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2,629,924

INSTRUMENT REPAIR LIGHTING TABLE

Filed March 28, 1951

2 SHEETS—SHEET 1

FIG. 1

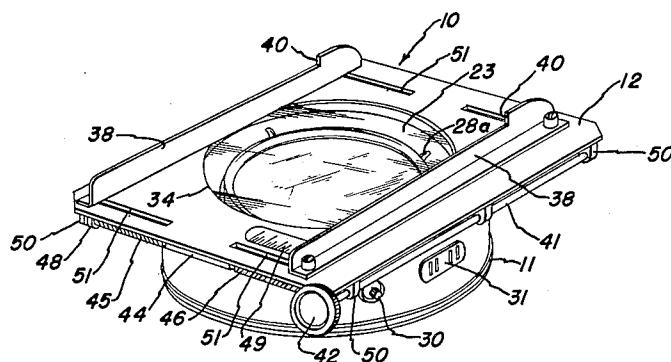
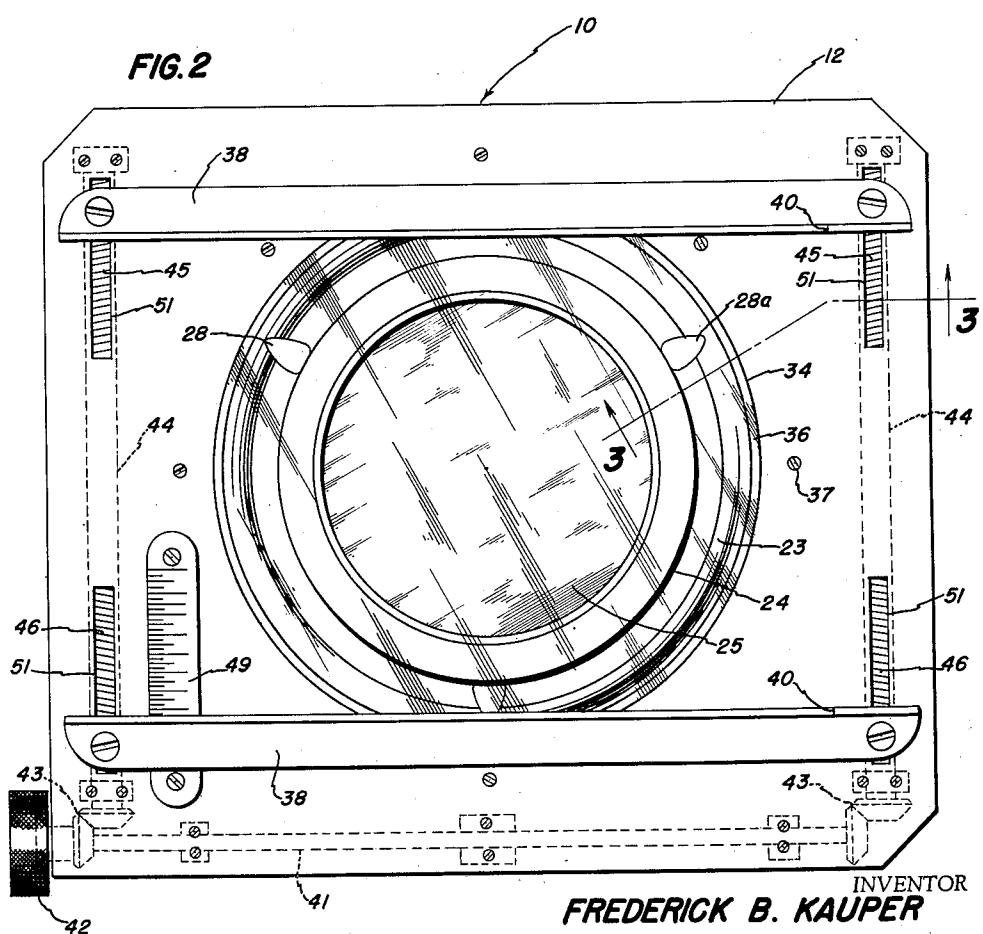


