual function of supplying the desk or the drawing board selectively when they are in use.

It is the primary purpose and intent of this invention to provide a means whereby the drawing board may be readily slid or adjusted vertically upon the supporting rails **26** and the members **30** secured thereto. For that purpose, a resilient supporting and adjusting means is provided for each side of the drawing board. This supporting means conveniently comprises a suitable casing or housing **42**, adapted to be secured to the inside surface of the side rail **26** as by appropriately notching or recessing the rail member **30**, through the agency of carriage bolts or the like **44**. These casings include a smooth flat plate-like flange **46** upon their upper surfaces, which flange as shown in Figure 6 is adapted to be disposed flush with the top sliding surface of the rail **26** and the member **30** secured thereto. A slot **48** is disposed in the flange **46** to permit passage of a flexible tape or web **50** therethrough. The lower end of this tape is conveniently provided with a ring **52**, which by means of a staple or other fastener **54** may be secured to the back side of the work board **14** adjacent the lower edge of the same. The tape is conveniently disposed closely adjacent to its corresponding rail whereby the same is mounted in an unobtrusive manner.

Disposed within the casing **42** is a cylindrical drum or reel **56** of any desired character upon which the upper end of the flexible tape is attached and by which the tape is adapted to be wound, there being provided a coiled spring of the clockwork type **58** having one end secured a stationary arbor or shaft **60** and its other end attached to the reel inner surface. This spring is so mounted that the same will resiliently urge the reel in a direction to wind up the tape thereon. This spring is of sufficient strength to just compensate for the weight of the drawing board whereby the latter will be resiliently retained in any selected vertically adjusted position, but may be vertically moved upwardly or downwardly upon its supporting rails by the touch of a finger of the operator.

By this invention, the user may readily adjust the board by the touch of a finger tip to its desired vertical position, this requiring a minimum of effort and attention upon the part of the user and thus offering the minimum of interference with the operator's use of the drawing board. In this way the proper portion of the board will be presented for the user whereby the latter will not need to change his position as by standing, stooping or bending in order to work at different portions of the board.

Attention is next directed to Figures 8 and 9 in which a modified spring device, which is of a commercially available and known type, may be utilized to support the drawing board. The spring device illustrated herein consists of a cylinder **70** which is closed at its top end as at **72** and has an open bottom end. A strap or clamp **74** is provided by means of which the cylinder is secured to the members **26** and **30** of the frame work of the article as illustrated in Figure 8. In this position the open end of the cylinder is disposed downwardly, and serves to

permit passage therethrough of a spiral spring **76**. The latter has its upper end anchored in the cylinder in any suitable manner, and preferably in a manner which will permit the same to be adjusted to vary the tension of the spring device. The lower end of the spring is provided with an eye or aperture **78** by means of which the same may be attached to a lower portion of the drawing board **14**.

In this form of spring device the convolutions or turns of the spiral spring which consists of a metallic, flexible, resilient strip, are at all times spaced from each other to avoid rubbing contact. Thus, when the drawing board is pushed downwardly the coils are longitudinally extended in the manner shown in Figure 8, thereby additionally tensioning the spring. It is preferred to adjust the spring tension to such an extent that it will exactly balance the weight of the drawing board whereby the latter may be adjusted by finger tip pressure of the operator.

Since the spring devices of Figures 7 and 9 are of a commercially available and well known type, and may be purchased upon the open market, a further description of the same is deemed to be unnecessary.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A combined desk and work board comprising a desk, rails inclined upwardly from said desk, a work board slidably received for substantially vertical movement upon said rails and disposed in an inclined position for convenient use, resilient means mounted on the rails and connected with the work board adjacent the lower end of the same for yieldingly supporting and maintaining the board in vertically adjusted positions upon said rails while permitting easy vertical movement of said board to different vertically adjusted positions, said resilient means including spring biased reels and tapes connecting said reels to said work board, the lower ends of said rails terminating at and being secured to the outer edge of said disk whereby the work board may be selectively positioned with its lower edge substantially level with the desk and substantially below the level of the desk, said tapes lying beside said reels in their extended positions, said reels being mounted in housings said housings having flanges disposed flush with the surface of said rails upon which said work board slides, said housings being secured to sides of said rails.

2. The combination of claim 1 including a pair of inclined supports secured at the upper ends to said rails and secured intermediate their ends to the desk.

3. The combination of claim 1 wherein said desk includes drawers, said drawers being openable from either side of said desk, said drawers being disposed beneath the lower edge of said work board in the upper position of the latter whereby access may be had to said drawers with the work board in its upper position.

References Cited in the file of this patent

UNITED STATES PATENTS

1,257,495	Krueger	Feb. 26, 1918
1,507,384	Knowlton	Sept. 2, 1924
1,774,236	Ohnstrand	Aug. 26, 1930
1,949,521	Wilhelm	Mar. 6, 1934
2,674,508	Richardson	Apr. 6, 1954

FOREIGN PATENTS

18,210	Australia	May 2, 1935
1,029,882	France	Mar. 11, 1953