Oct. 30, 1962 O. WENGER 3,060,624

DRAWING TABLE

Filed Jan. 12, 1961

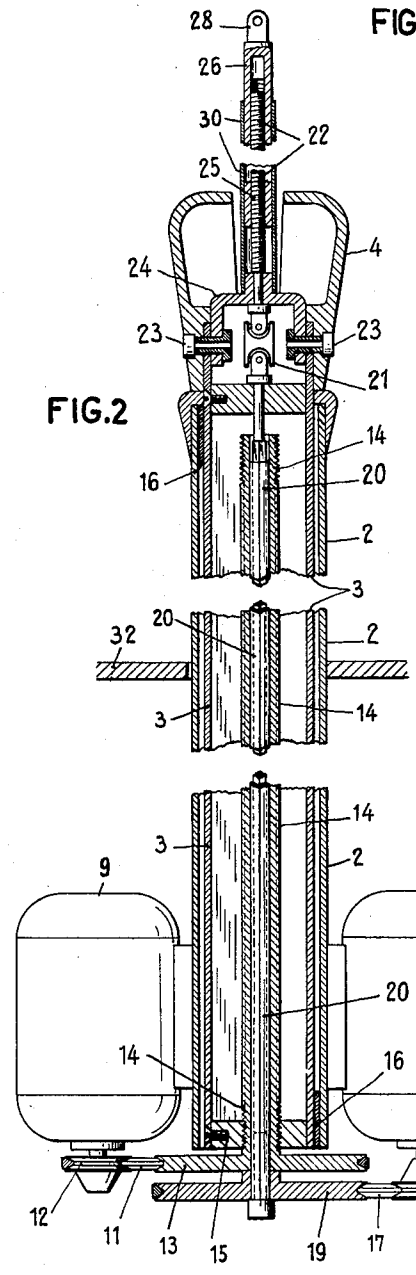


FIG.2

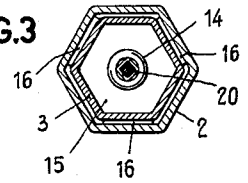


FIG.3

FIG.1

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United States Patent Office 3,060,624 Patented Oct. 30, 1962

3,060,624

DRAWING TABLE

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Filed Jan. 12, 1961, Ser. No. 82,302
Claims priority, application Switzerland Jan. 15, 1960
9 Claims. (Cl. 45—131)

The invention relates to a drawing table and more particularly to a structure comprising a drawing board mounted on an extensible column for permitting an adjustment in height as well as in angular position.

It was proposed to make drawing tables having a vertical column which is telescopically adjustable by means of a motor driven screw spindle or through a hydraulic fluid fed by a motor driven pump. Mechanical devices for this purpose show mostly a comparatively complicated structure due to the position of the motor and the necessary gear between the latter and the screw spindle, and hydraulic devices are heavy and suffer often the draw back of fluid loss due to occasional leakage or damage. In such drawing tables the positioning of the table board in angular relation was achieved by manually operated means.

It an object of the present invention to provide electromechanical means for both, the adjustment of the board in height and in angular relation, whereby the means for the adjusting modi are separate and independent from each other for being operable at will, that means also simultaneously.

It is another object of the invention to provide an inclined column mounted on a pedestal, wherein the driving means for both adjusting devices are located in hidden manner.

These and further objects of the invention will become apparent in the following detailed description of a preferred embodiment illustrated in the drawing in which:

FIG. 1 is lateral view of the drawing table with parts of the pedestal broken away;

FIG. 2 shows an axial section of the column of the drawing table, and

FIG. 3 shows a transversal section through the column.

A forwardly inclined column is mounted in a pedestal **1** and consists of a hexagonal outer tube **2** and a hexagonal inner tube **3**. These tubes are telescopically extensible and carry a head **4** which is mounted on the upper end of the inner tube **3**. From this head a support **5** projects forwardly and provides an axle **8** on which the table board **6** is pivotally mounted so, that the front edge **7** of the board is parallel to the axle. The forwardly inclined position of the column includes the advantage to procure sufficient free space for feet and legs of the user of the table.

