Sept. 22, 1953 J. F. JOY 2,652,657

DRAFTING TABLE

Filed Feb. 17, 1948 4 Sheets-Sheet 1

Fig. 1.

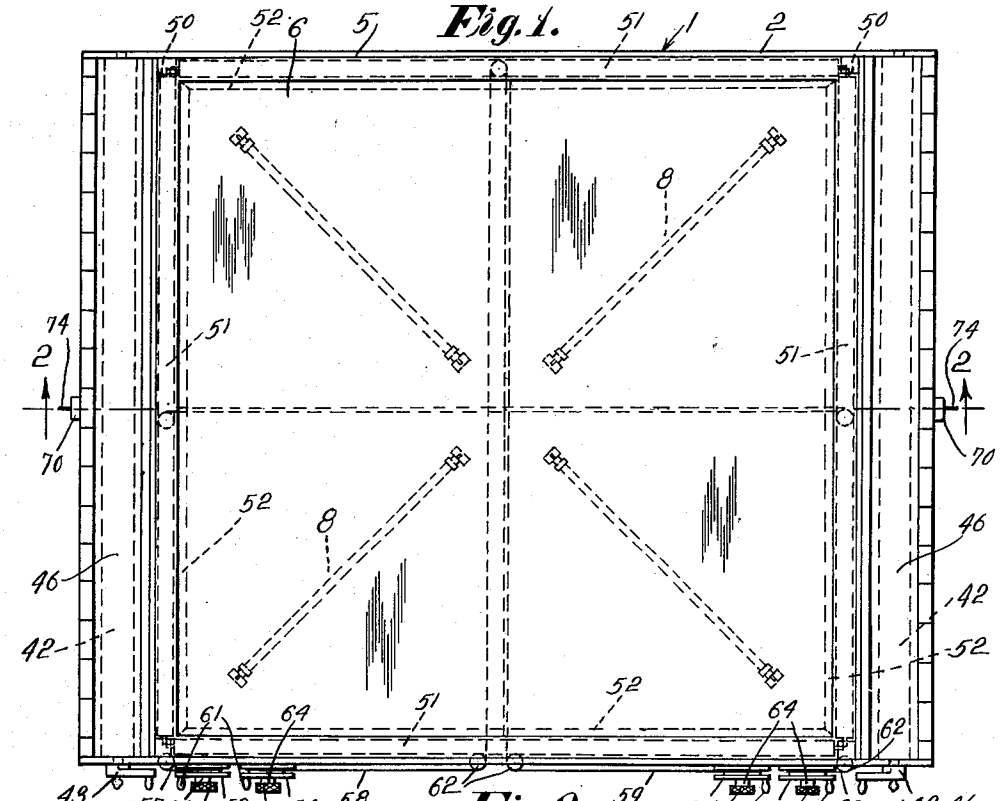
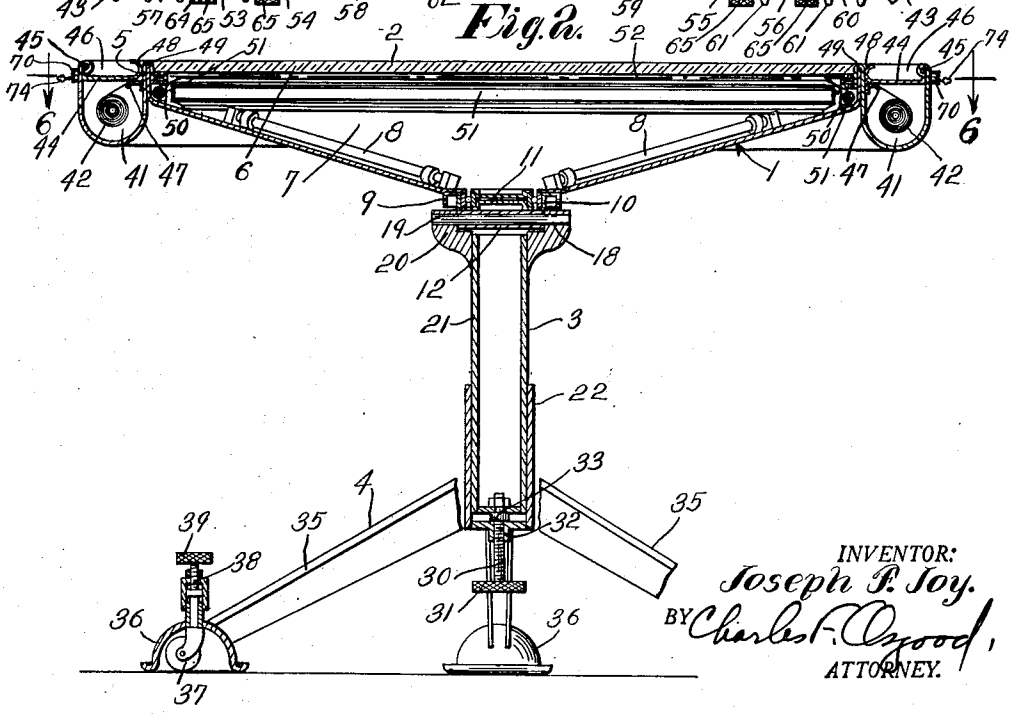


