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ROTATABLY MOUNTED REFLECTOR AND LIGHT

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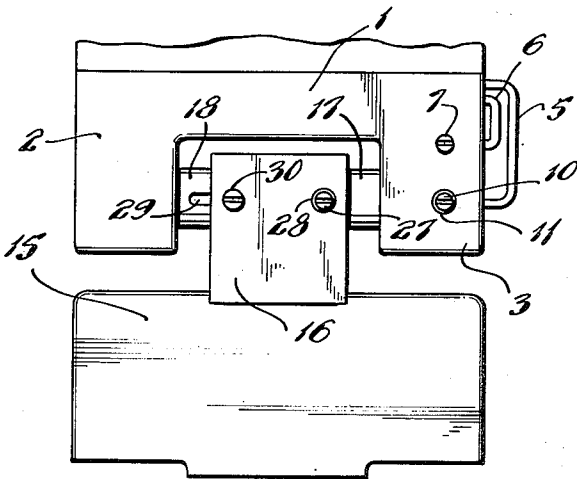
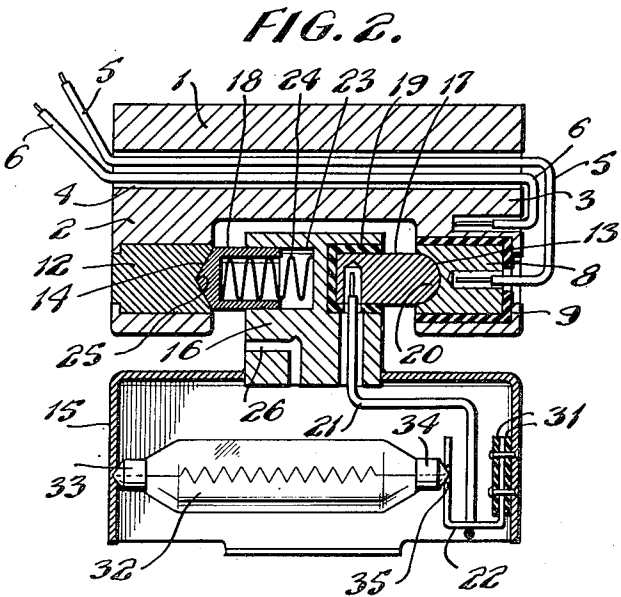


FIG. 1.



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ROTATABLY MOUNTED REFLECTOR AND LIGHT

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2 Claims. (Cl. 240-44)

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The present invention relates to an illuminating system for industrial appliances, and more particularly for machine tools, machines and apparatus of other kinds.

It is an object of the present invention to provide an illuminating system having a reflector which can be turned about an axis parallel to the axis of the reflector in order to emit the light in any desired direction.

It is another object of the present invention to provide an illuminating system which allows an easy removal or exchange of the reflector.

It is a further object of the present invention to provide an illuminating system of the kind described which is sturdy and capable of resisting any shocks.

In its broadest aspects, my invention comprises in combination a member adapted to be rigidly connected to the industrial appliance, a reflector detachably connected to said member, and a lamp arranged in the reflector.

In a preferred embodiment of my invention, the reflector is rotatable with respect to the member about an axis parallel to the axis of the reflector.

Preferably, the member includes a part arranged for displacement along the axis of rotation of the reflector, and resilient means for urging the part into engagement with the member.

Preferably, the member is substantially U-shaped and has two legs, each having a recess. These recesses are engaged by pin-shaped parts connected to the member rigidly connected to the reflector, one of the pin-shaped parts being arranged for longitudinal displacement in the member rigidly connected to the reflector.

In a preferred embodiment of my invention, the other of the pin-shaped parts is electrically insulated from the member rigidly connected with the reflector, and the leg having the other recess is electrically insulated from the industrial appliance.

Preferably, a resilient clip is provided in the reflector and insulated from the body of it, an electrical connection being provided between the other pin-shaped member and the resilient clip, and the lamp being arranged in contact with the clip.

In a preferred embodiment of the present invention, a slot is provided in the displaceable pin-shaped part and engaged by a screw provided in the member rigidly connected with the reflector.

Preferably, a duct is provided in the member rigidly connected to the reflector, connecting the inside of the reflector with the atmosphere.

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The novel features which I consider as characteristic for my invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

Fig. 1 is a top view of an illuminating system according to the invention; and

Fig. 2 is a horizontal section of the system shown in Fig. 1.

Referring now to the drawing, a substantially U-shaped member 1 is adapted to be rigidly connected to the industrial appliance (not shown). The U-shaped member 1 has two legs 2 and 3 and is provided with a boring 4 for receiving the leads 5 and 6 connecting the illuminating system with a source of electric energy (not shown). Lead 6 is secured to the bulk of the U-shaped member 1 by means of a screw 7. The leg 3 of the U-shaped member 1 has a part 8 separated by an electrical insulation 9 from the bulk of the U-shaped member 1. The other lead 5 is connected to this part 8 by means of a screw 10 arranged in the part 8 and insulated from the bulk of member 1 by an insulating washer 11 or the like. Preferably, the other leg 2 of member 1 is provided with a central member 12 which is shown in the drawing in electrical contact with the bulk of the member 1. It should be understood, however, that the part 12 could be insulated from the bulk of the member 1 in the same manner as part 8 and connected directly to the lead 5.

