

PATENT SPECIFICATION

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(54) IMPROVEMENTS IN OR RELATING TO OPTICAL SLIDE PROJECTORS

(71) We, FRANKE & HEIDECKE GMBH, a German Body Corporate, trading as ROLLEI-WERKE FRANKE & HEIDECKE, of 196 Salzdahlumer Strasse, 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 an optical slide projector comprising a projecting lens, which is incorporated in the projector housing and whose mount slightly projects from a corresponding housing aperture, and comprising a guide intended for the reception of a magazine and extending adjacent and parallel to the projecting lens, and comprising at least one hand switch for switching the projector and/or the projection lamp on and off.

According to the present invention, the projector is distinguished by a cover which encloses the magazine guide, the projecting lens and the hand switches and which lies in suitably formed recesses provided on the projector housing so that the cover can be removed from the projector housing.

The measures taken according to the invention ensure that all the exposed parts of the projector are covered and are protected against the penetration of dust, thus obviating the necessity of a protective envelope for the projector being provided, above all if, as is usual, the housing is made from a shock-resistant material. Furthermore, it is possible to leave even a full magazine in the magazine guide during a transportation of the projector. The covering of the hand switch provides an additional safeguard against the projector or the projection lamp being switched on when the projecting lens is covered. Since the cover lies in appropriately formed contours of the projector housing, it is held in the projector housing in a form-fitting manner so that there is no need for any additional stop elements to fasten the hood.

According to a preferred constructional embodiment of the invention, the cover consists of a first plate covering the front end of the projecting lens and the adjacent front-end aperture of the magazine guide, a second plate which is opposite to the first plate and covers the other aperture of the magazine guide and the hand switch arranged beside it, and a web connecting the two plates and covering the longitudinal aperture of the magazine guide.

If, according to a further development of the invention, the web is designed so that it projects into the magazine guide and its height is such that, with the magazine inserted in the magazine guide and equipped with slides, the web underside lies directly above the slide upper edges, even a filled magazine can be left in the magazine guide during a transportation of the projector without any risk of the slides dropping from the magazine.

Preferably, the cover, consisting of the first and second plates and the web connecting the plates, is designed in one piece and is adapted to the external housing contours of the projector. By this means, there is provided a smooth and solid projector surface without any projecting edges and corners.

An embodiment of the invention is shown by way of example in the drawings in which:—

Fig. 1 shows the projector according to the invention with the cover inserted,

Fig. 2 shows details of the magazine guide and cover of a projector which comprises a slide lifting ramp, and

Fig. 3 shows the projector of Fig. 1 and the cover removed therefrom.

Incorporated in the projector housing designated by 1 is the projecting lens 2 whose mount 2a slightly projects from a corresponding aperture 3 in the housing. Parallel to the projecting lens, the housing forms a magazine guide 4 in the shape of a channel-shaped depression extending through the entire projector. On the

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projector side that is opposite to the aperture 3 for the projecting lens 2, there is a hand switch 5 for switching the projector on and off and a hand switch 6 for switching the projection lamp (not shown) on and off. Along the magazine guide, the housing comprises in the area of the aperture 3 for the projecting lens and in the area of the hand switches 5 and 6 deepened recesses 7, into which a cover 8 is insertable in such a way that its top forms a flat surface with the housing top.

The cover 8 consists of a first plate 81 which, when the cover is inserted in the projector, completely covers the portion of the projecting lens 2 that projects from the housing and the front-end aperture of the adjacent magazine guide 4, a second plate 82 which covers the other front-end aperture of the magazine guide 4 and the two hand switches 5 and 6 on the opposite side of the projector, and a web 83 which connects the first plate 81 to the second plate 82 and covers the longitudinal aperture of the magazine guide at the projector top. The web, which also lies at the top of the projector housing 1 in recesses 7 extending on both sides of the magazine upper edge in the housing, is thick-walled and projects into the magazine guide. The web portion projecting into the magazine guide is so dimensioned that, with the magazine 10, which is filled with slides 9, inserted in the magazine guide 4, the underside of the web 83 lies directly above the upper edges of the slides across the entire magazine. By this means, the slides cannot slide from the magazine, with the cover 8 inserted in the projector, even when the projector is transported and tilted.

If the projector is provided with a lifting ramp for the slides in the slide changing plane, then the web underside is formed in such a way that in the area of the lifting ramp the web underside extends parallel to the lifting ramp upper edge and at a distance of slightly more than the height of one slide, as shown in Fig. 2.

The first plate 81, the second plate 82 and the web 83 connecting the plates are formed in a single piece which is adapted to the external housing contour of the projector in such a way that the closed projector has flat and smooth surfaces all round.