Fig. 2.



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Sept. 22, 1953 J. F. JOY 2,652,657

DRAFTING TABLE

Filed Feb. 17, 1948 4 Sheets-Sheet 2

Fig. 3.

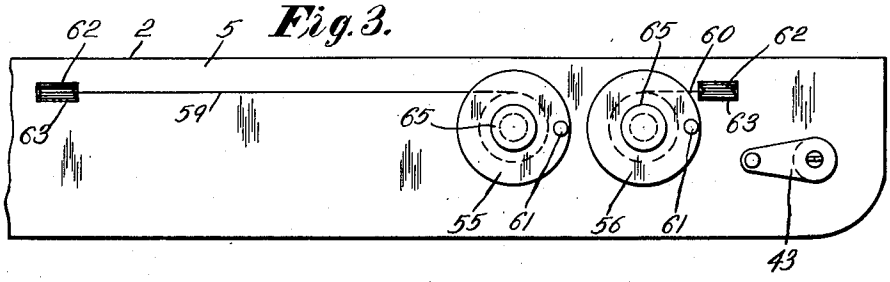


Fig. 4.

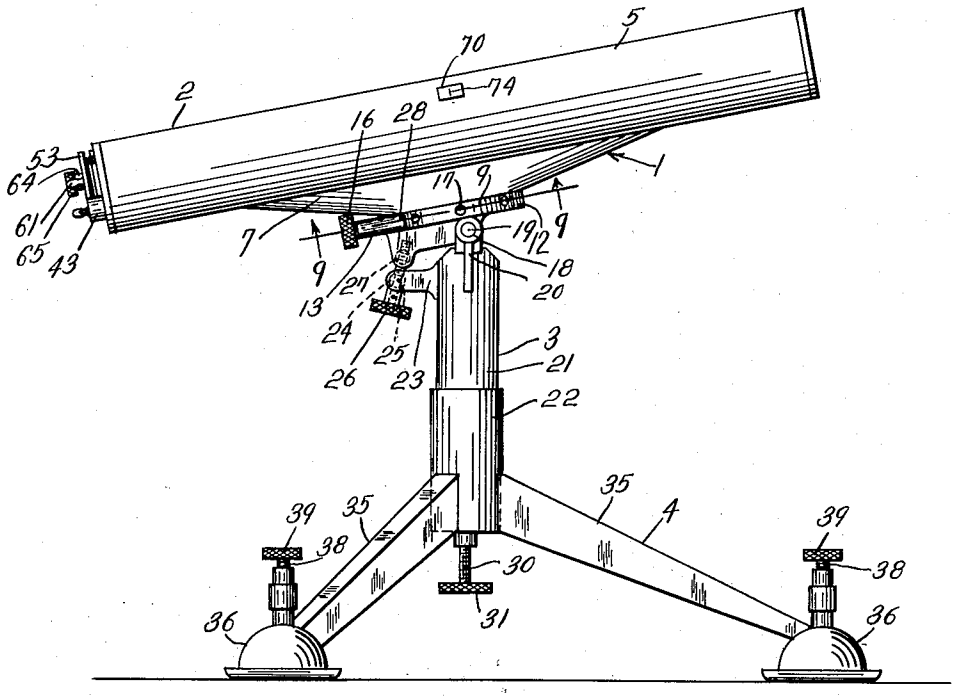
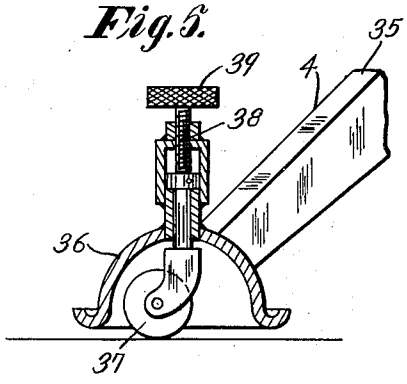


