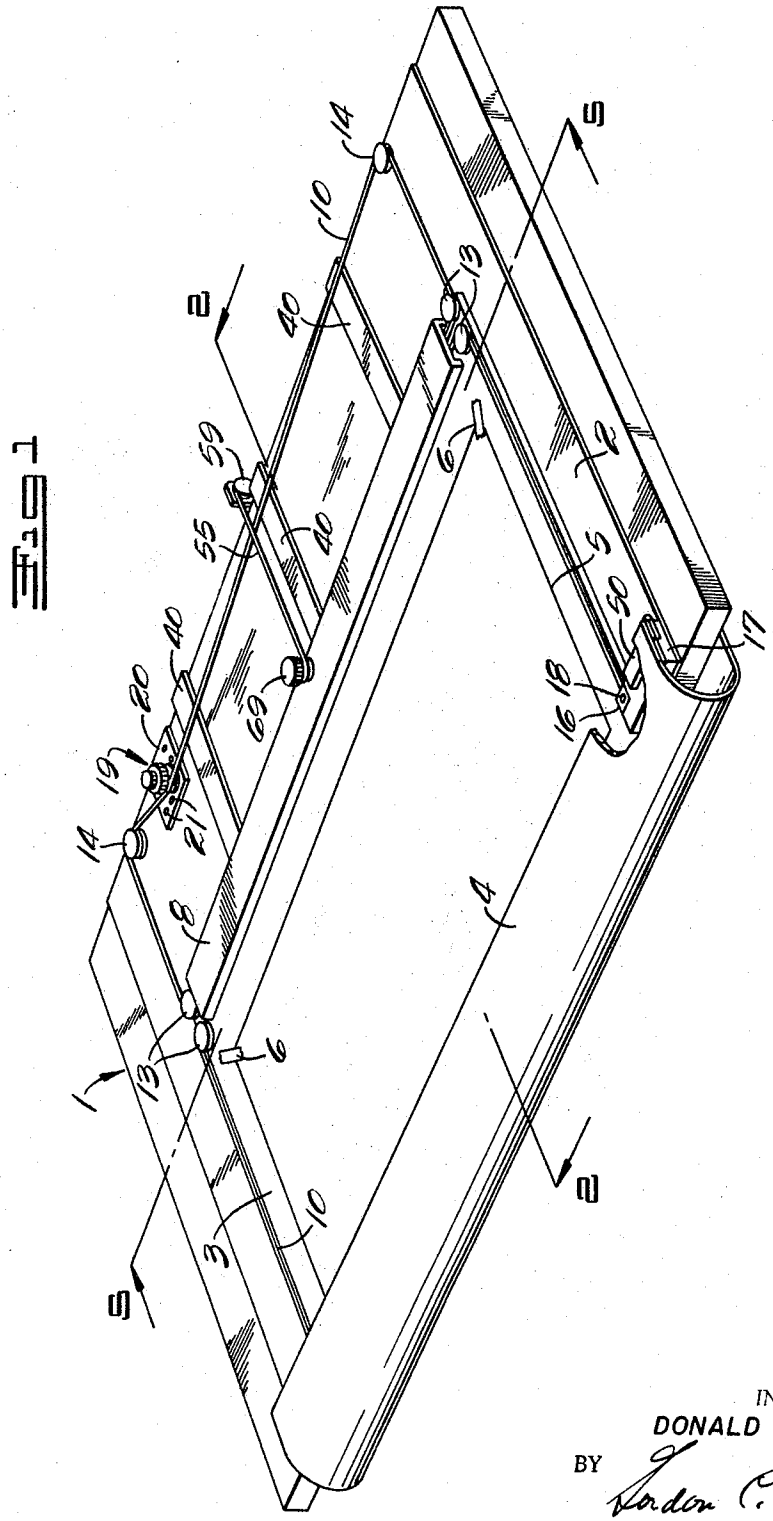
July 11, 1967 D. F. VANEK 3,330,580

DRAFTING DEVICE

Filed July 11, 1966 4 Sheets-Sheet 1

Fig. 1



