H. S. KUHN.

DRAWING TABLE.

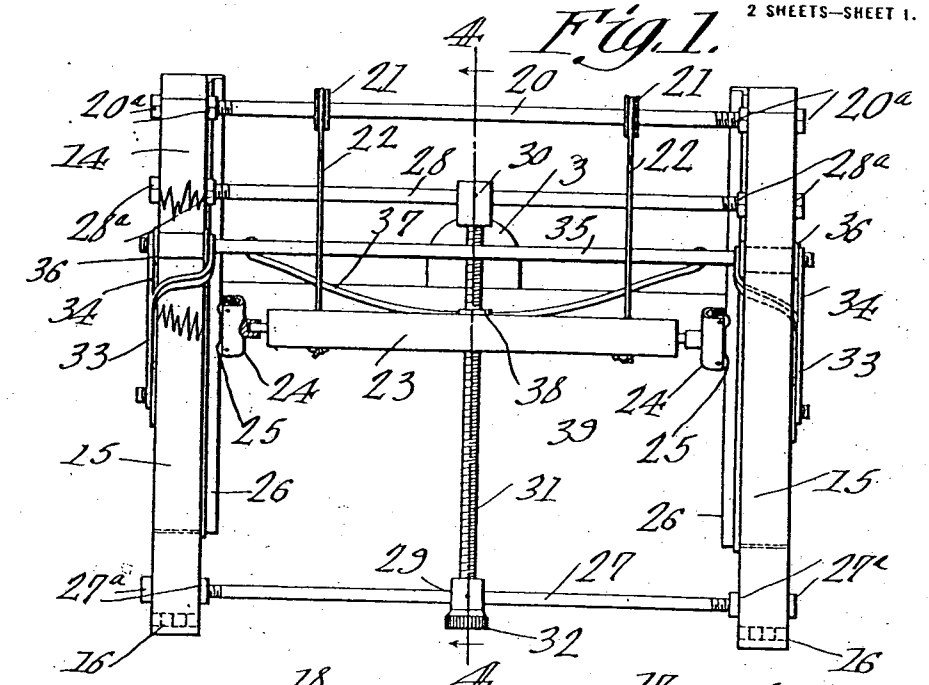
APPLICATION FILED MAR. 12, 1915.

1,171,523.

Patented Feb. 15, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



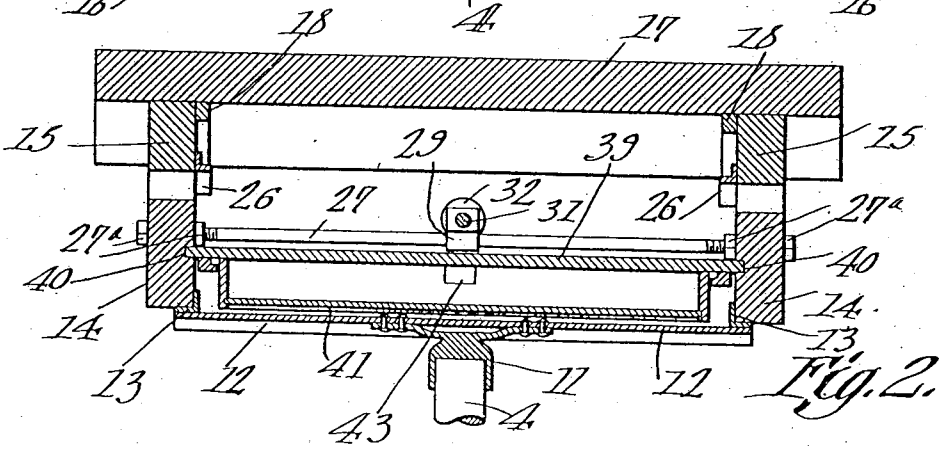


Fig. 2.

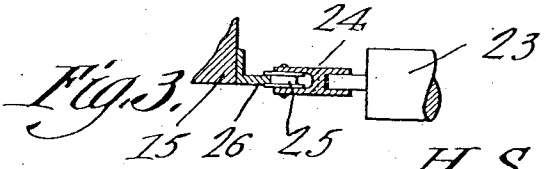


Fig. 3.

Witnesses

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DRAWING TABLE.

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2 SHEETS—SHEET 2.