Fig. 5.



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Sept. 22, 1953 J. F. JOY 2,652,657

DRAFTING TABLE

Filed Feb. 17, 1948 4 Sheets-Sheet 3

Fig. 6.

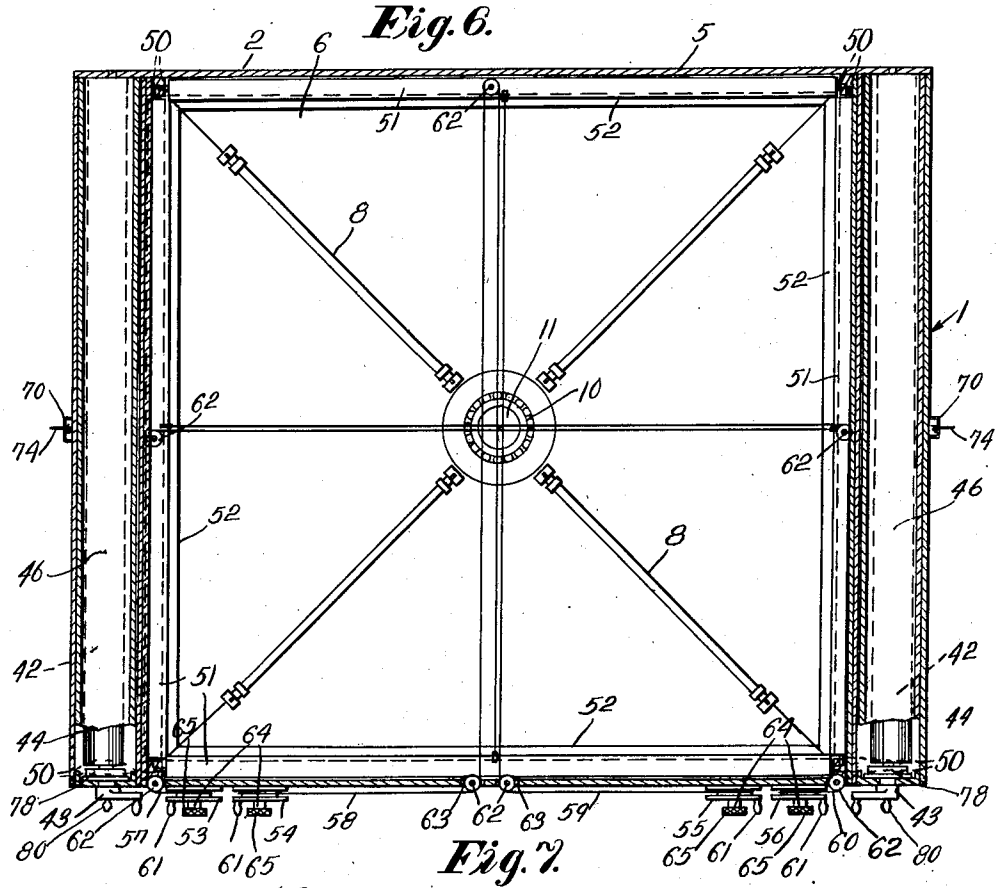
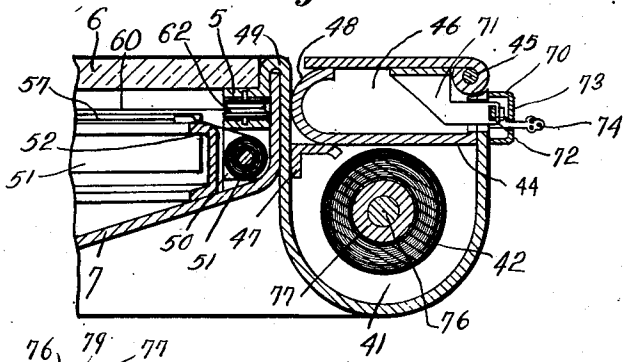