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DRAFTING DEVICE

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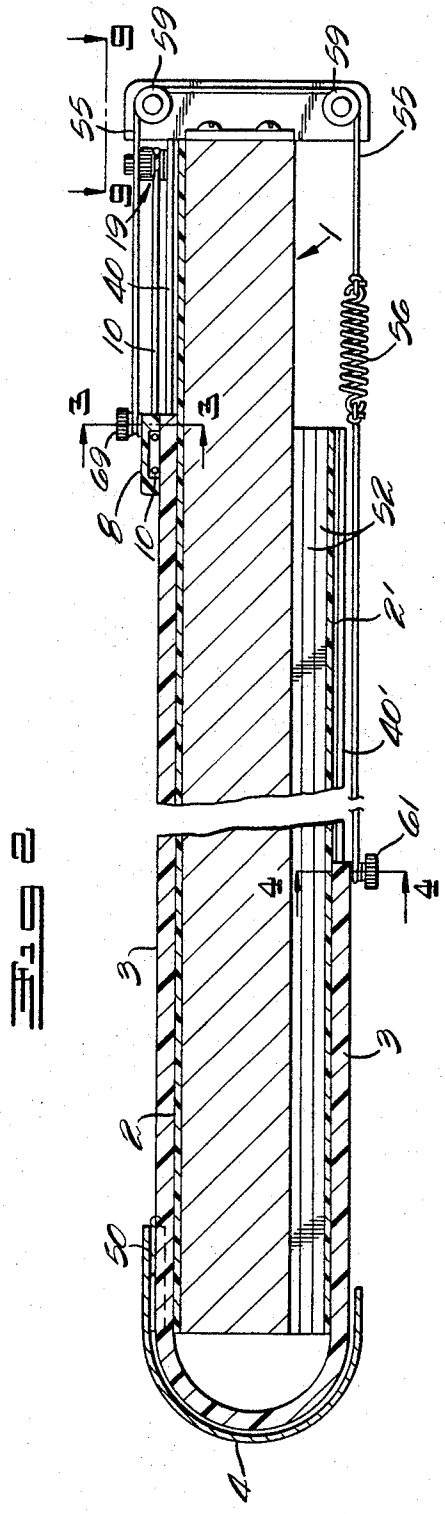


