United States Patent [19]

Cowley

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[54] **DRAFTING TABLE**

[76] Inventor: **Gary Cowley,** 2331 Main, Vancouver, British Columbia, Canada

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[52] **U.S. Cl.** **108/2;** 108/4; 108/6; 108/150

[51] **Int. Cl.²** **A47F 5/12**

[58] **Field of Search** ..... 108/1–10, 136, 108/150; 188/77 R

[56] **References Cited**

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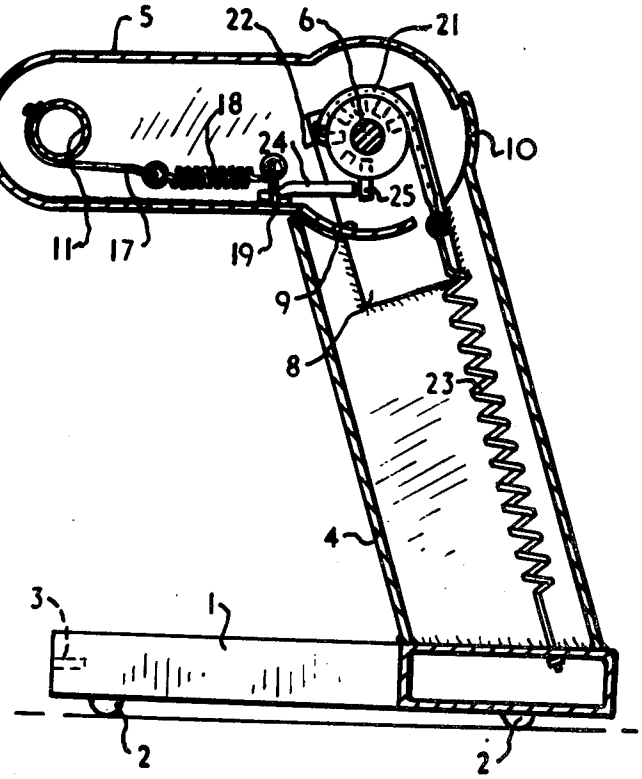
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Primary Examiner—Roy D. Frazier
Assistant Examiner—William E. Lyddane
Attorney, Agent, or Firm—W. Irwin Haskett

[57] **ABSTRACT**

A drafting table having a novel pedestal assembly including a horizontal V-shaped base, with the spread of the V toward the front, mounted on three spaced foot pads disposed in the form of a triangle for exceptional stability and a forwardly inclined single trunk rising from the apex of the V-shaped base with an extension column continuing upwardly from the top of said trunk and pivoted thereto on a horizontal axis disposed transversely of the V-shaped base to allow the extension column to hinge downwardly towards the front to a substantially horizontal position. Rotatably mounted in the upper end of said extension column is a transversely disposed horizontal cylinder that parallels the pivot axis of the column with radial brackets on opposite ends that support a drawing board and allow it to be tilted to the desired inclination. Within the trunk and extension column that are both hollow are two counter balancing mechanisms; an adjustable counter balance device for the extension column and the variously loaded drawing board it carries being housed in said trunk and an independent counter balance device unrelated to the first mentioned one to compensate only for the tilting of the board on its transverse supporting cylinder being housed, together with a common locking mechanism for both articulations, in the extension column.

7 Claims, 7 Drawing Figures



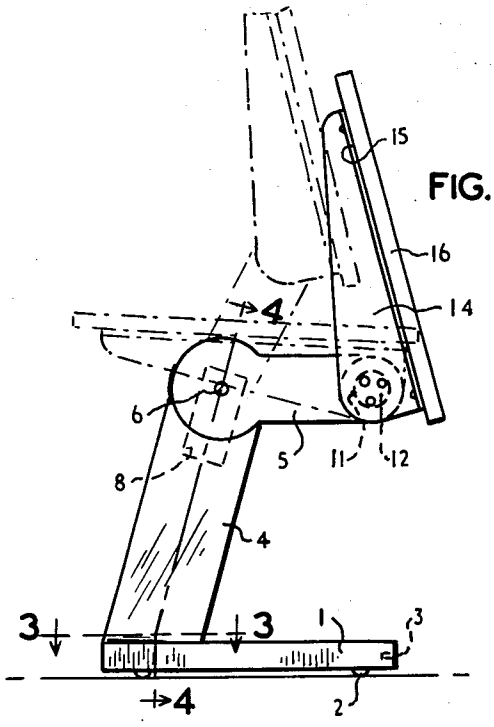


FIG. 1.