Fig. 7.



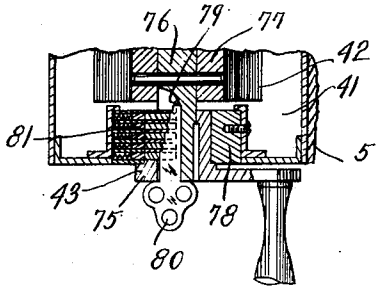


Fig. 8.

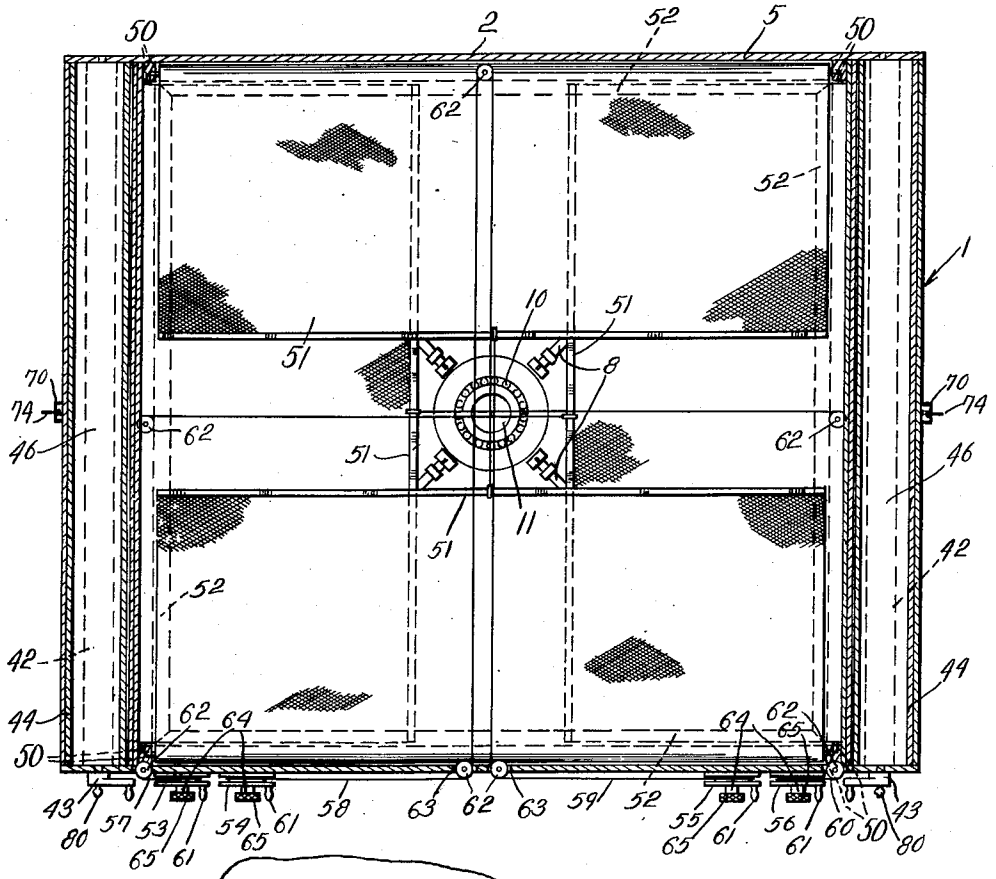
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Filed Feb. 17, 1948 4 Sheets-Sheet 4

Fig. 9.



