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G. CUSHING

2,320,815

PIANO LAMP

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Fig. 1.

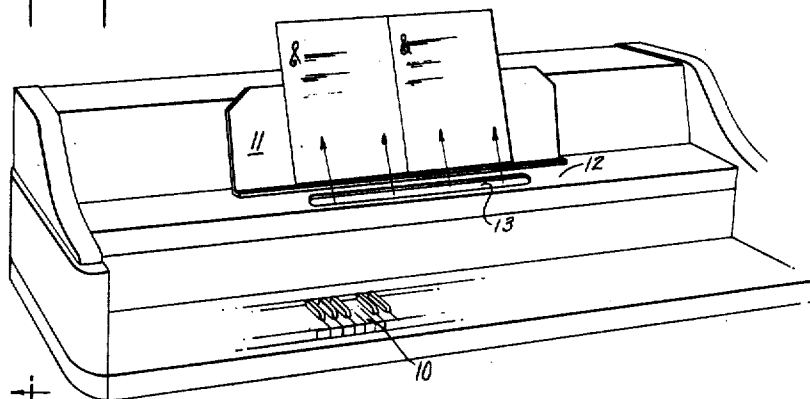


Fig. 2.

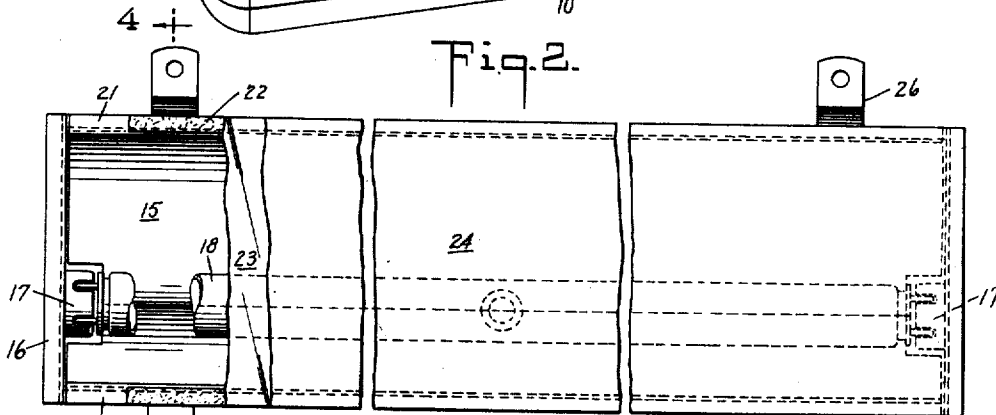


Fig. 3.

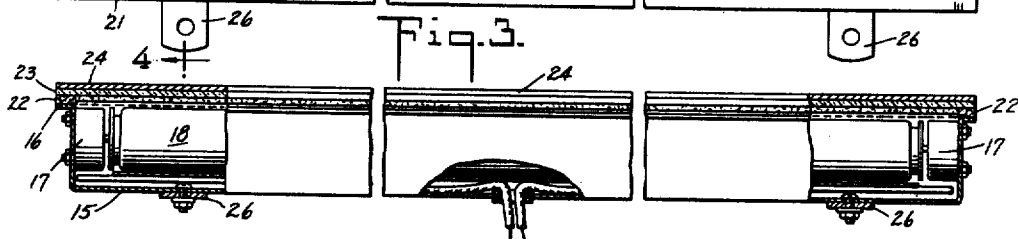
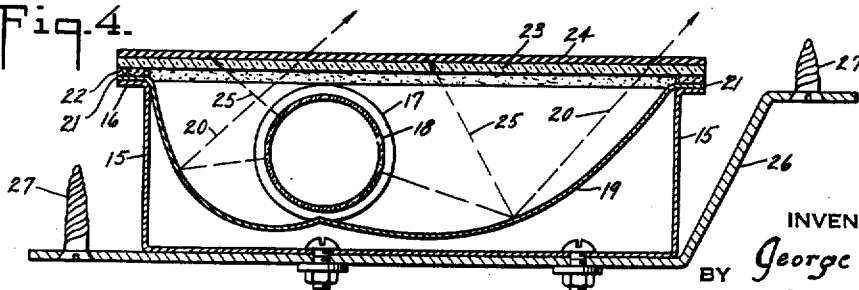


Fig. 4.



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## UNITED STATES PATENT OFFICE

2,320,815

## PIANO LAMP

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6 Claims. (Cl. 240—4)

The present invention relates to piano lamps, and is more particularly directed toward piano lamps adapted to be built into the piano for lighting music on the desk of the piano.

According to the present invention the piano is provided with an opening in the desk below and in front of the music rack, and the luminaire is placed below this opening and is provided with an elongated light source and a louvered cover which directs the useful light upwardly and rearwardly toward the music and at the same time cuts off all forwardly directed light, so that the player can read the music which will be intensely illuminated by light from the luminaire while stray light, which would produce glare, is effectively eliminated.

The luminaire may conveniently employ a single 18" fluorescent lamp and its light will spread over the opened out pages of the music.

The accompanying drawing shows, for purposes of illustrating the present invention, an embodiment in which the invention may take form, it being understood that the drawing is illustrative of the invention rather than limiting the same.

