July 21, 1953 E. LAXO 2,646,322

VERTICALLY ADJUSTABLE DRAFTING BOARD TABLE

Filed Jan. 10, 1949 3 Sheets-Sheet 1

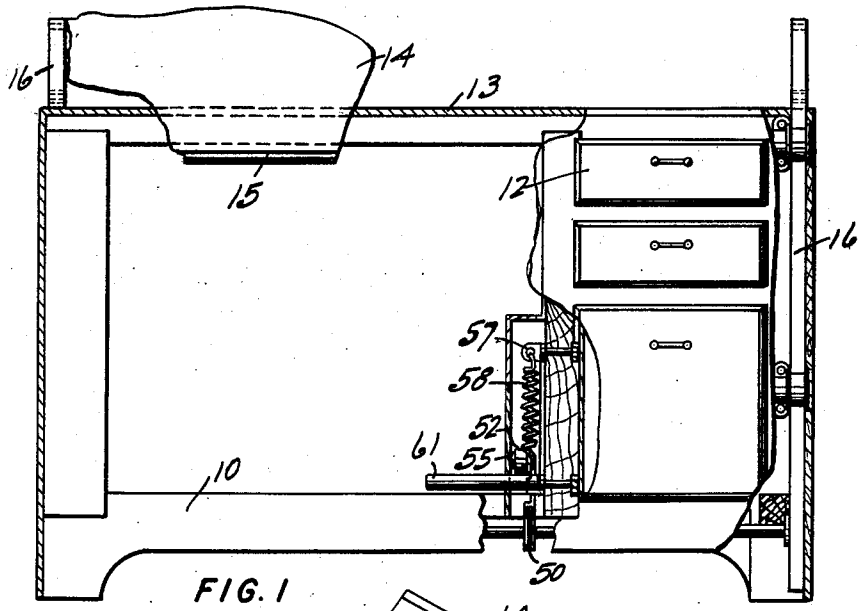


FIG. 1

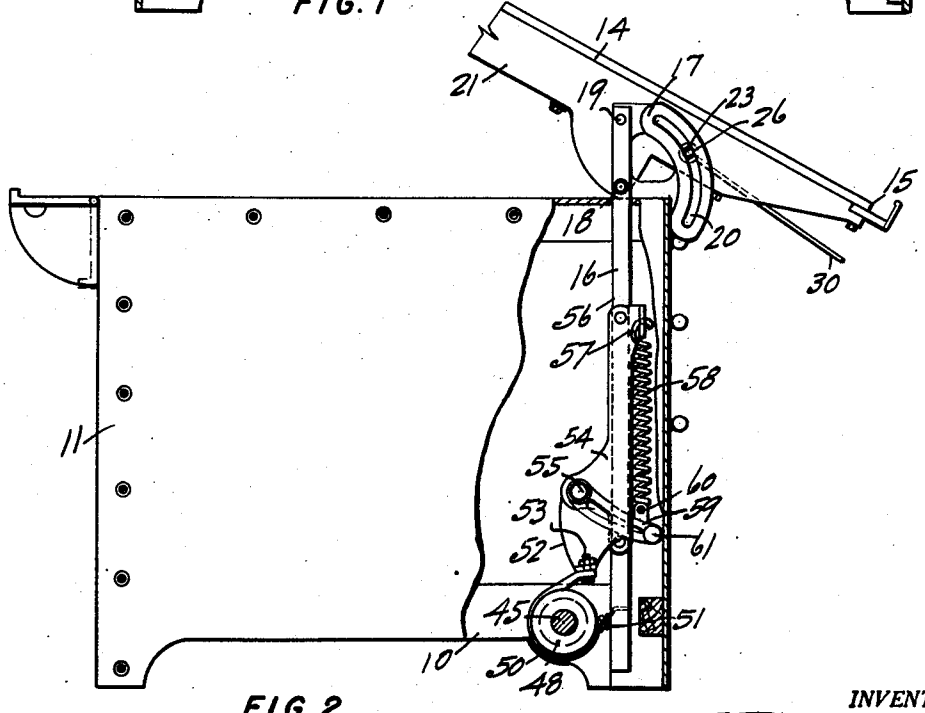


FIG. 2

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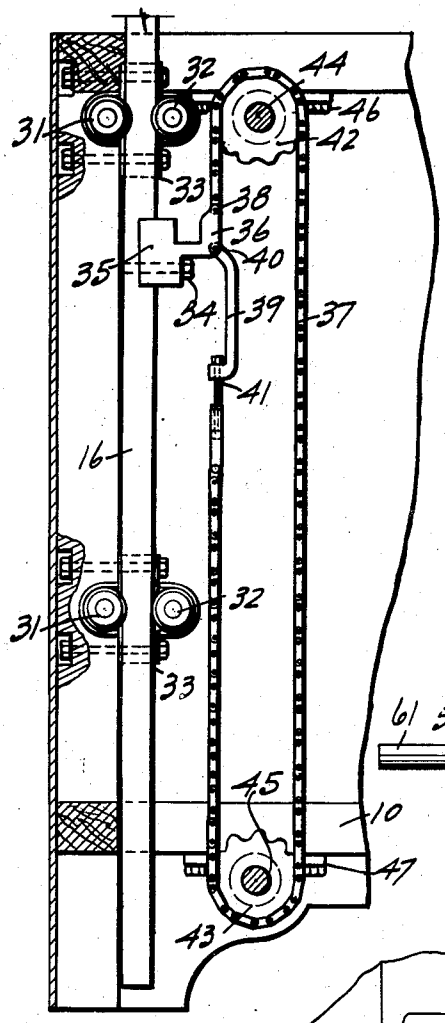


