

March 1, 1949.

C. C. BRAUN

2,462,941

DESK LAMP

Filed June 29, 1946

2 Sheets-Sheet 1

Fig. 1.

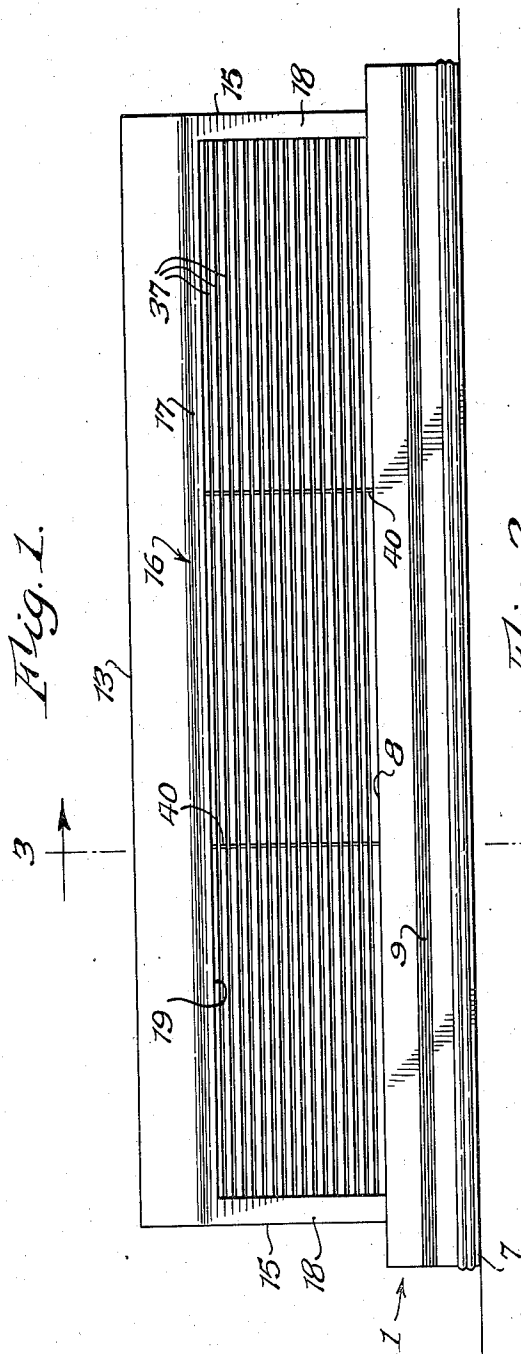
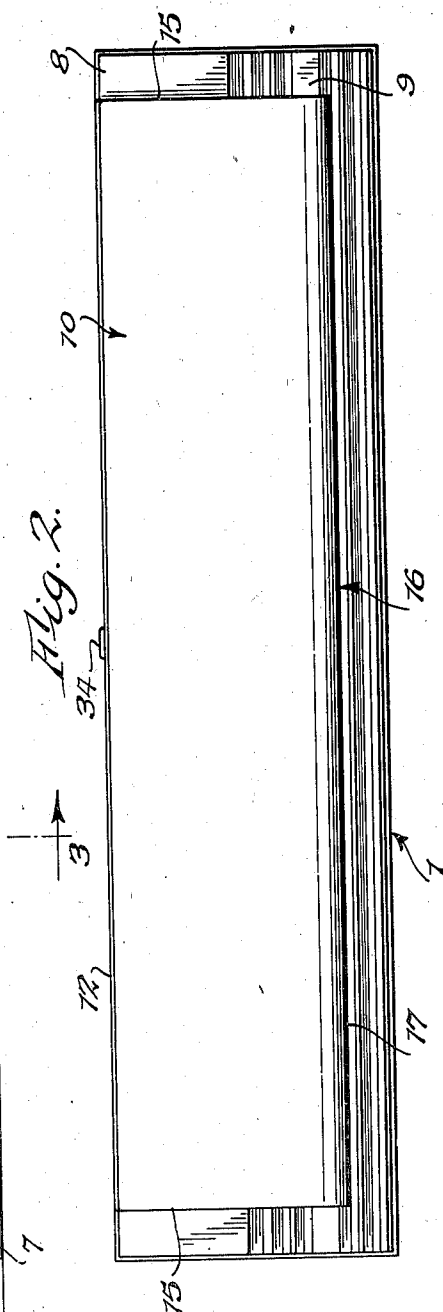


Fig. 2.



