W. H. SPENCER.

ILLUMINATING DEVICE.

APPLICATION FILED DEC. 27, 1910.

996,154.

Patented June 27, 1911.

3 SHEETS—SHEET 1.

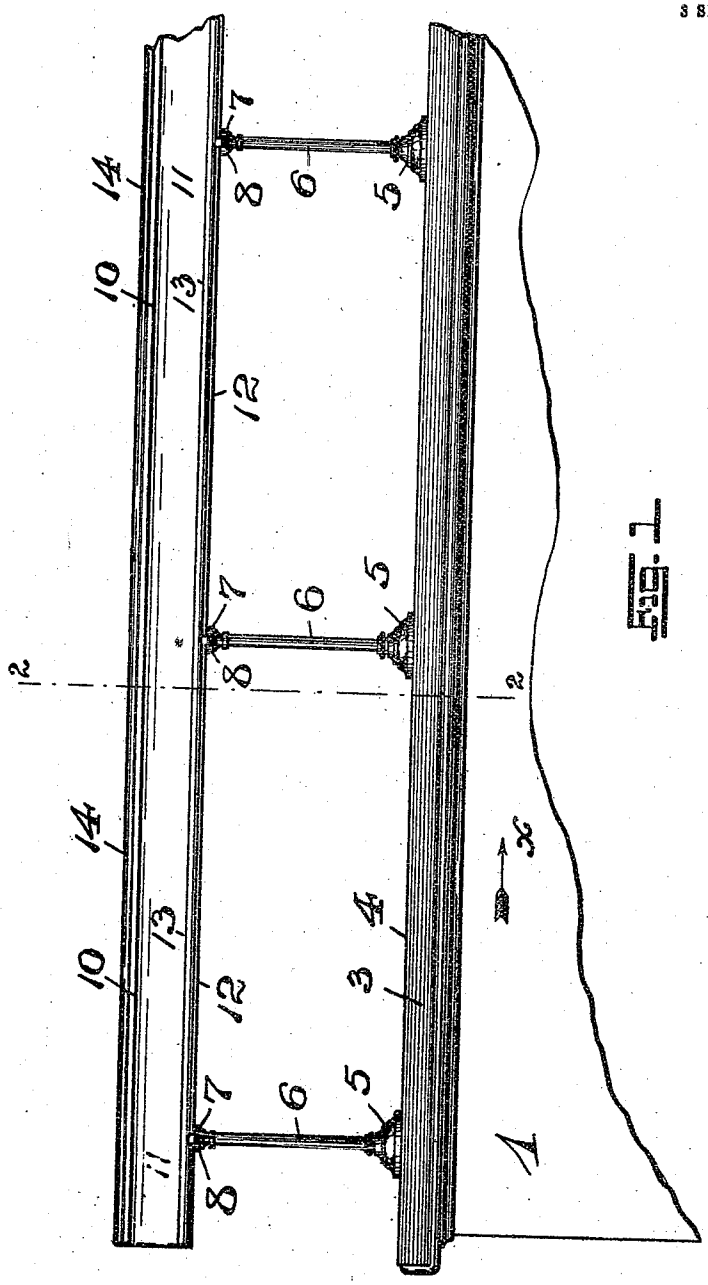


Fig. 1

