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(54) FILM PROJECTION CASSETTE

(71) We, BOLEX INTERNATIONAL S.A., of 18 Avenue des Alpes, CH - 1450, Sainte-Croix, Switzerland, a Swiss Company, 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 present invention concerns a film projection cassette for containing cinematographic film, with or without a track, on two spools lying side by side in coplanar relationship.

Film cassettes for the projection of silent films are already known, and in these the film is rolled onto two standard spools or onto two rotating cores mounted side by side in the cassette. These cassettes are not designed to contain film with a sound track.

According to the present invention there is provided a film cassette comprising a casing containing two film spools arranged side by side in coplanar relationship and having a filmgate, said casing including means for forming an aperture for access to a portion of the film extending between the gate and one spool to enable a soundtrack reading head to be used in conjunction with the cassette.

In a preferred form of the invention, the cassette contains a feed spool and a take-up spool placed side by side in coplanar relationship inside the case and has a film-gate in one side. When a silent film is projected, the film follows the traditional route from the feed spool onto the take-up spool passing in front of the film-gate, the forward movement being brought about by a mechanical means such as a claw or any other intermittent film drive. When a sound film, with a magnetic or optical soundtrack along its edge, is projected it is necessary to form a loop of film after the film-gate so that the intermittent movement of the film for projection may be transformed into continuous movement for sound reading. Naturally the standard distance between the positions of the film-gate and the read head has to be maintained.

The cassette can be used for projecting either silent films, or sound films when an opening is made in the case after the film-gate along the route of the film.

In one embodiment, this opening is made by providing a zone of low breakage resistance in the case, which zone may be broken away to provide an opening for the introduction of one or several parts of a sound reading device, or for extracting a loop of film. This zone may, for example, be defined by a groove moulded with the rest of the case and surrounding a portion to be broken away. The zone may be made of a mechanically different material from the rest of the case.

Alternatively, there may be a sliding door in the cassette which can open part of the case and simultaneously extract a loop of film from the cassette in order for it to be run through a sound reading device outside the cassette.

The present invention will now be further described by way of example, with reference to the accompanying drawings, in which:—

FIGURE 1 shows a cassette in plan with an opening through which a device for reading the sound may be introduced or through which a loop of film may be extracted;

FIGURE 2 shows a fragmentary part of the cassette in perspective, and illustrates how an opening may be made in the case of the cassette;

FIGURE 3 shows a section taken on the line I-I in Figure 1;

FIGURE 4 is a section similar to Figure

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3 but through part of a modified cassette in which an opening can be made in the top and in the bottom;

FIGURE 5 is a section through another construction of cassette;

FIGURE 6 is a plan view of the cassette of Figure 5; and

FIGURE 7 is a view corresponding to Figure 5 but shows a slidable portion of the case in an extracted position.

Figure 1 shows a film cassette comprising a casing 1 formed by a shallow box 6 closed by a lid 9. The casing is made of a suitable plastics material.

Mounted side-by-side inside the casing in coplanar relationship are two spools on which are wound opposite end-portions 2 of a cinematograph film 3. Between the two spools the film travels through a film-gate 4 provided in one edge surface in the casing. A breakaway zone, shown in more detail in Figures 2 and 3, is also provided in the casing edge surface a short distance from the film-gate 4.

The breakaway zone comprises two parts which are defined from the adjacent portions of the casing by grooves which enable the two parts to be easily broken away. Figure 2 shows the zone broken away and from which it will be seen to comprise a part 7 integral with the shallow box portion 6 of the casing, and a part 10 integral with the lid 9 of the casing. The grooves 8 and 11 which separate these two parts from the associated parts of the casing are clearly shown in Figure 3. The grooves enable the breakaway zone to be detached cleanly along well defined lines as is clearly shown in Figure 2.

The cassette partially shown in Figure 4 is slightly modified in that the breakaway part 7′ is separated from the remainder of the casing by a groove 8′ which is substantially parallel to the groove 11′.

When the cassettes are required to be used for silent films the casings are left intact. If they are to be used for sound films, the parts of the breakaway zone are broken cleanly away along the grooves intended for this purpose and a sound pick-up head may be introduced into the casing by way of the broken away zone in order to read a soudtrack on a film. Alternatively a loop of the film may be extracted from the cassette casing for sound reading in a pick-up head elsewhere in a projector.