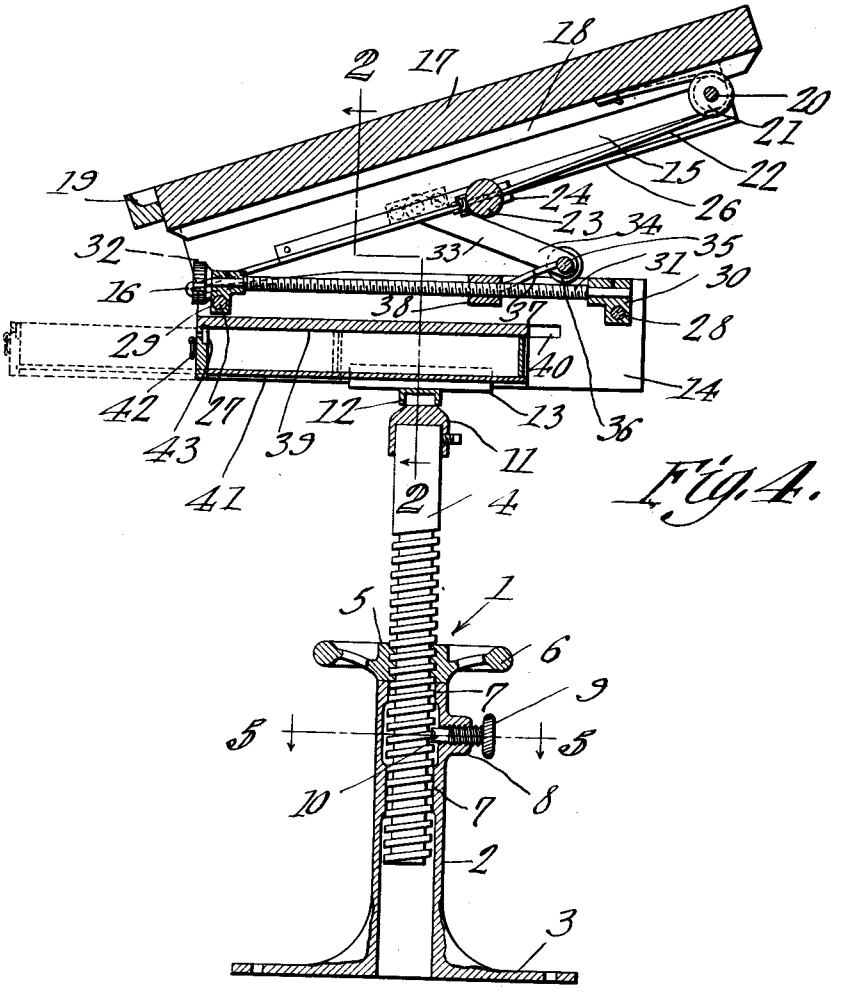


Fig. 4.

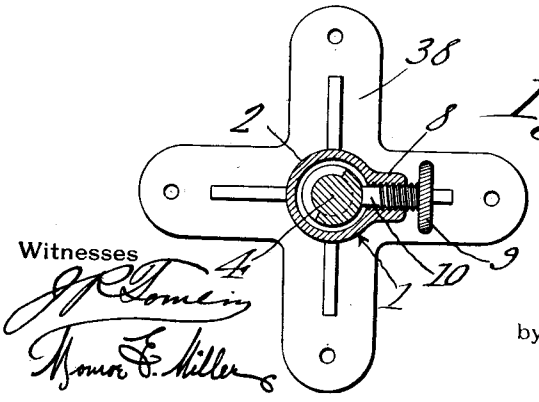


Fig. 5.

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UNITED STATES PATENT OFFICE.

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DRAWING-TABLE.

1,171,523. Specification of Letters Patent. Patented Feb. 15, 1916.

Application filed March 12, 1915. Serial No. 13,940.

To all whom it may concern:

Be it known that I, HARRY S. KUHN, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented a new and useful Drawing-Table, of which the following is a specification.

The present invention appertains to a drawing table, and aims to provide a novel and improved device of that character.

Among its various objects, the invention aims to provide a drawing table having a drawing or drafting board which may be revolved to various positions in order that the light may strike the board at the desired angle; to provide a drawing table embodying a vertically adjustable board, whereby the same may be adjusted to various heights; to provide novel means whereby the board may be swung to various angles from a horizontal to a vertical position; to provide novel means for raising and lowering the board; to provide novel means whereby the board may be slid or adjusted at any position to which it is swung and will be counter balanced to hold its position; to provide a slide leaf and drawer which are adapted to be drawn from below the board; and to provide other desirable features in a table used for drawing or similar purposes.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view of the improved table, the board being removed, and a portion of the frame being broken away. Fig. 2 is a sectional view taken on the line 2—2 of Fig. 4. Fig. 3 is a sectional detail illustrating one of the carriages for the weight. Fig. 4 is a vertical section of the table taken on the line 4—4 of Fig. 1. Fig. 5 is a cross sectional view of the standard taken on the line 5—5 of Fig. 4.