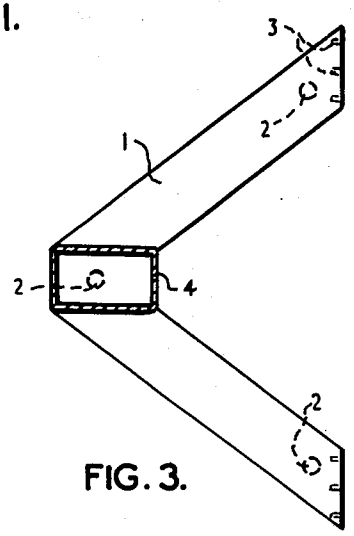


FIG. 3.

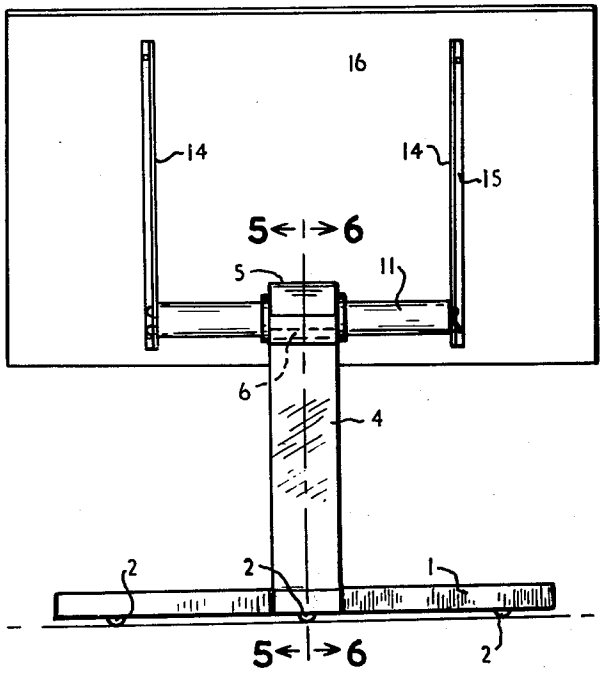


FIG. 2.

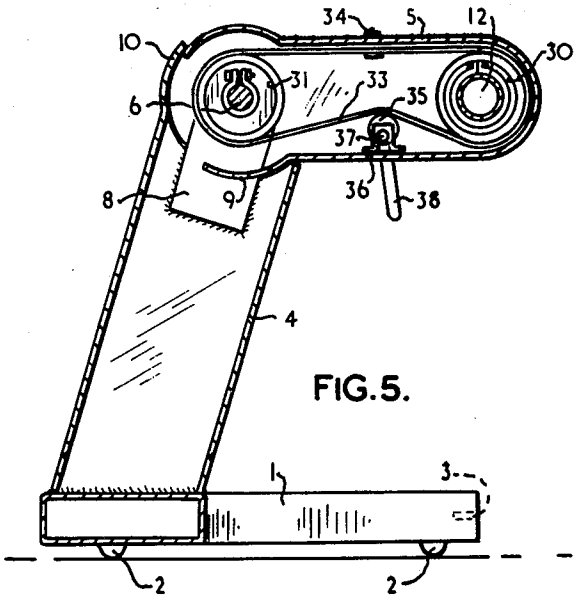


FIG. 5.

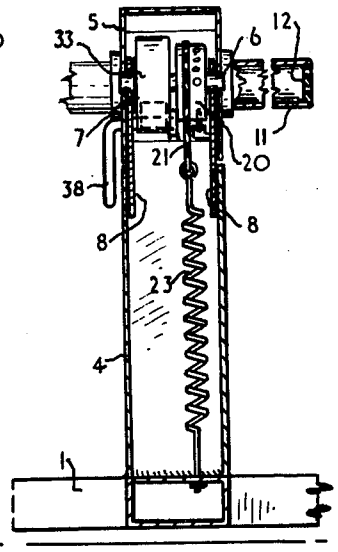


FIG. 4.