FIG. 2

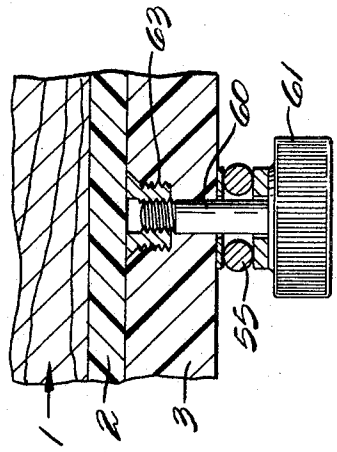


FIG. 4

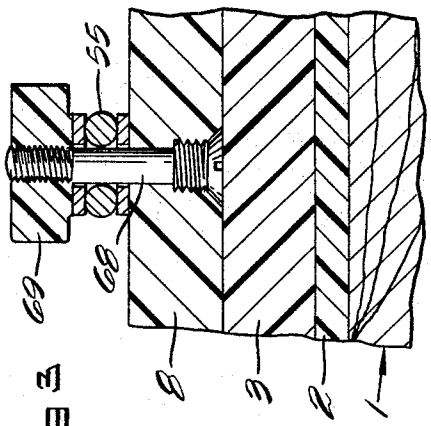


FIG. 3

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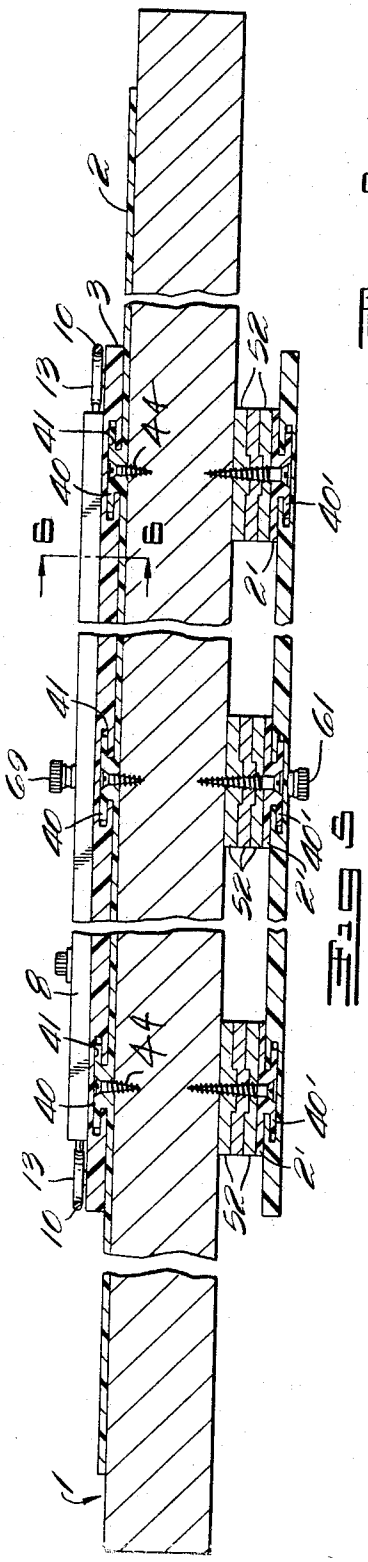
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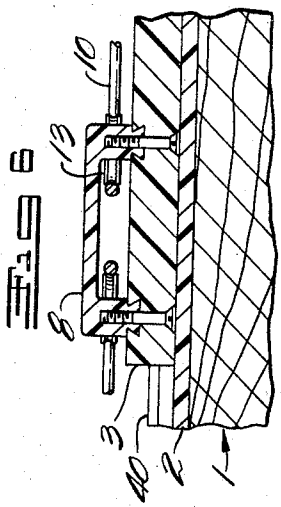
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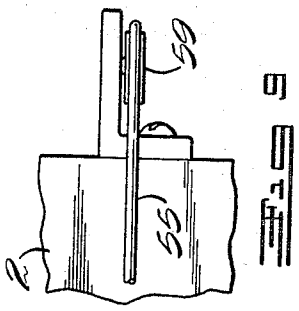