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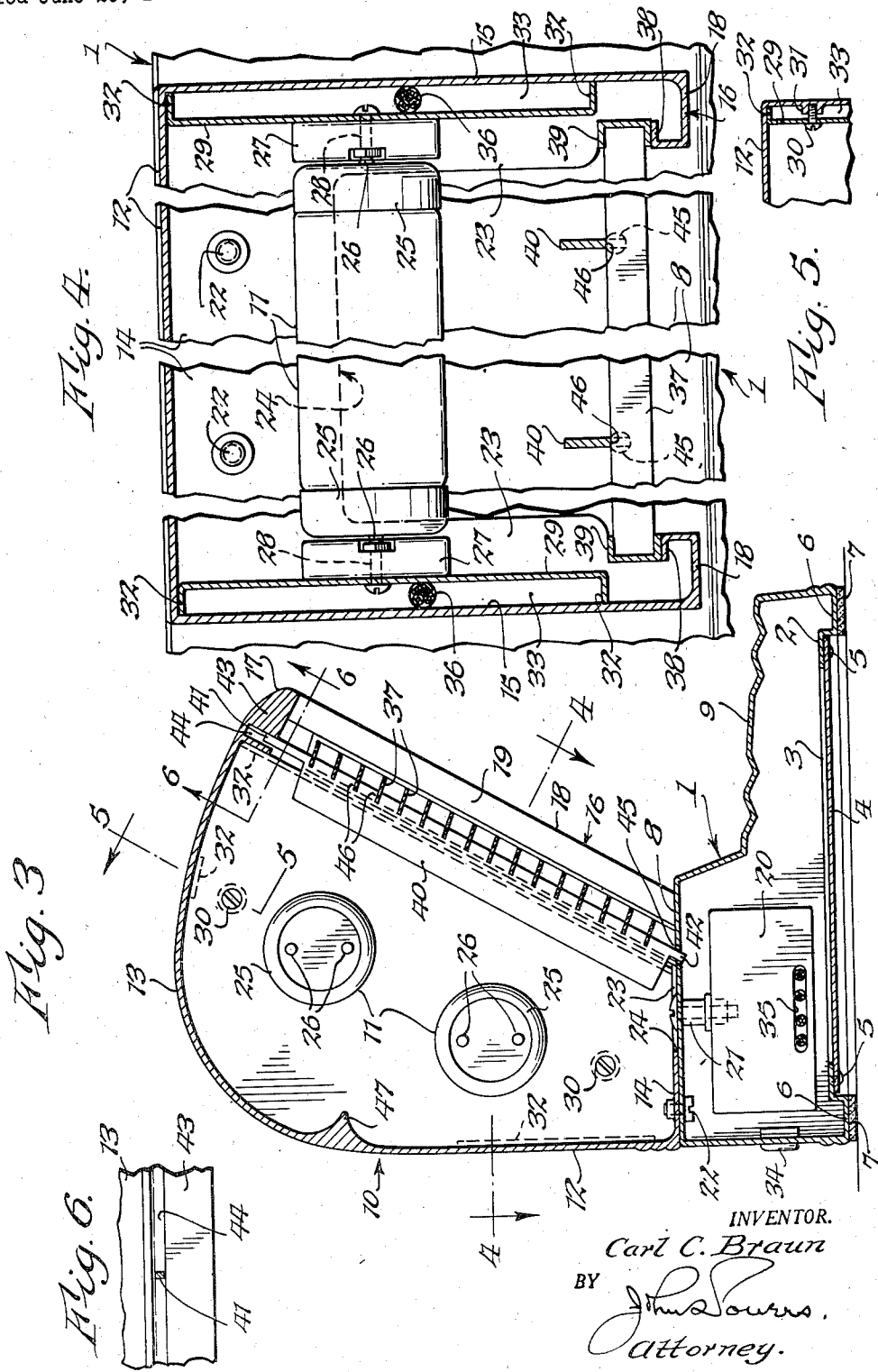
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UNITED STATES PATENT OFFICE

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DESK LAMP

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Application June 29, 1946, Serial No. 680,415

3 Claims. (Cl. 240—51.11)

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This invention relates to improvements in desk lamps.