FIG. 2



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2 SHEETS—SHEET 2

FIG. 4

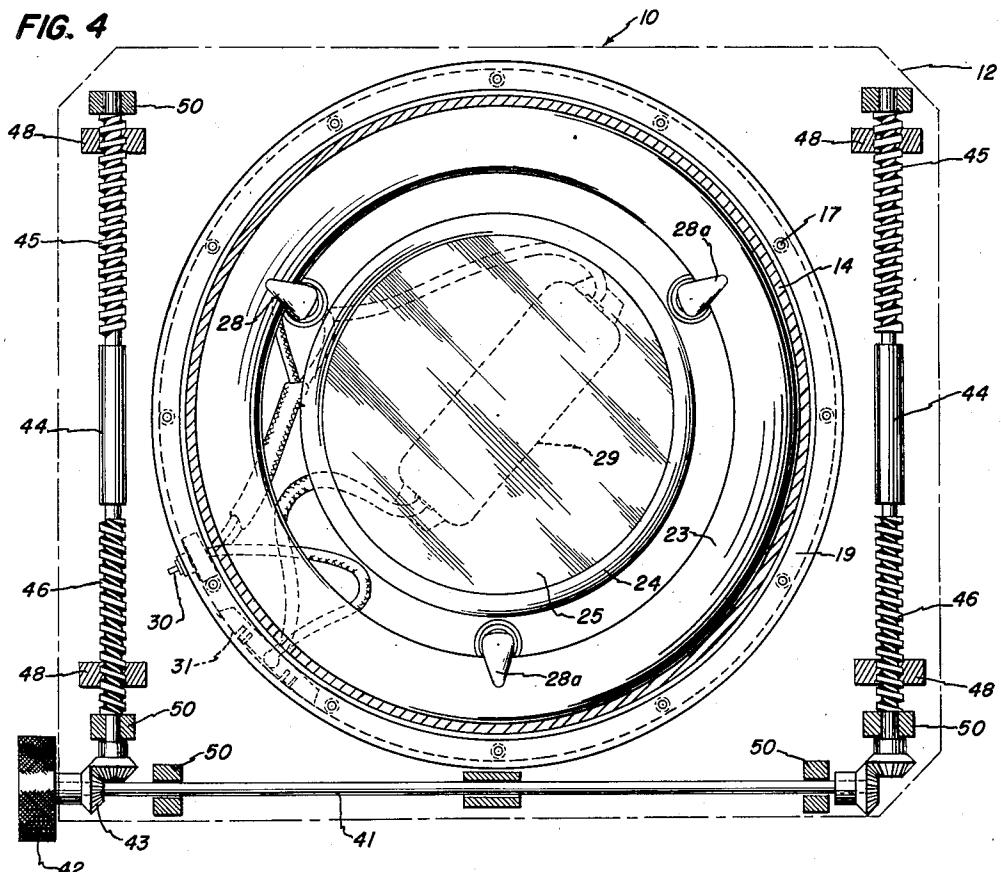


FIG. 3

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## UNITED STATES PATENT OFFICE

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## INSTRUMENT REPAIR LIGHTING TABLE

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4 Claims. (Cl. 29—284)

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sec. 266)

## 1

This invention relates to improvements in assembling and disassembling apparatus, its particular purpose being to provide a stand or table on which to support a typewriter for inspection and repair, a source of light being located in the base of the table to illuminate the mechanism from underneath, thus to make the parts stand out in relief and to make it possible to see otherwise obscure details.

The use of a turntable and a frame for the support of the work while performing operations on it is known to be disclosed in this particular art as for example by the patents to Michael H. Flynn, No. 1,220,507 of March 27, 1917 and to Harold P. Bentley, No. 2,455,016 of July 13, 1948. This observation is made largely to contrast the invention from devices of a similar sort and not as an acknowledgement of any pertinence that said devices may possess. In said devices the work is required to be clamped in place, whereas in the instant invention the work is merely set in place. The latter provision is a contribution toward the intended simplicity of the subject table, and in order to make an inspection or an overhaul job a relatively easy matter. The table has built into it a circular fluorescent lamp which floods the machine from the underside with light and relieves the repairman from having to manage a spotlight with one hand.

From these statements it will be understood that one of the objects of the invention is to provide a repair table which is reduced to a relatively few parts and which because of the resultant light weight and low cost will appeal to a class of repairmen who can out of those considerations press it into widespread and liberal use.

Another object of the invention is to provide a repair table wherein a circular lamp, permanently installed in the base portion of the device, can be switched on to fully illuminate the machine under inspection or repair from underneath, the permanent installation giving the repairman free use of both hands.

Another object of the invention is to provide a particular combination of parts wherein the revoluble table top both has adjustable tracks for supporting various sizes of machines within limits, and provides an almost dust and dirt-proof closure for the light compartment.

Another object of the invention is to provide a mirror in the foregoing light compartment to accommodate such instances wherein a casual observation of the nethermost parts of the ma-

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chine will suffice thus avoiding up-ending the machine for inspection, said mirror being located inside of the circular lamp and near the upper contour thereof so as neither to obscure the light from the lamp nor to reveal an image which otherwise might be marred by glare from the lamp.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

Fig. 1 is a perspective view of the improved instrument repair table;

Fig. 2 is a plan view;

Fig. 3 is a detail cross section taken substantially on the line 3—3 of Fig. 2, and

Fig. 4 is a plan view of the table omitting the turntable top, parts being shown in section as though taken on the line 4—4 of Fig. 3.