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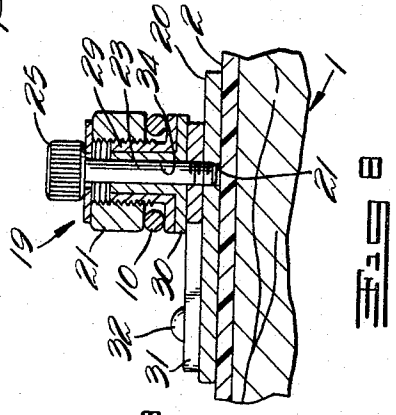
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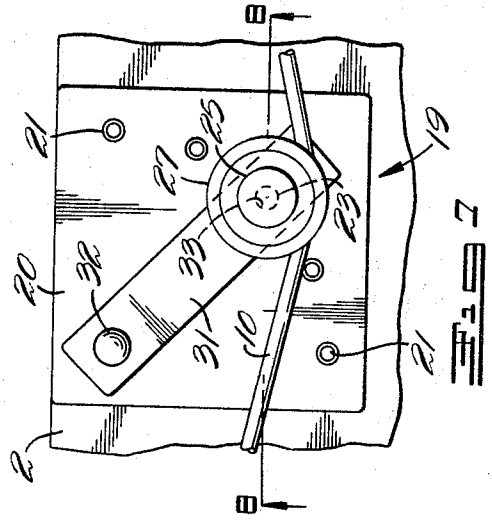
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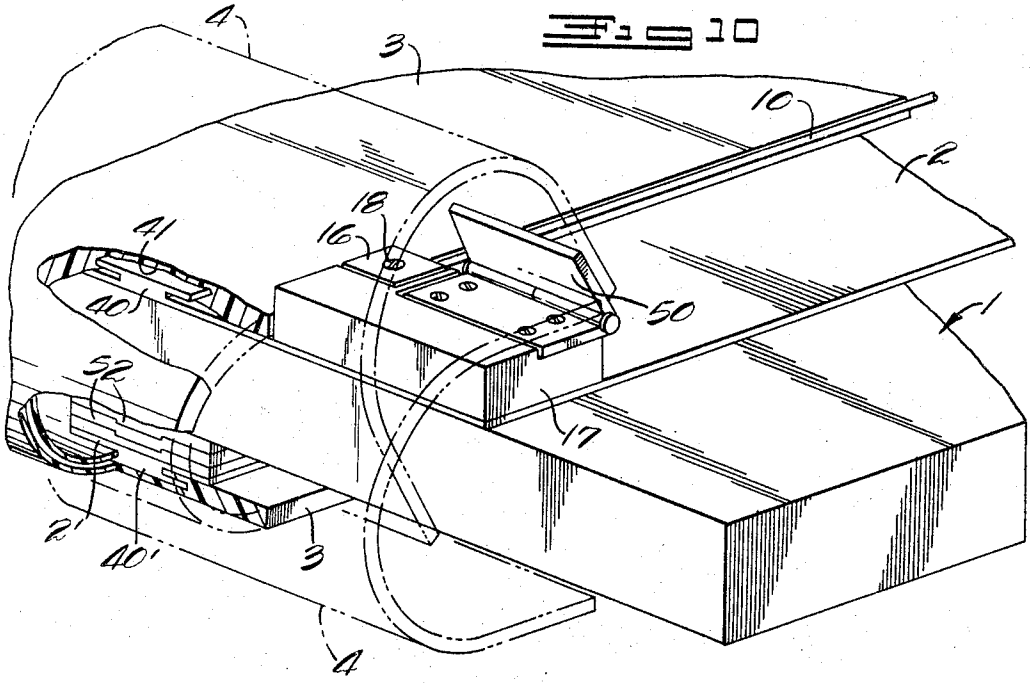
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July 11, 1967 D. F. VANEK 3,330,580