FIG. 3

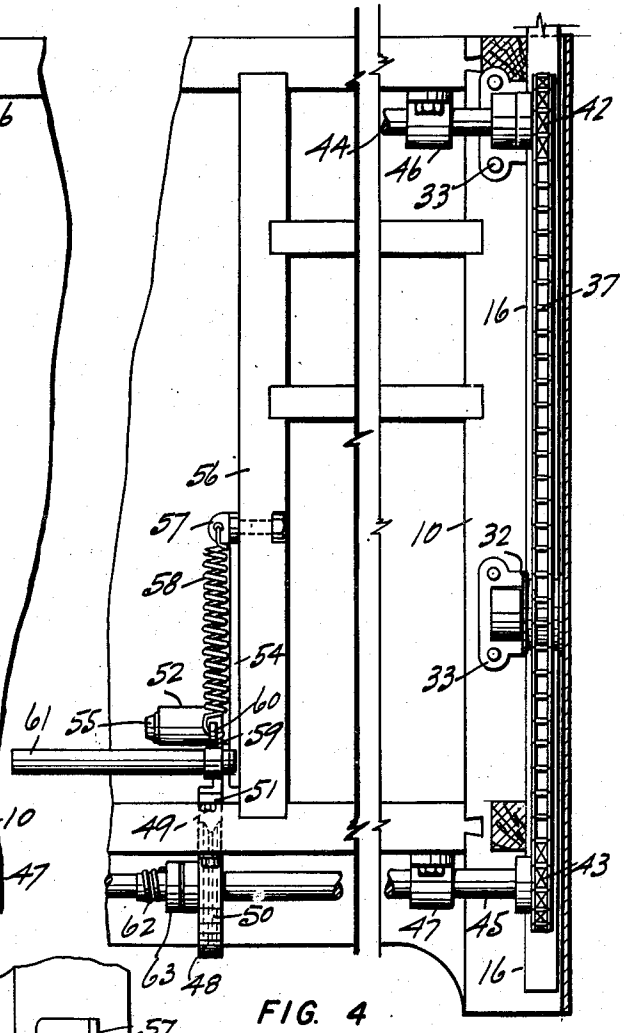


FIG. 4

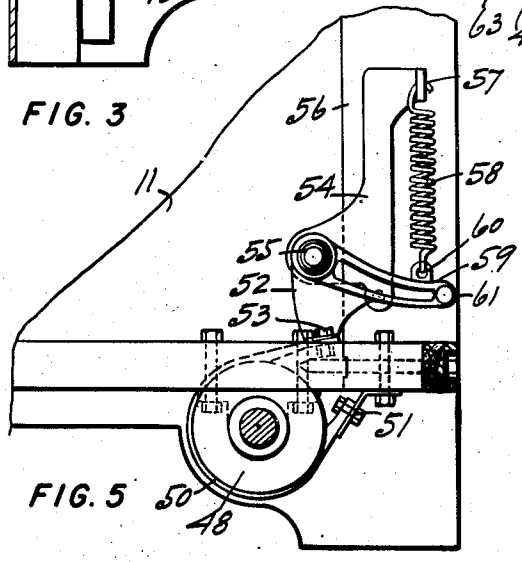


FIG. 5

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VERTICALLY ADJUSTABLE DRAFTING BOARD TABLE

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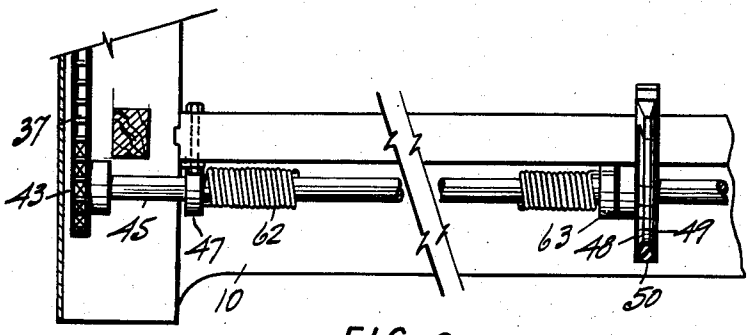