For the electro-mechanical adjustment of the table board **6** in height and angular relation two electromotors **9** and **10** are located symmetrically on opposite sides of the column and mounted on the outer hexagonal tube **2** within the pedestal. The motor **9** drives, practically noiseless through the intermediary of a cone belt **11** over the pulleys **12** and **13** a hollow screw spindle **14** arranged coaxially in the column. The spindle engages a screw nut **15** fastened to the lower end of the inner tube **3**, thus causing an accommodated axial shifting of the inner tube **3** relatively to the outer tube **2**. The inner tube **3** is fitted on the outside surface of its lower part with three slide plates **16** (FIG. 3) contacting the inner surface of the outer tube **2** and this latter carries on the inside surface of its upper part three slide plates **16** too, in which way an excellent stability is obtained, even in the extremely extend position of the two mentioned tubes.

The electromotor **10** drives, practically noiseless, through the intermediary of a cone belt **17** over the pulleys **18** and **19** a spindle **20** coaxially located in the hollow spindle **14**. The spindle **20** consists of a square bar pushed in a square tube, whereby this two elements are telescopically extensible according to the extension of the column. The upper end of the spindle **20** is connected with a double knuckle joint **21**, the opposite side of which is connected with a screw spindle **22** journalled in a part **24** which is pivotally mounted in the head **4** by means of the axles **23** being parallel to the axle **8** of the pivotal table board **6**. The spindle **22** extends into a tube **26** having at its one end adjacent to the head **4** an internal thread **25** which engages the spindle **22**. The other end **28** of the tube **26** is pivotally fastened the rear edge **27** of the board **6** by means of an axle **29** which is parallel to the axles **8** and **23**. The tube **26** extends into an outer tube **30** which is secured to the pivotal part **24** and forms together with the tube **26** a telescope unit for the self-arresting adjustment of the inclination of the table board.

Both electromotors **9** and **10** may be operated independently and simultaneously in equal or opposite directions, for instance by means of switches mounted on the board but not shown, in order to accommodate the board to convenient height and inclination. The inclination may be varied from the horizontal to the vertical position (FIG. 1).

The pedestal **1** is furnished in its upper surface with an opening which is closed by a cover **32**, fitted to the outer hexagonal tube **2**. Column and motors may be passed through this opening on occasion of their mounting or for cleaning and inspection purposes. The coaxial arrangement of the electromotors relative to the column and, therefore, the complete lack of gears provides a practically noiseless running of the described adjustment device of the drawing table.

The knuckle joint located in the head **4** between the drive spindle **20** and the screw spindle **22** of the telescope unit **26**, **30** could be substituted by other organs for cropped power transmisison as for instance by flexible shaft or gear with plastic manufactured toothing for noise suppression.

While I have disclosed one embodiment of the present invention, it is to be understood that this embodiment is given by example only and not in a limiting sense, the scope of the invention being determined by the objects and the claims.

What is claimed is:

1. A drawing table comprising, in combination, a hollow pedestal; a telescopically extensible column formed by an outer tube fixedly mounted in said pedestal and an inner tube slidably received in said outer tube for movement in longitudinal direction thereof while being prevented from turning about its axis; a drafting board connected to the upper end of said inner tube tiltable about an axis extending transverse to the axis of said inner tube; a pair of motor means in said pedestal; means operatively connected to one of said motor means and to said inner tube for shifting the latter in longitudinal direction with respect to said outer tube; elongated extensible means tiltably connected at one end thereof to said upper end of said inner tube and at the other end thereof to an edge portion of said drafting boar distant from said tilting axis thereof, said extensible means being movable between extended and contracted positions for tilting during change of said positions said board about the tilting axis thereof; and extensible drive means extending through the interior of said inner tube and being operatively connected to the other motor means and said elongated extensible means to move the latter between said positions thereof.

2. An arrangement as defined in claim 1 in which said hollow pedestal has an inclined axis and in which said telescopically extensible column is coaxially arranged with respect to the inclined axis of said pedestal.

3. An arrangement as defined in claim 1 in which said outer and inner tubes of said column have each a hexagonal cross section and in which the outer surface of the inner tube is slightly spaced from the inner surface of the outer tube, and including guide plate means in the space between said surfaces.