DRAFTING DEVICE

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Fig 10



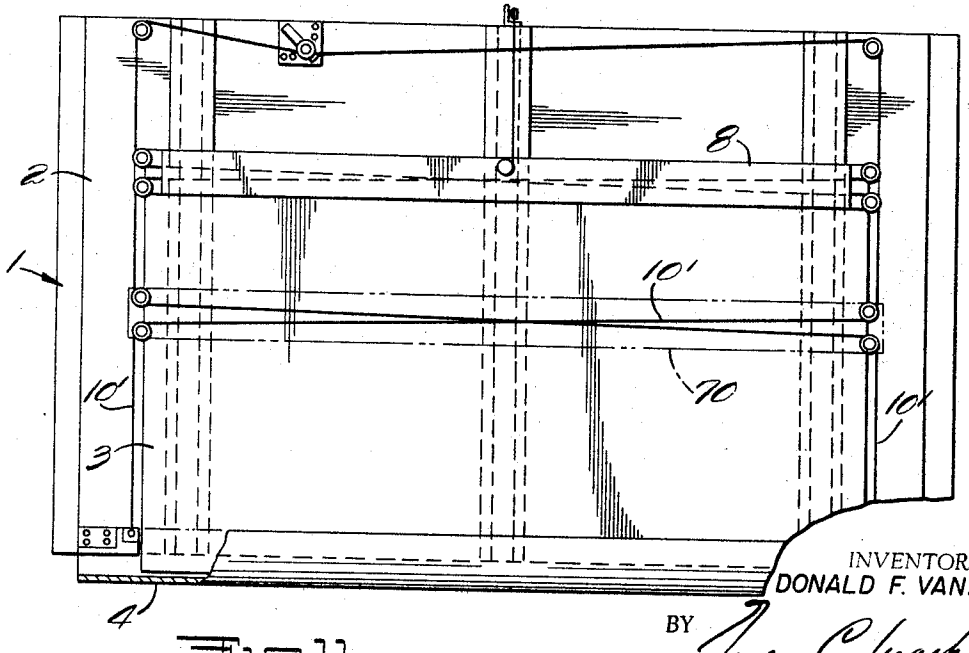


Fig 11

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United States Patent Office 3,330,580 Patented July 11, 1967

3,330,580

DRAFTING DEVICE

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Filed July 11, 1966, Ser. No. 564,298
8 Claims. (Cl. 281—44)

This invention relates to a device to be used in connection with a drawing or drafting board and the combination of the device with a drawing board. The device may be incorporated as a part of a drawing board or it may be manufactured separately for attachment to a board.

The device comprises a support sheet on which a drawing is fastened while it is being worked upon by a draftsman. This support sheet is usually of plastic although it might be of metal. This sheet is arranged to be moved toward and away from the top edge of the board and is so flexible that the bottom portion is bent around the bottom edge of the board when the sheet is lowered toward the bottom edge to facilitate the work of the draftsman. A guard is provided to prevent unintentional contact between the person working at the board and the drawing which is attached to the support sheet.

A header is provided across the top of the support sheet and the support sheet is attached to this header. This is always maintained parallel to the top and bottom edges of the board. For this purpose there are two pulleys or the like adjacent each end of the header. Guy means are provided which maintain the header parallel to the top of the board. Thus the header with the support sheet attached to it can be moved toward the top or bottom of the board and is always maintained parallel to the top and bottom and the sheet can thus be readily moved to a location on the board at which it is most convenient for the draftsman to work upon it.

The guy means may be of any suitable composition such as string, cord, wire, etc. Usually a single guy will be strung up both edges of the board and across the top, but separate guy means may be utilized. Means for tightening the guy is provided.

In a preferred arrangement there is a base sheet (usually plastic, although it may be metal) between the drawing board surface and the support sheet, and interlocking means such as tongues and grooves on the adjacent surfaces of these two sheets keep the support sheet flat.

It is desirable to provide connecting means between the bottom edge of the support sheet and its top edge so that as it is pushed away from the top edge of the board there is a pull on it, as well.

A parallel bar is advantageously connected with the guy means on which the header operates. This parallel bar will be parallel with the header at all times.

With this drawing board, any portion of a drawing fastened to it can be brought within easy reach of the draftsman while remaining seated, and any unused lower portion of a sheet of drawing paper can be moved under the board until it is to be used. The top edge of the paper is always parallel to the top of the board, and if used with a parallel bar, it is always parallel to the paper's edge. The draftsman has a movable drafting surface the top edge of which is always parallel to the top of the board.