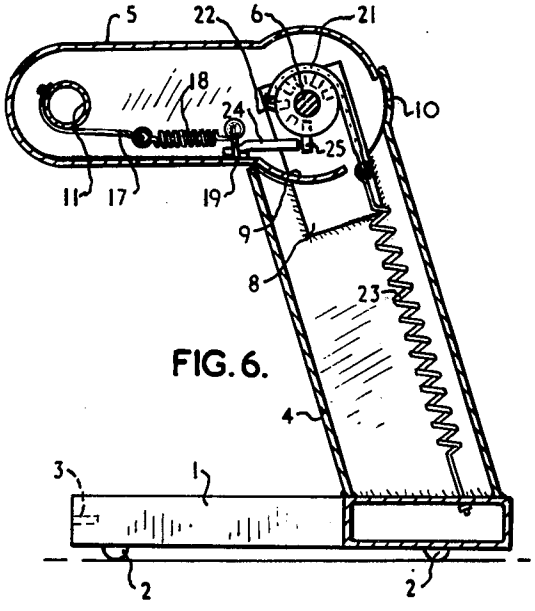


FIG. 6.

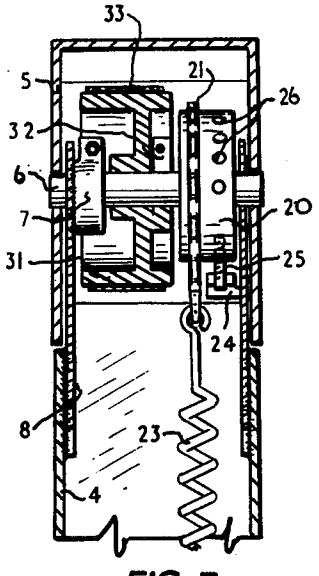


FIG. 7.

DRAFTING TABLE

BACKGROUND OF THE INVENTION

This invention relates to improvements in a drafting table and appertains particularly to one having a uniquely stable pedestal including a single articulated column.

It has been known to produce drafting tables having a drawing board adjustable for both elevation and tilt and to provide for counter balancing the adjustment movements and for locking the adjusted parts in the selected positions. Attempts have also been made to produce a drafting table with a single vertically slidable or articulated post. See U.S. Pat. Nos. 2,988,418 - Knudsen; and 3,638,584 - Cisler; and Canadian Pat. Nos. 695,671 - Wenger; 901,056 Sautereau; and 808,519 - Parigi.

Whether incorporated in a conventional table-like unit or utilizing a single column pedestal, each of the drafting tables disclosed in the aforementioned patents is deemed deficient in various ways and the present item constitutes an improvement thereover.

Many conventional table-type units are large and bulky; even some single column pedestals present a massive weight problem and those that do not are so designed as to lack the essential stability of a good drafting table; the over-sized or ill-shaped base interferes with the position of the user's feet; the column inclines away from instead of toward the draftsman, the board is pivoted in the wrong place, the balance spring is not readily adjustable or the drawing board when locked is less then rigid.

SUMMARY OF THE INVENTION

It is an object of this invention to provide a drafting table having an improved pedestal including a horizontal V-shaped base with the spread of the V to the front and a single articulated forwardly inclined post rising from the apex thereof, the V-shaped base being mounted on three spaced feet or floor pads arranged in the form of a triangle for exceptional stability.

A further object of the invention is to provide a single pedestal drafting table having a forwardly inclined, articulated post rising from the apex of a forwardly facing V-shaped base, and wherein the hingedly mounted upper column of the post swings forwardly from near vertical to approximately horizontal position over the open spread front of the V-shaped base.

A further object of the invention is to provide a drafting table of the character described, having an articulated inclined, two part post consisting of a trunk and a pivotally mounted extension column on the top thereof that in turn supports a tiltable drawing board, wherein the pivoted extension column and the tiltable board are provided with separate and independent counter balancing mechanisms yet the articulated movements of the column and board are both releasably locked in selected adjusted positions by a single locking mechanism.

