

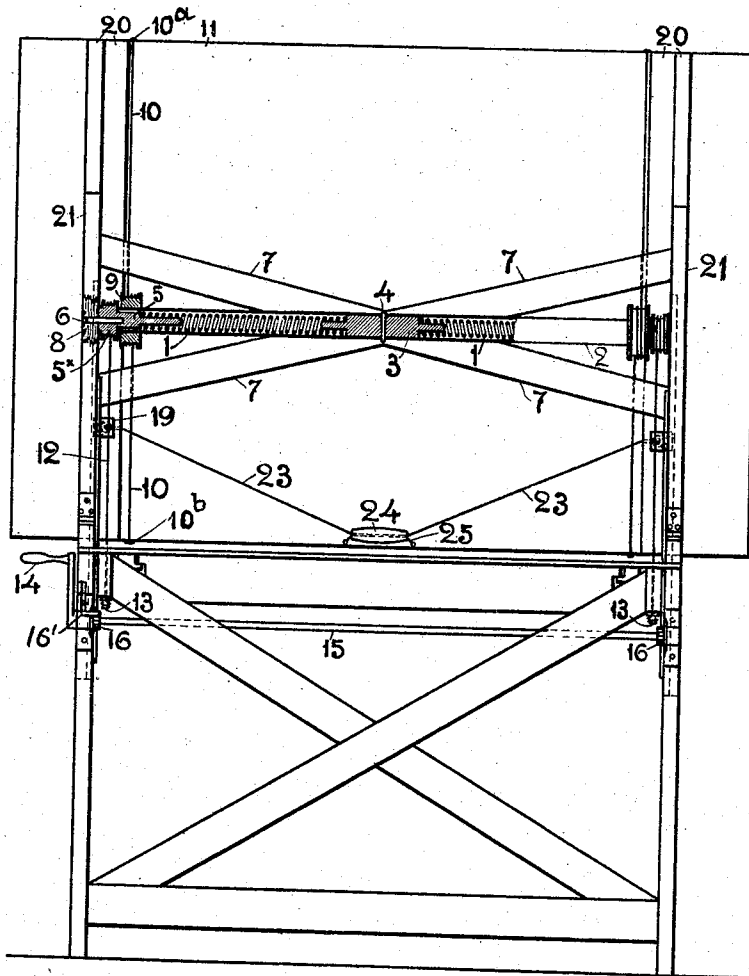
No. 867,024.

PATENTED SEPT. 24, 1907.

C. A. EGELIN.
DRAWING BOARD.
APPLICATION FILED JUNE 1, 1906.

3 SHEETS—SHEET 1.

FIG. 1.



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3 SHEETS--SHEET 2.

Fig. 2.

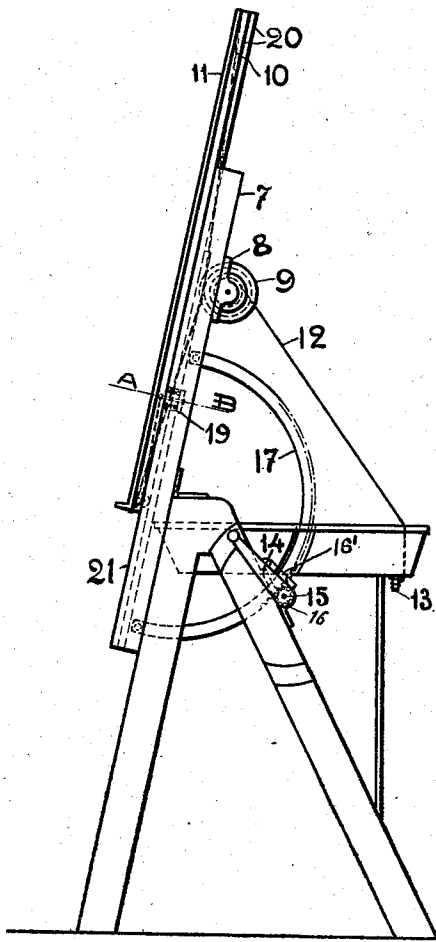
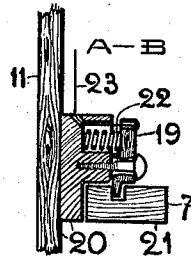


Fig. 3.