The principal object is to provide a lamp which, with the source of illumination concealed, will concentrate upon the surface of the desk, throughout an area of ample working dimensions, a brilliant illumination of uniform quality so controlled and directed that the worker at the desk will have ample illumination for his work and will be wholly free from eye strain, resultant either from insufficient illumination or from the glare of direct or reflected rays.

A further object is to provide a lamp, having the above characteristics, in which the details of construction and arrangement so facilitate the assembly of the parts as to minimize the production costs in this regard and to enable quick and easy repair.

In the accompanying drawings:

Figure 1 is a front elevation of a desk lamp in accordance with my invention.

Figure 2 is a top plan view thereof.

Figure 3 is a vertical cross section on the line 3—3 of Figure 1, looking in the direction of the arrows, the caps at the left ends of the fluorescent tubes (Figure 1 being considered) being shown in elevation.

Figure 4 is a horizontal section on the line 4—4 of Figure 3, looking in the direction of the arrows.

Figures 5 and 6 are detailed sections on the lines 5—5 and 6—6, respectively, of Figure 3, looking in the direction of the arrows.

The lamp includes a base 1 in the form of a hollow shell or casing having its bottom 2 formed with an extended open area 3 which is normally closed by a plate 4 secured by screws 5. The bottom 2 is formed adjacent its front and rear edges with downwardly projecting portions 6 which carry on their external faces strips 7 of felt or other suitable material for contacting supporting engagement with the surface of the desk. The top wall of the base 1 is formed with an elevated platform 8 extending, in a horizontal plane, from the rear wall of said base. The base preferably includes a portion 9 which projects forwardly from the platform 8, the forwardly projecting part of the top wall being in a plane substantially below the plane of the platform 8, thereby to avoid any substantial limitation of the area of the "field" upon and throughout which the light rays are concentrated. The forwardly projecting portion of the top wall is incidentally available, and is preferably so formed, for the convenient support of pens, pencils, erasers and other items

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commonly used in desk work. The platform 8 provides direct support for the lamp casing and the parts which it carries.

The lamp casing 10 is mounted upon and secured to the platform 8 and encloses a suitable source of light, preferably fluorescent tubes 11.

The lamp is preferably positioned adjacent the rear edge of a flat desk or table. The casing 10 is elongated in the transverse direction of the desk or table, preferably having in such direction an extent of between two and three feet, with its front wall open throughout the greater part of such length for the emission of light rays upon the desk or table throughout an area substantially commensurate in such direction with the opening in the front wall.

The casing 10 consists of an upright rear wall 12, a top wall 13 of cross section suitably curved between the front and rear sides of the casing and into which the wall 12 merges, a bottom wall 14, end walls 15, and a front wall 16 of frame like character, the parts of which are a top bar 17 and end bars 18, which extend from the top bar to the platform 8. The bars 17 and 18 and platform 8 delimit a relatively large open area 19 of rectangular outline through which light rays are emitted from the enclosed source of light. The opening 19 in the horizontal direction, that is to say in the transverse direction of the top of the desk or table, preferably has an extent of between two and three feet whereby the area upon which the light rays are concentrated will be substantially commensurate in the same direction. The vertical dimension of the opening 19 is such that the area upon which the light rays are concentrated will extend close to the front edge of the desk or table. Thereby the concentration of the light rays will be through an area of ample working dimensions.

The base 1 encloses the usual ballast 20 for cooperation with the fluorescent tubes 11, the ballast being supported by and suspended from the platform 8 by a suitable bolt connection 21, the head of the bolt element engaging the upper face of the platform 8 as a support. Access to the interior of the base 1 is had, as occasion may require, by the removal of the plate 4, thereby to expose the open area 3.