A still further object of the invention is to provide an improved single pedestal drafting table of the character described, that is of neat, simple and compact construction, is easily and quickly adjusted to the desired elevation and tilt, conveniently locked in and released from chosen position and affords the maximum comfort to the user in sitting or standing position.

BRIEF DESCRIPTION OF THE DRAWINGS

To the accomplishment of these and related objects as shall become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts as shall be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the claims hereunto appended.

In the drawings:

FIG. 1 is a side elevation of a preferred embodiment of the invention;

FIG. 2 is a rear elevation thereof;

FIG. 3 is a horizontal, transverse section, on line 3—3 of FIG. 1, showing the V-shaped, three point foot pad base;

FIG. 4 is an enlarged, vertical, transverse section, taken on line 4—4 of FIG. 1;

FIG. 5 is an enlarged vertical, longitudinal section, taken on line 5—5 of FIG. 2;

FIG. 6 is a similarly enlarged, vertical, longitudinal section taken on line 6—6 of FIG. 2; and

FIG. 7 is a further enlarged, vertical transverse section, similar to FIG. 4, detailing the pivot area assembly.

DETAILED DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

The present single pedestal drafting table provides a neat and compact unit utilizing a horizontally disposed V-shaped base 1, having the spread of the arms of the V to the front, here shown as a hollow metal form of shallow rectangular-in-cross-section forms. Three spaced feet or foot pads 2 arranged in the form of a triangle afford stable support for the base, centrally underlying the general areas of the apex and the spread apart free forward ends of the arms of the V as seen clearly in FIG. 3. The front end of both arms are tapped and threaded, as at 3, for the selective attachment of a side reference (not shown) or other piece of equipment or accessory.

Rising from the apex of base 1 is a single post that is inclined forwardly so that it extends out over the open space between the spread arms of the V. The post is articulated comprising a lower trunk portion 4, welded to the base at its apex, and an extension column portion 5 continuing upwardly from the top of the trunk and hingedly connected thereto by a transversely disposed horizontal pivot pin 6. Both the trunk and extension column portions 4 and 5 are elongated hollow members of metal or other suitable material, being rectangular in cross-section and of similar width. The upper end of the trunk 4 is fashioned to receive the lower end of the hinged column 5 having an arcuate contour on the top of both sides with a plate 8 welded on each of the confronting sides and rising substantially above the arcuate top to support the outer ends of the pivot pin 6 that is held against rotation by a clamp 7 fixedly mounted on one of said plates. The side walls of the hollow extension column, which may be of less depth though of the same width as the trunk, terminate at their lower end in a circular contour concentric with the pin 6 on which the column hinges, fitting the arcuate contour of the top of the trunk and lying substantially coplanar therewith. An arcuate wing 9 on the lower edge of the front wall of the column 5 which is open to the bottom and an arcuate upward extension 10 on the rear wall of the trunk 4 which is open at the top contribute to the neat

appearance of the hinge joint of this articulated post structure. The extension column **5** may be swung forwardly from upright to approximately horizontal position where it extends out over the open spread front of the V-shaped base, the exceptional stability of the unit being assured by the design of the V-shaped base and the relation of the forwardly incline post to it.

Across the top or free outer end of the extension column **5** a horizontal transversely disposed elongated cylinder **11** is rotatably journalled in the column's spaced side walls, its opposite ends being closed with welded-in closure caps **12.** A triangular bracket **14** is affixed as by bolts on the outer face of each cap extending radially from the cylinder and having their spaced confronting bodies lying in parallel planes. Each bracket has a narrow flange **15** along one side by which it attaches to the underside of drawing board **16** which is thereby free to be tilted to the desired angle on the axis of the cylinder **11** that parallels the pivot pin **6.** It will be noted that the bracket triangle is so proportioned that the board's tilting axis is near to its forward or lower edge.