4. A drawing table comprising, in combination, a hollow pedestal; a telescopically extensible column formed by an outer tube fixedly mounted in said pedestal and an inner tube slidably received in said outer tube for movement in longitudinal direction thereof while being prevented from turning about its axis; a drafting board connected to the upper end of said inner tube tiltable about an axis extending transverse to the axis of said inner tube; a pair of electromotors in said pedestal; an elongated screw spindle loacted in said inner tube; screw nut means fixed to said inner tube and operatively engaging said screw spindle for shifting said screw nut means and said inner tube connected thereto in axial direction upon rotation of said screw spindle; transmission means operatively connected to one of said electromotors and to said screw spindle for rotating the latter; elongated extensible means tiltably connected at one end thereof to said upper end of said inner tube and at the other end thereof to an edge portion of said drafting board distant from said tilting axis thereof, said extensible means being movable between extended and contracted positions for tilting during change of said positions said board about the tilting axis thereof; and extensible drive means extending through the interior of said inner tube and being operatively connected to the other motor means and said elongated extensible means to move the latter between said positions thereof.

5. An arrangement as defined in claim 4 in which said pair of electromotors are located on opposite sides of said column.

6. An arrangement as defined in claim 4 in which said electromotors are fixedly connected to said outer tube and in which said telescopic extensible column together with said motors can be removed from said pedestal as one unit.

7. A drawing table comprising, in combination, a hollow pedestal; a telescopically extensible column formed by an outer tube fixedly mounted in said pedestal and an inner tube slidably received in said outer tube for movement in longitudinal direction thereof while being prevented from turning about its axis; a drafting board connected to the upper end of said inner tube tiltable about an axis extending transverse to the axis of said inner tube; a pair of electromotors in said pedestal; an elongated hollow screw spindle located in said inner tube coaxial therewith; screw nut means fixed to said inner tube and operatively engaging said screw spindle for shifting said screw nut means and said inner tube connected thereto in axial direction upon rotation of said screw spindle; transmission means operatively connected to one of said electromotors and to said screw spindle for rotating the latter; elongated extensible means tiltably connected at one end thereof to said upper end of said inner tube and at the other end thereof to an edge portion of said drafting board distant from said tilting axis thereof, said extensible means being movable between extended and contracted positions for tilting during change of said positions said board about the tilting axis thereof; and telescopic shaft means extending through said elongated hollow screw spindle coaxially therewith and being operatively connected at one end thereof to the other of said electromotors and at the other end thereof to said elongated extensible means to move the latter between said positions thereof.

8. A drawing table comprising, in combination, a hollow pedestal; a telescopically extensible column formed by an outer tube fixedly mounted in said pedestal and an inner tube slidably received in said outer tube for movement in longitudinal direction thereof while being prevented from turning about its axis; a drafting board connected to the upper end of said inner tube tiltable about an axis extending transverse to the axis of said inner tube; a pair of electromotors in said pedestal; an elongated hollow screw spindle located in said inner tube coaxial therewith; screw nut means fixed to said inner tube and operatively engaging said screw spindle for shifting said screw nut means and said inner tube connected thereto in axial direction upon rotation of said screw spindle; transmission means operatively connected to one of said electromotors and to said screw spindle for rotating the latter; a pair of telescoping sleeves having each a free end, one of said sleeves being tiltably connected at the free end thereof to said upper end of said inner tube and the other of said telescoping sleeves being tiltably connected at the free end thereof to an edge portion of said drafting board distant from the tilting axis of said board; a second elongated screw spindle extending in the interior of said sleeves coaxial therewith, said second screw spindle being connected to one of said sleeves for rotation relative thereto about the axis thereof while being prevented from moving in axial direction of said one sleeve and the other of said sleeves being formed with a screw thread operatively engaging said second screw spindle for moving said telescoping sleeves during turning of said second screw spindle between expanded and contracted positions for tilting during change of said positions said board about the tilting axis thereof; telescopic shaft means extending through said elongated hollow screw spindle coaxially therewith and being operatively connected at one end thereof to the other of said electromotors; and a universal joint connecting the other end of said telescopic shaft means with said second screw spindle.

9. An arrangement as defined in claim 8 and including a pair of belt drives respectively connecting said electromotors to said hollow elongated screw spindle and said telescopic shaft means.

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