The bottom wall 14 of the casing 10 rests upon the platform 8 and is secured to it by suitable screw fastenings 22, the wall 14 having threaded nipples to accommodate the screw elements of such fastenings. The bottom wall 14 has at its sides forwardly projecting extensions 23 which provide a central cutaway portion 24 within

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which the bolt element of the fastening 21 is arranged.

The fluorescent tubes 11 are provided at their ends with the usual caps 25 having contact pin elements 26 for removable engagement with sockets 27 of any suitable standard form, the elements 26 having electrical contacting engagement with the contacts carried by said sockets. The sockets 27 are secured by bolt fastenings 28 to supporting plates 29 which conform in outline to the end walls 15 which they adjoin. The plates 29 are secured to the end walls by screws 30 which have threaded engagement in nipples 31 provided on the end walls. The plates 29 are formed along their margins with flanges 32 which abut the end walls and provide clearances 33. The base 1 is formed in its rear wall with an opening in which is fitted the usual insulating sleeve 34 through which is passed the cable carrying the electric wires (not shown) for connection to the ballast 20. The electric wires pass through openings 35 in the side walls of the casing of the ballast and through registering openings 36 in the platform 8 and extensions 23 into the clearances 33, their terminals being connected to the sockets 27 in the usual manner.

The light rays which pass through the open area 19 at the front of the casing 10 are directed and diffused by a screen of suitable construction, preferably of the construction herein shown. In this construction the screen consists of a series of suitably spaced horizontal louvers 37 in parallel planes which are inclined forward and downward at an angle suitable for the purposes in view. The end bars 18 of the front wall are formed along their inner edges with inwardly projecting angular extensions 38 which carry channel members 39 in which the end portions of the louvers are fitted, these members holding the louvers against endwise displacement. The mutual spacing of the louvers is maintained by supporting bars 40 of which any suitable number, depending on the length of the louvers, may be provided, two of such bars, as shown in the drawings, being ordinarily sufficient. The bars 40 are provided at their upper ends with projecting stems 41 and at their lower ends with projecting stems 42. The casing top wall 13 is formed adjacent its front end with a thickened portion 43 which provides the top bar 17 of the front wall of the casing. The stems 41 at the upper ends of the bars 40 project into a groove 44 in the thickened portion 43 and the stems 42 at the lower ends of the bars 40 project through openings 45 in the platform 8. The bars 40 along their front edges are formed with recesses 46 and the rear edge portions of the louvers 37 fit in these recesses. Thereby the bars 40 maintain the proper mutual spacing of the louvers.

In the assembly of the lamp the electric wires are passed through the openings 36 and are connected to the sockets 27, the plates 29 then being secured by the screws 30 to the end walls 15 of the casing 10 with their front flanges behind and abutting the thickened portion 43. The tubes 11 are then placed in position with their pins 26 engaged in the sockets 27 in the usual manner. The assembly of louvers 37 and bars 40 is then placed in its proper position relatively to the casing 10, the louvers, as a series, being introduced into the lower ends of the channel members 39 and moved along said channel members, carrying the bars 40 with them, until the stems 41 engage in the groove 44. The casing 10, with its associated fluorescent tubes and louver assembly, is

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then placed upon the platform 8, the stems 42 of the bars 40 being passed through the openings 45 in said platform. The screw elements of the fastenings 22 are then threaded into the companion nipples on the bottom wall 14 of the casing 10, after which the plate 4 is secured to the bottom of the base 1 by the screws 5, thereby to close the open area 3 through which access may be had to the interior of the base.