The present table embodies a central adjustable or extensible standard 1 comprising a lower tubular or hollow section 2 having a base 3 adapted to be fastened or secured upon the floor or other support, and an upper section 4, in the form of a screw telescoped into the section 2. A nut 5 is threaded upon the section or screw 4 and seats upon the upper end of the section 2 for supporting the screw 4 at various vertical positions, it being noted that the nut 5 may be rotated to either raise or lower the screw and parts carried thereby. The nut 5 is preferably provided with a hand wheel 6 in order that it may be readily turned. The section 2 is provided with a pair of contracted bearing portions 7 with which the screw 4 is slidably engaged, and the standard section 2 is provided between the portions 7 with means for locking the screw 4 in position. Thus, the section 2 is provided between the portions 7 with an outstanding boss 8, and a set screw 9 is threaded into the boss 8. A hard wear block 10 is disposed slidably within the inner or basal end portion of the boss 8 and is provided with a curved or concaved face to bear against the side of the screw 4, the inner end of the set screw 9 bearing against the block 10 to force the same inwardly. When the set screw 9 is loosened, the block 10 will be released, and the screw 4 may then be adjusted by rotating the nut 5.

The upper end of the standard 1 carries the frame for the drawing board, and to this end, a casting or head 11 is secured upon the upper end of the screw 4 of the standard, and has secured thereon a transverse channel iron member 12. A pair of angle iron members or T-heads 13 are secured upon the ends of the member 12, and receive and hold the side bars 14 of the frame. The frame also includes bars or arms 15 having their forward ends connected by means of hinges 16 to the forward ends of the bars 14, and whereby the arms 15 may swing upwardly and downwardly above the bars 14.

The arms 15 carry the drawing board 17, which is provided at its under surface with a pair of cleats 18 which fit against the inner sides of the arms 15 for constraining the board 17 against transverse motion upon the arms 15, but to enable the board 17 to be shifted back and forth upon the arms. The lower or forward edge of the board 17 is preferably provided with a pencil holder or trough 19.

The board 17 is provided with a counter

balance, and to this end a transverse rod 20 is terminally engaged to the upper or free ends of the arms 15, and nuts 20ª are preferably threaded upon the rod 20 to clamp the arms 15, and whereby the rod 20 will brace the arms. The rod 20 serves as a support for a pair of pulley wheels 21 which are journaled loosely upon the rod to rotate and slide thereon, and a pair of cables or flexible elements 22 are secured to the bottom of the board 17 and pass around the pulley wheels 21 to a weight 23 which acts as a counter poise for the board. The ends of the transversely arranged weight 23 are engaged to a pair of carriages 24 each of which has a pair of grooved wheels 25 engaging and straddling the inwardly projecting flange of an angle iron rail or guide 26 secured to the inner side of the adjacent arm 15. In this manner, the weight 23 is carried by and guided along the arms 15, and holds the board 17 at any position to which it is slid. Attention is directed to the fact that when the arms 15 are swung upwardly, whereby the board 17 has a greater tendency to slide downwardly, the effect of the weight to raise the board will be increased, so as to cause the board and weight to counter balance one another properly, whereas when the arms 15 are swung downwardly, there will be less liability for the board 17 to slide forwardly or downwardly, and at the same time, the raising effect of the weight transmitted by the cords to the board will be reduced. The board and weight therefore counter balance one another at any position of the arms 15.

The device for adjusting and holding the arms 15 embodies a pair of front and rear transverse rods 27 and 28 terminally engaged through the front and rear end portions of the bars 14, and having the respective nuts 27ª and 28ª threaded thereon to clamp the bars. The rods 28 thus brace and tie the bars 14 together. Front and rear bearings 29 and 30, respectively, are secured or mounted upon the central portions of the rods 27 and 28, and a screw 31 is terminally journaled within the bearings 29 and 30, and is provided at its forward end with a knurled finger piece 32 whereby the screw may be conveniently rotated by the operator at the front of the table. A pair of adjusting and supporting members or bars 33 are pivoted to the outer sides of the arms 15 at the proper points, and their lower or free portions are provided with forks 34, and a transverse rod 35 is terminally engaged through the arms of the forks 34. Flanged wheels or rollers 36 are journaled upon the rod 35 within the forks 34 and run upon the upper edges of the bars 14, it being noted that the rod 35 causes the members 33 to swing in unison, and that the wheels 36 in working upon the bars 14 will properly guide the members 33. A bow-shaped spring 37 is terminally secured to the rod 35 at points adjacent the forks 34, and the central portion of the spring 37 is secured to or provided with a nut 38 threaded upon the screw 31 in front of the rod 35. Thus, when the screw 31 is rotated, the nut 38 will be fed forwardly or rearwardly, according to the direction in which the screw is turned, and the rod 35 will be moved with the nut 38. The rod 35 being moved forwardly or rearwardly will raise or lower the arms 15 and board 17 carried thereby. When the screw 31 is rotated to move the nut 38, the spring 37 yieldably moves the rod 35, the yielding action of the spring being desirable for yieldably raising or lowering the board. Furthermore, the spring allows the board to yield when sufficient pressure is given to bear thereon, this yielding movement of the board being desirable in many cases. The bars 33 form props between the arms 15 and the bars 14, whereby the downward pressure exerted is transmitted to the bars or props 33, and said props resting upon the frame will resist the downward movement of the board, although the bars 33 can slide along the frame against the tension of the spring 37 when necessary. This allows the board to be depressed, but not too easy. The bars 14 also carry a slide leaf 39 which has its side edges slidably received by longitudinal grooves 40 provided in the inner sides of the bars 14, and whereby the leaf 39 may be pulled forwardly from below the lower edge of the board 17. The leaf 39 carries a slidable drawer 41 below the same, which may be used for holding the drawing instruments, scales, and other articles desired. The front end of the drawer 41 is provided with a handle 42, and a key controlled lock 43.