FIG. 6

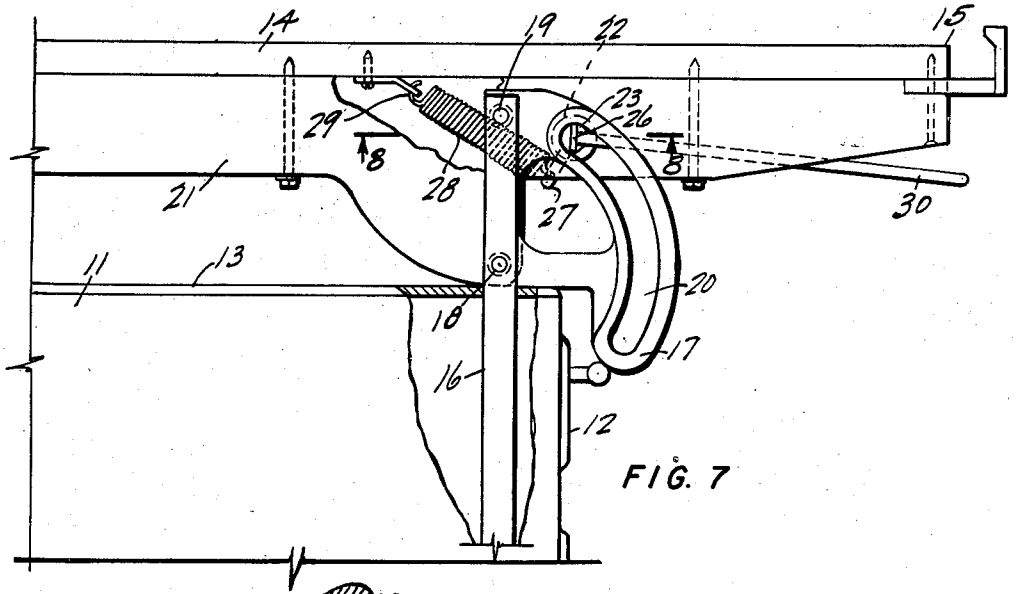


FIG. 7

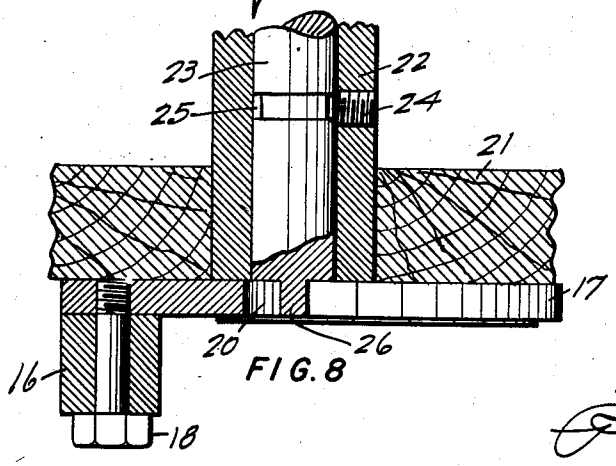


FIG. 8

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UNITED STATES PATENT OFFICE

2,646,322

VERTICALLY ADJUSTABLE DRAFTING BOARD TABLE

Ed Laxo, Oakland, Calif.