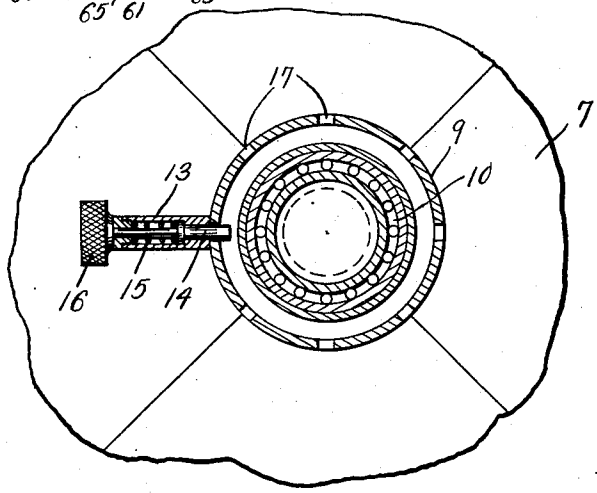


Fig. 10.

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2,652,657

UNITED STATES PATENT OFFICE

2,652,657

DRAFTING TABLE

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Application February 17, 1948, Serial No. 8,953

4 Claims. (Cl. 45—131)

1

This invention relates to drafting tables and more particularly to an improved universal drafting table capable of a wide range of adjustment and having novel features of construction.

The drafting table of the present invention, in a preferred embodiment, is provided with a universally tiltable table top which is also adjustable in height so that the table top may be readily adjusted to enable the user to sit in a comfortable office-type swiveled chair instead of a conventional draftsman's stool. Due to the universality of the support of the table top, the work may be at all times within easy reach of the draftsman. The table top is provided with a top panel or plate of transparent material, preferably a translucent plastic material, and may be illuminated from beneath by a source of light located in a light box beneath the table top to facilitate tracing. In the preferred embodiment, closed storage compartments are arranged longitudinally at the sides of the table top and are fitted with removable rolls of large capacity for drawing or tracing paper which has its portion between the rolls passing across the translucent top of the table and the rolled paper may be readily transferred from one roll to the other simply by rotating the rolls to pay off from one end and to wind on the other. The compartment covers, when closed, are formed to serve as trays for draftsmen's tools. Suitable locks are provided for the rolls and the compartment covers to prevent unauthorized tampering. Suitable roller shades are provided at the several sides of the table top and may be adjusted to block out portions of the illuminated top of the table so that only the portion in use is exposed to the light source. The translucent plastic top of the table may be composed of relatively soft material to permit the insertion of thumb tacks in order to secure the drawing paper firmly in place on the working surface. The table feet are equipped with adjustable roller casters so that the feet may be elevated onto the rollers to facilitate movement of the table from place to place, and the roller casters may be retracted within the feet to bring the latter firmly into contact with the floor when it is desired firmly to locate the table in place.

An object of the present invention is to provide an improved drafting table. Another object is to provide an improved universal drafting table having improved adjusting means whereby a relatively wide range of adjustment of the table top is obtained. Yet another object is to provide improved storage means for the drawing or tracing paper within the sides of the table top

2

and including rolls of paper whereby the paper may pass over the table top and be transferred readily from one roll to the other as it is used. A further object is to provide an improved drafting table having a transparent or translucent top and having a suitable light source associated therewith to facilitate tracing. A still further object is to provide an improved drafting table having improved means associated with the illuminated top of the table whereby portions of the top may be blocked off so that only the portion in use is exposed to the light source. Anothe robject is to provide an improved translucent table top having a novel lighting arrangement associated therewith for illumination purposes. A further object is to provide improved locking means for the paper rolls and the compartment covers to prevent tampering by unauthorized persons. Still another object is to provide an improved drafting table having novel combinations and arrangements of parts. These and other objects and advantages of the invention will, however, hereinafter more fully appear in the course of the following description.