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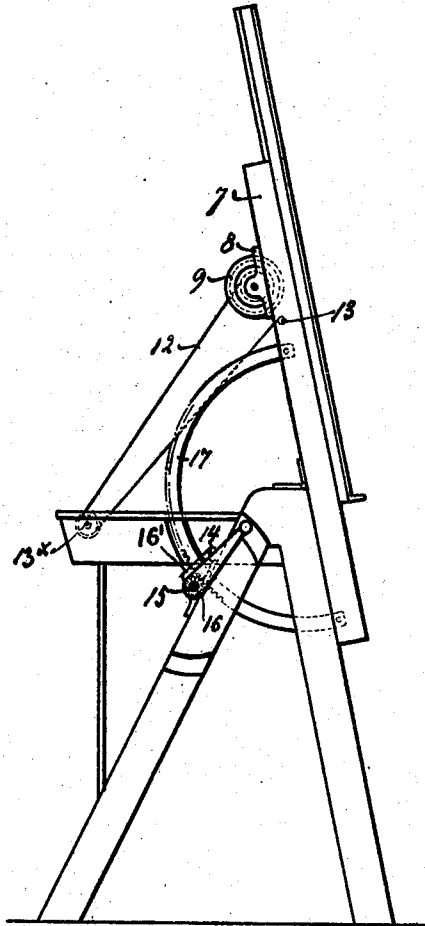
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3 SHEETS—SHEET 3.

Fig 4.



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UNITED STATES PATENT OFFICE.

CARL AUGUST EGELIN, OF STOCKHOLM, SWEDEN.

DRAWING-BOARD.

No. 867,024.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed June 1, 1906. Serial No. 319,778.

To all whom it may concern:

Be it known that I, CARL AUGUST EGELIN, a citizen of the Kingdom of Sweden, residing at Kungsholmsgatan 2, in the city of Stockholm, Sweden, have invented a new and useful Drawing-Board, of which the following is a specification.

My invention relates to drawing-boards consisting of a stand, a frame hinged or otherwise turnably connected to said stand, and a board sliding on said frame, and the object is to facilitate the adjustment of the board relatively to the frame and the adjustment of the frame and board relatively to the stand and to afford means for securing the frame and board in the adjusted positions and to essentially reduce the weight of the whole.

The known constructions of drawing boards swinging on a stand so as to bring the board to any desired inclination are heavy and complicated, and in order to raise the board or lower it, when it is secured in a certain plane, the whole frame and mechanism for turning the frame must be lifted or lowered in the stand.

According to the present invention the frame with the board is tilted into the desired angle, and the board is raised or lowered by simply shifting it on the frame in the inclined plane thereof. Springs balance the board in all positions, increasing their tension automatically according to the incline given to the board.

In the accompanying drawing forming part of this specification, Figure 1 is a back view (partially in section) and Fig. 2 a side view of a drawing-board constructed according to this invention. Fig. 3 is a section on line A—B Fig. 2 showing the clamping device on a larger scale. Fig. 4 is a side elevation, similar to Fig. 2, showing modified means for tensioning the springs.

My device consists of a stand or rigid support of any suitable construction. Pivotaly mounted on said support so as to be capable of angular adjustment about a horizontal axis is a frame 7, composed of two grooved side bars 21 connected by cross-rails. A drawing board 11 is provided on its under surface at the sides with the ribs 20 adapted to engage said grooved side rails, whereby the board is mounted to slide up and down on the frame 7.

In the form shown two spiral springs are used for counterbalancing the weight of the board, and these springs 1 are inclosed in a tube or shell 2. The inner ends of the springs are connected to the tube by means of a plug 3 which by a pin 4 is rigidly secured to the tube. The other end of each spring is connected to a spindle 5. These spindles are free to rotate in the ends of tube 2 and carry outside of the tube each a roller 5^x, and a pivot 6. The pivots 6 rest in the frame 7 that is to say in bearings 8 secured to the vertical bars or side pieces 21. Rollers 9 are rigidly secured to the ends of tube 2. On each roller 9 a cord 10 is wound and the ends of the cords are connected to the upper and lower

edge of the board (at 10^a and 10^b) respectively. Thus the board is hanging on the tube by means of the cords 10 and when the board is shifted up or down along the side pieces 21 of the frame 7 the tube 2 and the inner end of the springs are revolved, so that the springs are more or less strained. A clamping device described below serves to maintain the board in any position, whenever it has been pushed up or pulled down.

On each roller 5^x a cord 12 is wound, one end of this cord being fast on the roller, the other end being connected to the stand or to a stud 13 or the like, fixed to the stand. Thus when the frame is tilted with the plate or drawing board from a horizontal position into an incline the rollers 5^x, in gradually increasing their distance from the stand, are turned by the cord 12 and thereby the coil springs are more and more tensioned, so that when the plate reaches almost the vertical position its tendency to slide down under its own weight is counter balanced by the greater tension of the springs and therefore in any position, also in the vertical position, it is quite easy to shift the plate in the guide grooves to the extent permitted by the balancing springs and to secure it in a higher or lower position by the clamping means described below.