Application January 10, 1949, Serial No. 70,089

4 Claims. (Cl. 311—36)

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This invention relates to vertically adjustable drafting board tables.

In the use of drafting board tables it is frequently necessary to adjust the level or height of the board; for example, it may be desirable to facilitate access to one part or another of the board or it may be necessary to adjust the board for draftsmen of different heights.

Such vertical adjustment should be simple to operate, and preferably, it should be such that, by means of a simple operation, the board can be lowered and raised to the desired level but by an equally simple operation can be clamped securely in the adjusted position.

An object of the present invention is to provide improvements in vertically adjustable drafting tables.

Another object is to provide a drafting table wherein the board is vertically adjustable to the desired height, wherein such adjustment can be quickly accomplished with a minimum of effort and wherein, when such adjustment has been made, by the simple operation of releasing an operating member the board is automatically and instantly locked at the selected height.

These and other objects of the invention will be apparent from the ensuing description and appended claims.

In describing the invention reference will be had to the accompanying drawings, in which:

Fig. 1 is a front elevation of the invention with the drawing board shown only fragmentarily.

Fig. 2 is a side elevation of Fig. 1 with a portion of one side wall of the cabinet broken away to show the interior mechanism.

Fig. 3 is an enlarged inside view of the equalizing means for vertical adjustments, and comprises a side view of the mechanism for one end of the cabinet.

Fig. 4 is a rear view of the mechanism shown in Fig. 3 and constitutes a side elevation of Fig. 3.

Fig. 5 is an enlarged view of the braking or locking mechanism for vertical adjustments.

Fig. 6 is a fragmentary front elevation of the equalizing, braking or locking, and spring counterbalancing means.

Fig. 7 is an enlarged fragmentary view showing the angular adjustment locking means.

Fig. 8 is an enlarged section taken on line 8—8 of Fig. 7.

The invention includes a base in the form of a cabinet having a frame 10 which is housed in as indicated at 11 and provided with drawers 12 and having a top wall 13 to provide storage space for drawings and the like under the drawing board;

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and a drawing board 14 which is both, angularly and vertically adjustable relative to the top wall 13.

The front edge 15 of the drawing board overhangs the front end of the cabinet sufficiently to provide ample leverage for adjusting the angularity of the board by pressing or lifting, and it thus also provides ample foot clearance when working close to the board.

The automatic locking means for locking the board in any angularly adjusted position consists of a pair of vertically adjustable standards 16 to each of which is fixedly secured a quadrant 17 as indicated at 18 and 19 and having an arcuate slot 20 having its axis coincident with the axis of the bolt 18, with the support members 21 of the drawing board pivotally secured by the bolts 18 for angular adjustment thereabout.

A bushing 22 is fixed in each of the members 21 with its axis midway of the slot 20, and a shaft 23 is rotatable in the respective bushings and maintained against axial movement by the set screws 24 engaging in the annular recess 25 in the shaft, and each end of the shaft terminates in a cam 26 which clamps between the walls of the slot 20 when moved substantially cross-wise of the slot.

Fixed on each end portion of the shaft 23 adjacent to the inside end of each bushing 22 is a lever 27 having one end of a tension spring 28 anchored therein with the other end of the spring anchored to the board as indicated at 29, and a cylindrical bar 30 has its opposite ends anchored in the hubs of the respective levers, the bar being bent to an elongated U-shape and extending forward to the front edge of the drawing board for convenient accessibility, this bar functioning as a release bar when raised manually and otherwise aiding the spring by its weight in making the locking means effective.

Thus, to angularly adjust the board, the bar 30 and the front edge of the board are simultaneously gripped and either heavy pressure applied to tilt the board up, or light pressure while allowing the board to lower, with the fingers releasing the release bar when the proper adjustment is reached, the weight of the bar coupled with the tension of the spring causing the cam 26 to instantly lock the board in the instant angular position as the cam is turned crosswise of the slot 20.

The vertical adjusting means includes the standards 16 which operate between rollers 31 and 32 which are rotatably supported by the

brackets 33 which are mounted on the frame of the cabinet.