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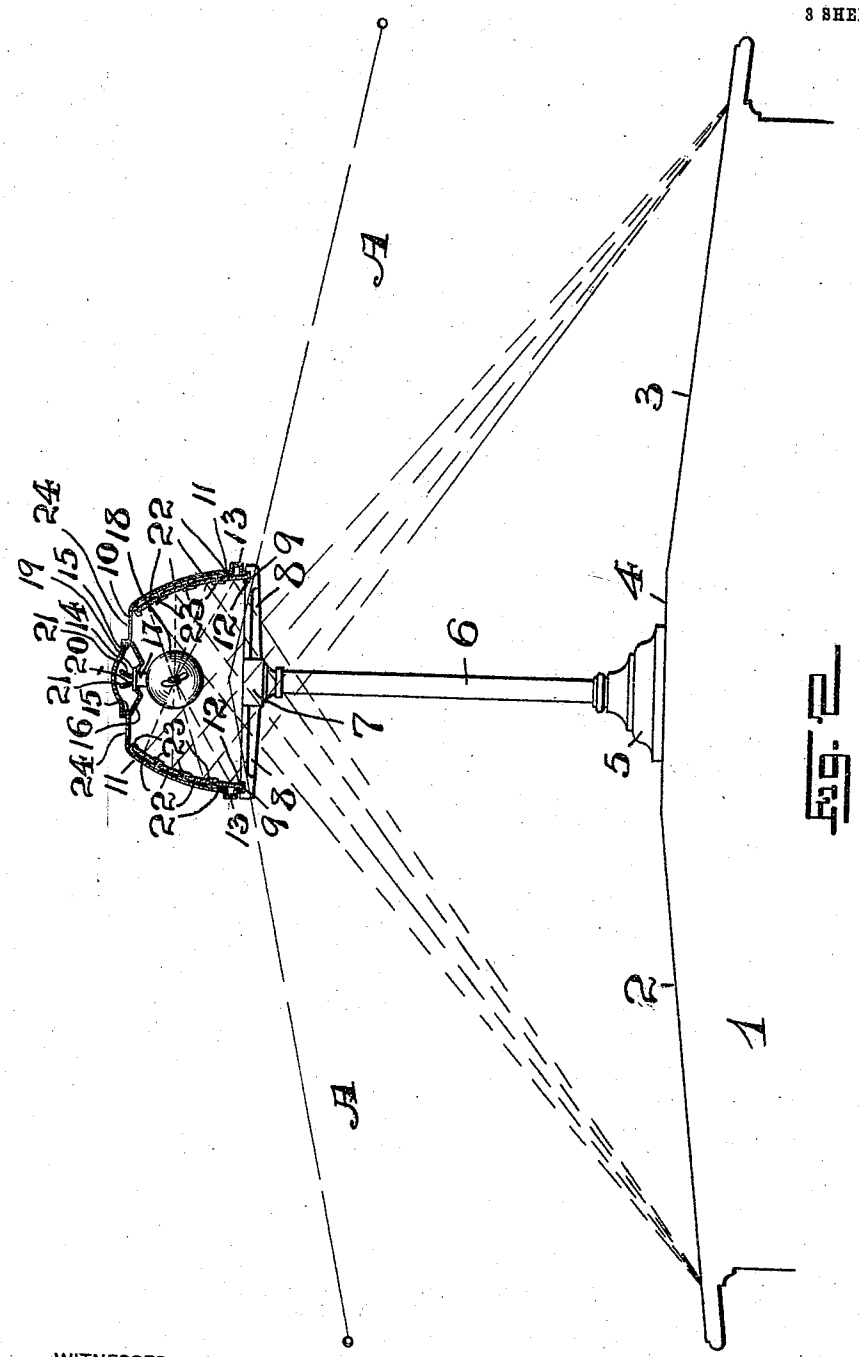


Fig. 2.

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3 SHEETS—SHEET 3.