When the springs are long, having many spiral convolutions and the distance between the rollers 5^x and the fastening point 13 of the cord 12 is too small to sufficiently increase the tension of the springs, when the board is turned upwards, the studs 13 may be secured on the frame 7 instead of the stand, thus the cord may be doubled and led over a pulley 13^x mounted on the stand, as shown in dotted lines in Fig. 4. The tension of the springs 1 is adjusted by winding the cords one or more times on the studs 13.

The tilting of the board is effected in a manner well known for this purpose, by means of a crank 14 and shaft 15 having bearings in the stand and provided with pinions 16 adapted to gear with toothed sectors 17 fastened on the frame 7. For securing the frame in adjusted position a gravity pawl 16' is employed engaging the teeth of one of the pinions 16. Such pawl is suitably fulcrumed to the stand.

The board is firmly secured in all positions in the guiding frame 7 by a releasable clamping device. In the form shown said device consists of clamping levers 19 mounted on the board or on angular ribs 20 of the board. The ribs 20 slide upon the side pieces 21 of the frame and the ends of levers 19 extend into guide grooves of the same. One end of the levers 19 is acted upon by a strong spring 22 so as to press the other end against the side of the groove and produce friction. When the board is to be moved, the pressure is released by a handle 24 suspended from the lower back part of the board by means of straps 25 and connected to the levers 19 by means of cords 23, which extend from the handle

through eyes to the spring pressed end of the levers 19 in such a way, that a pull on the handle will compress the springs and release the grip in the guide grooves.

Having thus described my invention, what I claim is:

- 5 1. In a drawing table, a stand, a frame pivotally connected thereto to swing on a horizontal axis, a drawing board mounted to slide up and down on said frame, a tubular shaft having a rotary bearing on said frame at one end, a spring in said hollow shaft secured therein at one end
10 and its other end secured to a spindle revolubly mounted at one end in the other end of said shaft, said spindle being revolubly mounted in the frame at its outer end, a cord encircling a portion of said tubular shaft and secured at its ends to the upper and lower ends of the
15 drawing board, and a cord wound about the outer portion of said spindle and means on the stand for engaging the free portion of said cord, whereby the tension of the spring is varied as the frame is swung on its axis.
2. In a drawing table, a stand, a frame pivotally connected thereto to swing on a horizontal axis, a drawing
20 board mounted to slide up and down on said frame, a tubular shaft, springs in said hollow shaft secured therein at their inner ends and at their outer ends secured to spindles revolubly mounted at their inner ends in the
25 ends of said shaft, said spindles being revolubly mounted in the frame at their outer ends, rollers or drums formed on said spindles and on said shaft at each side of the table, cords encircling the drums on the shaft and at
30 their ends each secured to the upper and lower ends of the drawing board, and cords wound about the drums on the spindles and having their free ends secured to the stand whereby the tension of the springs is uniformly varied as the frame is swung on its axis.
3. In a drawing table a stand, a frame pivotally connected thereto to swing on a horizontal axis, a drawing
35 board mounted to slide up and down on said frame, a tubular shaft having a rotary bearing on said frame at one end, a spring in said hollow shaft secured therein at one end, and its other end secured to a spindle revolubly

mounted at one end in the other end of said shaft, said
40 spindle being revolubly mounted in the frame at its outer end, a cord encircling a portion of said tubular shaft and secured at its ends to the upper and lower ends of the drawing board, and a cord wound upon the
45 outer portion of said spindle, and means on the stand for engaging the free portion of said cord, whereby the tension of the spring is varied as the frame is swung on its axis, said frame having a guide groove therein and a releasable spring-pressed element on said board frictionally engaged in and sliding along said groove, to normally
50 hold the board against sliding on the frame under the tension of the spring in said shaft.

4. In a drawing table, a stand, a frame pivotally connected thereto to swing on a horizontal axis, a drawing
55 board mounted to slide up and down on said frame, a tubular shaft, springs in said hollow shaft secured therein at their inner ends and at their outer ends secured to spindles revolubly mounted at their inner ends in the ends of said shaft, said spindles being revolubly mounted
60 in the frame at their outer ends, rollers or drums formed on said spindles and on said shaft at each side of the table, cords encircling the drums on the shaft and at their ends each secured to the upper and lower ends of the drawing-board and cords wound about the drums on the
65 spindles and having their free ends secured to the stand whereby the tension of the springs is uniformly varied as the frame is swung on its axis, said frame having grooves therein at each side thereof, and spring-pressed clamping
70 levers on said board at each side, each having a portion frictionally engaged in one of said grooves, to normally hold the board against movement under the tension of the springs in said shaft, and means for simultaneously releasing said clamps to allow the board to be moved.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 75

CARL AUGUST EGELIN.

Witnesses:

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L. ROMELE.