In the accompanying drawings there is shown for purposes of illustration one form which the invention may assume in practice.

In these drawings:

Fig. 1 is a top plan view of the preferred illustrative embodiment of the improved universal drafting table.

Fig. 2 is a vertical sectional view taken substantially on line 2—2 through the table shown in Fig. 1 and illustrating structural details.

Fig. 3 is an enlarged fragmentary side view showing details of the table.

Fig. 4 is a side elevational view of the table shown in Figs. 1 and 2, with the table top tilted.

Fig. 5 is an enlarged detail vertical sectional view taken through one of the supporting feet, showing the caster roller in operative position.

Fig. 6 is a horizontal sectional view taken substantially on line 6—6 of Fig. 2.

Fig. 7 is an enlarged fragmentary sectional view taken on the plane of Fig. 2, showing details of construction.

Fig. 8 is a detail horizontal sectional view through one of the paper rolls, showing details of the roll lock.

Fig. 9 is a view similar to Fig. 6, with the shades positioned to block out portions of the illuminated table top.

Fig. 10 is an enlarged detail sectional view taken on line 9—9 of Fig. 4.

In this illustrative embodiment of the inven-

tion, as shown in the drawings, the improved universal drafting table is generally designated 1 and is preferably of a fabricated sheet metal construction. The table comprises a rectangular table top 2 tiltably mounted on an adjustable pedestal 3 supported by a tripod base 4. The table top comprises a rectangular frame 5 shaped to receive and support a transparent top plate or panel 6 preferably of translucent plastic material, and arranged beneath this transparent plate is a light box 7 of frustopyramidal form having its inner surface coated with a suitable light reflecting material. Disposed in the light box is a suitable light source, herein a battery of fluorescent or other electric lamps 8 preferably arranged cornerwise in the light box and connectible by a conventional switch or plug cord to a suitable source of electricity whereby the table top may be illuminated. The light box 7 is rigidly secured at its wide end to the rectangular frame 5 and supports the rectangular frame and has, at its narrow end, a bottom bearing annulus or bearing ring 9 swivelled on a bearing 10 supported by a cylindric projection 11 extending upwardly on a tiltable support 12. The support 12 has an integral tubular portion 13 in which is guided a plunger 14 pressed inwardly by a spring 15 and provided with a knurled handle 16, and this plunger is engageable with any one of a series of radial apertures 17 in the bearing ring 9 for locking the table top in its different swivelled positions with respect to the pedestal 3. The tiltable support 12 is pivoted at 18 on a transverse pivot pin 19 supported at its ends within a yokelike portion 20 herein secured as by welding to the upper end of the pedestal. The swivel axis of the table top is substantially perpendicular to the pivotal axis of the support. The pedestal has an adjustable vertical tubular post 21 telescopically arranged within a lower tubular support 22, herein arranged centrally on the tripod base 4. The post 21 has secured thereto, as by welding, a lateral lug 23 supporting a pivot member 24 engaged by a rotatable adjusting screw 25 provided with a knurled handle 26, and this screw is threaded within a pivoted nut 27 carried by depending lugs 28 integral with the support 12, as shown in Fig. 4. The knurled handles 16 and 26 of the plunger lock 14 and the adjusting screw 25 are conveniently located so that the draftsman may readily and easily adjust the table top as desired while in seated position.

The elevation of the table top may be adjusted in various manners, herein preferably by an adjusting screw 30 coaxial with the pedestal at the bottom thereof and having a knurled handle 31 and threadedly engaging a nut 32, the latter herein formed integral with the bottom of the tubular pedestal member 22; and this screw rotatably engages at 33 the bottom of the tubular post 21 of the pedestal. Thus, by a simple adjustment of the screw 30, the post 21 of the pedestal may be adjusted vertically relative to the lower tubular support 22 to vary the length of the pedestal to change the height of the table top. The tripod base has three diverging legs 35 secured, as by welding, to the lower tubular support 22 and provided with floor engaging feet 36. These feet are of inverted cuplike shape and, in their hollow interiors, house roller casters 37 which are retracted within the feet when the table is located in a firm position. These roller casters have adjusting screws 38 provided with knurled handles 39 whereby the roller casters may be projected below the feet 36 to support the latter in elevated position off the floor to enable rolling of the table from place to place.