The invention is further described in connection with the accompanying drawings, in which—

FIGURE 1 is a view in perspective of the drawing board with a sheet of drawing paper on the support sheet;

FIGURE 2 is an enlarged longitudinal section through the drawing board (partly broken away) on the line 2—2 of FIGURE 1;

FIGURE 3 is an enlarged sectional detail on the line 3—3 of FIGURE 2;

FIGURE 4 is an enlarged sectional detail on the line 4—4 of FIGURE 2;

FIGURE 5 is an enlarged transverse section on the line 5—5 of FIGURE 1;

FIGURE 6 is a sectional detail on the line 6—6 of FIGURE 5;

FIGURE 7 is an enlarged plan view of the guy tightening means;

FIGURE 8 is a sectional detail on the line 8—8 of FIGURE 7;

FIGURE 9 is an enlarged plan view showing the pulley and cord tensioning means;

FIGURE 10 is an enlarged detail in perspective of the lower right-hand corner of the board, and shows the guard in phantom in its normal and raised positions; and

FIGURE 11 is a plan view of the board with a parallel bar associated with the guy means on which the header operates.

In the drawings, the drawing board **1** may be of any usual design. The board is to be mounted on any usual standard, positioned at any angle to meet the convenience of the draftsman.

Covering at least most of the top of the board is the base sheet **2** which is secured to the board surface, and the support sheet **3** which is slidable on top of this by a tongue and groove arrangement. The support sheet **3** may be of any size and is sufficiently flexible to curve around the bottom edge of the board within a hinged guard **4**. The drawing illustrates a sheet of drawing paper **5** fastened to the support sheet **3** by adhesive tapes **6**.

The header **8** is secured to the top of support sheet **3** and is parallel to the top and bottom edges of the board. It remains parallel to these edges regardless of its position nearer or farther from the top edge of the board. The drawings, particularly FIGURE 6, illustrate this header as a channel. Portions of the guy string **10** pass under it from one end to the other, crossing one another. Pulleys **13** are provided at the upper corners of the support sheet **3**, aligned one below the other, and the guy passes around these and also around the pulleys **14** adjacent the upper edge of the board. Pins or the like may replace these pulleys. The two ends of the continuous guy **10** are secured near the bottom of the board, as by being secured under a removable block **16** of footer **17** by screw **18** which is fastened to the base sheet **2**. These blocks can readily be removed for replacement of the guy.

Any suitable device for maintaining the guy or guys under tension is employed. In the drawing, the tensioning device **19** includes the base **20** which is fused or riveted or otherwise fastened to the support sheet **3**. It is provided with a number of tapped holes **21** into any of which the bolt **23** with the knurled head **25** can be screwed. The guy string **10** is clamped in the tensioning device independently of the screw **23** by the nut **27** which is threaded on stud **29** placed on sleeve **30**. This clamping arrangement is mounted on arm **31** pivoted at one end to base **20** by pivot **32**. A hole **33** in arm **31** is aligned with the hole **34** in sleeve **30**. The nut **27** is tightened after the bolt **23** has been screwed into the desired hole **21**. Tension on the guy is increased by swinging arm **31** downward from the top of the board.

The guy does not move over the pulleys, but the pulleys roll over the guy as the header **8** is moved from an upper location on the board to a lower location, or vice versa. As shown in FIGURE 3, the pulleys **14** at the upper corners of the board may be replaced by pins or other guide means.

As best shown in FIGURE 5, one or more tongues **40** project upwardly from the base sheet **2** and are prefer-

ably integral with this sheet. These are interlocked in grooves **41** in the underside of the support sheet **3**. There is little vertical play of the tongues within the grooves and the support sheet is held firmly against its support. Screws **44** through the tongues hold the base sheet **2** against the board.

The guard **4** is fastened to hinges **50** which are fastened to the footer **17** so that it may be raised or lowered as shown in phantom lines in FIGURE 10, in the event that it is necessary to lift the guide to inspect any matter below it, such as a lower part of a drawing, or to provide a new guy, etc.

The flexible support sheet **3** is bent around the bottom of the board under the guide **4** and grooves in its upper surface engage the tongues **40'** on the spacers **2'** on the bottom of the board (FIGURE 2). In order to prevent the necessity of bending the sheet **3** too sharply, it is desirable to build a support for the sheet **2'** on the underside of the board **5** by shims **52** or the like.