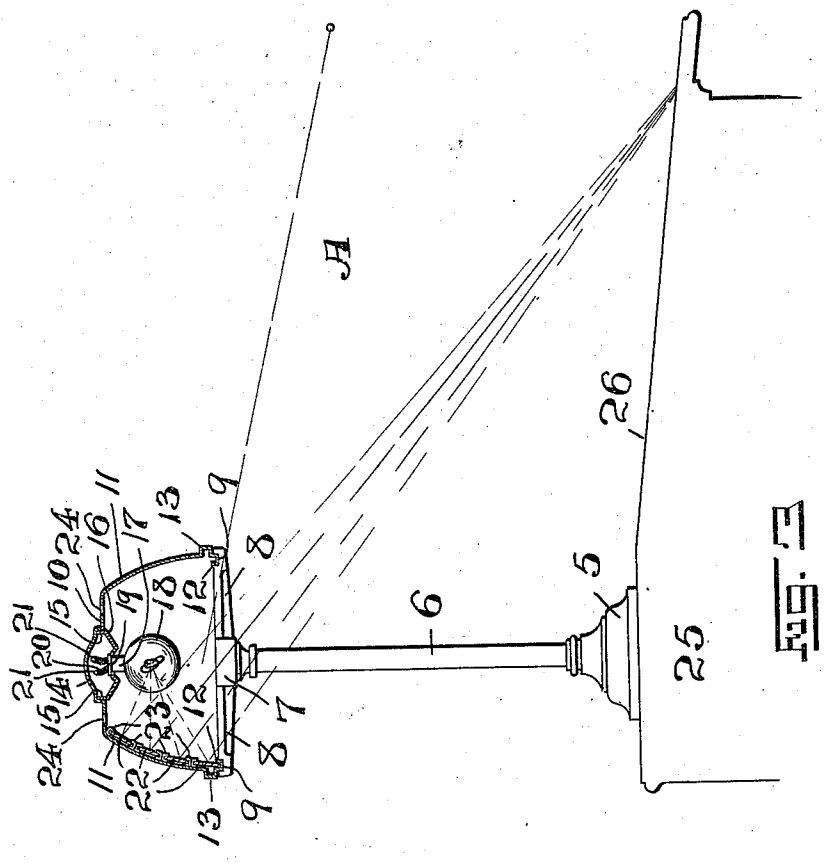


Fig. 3.

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# UNITED STATES PATENT OFFICE.

WILLIAM H. SPENCER, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE FRINK SPENCER, OF NEWARK, NEW JERSEY.

## ILLUMINATING DEVICE.

996,154. Specification of Letters Patent. Patented June 27, 1911.

Application filed December 27, 1910. Serial No. 599,471.

*To all whom it may concern:*

Be it known that I, WILLIAM H. SPENCER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Illuminating Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention relates, generally, to improvements in illuminating devices; and the invention refers, more particularly, to a novel construction of illuminating device adapted to be used in connection with book-keepers' desks, bank desks, reading desks, display tables and cabinets and for other similar uses.

The present invention has for its principal object to provide an illuminating device comprising a novel construction and arrangement of lighting units with reflector-members and shades, and standards for properly supporting the same, all being arranged and combined in such a manner, so that when placed in proper relation with desks, tables, or the like, the light-rays will be controlled and directed so as to produce an even illumination of the entire surface of the desk, table or the like, and at the same time so arranging the reflector angles, so as to throw the maximum light-flux to the farthest point to be illuminated.

A further object of the present invention is to so arrange a reflector-member and a supporting means therefor, to obtain the highest illuminating efficiency upon the working surface of a desk, table, or the like, at the same time shielding the eyes from both the direct and indirect glare or rays of the lighting units; and, furthermore, distributing said lighting units and reflector-members, so that the light-flux is directed from the various reflector-points or sources, causing such a diffusion thereof as will eliminate shadows and the glare or reflection of white paper, whether the clerk or other person using said desk, table, or the like, is working in either a left hand or right hand position.

Other objects of the present invention not at this time more particularly enumerated will be clearly understood from the following detailed description of the present invention.

With the various objects of my present invention in view, the same consists in the novel construction of illuminating device hereinafter set forth; and, furthermore, the invention consists in the novel arrangements and combinations of the various devices and parts, as well as in the details of the construction thereof, all of which will be hereinafter more fully described, and then finally embodied in the clauses of the claim which are appended to and which form an essential part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a double desk equipped with the novel construction of illuminating device made according to and embodying the principles of the present invention, a portion of said desk being shown broken away. Fig. 2 is a large detail cross-section of the same, taken on line 2—2 in said Fig. 1, and looking in the direction of the arrow *x*. Fig. 3 is a similar large detail cross-section of the novel construction of illuminating device, the same being applied to a single desk, and being slightly modified in construction so as to suit its use with said single desk.

