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(54) IMPROVEMENTS IN AND RELATING TO CIRCULAR MAGAZINES FOR SLIDE PROJECTORS

(71) We, AGFA-GEVAERT AKTIEN-GESELLSCHAFT, a body corporate recognised under German Law, of Leverkusen, 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 magazines for slide projectors, the magazine being divided by walls into compartments for individual slides.

The invention provides a circular magazine for use with a slide projector and having compartments for slides, wherein the slide compartment walls extend substantially radially and the arrangement is such that slides can enter the compartments in a radially inward direction and can leave the compartments in a radially outward direction, and the slide compartment walls are substantially of L-shape so that, when the magazine is mounted with its axis vertical, one shank of each compartment wall extends substantially horizontally adjacent to one axial end of the magazine and the other shank extends substantially vertically adjacent to the outer periphery of the compartments.

Advantageously, the circular magazine includes a removable lid arranged, when it is in position, to prevent slides from leaving the slide compartments in one axial direction. The removable lid preferably has an axial cross-section which, on each side of the axis of the projector, is of L-shaped cross-section, one shank of the L extending inwards over at least a part of the slide compartments and the other shank extending, when the axis of the magazine is vertical, vertically and at a point that is radially inside the radially inner edges of the slide compartment walls. The part of the lid that extends inwards may be provided with a flange that extends inwardly beyond the inner ends of the slide compartment wall to facilitate handling the magazine and the lid. The lid is advantageously provided with springs which are arranged to bear re-

siliently on slides in the slide compartments. The springs may be made of plastics material and be formed in one piece with the lid. Instead, the lid may be moulded from a plastics material and the springs may be made of metal and be secured to the lid during the moulding of the lid.

Advantageously, when the circular magazine is provided with a removable lid, the magazine includes a base arranged to prevent slides from leaving the slide compartments in the axial direction opposite to the axial direction in which they are prevented from leaving by the lid. Preferably, the overall external linear dimension of the magazine in an axial direction is equal to the sum of the linear dimensions in that direction of the base, a slide compartment and the lid.

Advantageously, the radially outer edges of the slide compartment walls are so shaped that slides in the slide compartments extend beyond a portion of the said edges to enable them to be grasped manually.

The invention also provides a slide projector which contains a magazine constructed in accordance with the invention and which includes a slide changer arranged to engage in the slide compartments of the magazine outside the region of the shanks of the slide compartment walls that, when the axis of the magazine is vertical, extend substantially horizontally adjacent to one axial end of the magazine.

Two forms of circular magazine for use with a slide projector and constructed in accordance with the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is a greatly reduced perspective view of one form of slide magazine;

Fig. 2 is a perspective view on a larger scale of part of the slide magazine shown in Fig. 1;

Fig. 3 is a cross-section taken on the line III—III in Fig. 2; and

Fig. 4 is a sectional view of a part of a second form of magazine.

Referring to Figs. 1 to 3 of the accompanying drawings, the first form of circular slide magazine comprises a base ring 1 which is the same radial width as a slide 2. The individual slide compartment walls 3 are arranged on, and preferably moulded with, the base ring 1. The compartment walls 3 run in a radial direction and are substantially in the shape of an inverted L, with one shank 3a running parallel to the radially outer edges 2a and the other shank 3b running parallel to the upper edges 2b of the slides 2 in each case. Each shank 3a is the same height as a slide 2 and each shank 3b has a radial length equal to the width of a slide, so that the compartment walls 3 do not project beyond the slides 2. The radial width 3c of the shank 3a is, however, considerably smaller than the width of a slide 2, so that the slides lie freely in the radially inner, lower part of the magazine.

In order to ensure that the slides 2 are held down in the magazine and also cannot slide radially inwards out of the magazine, the magazine is closed at the top by means of a lid 4 which in cross-section is, on each side of the axis of the magazine, in turn substantially in the shape of an inverted L, with one shank extending over the upper edge 2b of the slide 2 and the other, very short shank 4a extending parallel to the radially inner edge of the slide over the axial width 3b. By means of this short shank 4a the slides are prevented from sliding radially inwards out of the slide compartments of the magazine.

