

PATENT SPECIFICATION

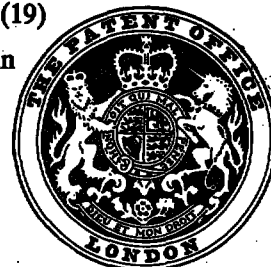
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(54) CASSETTE FOR ROLL FILM

(71) We, AGFA-GEVAERT AKTIENGESELLSCHAFT, a body corporate organised according to the laws of Germany, 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 film cassettes for roll film.

With a cassette of the kind comprising a shell or jacket portion having cover portions covering the open ends of the shell, at least one of the cover portions being designed as a detachable lid for the shell, the problem arises of how to fit the lid in a substantially light-tight and simple manner onto the shell portion and in such a manner that it possible to force off the lid after the film has been exposed.

The present invention provides a cassette for roll film, the cassette comprising a substantially cylindrical shell provided with a longitudinal opening for the passage of film, and cover means arranged at each end of the shell so as to provide a substantially enclosed container, at least one of the cover means comprising a detachable lid having a groove in the region of its circumference, the end portion of the shell wall surrounding that open end of the cylindrical shell to be closed by the lid being arranged to fit into the groove so as to provide a labyrinthine, light-tight path from the outside of the cassette to the inside, the said end portion of the wall having a gap in the region of the longitudinal opening, and there being a discontinuity in the groove corresponding to the gap, which discontinuity is arranged, when the said end portion of the wall is fitted into the groove, to lie in the gap to obstruct the entry of light into the cassette in that region.

Preferably, the said end portion of the

wall is a generally cylindrical flange having a gap in the region of the longitudinal opening. Advantageously, the external diameter of the flange is less than the external diameter of the shell and the external diameter of the lid is not greater than the external diameter of the shell.

Preferably, the height of that portion of the lid forming the outer wall of the groove is less than the height of the flange, to provide a recess into which a tool may be inserted to force apart the shell and the lid.

A cassette constructed in accordance with the invention will now be described, by way of example, with reference to the accompanying drawing, which is a perspective view of the cassette shown with its lid removed, in conjunction with a tool for opening the cassette.

With reference to the drawing, the cassette comprises a substantially cylindrical shell portion indicated generally by the reference numeral 1, which is provided with an opening 2 for the passage of film therethrough. Light excluding means 3 are provided for the opening 2. The shell is open at one end, that is, at the top, as seen in the drawing. The wall of the shell 1 is provided, at its open end, with a flange, or rib, 4, which projects from the end surface 10 of the main wall of the shell. The flange 4 extends around the end surface 10 of the shell wall over most of the circumference, but is broken by a gap in the region where the opening 2 interrupts the end surface 10 of the wall.

The cassette further comprises a lid 6 for closing the open end of the shell 1 when a film (not shown) has been inserted into the cassette, the lid being provided in its circumferential region with a groove 7. The groove 7 is so arranged that the flange or rib 4 engages it in a labyrinthine manner and thus provides a light-tight seal around the major part of the circumference of the cassette

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when the lid is fitted onto the end of the shell 1. The groove 7 is interrupted for a distance equal to the gap in the flange 4 by a cross-piece 8. The portion 9 of the lid 6, which comprises the outer wall of the groove 7, is not as deep as the flange, or rib, 4.

Small projections, or locking cams, 5, are provided on the flange 4, for the purpose of releasably locking the lid 6 to the shell 1, as described below. The flange 4 is resilient.

When the lid 6 is fitted onto the shell 1, to form a closed cassette, the flange 4 engages the groove 7, and the cross-piece 8 engages the gap in the flange 4 thereby fitting over the end of the opening 2 at the open end of the cassette shell 1 so as to seal off this end of the opening in a light-tight manner, and at the same time precisely determining the slot width of the opening. The shell 1 and the lid 6 are held in this engagement by the action of the projections, or locking cams, 5, which are arranged to engage the lid 6 either by friction, or by engaging with recesses which may be provided for this purpose on the inner surface of the wall 9. Alternatively, the cams can be formed in the groove for engagement with recesses in the flange 4, or for frictional engagement with the flange 4. When the lid 6 is so fitted onto the shell 1, as a result of the flange 4 having a greater height than the wall 9, there is formed between the end surface 10 of the main wall of the shell and the lower edge of the outer wall 9 a recess into which a tool can be inserted to prise apart the lid and the shell and hence open the cassette. For the purpose of so opening the cassette, for example, in order to remove an exposed film, there may be provided a tool 12 having wedge-shaped ribs 11 which are arranged so that they can be pushed into the said recess to force apart the lid 6 and shell 1. (Owing to the resilience of the flange 4, the locking cams 5 are released from locking engagement with the lid 6 by this action of the tool 12).

The shell 1 and the lid 6 may be made from plastics material, and, in this case, they may be sealed together ultrasonically after the insertion of a film into the cassette, in addition to being locked together by the action of the locking cams. The seal is temporary and easily breakable to gain access to the film.