The top wall 13 of the casing 10 has an extent from rear to front substantially greater than the corresponding extent of the platform 8 whereby the top wall 13 overhangs the portion of the base 1 which projects beyond said platform. The end bars 18 of the front wall of the casing 10 extend to the platform 8 and are in a common plane inclined inward and downward at a suitable angle to the perpendicular. An angle of the order of thirty degrees, as shown, has been found quite satisfactory for the purposes in view. The common planes of the front and rear edges of the louvers are at corresponding angles to the perpendicular. The louvers themselves are preferably set at slight angles, that is to say of the order of ten degrees, to the common planes of their front and rear edges, their inclination being relatively upward from a plane normal to the common plane of their front edges, thereby, in connection with the angle of the entire series of louvers to the perpendicular, to provide a field of illumination which will extend quite close to the front edge of the flat top of the desk or table. Where, as herein shown, more than one fluorescent tube is used the plane coincident with the central longitudinal axes of the tubes is preferably parallel to the planes of the front and rear edges of the louvers. Thereby the fluorescent tubes are spaced equidistantly from the louvers and substantial uniformity of illumination is assured throughout the field upon which the light rays are cast.

In relation to the arrangement of the louvers 37 as a series in a plane inclined inward and downward from adjacent the front edge of the overhanging top wall 13 of the casing 10 and in relation to their described arrangement at angle normal to such plane, the mutual spacing of the louvers is such that they conceal the source of illumination, in the example disclosed the fluorescent tubes 11, from the eyes of the user, thereby eliminating any glaring effect such as would be present if the source of illumination were in any degree in a direct line of vision.

The inner faces of the rear wall 12 and top wall 13 of the casing 10 are suitably finished to provide reflecting surfaces. These have elements of curvature which are adapted to the arrangement of the louvers to insure that the proper degree of light will be cast upon the working "field" of the flat top of the desk or table. The curvature of the top wall 13 is determined with this end in view and, for a similar purpose, suitable curvature is provided at the inner surface of the wall 12 by means of a horizontal rib 47 arranged substantially at the junction of the walls 12 and 13, the sides of the rib having suitable curvature and the rib, in effect, causing the walls 12 and 13 to function as individual reflectors for the respective lower and upper fluorescent tubes 11. The louvers 37 are also formed with reflecting surfaces; for example, as now preferred, the louvers may be made of aluminum with highly polished surfaces.

The illumination which is cast upon the desk or table will be composed principally of direct

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rays but will include a substantial percentage of reflected rays and will be sufficiently strong for all working purposes. Such illumination is at once concentrated, in the sense that in greater part it covers a substantially definite, though ample, working area, and diffused, in the sense that it is substantially uniform throughout the working area. Such rays as may be directed outward or upward from the screen of louvers will, of course, be reflected rays, the effect of which will be to contribute to the general illumination of the room, and they will be so diffused that they will be without the strength, direction or concentration to subject the eyes of the user of the desk to a condition of glare.

I claim:

1. A desk lamp having an elongated, hollow, transversely-extending base, an elongated lamp casing resting upon and attached to said base, said casing having back and end walls which extend upwardly from said base and a top wall which merges in a curve with said back wall, the top wall of said casing having a forwardly-located, horizontal edge which overlies said base and which with the forward edges of said end walls forms a frame which extends inward and downward from the top wall of the casing to the base at an angle to the perpendicular of the order of thirty degrees, a louver screen mounted in the opening defined by said frame at substantially the same angle of inclination as the frame, elongated fluorescent lamps mounted between said end walls one above the other and in a plane substantially parallel to the plane of the screen, said screen concealing said lamps from the user of the desk and diffusing the light rays therefrom in a forward and downward direction, and ballast means for the lamps within the hollow base.

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2. A desk lamp as set forth in claim 1 wherein the base is provided adjacent its rear edge with an elevated platform, the lamp casing having a bottom wall which is removably attached to said platform and having end plates to support the lamps, the end plates having lamp supporting contact sockets, being removably connected to the end walls of the casing and having flanges for engagement with said end walls to provide clearance for electric wiring.

3. A desk lamp as set forth in claim 1 wherein the louvers of the screen have a downward and forward inclination, are finished to provide reflecting surfaces and are spaced so as to conceal the source of light from the user of the desk; wherein the base is formed at its rear edge with an elevated platform to which the casing is removably attached; and wherein upwardly and outwardly extending bars support the louvers, the bars having edge recesses in which the louvers fit and having projecting upper and lower stems for removable engagement with the top wall and platform respectively.

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