Referring to Fig. 4 of the accompanying drawings, the second form of slide magazine is generally similar to that shown in Figs. 1 to 3, but the lid 4 has, for each slide compartment, a spring 4b which rests against the slide 2 situated in the compartment and thus produces a friction effect between the slide and the base plate 1 (which is here narrower in a radial direction than a slide), so that the slides do not slide radially outwards out of their compartments. The springs 4b may be made of plastics material and formed in one piece with the lid or they may be made of metal and secured to the lid either during the moulding of the lid or otherwise.

Owing to the fact that the shanks 3a only have the radial width 3c, the distance between the radially inner edges 3e of two adjacent shanks 3a is considerably greater than the distance between the radially inner edges of two adjacent shanks 3b. There is therefore a considerably wider space available for a slide-change slide 6 which is provided on a projector in the central space surrounded by the magazine. The width of the slide-change slider 6 may be almost equal to the distance between the radially

inner edges 3e of two adjacent shanks 3a, and thus may be constructed so that it is considerably more robust and more resistant to bending and other forms a failure than would be the case if it had to be sufficiently narrow to enable it to pass between the radially inner edges of two adjacent shanks 3b.

Other constructions are of course possible. Thus the radially outer edge of the shank 3a need not be straight but may, as shown in Fig. 4, be so shaped that the slides can be grasped manually from outside and removed from the magazine, for example.

Again as shown in Fig. 4 of the drawings, the shanks 3a and 3b of each compartment wall 3 may be joined by a curve rather than meeting at a right-angle as shown in Fig. 1. That does not alter the principle of the L-shape of the compartment walls.

Without altering the compact construction and easy operation in principle, the lid 4 may also have on it a flange 5 which projects radially inwards beyond the radially inner edges of the shanks 3b and so facilitates handling of the lid and of the entire magazine.

WHAT WE CLAIM IS:—

1. A circular magazine for use with a slide projector and having compartments for slides, wherein the slide compartment walls extend substantially radially and the arrangement is such that slides can enter the compartments in a radially inward direction and can leave the compartments in a radially outward direction, and the slide compartment walls are substantially of L-shape so that, when the magazine is mounted with its axis vertical, one shank of each compartment wall extends substantially horizontally adjacent to one axial end of the magazine and the other shank extends substantially vertically adjacent to the outer periphery of the compartments.

2. A circular magazine as claimed in claim 1, which includes a removable lid arranged, when it is in position, to prevent slides from leaving the slide compartments in one axial direction.

3. A circular magazine as claimed in claim 2, wherein the removable lid has an axial cross-section which, on each side of the axis of the projector, is of L-shaped cross-section, one shank of the L extending inwards over at least a part of the slide compartments and the other shank extending, when the axis of the magazine is vertical, vertically and at a point that is radially inside the radially inner edges of the slide compartment walls.

4. A circular magazine as claimed in claim 3, wherein the part of the lid that extends inwards is provided with a flange that extends inwardly beyond the inner ends of

Referring to Figs. 1 to 3 of the accompanying drawings, the first form of circular slide magazine comprises a base ring 1 which is the same radial width as a slide 2. The individual slide compartment walls 3 are arranged on, and preferably moulded with, the base ring 1. The compartment walls 3 run in a radial direction and are substantially in the shape of an inverted L, with one shank 3a running parallel to the radially outer edges 2a and the other shank 3b running parallel to the upper edges 2b of the slides 2 in each case. Each shank 3a is the same height as a slide 2 and each shank 3b has a radial length equal to the width of a slide, so that the compartment walls 3 do not project beyond the slides 2. The radial width 3c of the shank 3a is, however, considerably smaller than the width of a slide 2, so that the slides lie freely in the radially inner, lower part of the magazine.

In order to ensure that the slides 2 are held down in the magazine and also cannot slide radially inwards out of the magazine, the magazine is closed at the top by means of a lid 4 which in cross-section is, on each side of the axis of the magazine, in turn substantially in the shape of an inverted L, with one shank extending over the upper edge 2b of the slide 2 and the other, very short shank 4a extending parallel to the radially inner edge of the slide over the axial width 3b. By means of this short shank 4a the slides are prevented from sliding radially inwards out of the slide compartments of the magazine.

Referring to Fig. 4 of the accompanying drawings, the second form of slide magazine is generally similar to that shown in Figs. 1 to 3, but the lid 4 has, for each slide compartment, a spring 4b which rests against the slide 2 situated in the compartment and thus produces a friction effect between the slide and the base plate 1 (which is here narrower in a radial direction than a slide), so that the slides do not slide radially outwards out of their compartments. The springs 4b may be made of plastics material and formed in one piece with the lid or they may be made of metal and secured to the lid either during the moulding of the lid or otherwise.