A counter balance mechanism for the tiltable board **16** is housed entirely within the extension column **5** and includes a flexible member **17** that extends part way around the circumference of the rotatable cylinder **11** and is secured by one end to the cylinder while its opposite end connects with a tension coil spring **18** that is remotely anchored to a bracket **19** fastened to the column **5** near its lower pivoted end. The extension of part of the flexible member around the rotatable cylinder is such that as the drawing board is tilted between the upright and horizontal positions the tension on spring **18** is increased to compensate for the increased load.

A completely separate and independent counter balance mechanism is provided for the hingeable extension column **5.** It includes a wheel **20** rotatably mounted on the pivot pin **6** with a flexible member here shown as a link chain **21** extending part way around its circumference and secured thereto at one end by a keeper **22** with a tension spring **23** stretched between the chain's other end and the base **1.** To convey the load of the extension column **5** and its drawing board **16,** an abutment **24** is secured on the front wall of the column near its lower open end that engages a pin **25** extending radially from the rotatable wheel **20** into its path so that as the hinged column is lowered toward horizontal forwardly extending position, its load is taken by the stretched tension spring **23.** As the load the tension spring or springs **23** may be required to carry can differ, depending on the type of drafting machine or attachments mounted on the drawing board, a means for adjusting the tension is provided by the wheel **20,** alongside that part of its circumference engaged by the chain, having a series of radial threaded bores **26** in which the pin **25** may be selectably positioned.

To assure steadiness to the drafting table and a reliable rigidity to the drawing board at all times irrespective of the elevation or angle of tilt it is set at, a handy and conveniently positioned locking mechanism control is available. On the tiltable cylinder **12** inside the column **5** a drum **30** is secured against rotation and on the non-rotatable pivot pin **6** a similar drum **31** is secured in non-rotatable relation as by the drum-carried clamp **32** clearly seen in FIG. **7.** The drums **30** and **31** are in line and encircled by a flexible brake band **33** that is anchored to the extension column **5** as at **34.** The belt or band **33** is normally loose permitting slippage between it and the spaced drums. To tighten the band **33** so that it grips the drums in non-sliding relation a cam **35** is rotatably mounted on brackets **36** on the inside of the front wall of column **5** about mid-way between the drums, its horizontal shaft **37** extending transversely of the column then projecting through the side thereof being disposed at right angles and depending as a locking lever **38** that lies within case reach of the user at all times. Should any stretch occur in the belt **33,** the unwanted slack can be taken up by the upward adjustment of the cam shaft **37** within the brackets **36** or by inserting shims under the base thereof.

In use, it will be seen that this drafting table, with its novel pedestal consisting of a single articulared post rising at a forwardly inclined angle from the rearwardly located apex of a horizontally disposed V-shaped base, the spread of which V is toward the front and wherein the base is supported on three foot pads in a triangular arrangement, provides a neat compact unit of pleasing design and exceptional stability. The separate and independent counter balancing mechanisms for the articulated upper column of the post and the tilting drawing board atop the column are effectively housed in the trunk and extension column portions respectively, in relative alignment transversely of the table, the former mechanism having readily available adjustment to compensate for the added weight of the particular drafting machine attached to the drawing board. Especially convenient for the user is the movement locking mechanism, to hold the hinged column and the tilting board in any chosen position for drawing, whether seated or standing, with its single lever handle disposed exteriorly of the column and within easy reach of the user as it depends from the column in horizontal position or extends horizontally forwards therefrom when the column is in approximately vertical position.

From the foregoing description taken in connection with the accompanying drawings, it will be manifest that a drafting table is provided that will fulfil all the necessary requirements of such a device but various changes in the size, shape and arrangement of parts may be made to the form of invention herein shown and described without departing from the spirit of the invention or scope of the claims.