In this improved drafting table construction, the rectangular frame 5 of the table top 2 has closed storage compartments 41, 41 extending longitudinally at its sides, as shown in Fig. 2, and suitably journaled in these compartments are rolls 42, 42 on which drawing or tracing paper is wound, and the portion of the paper intermediate these rolls passes over the illuminated top of the table. The rolls have suitable hand cranks 43 whereby the rolls may be rotated to effect transfer of the paper from one roll onto the other as the paper passing over the working surface of the table top is used up. The compartments 41 have covers 44 hinged at 45 and which may be swung open to obtain access to the rolls 42 to permit removal of the used rolls and insertion of new rolls. The tops of these covers are recessed at 46 to provide trays for receiving drafting tools and are also provided with suitable hinged covers. Guide flanges 47 having downwardly bent portions serve to guide the paper as it passes from one roll or extends toward the other roll, and the covers 44 have curved edges at 48 which, when the covers are closed, serve to further guide the paper and provide sufficient frictional contact with the paper to maintain the latter under slight tension so that its portion passing over the working surface of the table top is held flat and smooth. The adjacent top edges 49, at the inner sides of the compartments, are also rounded to permit movement of the paper smoothly thereover.

Now referring to the improved means for blocking out portions of the illuminated surface of the translucent table top, it will be noted that suitably secured to the rectangular frame 5 of the table top are suitably formed brackets 50 for conventional roller shades 51, herein respectively arranged lengthwise of the four sides of the rectangular frame within the light box 7 at the inner sides thereof, as shown in Fig. 7. Extending across each inner side of the roller shades and secured to the bottom of the reflector box are guides 52, with the upper surfaces of the guides for one pair of parallel rollers arranged at a slightly different higher level from the other pair, so that the shades are adequately guided at their side edges as they are drawn off of their rolls. One of the guides 52 is shown in cross section in Fig. 7. The roller shades may be extended from four directions beneath the illuminated top of the table surface to block out portions thereof so that only the portion in use is exposed to the light source (Fig. 8). It will be evident that by properly positioning the shades, any desired portion of the transparent plate 6 may be exposed to the light source. Also arranged at the lower inner side of the table top in adjacency to the hand cranks 43 of the paper rolls are relatively small cable winding drums 53, 54, 55 and 56 respectively having cables 57, 58, 59 and 60 wound thereon, and each is provided with a hand crank 61. These cables are guided by appropriately located sheaves 62 journaled on the frame 5 within the light box on axes perependicular to the plane top surface of the table, and the sides of the frame of the table top are cut away at 63 to permit the cables to be extended from the drums into the light box

around these guide sheaves. Each cable winding drum is provided with a conventional lock 64 having a knurled operating handle 65 by which the locks may be tightened to hold the drums firmly against rotation when the roller shades are properly positioned with respect to the table working surface. Thus, the several shades may be separately operated from convenient points near the draftsman's side of the table.

To prevent tampering of the drawings by unauthorized persons, the paper rolls and compartment covers are provided with locks. The covers 44 of the roll-compartments 41 are provided with locks 70, as shown most clearly in Fig. 7. Each cover has a bracket 71 having a slot for receiving a lock bolt 72 contained in a lock case 73 secured to the middle portion of the adjacent side of the rectangular frame 5 and in which a key 74 is insertable. Thus, the compartment covers may be firmly locked in closed position, and the locks may be readily released by the key which is in the custody of the draftsman in charge of the drawing table. The covers for the trays may be provided with similar locks, if desired.