Owing to the fact that the shanks 3a only have the radial width 3c, the distance between the radially inner edges 3e of two adjacent shanks 3a is considerably greater than the distance between the radially inner edges of two adjacent shanks 3b. There is therefore a considerably wider space available for a slide-change slide 6 which is provided on a projector in the central space surrounded by the magazine. The width of the slide-change slider 6 may be almost equal to the distance between the radially

inner edges 3e of two adjacent shanks 3a, and thus may be constructed so that it is considerably more robust and more resistant to bending and other forms a failure than would be the case if it had to be sufficiently narrow to enable it to pass between the radially inner edges of two adjacent shanks 3b.

Other constructions are of course possible. Thus the radially outer edge of the shank 3a need not be straight but may, as shown in Fig. 4, be so shaped that the slides can be grasped manually from outside and removed from the magazine, for example.

Again as shown in Fig. 4 of the drawings, the shanks 3a and 3b of each compartment wall 3 may be joined by a curve rather than meeting at a right-angle as shown in Fig. 1. That does not alter the principle of the L-shape of the compartment walls.

Without altering the compact construction and easy operation in principle, the lid 4 may also have on it a flange 5 which projects radially inwards beyond the radially inner edges of the shanks 3b and so facilitates handling of the lid and of the entire magazine.

WHAT WE CLAIM IS:—

1. A circular magazine for use with a slide projector and having compartments for slides, wherein the slide compartment walls extend substantially radially and the arrangement is such that slides can enter the compartments in a radially inward direction and can leave the compartments in a radially outward direction, and the slide compartment walls are substantially of L-shape so that, when the magazine is mounted with its axis vertical, one shank of each compartment wall extends substantially horizontally adjacent to one axial end of the magazine and the other shank extends substantially vertically adjacent to the outer periphery of the compartments.
2. A circular magazine as claimed in claim 1, which includes a removable lid arranged, when it is in position, to prevent slides from leaving the slide compartments in one axial direction.
3. A circular magazine as claimed in claim 2, wherein the removable lid has an axial cross-section which, on each side of the axis of the projector, is of L-shaped cross-section, one shank of the L extending inwards over at least a part of the slide compartments and the other shank extending, when the axis of the magazine is vertical, vertically and at a point that is radially inside the radially inner edges of the slide compartment walls.
4. A circular magazine as claimed in claim 3, wherein the part of the lid that extends inwards is provided with a flange that extends inwardly beyond the inner ends of



the slide compartment walls to facilitate handling the magazine and the lid.

5 5. A circular magazine as claimed in any one of claims 2 to 4, wherein the lid is provided with springs which are arranged to bear resiliently on slides in the slide compartments.

10 6. A circular magazine as claimed in claim 5, wherein the springs are made of plastics material and are formed in one piece with the lid.

15 7. A circular magazine as claimed in claim 5, wherein the lid is moulded from a plastics material and the springs are made of metal and are secured to the lid during the moulding of the lid.

20 8. A circular magazine as claimed in any one of claims 2 to 7, which includes a base arranged to prevent slides from leaving the slide compartments in the axial direction opposite to the axial direction in which they are prevented from leaving by the lid.

25 9. A circular magazine as claimed in claim 8, wherein the overall external linear dimension of the magazine in an axial direction is equal to the sum of the linear dimensions in that direction of the base, a slide compartment and the lid.

30 10. A circular magazine as claimed in any one of claims 1 to 9, wherein the radially outer edges of the slide compartment

walls are so shaped that slides in the slide compartments extend beyond a portion of the said edges to enable them to be grasped manually.

35 11. A circular magazine substantially as hereinbefore described with reference to, and as shown in, Figs. 1 to 3 of the accompanying drawings.

40 12. A circular magazine substantially as hereinbefore described with reference to, and as shown in, Figs. 1 to 3 of the accompanying drawings, modified substantially as hereinbefore described with reference to, and as shown, in, Fig. 4 of the accompanying drawings.

45 13. A slide projector, which contains a magazine as claimed in any one of claims 1 to 12 and which includes a slide changer arranged to engage in the slide compartments of the magazine outside the region of the shanks of the slide compartment walls that, when the axis of the magazine is vertical, extend substantially horizontally adjacent to one axial end of the magazine.

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