In carrying out the invention the repair table generally designated 10 in the drawings, is shown to consist of two main parts, namely, the base ring 11 and the turntable 12. The flat ring 13 of the turntable has a circular depending flange 14, which fits closely down inside of the head 16 of the base ring. Ball bearings 17 between the flat ring 13 and the head 16 of the base ring provide smooth and easy rotation of the turntable. The head has a groove 18 in which the balls run. The balls are spaced in a ring 19. The location of the balls is as near to the perimeter of the turntable 12 as possible thereby providing a balanced support for the typewriter; a centrally supported turntable would be unstable and therefore would wobble.

A ring 20 retains the top ring 13 in place. For this purpose it is secured to the bottom rim of the flange 14 and overlaps the inward circular projection of the head 16. The retainer ring thus holds the ball bearings in their race as far as up and down motion is concerned. The spacer ring 19 rides the flange 14 closely and thus holds the balls as far as radial motion is concerned.

A plate 22 secured to the base ring 11 forms a bottom cover. It is also the mount for the circular fluorescent lamp tube 23 and the frame 24 of the central circular mirror 25. Brackets 26 support the mirror frame. Brackets 28 and 28a support the tube 23. Bracket 28 is rigid and is the socket into which the lamp tube is plugged. Brackets 28a are spring loaded so as 55 to effect easy emplacement or removal of the

lamp tube 23. A large percentage of the light from the lamp tube shines upward without impediment. That part of the light volume that otherwise would be entrapped is reflected by the inside surfaces of the base ring and the bottom. The wiring of the fluorescent lamp Fig. 4 includes a commonly used ballast 29 mounted on plate 22. A push-button type switch 30 and a twin outlet 31 are installed in the base ring. A line cord is plugged into one of the receptacles. The other is a convenience when some electrical appliance is to be plugged in. The switch may turn the lamp on and off but does not cut the power from the outlet.

It is to be noted that the mirror 25 is located near the upper contour of the fluorescent lamp 23. Being centrally situated and slightly depressed it does not interrupt the halo or cone of light which floods the work from underneath. But what is equally important, the image 20 of the nethermost parts of the typewriter reflected by it will not be marred by the glare.

The rectangular plate 32 of the turntable 12 has a central circular opening 34 matching the rabbet 35 around the smaller central opening of the top ring 13. These formations provide a recess in which a circular plate 36 of safety glass or an equivalent transparent pane is tightly fitted. This completes the closure of the light compartment, rendering the latter virtually dirt and dust-proof and serving to catch screws and other metal parts or objects that might fall from the typewriter during repair.

Screws 37 secure the plate 32 to the ring 13 to make a unitary turntable. Parallel tracks 38 of angle brass or equivalent material, are adapted to receive the typewriter (not shown). The preferred practice is to remove the rubber feet from the typewriter and substitute working feet or pins that are screwed in place. These pins are stood on the horizontal flanges of the tracks. The upstanding flanges are notched at 40 to provide stops or shoulders to check the typewriter from being pulled too far forward and off the turntable, especially when up-ended. In one model typewriter where the typewriter unit complete is removed from the typewriter frame, the left and right side of the unit sets between the upstanding flanges while the guides of the unit rests upon the top of the upstanding flanges.

An operating shaft 41 has a knob 42 with which to adjust the tracks 38. This shaft is intergeared at 43 with screw shafts 44, the right and left thread courses 45 and 46 of which are screwed into track nuts 48 that depend from the tracks. Upon turning the knob in appropriate directions the tracks are slid across the turntable either toward or from each other, thus to set them for the size of machine that is to be rested upon them. A scale 49 on the turntable is an aid in making the adjustment, it being graduated in half-scale inches, whereby the scale reading given is the total distance in full-scale inches from center to center of the horizontal part of the tracks. Bearings 50 (Fig. 4) at required places on the underside of the turntable support the various shafts. The turntable is slotted at 51 to accommodate the necks of the shouldered nuts 48 (Fig. 3). Screws are driven through the tracks into the necks of the nuts 48 from above to secure the two, the parts being machined to the necessary clearances to insure a smooth sliding action of the tracks without undue looseness.

The operation of the instrument table is briefly reviewed. It is adapted primarily to the inspec-

tion and overhauling of typewriters but, manifestly, may be used for any comparable machine. The latter is first measured from side to side (center to center of feet) and the tracks are set 5 accordingly by turning the knob 42 and sighting the scale graduations at the edge of the nearest track 38. The typewriter previously equipped with pins or working feet in lieu of the original rubber feet is set on the horizontal flats of the tracks. Since the tracks are spaced exactly from the axial center of the table and their adjustment is a screw feet, it follows that their distancing will remain uniform regardless of the specific dimension of a given setting.

