

PATENT SPECIFICATION

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(54) IMPROVEMENTS IN OR RELATING TO OPTICAL PROJECTORS

(71) We, FRANKE & HEIDECHE G.m.b.H., a German Body Corporate, trading as ROLLEI-WERKE FRANKE & HEIDECHE, of 196 Salzdhumerstrasse, 330 Braunschweig, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a still optical projector comprising a projecting lamp that is mounted in the projector housing and a housing aperture for exposing the projection lamp, which aperture is covered by a closing plate.

Since the projection lamp of a projector lasts only for a certain time, the necessity arises to exchange the used projection lamp for a new one, which can be done without any difficulty by the projector owner himself. To obviate the need of dismantling the projector for the lamp exchange, there is provided in the housing a closable aperture, through which the lamps can be exchanged without difficulty. Since projection lamps as a rule burn out during their light-emitting phase, that is to say during a slide projection, the prudent projector owner will always have a second projection lamp in reserve. Since it is not very often that a lamp exchange takes place, the projector owner frequently has forgotten the place where the replacement lamp is kept, so that a time-consuming search for the replacement lamp is connected with the lamp exchange, which is a nuisance, particularly when it is desired to continue the slide projection. A slide projection away from home moreover makes it necessary to take along a spare lamp, which is usually taken in the projector protective envelope. This entails the risk of the very sensitive halogen projector lamp being damaged or lost.

The task underlying the invention therefore is to improve a projector of the type mentioned at the beginning to the effect that, without any special provision being made, there is always available a spare lamp which is immediately at hand in the

event of a lamp exchange becoming necessary.

According to the present invention there is provided a still optical projector comprising a projection lamp which is mounted in the projector housing and a housing aperture which gives access to the projection lamp and can be covered by a closing plate, characterised in that there is provided in the projector housing a depression for the reception of a spare projection lamp and optionally a tool for the lamp exchange, which depression is covered by the closing plate in the position thereof in which it closes the housing aperture.

Thus, a second projection lamp is always carried in the projector and, since the housing aperture has to be exposed for the lamp exchange by the removal of the closing plate, the spare lamp is simultaneously released by this manipulation.

On a projector where the cooling fan, which is driven from a motor seated on the cooling fan shaft, is usually arranged parallel to the projection lamp, viewed in the direction in which the projection occurs, the depression is arranged, according to a preferred embodiment of the invention, above the drive motor for the cooling fan, the closing plate extending from the housing aperture for the projection lamp across the cooling fan to the housing side wall. This measure allows an additional manufacturing effect to be achieved in that the air passage slots for the cooling fan in the projector housing can be punched into the closing plate at the same time as the closing plate is produced, so that there is no need for a special operation to provide the projector housing with cooling slots.

In a further development of the invention, the closing plate is designed as a slide plate which is inserted in the housing in a flush manner and can be completely withdrawn from the projection housing.

The invention will be described with reference to a projector shown in the drawing illustrating an embodiment of the invention by way of example.

The projector housing 1 comprises at its

top a cavity 2 which extends almost over the entire width of the projector housing. In the area of the projection lamp 3, the reflection mirror 4 and the condenser 5, the cavity 2 comprises an aperture 6, through which access is provided to the projection lamp 3, the reflector 4 and the condenser 5. Parallel to this aperture 6, there is provided in the cavity 2 a further aperture 7 which uncovers, at least partially, the circumference of a fan wheel 8 arranged parallel to the optical system consisting of the reflector lamp and the condenser. A split-pole motor 9 for driving the fan wheel is arranged on the shaft of the fan wheel and lies in parallel and adjacent to the fan wheel.

In the space approximately above this split-pole motor 9, the cavity 2 comprises a depression 10 which is adjoined on both sides by two handle troughs 11 and 12. Inserted in the depression 10 is a spare lamp 16 and a tool 13 for the lamp exchange. By gripping the troughs 11 and 12, one can easily take hold of and remove the tool 13 and subsequently the spare lamp 16.

Insertable in the cavity 2 of the projector housing 1 is a slide plate 14 which is designed in such a way that it covers the entire cavity and ends flush with the housing surface. The slide plate furthermore comprises air passage slots 15 which correspond to the aperture 7 for the fan wheel 8 when the slide plate is fully inserted in the cavity 2. In this position, the slide plate 14 covers the aperture 6 and also encloses the depression 10, so that the projection lamp 3 (including the reflection mirror 4 and the condenser 5) is made inaccessible and the spare lamp 16 is prevented from dropping out during a transportation of the projector. For the lamp exchange, the slide plate 14 has to be withdrawn from the projector housing, when the projection lamp 3 is uncovered and the spare lamp 16 is also at hand for the exchange.

WHAT WE CLAIM IS:—

1. A still optical projector comprising

a projection lamp which is mounted in the projector housing and a housing aperture which gives access to the projection lamp and can be covered by a closing plate, characterised in that there is provided in the projector housing a depression for the reception of a spare projection lamp and optionally a tool for the lamp exchange, which depression is covered by the closing plate in the position thereof in which it closes the housing aperture.

2. A still optical projector as claimed in Claim 1, comprising a cooling fan which is arranged adjacent the projection lamp and to which a drive motor is coaxially attached, characterised in that the depression is provided in the projector housing in the space above the drive motor on the opposite side of the cooling fan from the projection lamp.

3. A still optical projector as claimed in Claim 2, characterised in that the closing plate extends from the housing aperture for the projection lamp across the cooling fan to the housing side wall.

4. A still optical projector as claimed in Claim 2 or 3, characterised in that in the area of the fan the closing plate comprises air passage slots.

5. A still optical projector as claimed in any one of the preceding Claims, characterised in that the closing plate is designed as a slide plate which is insertable in a cavity in the projector housing so that it is flush with the housing surface.

6. An optical projector, substantially as described herein with reference to and as illustrated by the accompanying drawing.

7. An optical projector as claimed in Claim 1, substantially as hereinbefore described.

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2. A still optical projector as claimed in Claim 1, comprising a cooling fan which is arranged adjacent the projection lamp and to which a drive motor is coaxially attached, characterised in that the depression is provided in the projector housing in the space above the drive motor on the opposite side of the cooling fan from the projection lamp.

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ERRATUM

SPECIFICATION NO 1539337

Page 1, line 4, for 330 read 3300

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