WHAT WE CLAIM IS:-

1. A cassette for roll film, the cassette comprising a substantially cylindrical shell provided with a longitudinal opening for the passage of film, and cover means arranged at each end of the shell so as to provide a substantially enclosed container, at least one of the cover means comprising a detachable lid having a groove in the region of its circumference, the end portion of the shell

wall surrounding that open end of the cylindrical shell to be closed by the lid being arranged to fit into the groove so as to provide a labyrinthine, light-tight path from the outside of the cassette to the inside, the said portion of the wall having a gap in the region of the longitudinal opening, and there being a discontinuity in the groove corresponding to the gap, which discontinuity is arranged, when the said end portion of the wall is fitted into the groove, to lie in the gap to obstruct the entry of light into the cassette in that region.

2. A cassette as claimed in claim 1, wherein the said end portion of the wall is a generally cylindrical flange having a gap in the region of the longitudinal opening.

3. A cassette as claimed in claim 2, wherein the external diameter of the flange is less than the external diameter of the shell and the external diameter of the lid is not greater than the external diameter of the shell.

A cassette as claimed in claim 3, wherein the height of that portion of the lid forming the outer wall of the groove is less than the height of the flange.

5. A cassette as claimed in any one of claims 1 to 4, wherein the said end portion of the wall and/or the inner surface of the groove is or are provided with projections which releasably engage the inner surface of the groove and the said end portion of the wall, respectively.

6. A cassette as claimed in any one of claims 1 to 5, wherein the shell and the lid comprise plastics material and are sealed together by a breakable seal that has been formed by treating the shell and the lid ultrasonically.

7. A cassette substantially as hereinbefore described with reference to, and as shown in, the accompanying drawing.

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when the lid is fitted onto the end of the shell 1. The groove 7 is interrupted for a distance equal to the gap in the flange 4 by a cross-piece 8. The portion 9 of the lid 6, which comprises the outer wall of the groove 7, is not as deep as the flange, or rib, 4.

Small projections, or locking cams, 5, are provided on the flange 4, for the purpose of releasably locking the lid 6 to the shell 1, as described below. The flange 4 is resilient.

When the lid 6 is fitted onto the shell 1, to form a closed cassette, the flange 4 engages the groove 7, and the cross-piece 8 engages the gap in the flange 4 thereby fitting over the end of the opening 2 at the open end of the cassette shell 1 so as to seal off this end of the opening in a light-tight manner, and at the same time precisely determining the slot width of the opening. The shell 1 and the lid 6 are held in this engagement by the action of the projections, or locking cams, 5, which are arranged to engage the lid 6 either by friction, or by engaging with recesses which may be provided for this purpose on the inner surface of the wall 9. Alternatively, the cams can be formed in the groove for engagement with recesses in the flange 4, or for frictional engagement with the flange 4. When the lid 6 is so fitted onto the shell 1, as a result of the flange 4 having a greater height than the wall 9, there is formed between the end surface 10 of the main wall of the shell and the lower edge of the outer wall 9 a recess into which a tool can be inserted to prise apart the lid and the shell and hence open the cassette. For the purpose of so opening the cassette, for example, in order to remove an exposed film, there may be provided a tool 12 having wedge-shaped ribs 11 which are arranged so that they can be pushed into the said recess to force apart the lid 6 and shell 1. (Owing to the resilience of the flange 4, the locking cams 5 are released from locking engagement with the lid 6 by this action of the tool 12).

The shell 1 and the lid 6 may be made from plastics material, and, in this case, they may be sealed together ultrasonically after the insertion of a film into the cassette, in addition to being locked together by the action of the locking cams. The seal is temporary and easily breakable to gain access to the film.

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wall surrounding that open end of the cylindrical shell to be closed by the lid being arranged to fit into the groove so as to provide a labyrinthine, light-tight path from the outside of the cassette to the inside, the said portion of the wall having a gap in the region of the longitudinal opening, and there being a discontinuity in the groove corresponding to the gap, which discontinuity is arranged, when the said end portion of the wall is fitted into the groove, to lie in the gap to obstruct the entry of light into the cassette in that region.

2. A cassette as claimed in claim 1, wherein the said end portion of the wall is a generally cylindrical flange having a gap in the region of the longitudinal opening.

3. A cassette as claimed in claim 2, wherein the external diameter of the flange is less than the external diameter of the shell and the external diameter of the lid is not greater than the external diameter of the shell.

A cassette as claimed in claim 3, wherein the height of that portion of the lid forming the outer wall of the groove is less than the height of the flange.

5. A cassette as claimed in any one of claims 1 to 4, wherein the said end portion of the wall and/or the inner surface of the groove is or are provided with projections which releasably engage the inner surface of the groove and the said end portion of the wall, respectively.

6. A cassette as claimed in any one of claims 1 to 5, wherein the shell and the lid comprise plastics material and are sealed together by a breakable seal that has been formed by treating the shell and the lid ultrasonically.

7. A cassette substantially as hereinbefore described with reference to, and as shown in, the accompanying drawing.

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