The parts 8 and 12 are provided with recesses 13 and 14, respectively, the recess 13 being preferably spherical, whereas the recess 14 is preferably conical. The recesses 13 and 14 are in alignment to each other.

A reflector 15 is rigidly connected to a member 16 which is provided with two pin-shaped parts 17 and 18, respectively, engaging the recesses 13 and 14. The pin-shaped part 17 is connected to the member 16 by means of an electrical insulation 19 and has a spherical head 20, engaging the recess 13. An electrical connection 21 connects the pin-shaped part 17 to a clip 22 to be described more in detail hereinafter.

The other pin-shaped part 18 is arranged for longitudinal displacement in a boring 23 of member 16, and a helical spring 24 urges the conical head 25 of pin-shaped part 18 into engagement with the recess 14. A duct 26 is provided in the

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member 16 and connects the interior of the reflector 15 with the atmosphere.

A screw 27 provided with the insulating washer 28 is arranged for holding the end of the electrical connection 21 in the pin-shaped part 17. The other pin-shaped part 18 is provided with a longitudinal slot 29 which is engaged by a screw 30 arranged in the member 16. The screw 28 limits the outward movement of the pin-shaped part 18.

The reflector 15 has an oblong box-like shape and is provided at one end thereof with a resilient clip 22 which is connected to the body of the reflector by means of insulating sheets or plates 31. A lamp 32, preferably a low voltage lamp, is arranged in the reflector 15 and contacts with one end 33 the bulk of the reflector and with the other end 34 the clip 22 which is provided with an opening 35 for accommodating the end 34 of lamp 32.

It should be understood that the end 23 may be insulated, if desired, from the reflector 15 by a clip similar to clip 22 which is connected by an electrical connection traversing the duct 26 and connected to the pin 13 in a similar manner as connection 21 is connected to pin-shaped part 17. In this case, part 12 must be insulated from member 1 as indicated above.

The operation of this device is as follows:

At first the reflector 15 is connected to the member 1 by pressing the part 13 back into the boring 23 and introducing the member 16 into the hollow of the U-shaped member 1, whereupon part 13 is allowed to move outward under the pressure of spring 24 and engage the recess 14. The reflector is now electrically connected to the leads 5 and 6, and the lamp may be switched on by switching means (not shown). The reflector 15 may be turned about the axis of rotation defined by the pin-shaped parts 17 and 18 and the recesses 12 and 14 so that the light can be directed to any direction at right angles to said axis.

The pin-shaped parts 17 and 18 constitute a plug enabling the reflector 15 to be inserted in the U-shaped member 1 in the same simple manner as an ordinary plug is inserted in a socket.

The duct 26 serves for removing hot air from the interior of the reflector to the atmosphere.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of illuminating systems for industrial appliances, differing from the types described above.

While I have illustrated and described the invention as embodied in illuminating system for industrial appliances, I do not intend to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of my invention.

Without further analysis, the foregoing will so fully reveal the gist of my invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention, and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

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

1. An illuminating system for an industrial appliance, comprising in combination, a U-shaped

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plug socket rigidly attached to said industrial appliance and having two legs and a recess located on the inner side of each leg; a plug member located within the space between said two legs and including a rigidly mounted pin engaging one of said recesses on the inner side of one of said legs of said U-shaped member and a movably mounted pin and means for resiliently urging said movably mounted pin into engagement with the other of said recesses on the inner side of the other leg of said U-shaped member, said pins and recesses being located along an axis extending transversely to said legs of said U-shaped member, whereby said plug member may be rotated with respect to said U-shaped member about said axis; means for electrically insulating said rigidly mounted pin from the remainder of said plug member and means for electrically insulating said recess engaged by said rigidly mounted pin from the remainder of said U-shaped plug socket; a reflector rigidly connected to said plug member; a resilient clip fixedly mounted in said reflector and means for electrically insulating said clip from said reflector; means providing an electrical connection between said clip and said insulated pin; a lamp mounted within said reflector and in contact with said clip; and means for conducting electric current through said insulated recess and pin, said electrical connection means, said clip and said lamp, so as to illuminate said lamp.

2. An illuminating system for an industrial appliance, comprising in combination, a U-shaped plug socket rigidly attached to said industrial appliance and having two legs and a recess located on the inner side of each leg; a plug member located within the space between said two legs and including a rigidly mounted pin engaging one of said recesses on the inner side of one of said legs of said U-shaped member and a movably mounted pin engaging the other of said recesses on the inner side of the other leg of said U-shaped member, said pins and recesses being located along an axis extending transversely to said legs of said U-shaped member, whereby said plug member may be rotated with respect to said U-shaped member about said axis; a reflector rigidly connected to said plug member, said plug member having passage means extending therethrough, opening at one end into said reflector and opening at its other end onto the outer surface of said plug, thereby providing an air duct which connects the interior of the reflector with the atmosphere; a lamp mounted within said reflector; and means for conducting electric current through said lamp so as to illuminate it.

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