WHAT WE CLAIM IS:—

1. An optical slide projector comprising a projecting lens which is incorporated in the

projector housing and whose mount slightly projects from a corresponding housing aperture and comprising a guide intended for the reception of a magazine and extending parallel to and beside the projecting lens and comprising at least one hand switch for switching the projector and/or the projecting lamp on and off, characterised by a cover which encloses the magazine guide, the projecting lens and the hand switch(es) and which lies in suitably formed recesses provided on the projector housing, so that the cover can be removed from the projector housing.

2. An optical slide projector as claimed in Claim 1, characterised in that the cover consists of a first plate which covers the front end of the projecting lens and the aperture of the magazine guide adjacent thereto, a second plate which is opposite to the first plate and covers the other aperture of the magazine guide and the hand switch(es) arranged adjacent thereto, and a web connecting the two plates and covering the longitudinal aperture of the magazine guide.

3. An optical slide projector as claimed in Claim 2, characterised in that the web projects into the magazine guide and in that the depth of its penetration is so dimensioned that, with the magazine inserted in the magazine guide and equipped with slides, the web underside lies directly above the slide upper edges.

4. An optical slide projector as claimed in Claim 3 and comprising, in the area of the slide changing plane, a ramp for lifting the slides, characterised in that in the area of the lifting ramp the web underside extends parallel to the lifting ramp upper edge and at a distance therefrom that is slightly more than the height of one slide.

5. An optical slide projector as claimed in one of the preceding Claims, characterised in that the cover comprising the first plate, the second plate and the web is designed in one piece and is adapted to the external contour of the projector housing.

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

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

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projector side that is opposite to the aperture 3 for the projecting lens 2, there is a hand switch 5 for switching the projector on and off and a hand switch 6 for switching the projection lamp (not shown) on and off. Along the magazine guide, the housing comprises in the area of the aperture 3 for the projecting lens and in the area of the hand switches 5 and 6 deepened recesses 7, into which a cover 8 is insertable in such a way that its top forms a flat surface with the housing top.

The cover 8 consists of a first plate 81 which, when the cover is inserted in the projector, completely covers the portion of the projecting lens 2 that projects from the housing and the front-end aperture of the adjacent magazine guide 4, a second plate 82 which covers the other front-end aperture of the magazine guide 4 and the two hand switches 5 and 6 on the opposite side of the projector, and a web 83 which connects the first plate 81 to the second plate 82 and covers the longitudinal aperture of the magazine guide at the projector top. The web, which also lies at the top of the projector housing 1 in recesses 7 extending on both sides of the magazine upper edge in the housing, is thick-walled and projects into the magazine guide. The web portion projecting into the magazine guide is so dimensioned that, with the magazine 10, which is filled with slides 9, inserted in the magazine guide 4, the underside of the web 83 lies directly above the upper edges of the slides across the entire magazine. By this means, the slides cannot slide from the magazine, with the cover 8 inserted in the projector, even when the projector is transported and tilted.

If the projector is provided with a lifting ramp for the slides in the slide changing plane, then the web underside is formed in such a way that in the area of the lifting ramp the web underside extends parallel to the lifting ramp upper edge and at a distance of slightly more than the height of one slide, as shown in Fig. 2.

The first plate 81, the second plate 82 and the web 83 connecting the plates are formed in a single piece which is adapted to the external housing contour of the projector in such a way that the closed projector has flat and smooth surfaces all round.

WHAT WE CLAIM IS:—

1. An optical slide projector comprising a projecting lens which is incorporated in the

projector housing and whose mount slightly projects from a corresponding housing aperture and comprising a guide intended for the reception of a magazine and extending parallel to and beside the projecting lens and comprising at least one hand switch for switching the projector and/or the projecting lamp on and off, characterised by a cover which encloses the magazine guide, the projecting lens and the hand switch(es) and which lies in suitably formed recesses provided on the projector housing, so that the cover can be removed from the projector housing.

2. An optical slide projector as claimed in Claim 1, characterised in that the cover consists of a first plate which covers the front end of the projecting lens and the aperture of the magazine guide adjacent thereto, a second plate which is opposite to the first plate and covers the other aperture of the magazine guide and the hand switch(es) arranged adjacent thereto, and a web connecting the two plates and covering the longitudinal aperture of the magazine guide.

3. An optical slide projector as claimed in Claim 2, characterised in that the web projects into the magazine guide and in that the depth of its penetration is so dimensioned that, with the magazine inserted in the magazine guide and equipped with slides, the web underside lies directly above the slide upper edges.

4. An optical slide projector as claimed in Claim 3 and comprising, in the area of the slide changing plane, a ramp for lifting the slides, characterised in that in the area of the lifting ramp the web underside extends parallel to the lifting ramp upper edge and at a distance therefrom that is slightly more than the height of one slide.

5. An optical slide projector as claimed in one of the preceding Claims, characterised in that the cover comprising the first plate, the second plate and the web is designed in one piece and is adapted to the external contour of the projector housing.

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