The present drawing table has many advantages which will be appreciated by the artist, draftsman, architect or other person using such a table. For instance, the upper frame of the table may be readily rotated to bring the board 17 to the most effective position for receiving the light thereon, and the board 17 may be readily adjusted vertically by adjusting the standard 1. The angle of the board 17 can also be readily adjusted, by rotating the screw 31, so that the rod 38 will be carried in the proper direction for either raising or lowering the board. When the nut 31 is drawn forwardly, the members 33 being pushed forwardly, will swing the arms 15 and board 17 toward a vertical position, and when the nut 31 is moved rearwardly, it will move the lower or free ends of the members 33 rearwardly to lower the arms 15 and board 17. Consequently, by adjusting the raising and lowering device, the board may be brought to any angle, may be lowered to a horizontal position, or may

be raised to a vertical position. The spring 37 connecting the nut 38 and rod 35 will allow the said parts to yield relatively to one another, whereby the board and its supporting arms will be yieldably moved and supported. When the nut 38 is moved rearwardly to its limit, the arms 15 are adapted to seat upon the bars 14, and when it is desired to hold the arms 15 stationary relative to the bars 14, this may be accomplished by the use of other ordinary brackets (not shown) applied to the rear ends of the arms 15 and bars 14. Attention is also directed to the fact that the board 17 may be slid back and forth at any angle or position thereof, and the frictional engagement between the board 17 and arms 15 will be sufficient under ordinary conditions, to prevent the board 17 being displaced by slight upward or downward pressures given to bear thereon, during the use of the table. The leaf 39 may be pulled out from under the board 17, and is useful, since calculations, sketches, and the like may be made thereon, and paper, pencils, and other articles may be laid upon the leaf 39 while the board 17 is at an inclined position. The drawer 41 is also useful in that the instruments, scales, and other devices may be contained therein, and kept locked within the drawer, when not in use. The bars 14 may also be detached or lifted from the angle iron members 13 so that they may be set upon a table, bench or other support when desired.

The carriages 24 are not limited to the specific construction illustrated, and are to be considered broadly only.

Having thus described the invention, what is claimed as new is:

1. In a device of the character described, a frame having a pair of hinged arms adapted to be swung upwardly and downwardly, a board slidable upwardly and downwardly upon the arms, a rod carried by the arms, inwardly projecting flanges carried by the arms, carriages having pairs of grooved wheels engaging the flanges, a weight carried by the carriages, a pulley wheel journaled upon the rod, and a flexible element attached to the board and weight and passing over the pulley wheel.

2. In a device of the character described, a frame comprising lower and upper members hinged together, the upper member being adapted to swing upwardly and downwardly, a board carried by the upper member, a swinging member pivoted to one of the aforesaid members and having its free portion bearing against the other member, a rotatable screw carried by the last mentioned member against which the swinging member bears, a nut threaded upon the screw, and a yieldable connection between the nut and swinging member.

3. In a device of the character described, comprising a frame embodying a pair of bars and a pair of arms hinged thereon to swing upwardly and downwardly thereabove, a pair of members pivoted to the arms, a rod engaged to the free portions of the said members, wheels journaled upon the rod and running upon the bars, a rotatable screw carried by the bars, a nut threaded upon the screw, and a bow spring terminally secured to the rod and having its central portion secured to the nut.

4. In a device of the character described comprising a standard, a transverse member carried by the standard, a frame embodying side bars, angle iron T-heads carried by the ends of the said member in which the said side bars are seated, and a board carried by the frame.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HARRY S. KUHN.

Witnesses:
M. G. HARMONY,
W. OTTO COOMBS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."