The cassette shown in Figure 6 is represented in Figures 5 and 7 upside down. In Figure 6 the cassette comprises a casing 21 containing two side-by-side coplanar spools which carry opposite end portions 22, 23 of a cinematograph film having a soundtrack. A portion of the film extends through a film-gate 24 provided in one edge face of the casing. Adjacent the film-gate 24 is provided a slide-out portion 28 of the casing contianing a roller 29 around which the portion of the film running from the film-gate 24 to the film portion 23 passes. The slide-out portion in its extracted position is shown in Figure 7 from which it will be seen that a loop of the film is distended out of the casing to enable it to cooperate with soundtrack reading devices of the projector. The motion of the slide-out portion is guided within the casing 21 by guiding surfaces provided on the base 26 of the casing which is provided with a lid 27 attached to the base by hinges, not shown.

In an unillustrated modification of the casing shown in Figures 1 to 4, the breakaway zone is formed from a material different from the remainder of the casing.

WHAT WE CLAIM IS:—

1. A film cassette comprising a casing containing two film spools arranged side by side in coplanar relationship ,and having a film gate, said casing including a means for forming an aperture access to a portion of the film extending between the gate and one spool to enable a sound track reading head to be used in conjunction with the cassette.

2. A cassette as claimed in claim 1, in which the aperture forming means is formed as a readily flangible part of the casing.

3. A cassette as claimed in claim 2, in which a line of breakaway of the readily flangible part is defined by a groove in the casing which is moulded with the zone from plastics material.

4. A cassette as claimed in claim 2, in which the readily flangible part is made of different material from the rest of the casing.

5. A cassette as claimed in claim 1, in which a component around which the film travels between the film-gate and one spool is withdrawable from a position inside the casing to a second position outside the casing to form the aperture giving access to the film.

6. A cassette as claimed in claim 5, in which the component comprises a roller mounted on a slider capable of being extracted laterally from the casing along guiding means to the second position.

7. A cassette as claimed in claim 1,

3 but through part of a modified cassette in which an opening can be made in the top and in the bottom;

FIGURE 5 is a section through another construction of cassette;

FIGURE 6 is a plan view of the cassette of Figure 5; and

FIGURE 7 is a view corresponding to Figure 5 but shows a slidable portion of the case in an extracted position.

Figure 1 shows a film cassette comprising a casing 1 formed by a shallow box 6 closed by a lid 9. The casing is made of a suitable plastics material.

Mounted side-by-side inside the casing in coplanar relationship are two spools on which are wound opposite end-portions 2 of a cinematograph film 3. Between the two spools the film travels through a film-gate 4 provided in one edge surface in the casing. A breakaway zone, shown in more detail in Figures 2 and 3, is also provided in the casing edge surface a short distance from the film-gate 4.

The breakaway zone comprises two parts which are defined from the adjacent portions of the casing by grooves which enable the two parts to be easily broken away. Figure 2 shows the zone broken away and from which it will be seen to comprise a part 7 integral with the shallow box portion 6 of the casing, and a part 10 integral with the lid 9 of the casing. The grooves 8 and 11 which separate these two parts from the associated parts of the casing are clearly shown in Figure 3. The grooves enable the breakaway zone to be detached cleanly along well defined lines as is clearly shown in Figure 2.

The cassette partially shown in Figure 4 is slightly modified in that the breakaway part 7' is separated from the remainder of the casing by a groove 8' which is substantially parallel to the groove 11'.

When the cassettes are required to be used for silent films the casings are left intact. If they are to be used for sound films, the parts of the breakaway zone are broken cleanly away along the grooves intended for this purpose and a sound pick-up head may be introduced into the casing by way of the broken away zone in order to read a soudtrack on a film. Alternatively a loop of the film may be extracted from the cassette casing for sound reading in a pick-up head elsewhere in a projector.

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In an unillustrated modification of the casing shown in Figures 1 to 4, the breakaway zone is formed from a material different from the remainder of the casing.

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3. A cassette as claimed in claim 2, in which a line of breakaway of the readily flangible part is defined by a groove in the casing which is moulded with the zone from plastics material.

4. A cassette as claimed in claim 2, in which the readily flangible part is made of different material from the rest of the casing.

5. A cassette as claimed in claim 1, in which a component around which the film travels between the film-gate and one spool is withdrawable from a position inside the casing to a second position outside the casing to form the aperture giving access to the film.

6. A cassette as claimed in claim 5, in which the component comprises a roller mounted on a slider capable of being extracted laterally from the casing along guiding means to the second position.

7. A cassette as claimed in claim 1,

arranged and adapted to be used substantially as described with reference to Figures 1 to 3; or as modified with reference to Figure 4; or as described with reference to Figures 5 to 7 of the accompanying drawings.

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