The paper rolls 42 contained in the compartments 41 are also each provided with a lock 75 which is shown most clearly in Fig. 8. In this construction, the paper roll has a shaft 76 surrounded by a tubular body 77 on which the paper is wound. Secured to the end wall of the compartment, within the latter, is a lock case 78. The shaft has a key-receiving slot 79 in which a key 80 is insertable. The hand crank 43 has carried by its hub a series of tumblers 81, which project into the shaft-slot 79 to lock the paper roll against rotation. When the key is turned, these tumblers are ejected from the shaft-slot to release the paper roll. Thus, the drawing paper may be wound up on the rolls, as desired, and the rolls may be firmly locked in position, and the rolls may be unlocked only by the person in authority who retains custody of the key. If desired, the same key may be used to lock both the compartment and tray covers and the paper rolls. Evidently, various other types of locking means for the rolls and covers may be employed.

As a result of this invention, an improved universal drafting table is provided wherein the table top may be adjusted through a relatively wide range to suit the convenience of the draftsman working at the table. By the provision of the transparent table top and the associated light source, the table top may be illuminated to facilitate tracing. The translucent plastic top of relatively soft composition enables insertion of thumb tacks in the top for holding the paper firmly in place over the working surface. The novel arrangement of the paper storage rolls within compartments at the sides of the table enables the drawing or tracing paper to be passed over the top of the table working surface between the rolls and be readily transferred from one roll to the other as the paper is used. The provision of the locks for the paper rolls and compartment covers prevents tampering by unauthorized persons. Further, the provision of the roller shades for blocking out portions of the illuminated surface of the table top enables exposure of only the portion of the transparent surface being used to the light source. The tripod base with its floor engaging feet enables the table to be firmly positioned on the floor, and the projectible caster wheels enable the feet to be elevated onto the wheels to permit easy rolling of the table from place to place. The improved table is not only easily adjustable to the desired position, but is also relatively simple and rugged in construction. The manners of use and other advantages of the invention will be clearly apparent to those skilled in the art.

While there is in this application specifically described one form which the invention may assume in practice, it will be understood that this form of the same is shown for purposes of illustration and that the invention may be modified and embodied in various other forms without departing from its spirit or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. In a drafting table, the combination comprising a table top having a transparent top plate providing a plane working surface and a light source beneath said plate, separate roller shades coextensive with the sides of said top plate and located between said plate and said light source and adapted to be drawn at different distances toward the center of said working surface relative to said illuminated top plate for blocking out any desired portions thereof so that only the portion in use is exposed to the light source, and manually actuated means including operating elements located near and operable from the forward side of the table and operatively connected to said shades respectively for separately adjusting the latter.

2. In a drafting table, the combination comprising a table top having a transparent top plate providing a plane working surface and a light source beneath said plate, separate roller shades substantially coextensive with the sides of said working surface and located beneath said top plate between the latter and said light source, one shade extending longitudinally along each side of the table top, and said shades adapted to be drawn relative to said illuminated top plate at different distances toward the center thereof for blocking out different portions of said plate over the entire area thereof so that only the portion in use is exposed to the light source, and manually actuated means including operating elements located near and operated from the forward side of the table and operatively connected to said shades respectively for separately adjusting the latter.

3. In a drafting table, the combination comprising a table top having a transparent top plate providing a plane working surface and a light source beneath said plate, separate roller shades substantially coextensive with the sides of said working surface and located beneath said top plate between the latter and said light source, one shade extending longitudinally along each side of the table top and said shades adapted to be drawn relative to said illuminated top plate toward the center thereof for blocking out any desired portions of said plate so that only the portion in use is exposed to the light source, and operating means for said shades including operating elements individual thereto and arranged remotely therefrom and operatively connected to said shades respectively for independently drawing said shades from points near the draftsman's side of the table.

4. In a drafing table, the combination comprising a table top including a rectangular frame shaped to receive a transparent top plate providing a plane working surface, a light box se-

cured to said frame beneath said top plate and containing a source of light for illuminating said plate, separate roller shades arranged in said light box substantially coextensive with the sides of the working surface and beneath said plate between the latter and said light source, said roller shades extending longitudinally along the sides of said box and adjustable to block out any desired portion of the working surface of said illuminated plate so that only the portion in use is exposed to said light source, and devices operable at will from the forward side of the table and connected to said shades respectively for individually adjusting the latter, said adjusting devices including operating elements extending from the exterior of said frame inwardly beneath said top plate.

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