This insures a balanced emplacement of the typewriting machine and augments the support provided by the ball bearings 17. The machine is inspected from all sides by revolving the turntable 12. The repairman can see into the innermost recesses by turning the lamp 23 on. This floods the machine with light from beneath and both illuminates the parts and makes them stand out in relief. The machine is up-ended by lifting the front end and standing it on its back. The shoulders 40 prevent pulling the machine off the tracks in the event of bringing it too far forward toward the front.

Obviously many modifications and variations of the present invention are possible in the light 30 of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

The invention described herein may be manufactured and used by or for the government of the United States of America for governmental purposes without payment of royalties thereon or therefor.

What is claimed is:

1. In a worktable, a base, a vertically extending ring mounted thereon and having a circumferential inwardly extending flange, a turntable mounted for rotation on said ring to form a chamber and having a centrally disposed circular aperture, a transparent pane mounted in said aperture, said turntable having a vertically depending ring in juxtaposition with a side of said flange thereby effectively dustproofing said chamber, a pair of work supporting members 45 mounted on said turntable for synchronous reciprocable movement toward and away from the center of the turntable to accommodate work of varying size, means for reciprocating said work supporting members, and a mirror mounted in 50 said chamber parallel with said transparent pane for viewing the underside of the work from a position above the turntable.

2. In an illuminated worktable, a base, a vertically extending ring mounted thereon and having a circumferential inwardly extending flange, a turntable mounted for rotation on said ring to form a chamber and having a centrally disposed circular aperture therein, a transparent pane mounted in said aperture, said turntable having a vertically depending ring in juxtaposition with a side of said flange thereby dustproofing said chamber, a pair of work supporting members mounted on said turntable for synchronous reciprocable movement toward and away from the center of the turntable to accommodate work of varying size, means for reciprocating said work supporting members, a mirror mounted in 60 said chamber parallel with said transparent pane for viewing the underside of the work from a position above the turntable.

3. In a worktable, a base, a vertically extending ring mounted thereon and having a circumferential inwardly extending flange, a turntable mounted for rotation on said ring to form a chamber and having a centrally disposed circular aperture therein, a transparent pane mounted in said aperture, said turntable having a vertically depending ring in juxtaposition with a side of said flange thereby dustproofing said chamber, a pair of work supporting members mounted on said turntable for synchronous reciprocable movement toward and away from the center of the turntable to accommodate work of varying size, means for reciprocating said work supporting members, a mirror mounted in 65 said chamber parallel with said transparent pane for viewing the underside of the work from a position above the turntable.

4. In a worktable, a base, a vertically extending ring mounted thereon and having a circumferential inwardly extending flange, a turntable mounted for rotation on said ring to form a chamber and having a centrally disposed circular aperture therein, a transparent pane mounted in said aperture, said turntable having a vertically depending ring in juxtaposition with a side of said flange thereby dustproofing said chamber, a pair of work supporting members mounted on said turntable for synchronous reciprocable movement toward and away from the center of the turntable to accommodate work of varying size, means for reciprocating said work supporting members, a mirror mounted in 70 said chamber parallel with said transparent pane for viewing the underside of the work from a position above the turntable.

a position above the turntable, and a source of illumination mounted within said chamber.

3. In a worktable, a base, a vertically extending ring mounted on said base and having a circumferential inwardly extending flange, a turntable mounted for rotation on said base ring to form a chamber therewith and having a centrally disposed circular aperture therein, a transparent pane mounted in said aperture, said turntable having a vertically depending ring in juxtaposition with a side of said flange thereby effectively dustproofing said chamber, a retaining ring mounted on said depending ring for contacting an underside of said flange to maintain the assembly of the turntable and vertically extending ring, a pair of work supporting members mounted on said turntable for synchronous reciprocable movement toward and away from the center of the turntable to accommodate work of varying size, means for reciprocating said work supporting members, and a mirror mounted in said chamber parallel with said transparent pane for viewing the underside of the work from a position above the turntable.

4. In an illuminated worktable, a base, a vertically extending ring mounted on said base and having a circumferential inwardly extending flange, a turntable mounted for rotation on said ring to form a chamber therewith and having a centrally disposed circular aperture, a transparent pane mounted in said aperture, said turntable having a vertically depending ring in juxtaposition with a side of said flange thereby effectively dustproofing said chamber, a retaining ring mounted on said depending portion for contacting an underside of said flange to maintain the assembly of the turntable and vertically ex-

tending ring, a pair of work supporting members mounted on said turntable for synchronous reciprocable movement toward and away from the center of the turntable to accommodate work of varying size, stop means formed on said work supporting members for limiting the movement of the work thereon, means for reciprocating said work supporting members, a mirror mounted in said chamber parallel with said transparent pane for viewing the underside of the work from a position above the turntable, and a circular lamp tube mounted in said chamber about the periphery of said mirror to cast a flood of light through said transparent pane and onto the work mounted thereover.

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