Similar characters of reference are employed in all of the above described views, to indicate corresponding parts.

Referring now to the said drawings, the reference-character 1 indicates a double desk provided with the respective working surfaces or tops 2 and 3 which extend upon either side of its central longitudinal portion 4. Secured upon said central longitudinal portion 4 of said double desk 1, by means of base-portions 5, of any suitable configuration or design, is a plurality of supporting columns or standards 6, said columns or standards 6 being provided with suitable heads 7 at their upper ends. Extending laterally and horizontally from said heads 7, and in opposite directions, is a pair of supporting arms or brackets 8 which are provided with receiving grooves or sockets 9, located adjacent to the free ends of the said supporting arms or brackets, and in the upper surface thereof.

The reference-character 10 indicates a combined reflector-casing and lamp-shade, the same being provided with downwardly extending and outwardly inclined concave side walls 11. The lower longitudinal edges of said side-walls 11 are formed with a suitable bead or rib-like portion 12, the same being adapted to be received in said receiving grooves or sockets 9 of said supporting arms or brackets 8, to support the said combined reflector-casing and lamp-shape 10, as the latter extends longitudinally from end to end of said desk 1. Said side-walls 11 are each further provided, at a point adjacent to their lower marginal edges, with an outwardly projecting stiffening bead or rib 13. Formed in the top wall of said combined reflector-casing and lamp-shade 10 is an upwardly projecting and longitudinally extending trough-like member 14, adapted to provide a wiring trough or conduit, and extending into said trough-like member 14 are the side-walls 15 of a suitably formed lamp-supporting member 16, said side-walls 15 being suitably secured, in any desirable manner, in their assembled relation to said trough-like member 14. Said lamp-supporting member 16 is provided, at suitable intervals throughout its length, preferably twelve inches apart, with holes or openings adapted to receive the sockets 17 of suitable lamps 18. Each socket 17 is provided with an annular flange or rim 19 for retaining said sockets in their assembled relation with said lamp-supporting member 16. The wires 20 of the said lamps 18, passing through said sockets 17, enter the interior of said trough-like member 14, where they may be secured in any suitable manner to the main or feed-wires 21 passing therethrough. Secured upon the inner sides of the said walls 11 of said combined reflector-casing and lamp-shade 10 are a series of reflector-members 22, the same being supported by channel bars 23, or any other suitable devices, fixed upon said walls 11. Said reflector-members 22 are disposed and secured in such a manner, so as to present a series of angularly disposed reflecting surfaces, each reflecting surface lying in the plane of a chord of said concave walls 11. Said reflector-members 22 may be made of silvered glass, or any other suitable material. The top wall of said combined reflector-casing and lamp-shade is provided with a plurality of holes or openings 24, which permit of the ventilation of the interior of said combined reflector-casing and lamp-shade, said holes serving to conduct away the heat generated by said lamps, thereby preventing the heat collecting and causing a more rapid disintegration of the lamps.

Referring now to Fig. 3 of the drawings, I have illustrated therein my novel illuminating device applied to a single desk 25 which is provided with but a single top or working surface 26. As will be apparent from an inspection of said figure of the drawings, the construction of said illuminating device is the same as that hereinabove described, except that the reflector-members are removed from one of the side-walls 11, since their location there is, in such use, unnecessary. The side-walls 11 facing or upon the side of the working surface of said desk serves to shield or shade the eyes of the user of the desk from the direct rays of the lamps.