What is claimed is:

1. A drafting table comprising a horizontally disposed V-shaped base, with the spread of the V to the front; a single, articulated, forwardly inclined post rising from the apex thereof, said post consisting of a lower trunk portion and an extension column portion continuing upwardly from the top of the trunk and hingedly connected thereto by a horizontal pivot disposed transversely of the V of said base, whereby said extension column may be swung forwardly from upright to approximately horizontal position over the open, spread, front of the V-shaped base; a drawing board mounted on the top of said column portion and tiltable on an axis paralleling said pivot; counter balancing mechanisms for said hinged column portion of said tiltable drawing board respectively; locking means for releasably securing the mentioned hinged and tiltable elements in selected adjusted positions, wherein the counter balancing mechanism for the extension column portion of the articulated forwardly inclined post includes a wheel rotatable on said pivot, a flexible member extending part

way around the circumference of the wheel and being secured thereto at one end, a tension spring stretched between the other end of said member and the bottom of the post, a radial extension on said wheel and an abutment on said extension column portion engageable therewith.

2. A drafting table according to claim 1, wherein the radial extension on said wheel may be selectably positioned on the wheel's circumference to vary the tension on the spring.

3. A drafting table according to claim 1, wherein said extension column portion carries a transversely disposed elongated cylinder rotatably mounted across the top thereof, closure caps in opposite ends thereof and angle brackets releasably secured by bolts to said end caps and extending radially therefrom having confronting triangular bodies lying in parallel planes each with a narrow flange along one edge attached to said drawing board.

4. A drafting table according to claim 1, having a transversely disposed elongated cylinder rotatably mounted across the top of said extension column portion for tiltably carrying said drawing board, and wherein the counter balancing mechanism for said tiltable drawing board includes a flexible member extending part way around the circumference of said transverse cylinder and secured thereto at one end and a tension spring stretched between the other end of said member and an anchor bracket attached to said extension column portion near its lower end, said flexible member, tensioning spring and anchor bracket being all housed within said extension column portion.

5. A drafting table according to claim 1, having a horizontal transversely disposed cylinder rotatably mounted across the top of said extension column portion for tiltably carrying said drawing board, and wherein said locking means includes a first drum fixedly secured on said cylinder, a second drum on said horizontal pivot secured against rotation relative to said lower trunk portion, a brake band anchored to said extension column portion and loosely encircling said first and second drums in normally slipping engagement, and means to tighten said band into tightly gripping engagement.

6. A drafting table according to claim 3, having a horizontal transversely disposed cylinder rotatably mounted across the top of said extension column portion for tiltably carrying said drawing board, and a first drum fixedly secured on said cylinder, and wherein said locking means includes a second drum on said horizontal pivot secured against rotation relative to said lower trunk portion, a brake band anchored to said extension column portion and loosely encircling said first and second drums in normally slipping engagement, and a lever-actuated cam to tighten said band into tightly gripping engagement with said drums, said cam having a horizontal axle extending transversely of the extension column and projecting through a side wall thereof, adjustable toward said band and terminally depending at right angles as a locking lever.

7. A drafting table comprising a horizontally disposed V-shaped base, with the spread of the V to the front; a single, articulated, forwardly inclined post rising from the apex thereof, said post consisting of a lower trunk portion and an extension column portion continuing upwardly from the top of the trunk and hingedly connected thereto by a horizontal pivot disposed transversely of the V of said base, whereby said extension column may be swung forwardly from upright to approximately horizontal position over the open, spread, front of the V-shaped base; a drawing board mounted on the top of said column portion and tiltable on an axis paralleling said pivot; counter balancing mechanisms for said hinged column portion and said tiltable drawing board respectively; locking means for releasably securing the mentioned hinged and tiltable elements in selected adjusted positions, wherein the lower trunk portion and the extension column portion of the articulated forwardly inclined part are both elongated hollow members of rectangular cross-section and of similar width, pivot-supporting plates secured on confronting inside faces of opposite sides of said trunk portion and rising above the top thereof, the end of said horizontal pivot extending outwardly beyond said plates and the opposite side walls of said extension column portion, lying coplanar with the opposite side walls of the trunk portion, being pivoted on such outwardly extending ends of the pivot, the top of the trunk side walls being of arcuate contour and the lower end of the extension column's coplanar side walls being of corresponding circular contour, concentric with the pivot, to fit the arcuate top of the side walls of the trunk; the front wall of the extension column having an arcuate wing on the bottom thereof and the rear wall of the trunk having an arcuate upward extension to contribute to the enclosure of said articulated post adjacent said pivot.

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