It has been found desirable to connect the header **8** at the top of the sheet with the other end of the sheet, under a certain amount of tension, as most clearly shown in FIGURE 2. Guy means **55** is used for this purpose. It may be doubled with the ends fastened to the end of the spring **56**, as shown. When the sheet is lowered on the board, the bottom end is pulled upwardly by the guy, and this provides smoother movement than if the sheet were merely pushed downward by downward movement of the header. Guy means **55** is guided by pulleys **59**. One end of the guy **55** encircles the shaft **60** of the setscrew **61** (FIGURE 4) which is threaded into a threaded metal insert **63** countersunk in the top of the sheet **3**. The other end of the guy **55** encircles the shaft of the inverted bolt **68** which is located in the upper wall of the header **8** (FIGURES 2 and 3). The nut **69** is tightened onto this bolt against the guy **55**.

FIGURE 11 is a plan view of the improved drafting device of this invention with which the parallel bar **70** has been combined with portions of the guy **10'** crossed lengthwise adjacent it. The parallel bar (a common drafting device) can be moved up and down over the drafting board, and at all times remains parallel to the top and bottom of the board just as the header **8** moves parallel to these top and bottom edges of the board.

It is not necessary that the guy means **10** be located above the cover sheet **3**. It may be located in grooves in this sheet, so as not to interfere with a drafting machine or the like located on the top of the board.

Instead of tongues and grooves for holding the support sheet against its support, other suitable interlocking means may be used such as inwardly crooked fingers on the cover sheet engaged in grooves in the edge of the support sheet.

The invention is covered in the claims which follow.

I claim:

1. A device for use with a drawing board which comprises a flexible support sheet, a header parallel to the top edge of the board and extending across the support sheet and fastened thereto, a base sheet with substantially parallel edges which is adapted to be mounted on the drawing board and is slidably interlocked to at least a part of the underside of the support sheet, tensioned, parallel guy means immovably fastened to the base sheet adjacent its respective edges, which guy means cross to the respective opposite edges of the base sheet at the header, with guide means fastened to the header adjacent its ends around which the guy means are separately located and flex and maintain the header parallel to the top edge of the board as it is moved toward and away from said top edge.

2. The device of claim **1** in which there is a single guy means and it crosses from one side of the base sheet to the other about guide means fastened to the base sheet adjacent its top edge, and tensioning means is fastened to the base sheet and connected with the guy means to keep it under tension.

3. In combination with a drawing board with top, bottom and side edges, a support sheet fastened to the board by means which permits the sheet to slide toward and away from said bottom edge, a header extending across the sheet and fastened thereto, tensioned parallel guy means fastened immovably with respect to the board adjacent its side edges which guy means cross to the opposite edges of the board at the header, with guide means fastened to the header adjacent its ends around which the guy means are separately located and flex as the header and support sheet are moved toward and away from the top edge of the board, the support sheet being bent around the top or bottom edge of the sheet with the end thereof away from the header slidably supported on the underside of the board.

4. The combination of claim **3** which includes a base sheet on the board which is slidably interlocked to at least a part of the underside of the support sheet.

5. The combination of claim **3** in which the support sheet is bent around the bottom edge of the board and the bent portion of which is covered by a guard which prevents contact therewith by a draftsman at the board.

6. The combination of claim **4** in which the guard is pivotally mounted to swing over and also away from the bottom edge of the board.

7. The combination of claim **3** in which the ends of the support sheet are connected under tension around the edge of the board opposite that over which the support sheet is bent.

8. The combination of claim **3** in which there is a single guy and the portions at the edges of the board are connected across the board away from the header, and a tensioning device positioned permanently with respect to the board maintains the guy means under tension.

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LEONARD FORMAN, *Primary Examiner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,330,580 July 11, 1967

Donald F. Vanek

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 4, line 30, for "sheet" read -- board --.

Signed and sealed this 25th day of February 1969.

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

EDWARD J. BRENNER
Commissioner of Patents