In the drawing:

Figure 1 is a perspective view of the upper part of the piano illustrating the mounting of the luminaire in the piano;

Figure 2 is a top plan view of the luminaire with parts broken away to show interior construction;

Figure 3 is a longitudinal sectional view with parts in elevation; and

Figure 4 is a transverse sectional view on the line 4—4 of Figure 2 looking in the direction of the arrow.

In Figure 1 the keyboard of the piano is indicated at 10, the music rack at 11 and the desk at 12. The desk is provided with an elongated opening 13 below and in front of the music rack and the luminaire shown in details in Figures 2, 3 and 4 is mounted below the opening 13.

As shown in the drawing the luminaire has an elongated sheet metal box 15 with outwardly extending flanges 16 about the open face of the box. The ends of the box support fluorescent lamp sockets 17, 17 located near the front wall of the box, as will be apparent from Figures 2 and 4. These sockets support a fluorescent lamp 18. An asymmetric reflector 19 is preferably mounted in the box to receive the lamp 18, and this reflector is arranged relatively to the lamp so that the dominant reflected rays are projected up-

wardly and rearwardly toward the music on the desk. Such rays are indicated at 20, 20, Figure 4.

The reflector preferably has flanges indicated at 21 which rest on top of the flanges of the box, and these flanges receive strips of felt material 22. A glass plate 23 rests on top of the felt gaskets and this glass in turn supports a sheet of plastic louver material 24. In this material the louvers are oblique sloping upwardly and rearwardly at an angle in the neighborhood of 45° so that light rays, such as 20, 20, can readily escape. The material forming the louvers is opaque so that light rays, such as 25, 25, are blocked by the louver material as indicated at the arrows on the ends of these rays. The box, lamp, reflector, cover and sheet of louver material are readily secured in place below the opening 13 in the desk of the piano by straps indicated at 26, 26 and screws 27.

When the luminaire is mounted in the piano, as above described, the music is very effectively illuminated by the upwardly and rearwardly directed light, while the source of light is entirely concealed from the musician. The black or opaque louver material does not permit light from the source to pass forwardly into the eyes of the musician. The auxiliaries and controls for the fluorescent lamp may be mounted in any convenient place in the piano and wired to the sockets. These details are not indicated in the drawing.

It is also apparent that the luminaire may be used in an inverted position above the music rack of an upright piano. In this case the light is sent down on to the music from above and the player's eyes are protected against glare.

It is apparent that, within the scope of the invention, modifications and different arrangements may be made other than is herein disclosed, and the present disclosure is illustrative merely, the invention comprehending all variations thereof.

What is claimed is:

1. A luminaire comprising a long shallow normally upwardly opening rectangular box, fluorescent lamp sockets carried by the ends of the box, a fluorescent lamp in the sockets, a glass plate over the top of the box, and a light directing cover resting on and supported by the glass plate and comprising a sheet of plastic material having closely spaced longitudinally extending louvers parallel with the lamp and disposed at a rearwardly sloping angle to the plane of the cover plate so that direct light can escape

only at a substantial angle to the vertical for illuminating vertical surfaces above and to the rear of the box.

2. A luminaire such as claimed in claim 1, wherein the louver material is opaque when viewed from the front so that no stray light from the source or reflector escapes in forward directions.

3. A luminaire comprising a long shallow normally upwardly opening rectangular box, fluorescent lamp sockets carried by the ends of the box near the front of the box, a fluorescent lamp in the sockets, an asymmetric reflecting trough about the lamp for directing reflected light upwardly and rearwardly, a glass plate over the top of the box, and a light directing cover resting on and supported by the glass plate and comprising a sheet of plastic material having closely spaced longitudinally extending louvers parallel with the lamp and disposed at a rearwardly sloping angle to the plane of the cover plate so that direct light can escape only at a substantial angle to the vertical for illuminating vertical surfaces above and to the rear of the box.

4. The combination with a piano having an elongated horizontal opening below and in front of a music desk, of a luminaire mounted under the opening and comprising a long shallow rectangular box, a reflecting trough in the box, a fluorescent lamp extending lengthwise of the box and placed nearer one front side wall of the box than the rear side wall, a rigid glass cover plate over the opening in the box, a sheet of plastic louver material on top of the glass cover plate, the louver material being opaque when viewed from above and in front of the box and transparent when viewed from above and to the

rear of the box, whereby the music on the desk is illuminated and the source concealed against observation by a player reading the music.

5. A luminaire for lighting a flat, substantially vertical surface of substantial length and width, the luminaire having a flat substantially horizontal face disposed rearwardly of and adjacent the said surface, the face of the luminaire being of the length of the surface to be illuminated and of a substantial width, the luminaire having a light source extending parallel to the face of the luminaire, and light controlling means in the flat face which transmits light obliquely toward the surface to be illuminated so that the latter surface intercepts said light, and which completely cuts off all direct light in a direction in front of the vertical plane through the source so that no light from the luminaire is received in the eye of the observer on said front side and the luminaire appears nonluminous.

6. A piano having a desk below and in front of a music rack and provided with an elongated opening of substantial width, a sheet of plastic louver material disposed across the bottom of the opening, a glass plate under the plastic sheet, a lamp box under the plate, a lamp of substantially the length of the opening and mounted in the box, a reflector below the lamp, and means to secure the box, plate and plastic sheet directly below the opening in the desk, the plastic sheet being transparent in directions to permit light from the lamp and reflector to escape to light music on the desk and opaque to cut off emission of light in directions forwardly of the music rack.

GEORGE CUSHING.