As will be apparent from the above description, and an inspection of the drawings, the illuminating device is made to run the entire length of the desk. The side-walls 11 are curved so as to permit of the distribution of said reflector-members 23 in such a series of angles as will redirect a portion of the direct rays of the light produced by the lamps 18 to the outermost portions of the working surface of said desk, and the same will cause a maximum flux of light at such points; furthermore, the direct rays of the lamps flood the inner portions of said desk surface with light, whereby an even illumination of the entire desk surface is obtained. The said side-walls 11 are also constructed in a manner to throw the redirect or reflected light-rays in paths below the level of the eyes of the users of the desk, as indicated diagrammatically by the eye level lines A in Figs. 1 and 2; and, at the same time, said side-walls 11 serve as a lamp-shade or shield for interrupting the direct rays of the lamps and preventing the same from reaching the eyes of the users of the desk. The lamps 18 being spaced at proper intervals throughout said combined reflector-casing and lamp-shades, the direct and indirect light-rays springing from various sources and reflection points or surfaces, cause a perfect diffusion and distribution of light, thus making it possible for the users of the desk to work in any position, either to the left hand or the right hand portions of the desk, without annoying under shadows, or equally annoying glare or reflection being produced from the surface of books or paper.

It will thus be readily apparent, that my present invention provides a novel illuminating device which is very efficient for the lighting of desks, tables, or many forms of flat working surfaces. In my device, the full efficiency of the lighting mediums are obtained and their normal efficiency increased and properly distributed, so as to place the light where it is needed, and prevent direct glare or reflection into the eyes.

I am aware that changes may be made in the general arrangements and combinations of the devices and parts, as well as in the details of the construction of the same,

without departing from the scope of the present invention as set forth in the foregoing specification, and as defined in the claims appended thereto. Hence, I do not limit my invention to the exact arrangements and combinations of the various devices and parts as set forth in the said foregoing specification, nor do I confine myself to the exact details of the construction of the said parts, as illustrated in the accompanying drawings.

I claim:

1. An illuminating device for desks and the like, comprising a combined reflector-casing and lamp-shade, downwardly extending and outwardly flaring concave side-walls connected therewith, longitudinally extending beads or ribs connected with the lower marginal edge of each side wall, outwardly projecting stiffening beads or ribs formed in said side walls, a plurality of lamps or lighting units supported within said combined reflector-casing and lamp-shade, a series of reflector-members, secured upon said side-walls of said combined reflector-casing and lamp-shade, adapted to throw a maximum light-flux to the outer portions of the desk surface, the rays of said light-flux being directed in lines below the level of the eyes of the user of the desks, and a plurality of columns or standards provided with means for engaging said beads or ribs connected with the lower marginal edge of said side-walls of said reflector casing and lamp shade to support the latter so that the same will extend the entire length of the desk, substantially as and for the purposes set forth.

2. An illuminating device for desks and the like, comprising a combined reflector-casing and lamp-shade, downwardly extending and outwardly flaring concave side-walls connected therewith, longitudinally extending beads or ribs connected with the lower marginal edge of each side wall, outwardly projecting stiffening beads or ribs formed in said side walls, a plurality of lamps or lighting units supported within said combined reflector casing and lamp-shade, a series of reflector-members, secured upon said side-walls of said reflector-casing and lamp shade and arranged in a series of angular positions so as to provide angularly disposed reflecting surfaces adapted to throw a maximum light-flux to the outer portions of the desk surface, the rays of said light-flux being directed in lines below the level of the eyes of the user of the disk, a plurality of columns or standards, and outwardly extending supporting arms or brackets connected with said columns or standards, the same being provided with grooves or receiving sockets for receiving said marginal beads or ribs of the side-walls of said combined reflector-casing and lamp-shade so as to support the latter longitudinally above the desk surface, substantially as and for the purposes set forth.

In testimony, that I claim the invention set forth above I have hereunto set my hand this 14th day of December, 1910.

WILLIAM H. SPENCER.

Witnesses:
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CHAS. K. WYATT.