Attached to each standard as indicated at 34 is a bracket 35 having a fixed arm 36 to one end of which is attached one end of a chain 37 as indicated at 38, with the other end of the chain attached to the bracket through a link 39 which is hinged at 40, the end of the chain being adjustable as to tension in this link as indicated at 41, and this chain engages about an upper sprocket 42 and lower sprocket 43 which are respectively fixed on the upper and lower shafts 44 and 45, the upper shaft being supported by bearings 46, while the lower shaft is supported by bearings 47.

Mounted on the lower shaft 45 is a brake drum 48 having a V-groove 49 for the V-belt 50 one end of which is anchored to the frame 10 as indicated at 51, with the other end anchored to a lever 52 as indicated at 53; the lever being pivoted to a bracket 54 as indicated at 55; the bracket being attached to one of the uprights 56 of the frame 10, and having a spring eye 57 in which one end of the tension spring 58 is anchored, the other end of the spring being anchored in the arm 59 of the lever 52 as indicated at 60, and this arm terminating in a foot treadle 61.

The counterbalancing means consists of a torsion spring 62 one end of which is anchored to the shaft by a collar 63 with the other end anchored to the bearing 47.

For elevating or lowering the drawing board, the treadle 61 is depressed, which releases the brake, the counterbalance quite effectively supporting the board. With the foot treadle depressed the board is either forced down or lifted to the desired height, the sprockets and chains equalizing the movement at the respective ends of the board. When the desired elevation is attained, the foot treadle is released, the spring 58 snaps the belt tight about the brake drum, securing the board in its instant vertically adjusted position. With the great length of torsion spring, the urgence toward lifting or to overcome the weight of the board is quite constant with all degrees of adjustment.

Thus is provided a drawing board which is quickly and easily adjustable to any angle front to back and to any desired elevation, with all adjustments automatically locked upon release of the releasing means, and with no possibility of changing the board longitudinally from its relative level position because of the parallel operation of the standards controlled by the sprockets and chains.

I claim:

1. Equalizing means for vertically adjustable drawing board, comprising a frame; spaced standards vertically slidable in said frame for adjustable support of said drawing board; an upper and a lower sprocket for each standard and a shaft for the upper sprockets and a second shaft for the lower sprockets and supported by said frame; a bracket fixed on each standard; a chain for each standard and each having its respective ends fixed to the bracket and each including adjusting means for one end of the chain, with the chains passing about the respective upper and lower sprockets.

2. Equalizing and holding means for a vertically adjustable drawing board, comprising; a frame, a pair of spaced standards for support of the drawing board and vertically slidable in said frame; said equalizing means consisting of an upper shaft and a lower shaft supported by said frame and each having a sprocket at each end and a chain for each pair of upper and lower sprockets, with the respective chains fixed to the respective standards; and locking means comprising a brake cooperating with one of said shafts and normally locking said one of said shafts against rotation, and a depressible lever for releasing said brake at will.

3. An adjustable drafting table comprising a drawing board; a stationary frame; spaced, parallel, vertical bars fixed to the board and slidably mounted on said frame for movement in a vertical plane to adjust the height of the board; a shaft rotatably mounted in the frame and arranged perpendicularly to the bars; chain and sprocket means including a first sprocket fixed to the shaft, a second rotatable sprocket, and a chain meshing with said sprockets and fixed to one of said bars for rotating the shaft when the bars and the drawing board are moved vertically, a brake for arresting rotation of the shaft; resilient means normally activating the brake to arrest such motion; and manually operable means for releasing the brake.

4. An adjustable drafting table comprising a drawing board; a stationary frame; spaced, parallel, vertical bars fixed to the board and slidably mounted on said frame for movement in a vertical plane to adjust the height of the board; a shaft rotatably mounted in the frame and arranged perpendicularly to the bars; chain and sprocket means for each bar, each said means including a first sprocket fixed to the shaft, a second rotatable sprocket and a chain meshing with said sprockets and fixed to one of said bars for rotating the shaft when the bars and the drawing board are moved vertically; a brake for arresting rotation of the shaft; resilient means normally activating the brake to arrest such rotation and manually operable means for releasing the brake; and counterbalancing means for balancing the weight of the board and bars.

ED LAXO.

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