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(54) **Cassette for storing a roll of photosensitive material.**

(57) The invention relates to a cassette for storing a roll of photosensitive material comprising a housing with a lengthwise slot for pulling the photosensitive material out of the housing, and two closing pieces connected to the end of the housing and comprising a pivot around which said roll can be unrolled, characterized in that braking means are provided between said closing pieces (1,1') and said roll (3,11), which braking means are provided for preventing said roll to unroll in an uncontrolled way.

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The present invention relates to a cassette for storing a roll of photosensitive material. The cassette consists of a housing with a lengthwise slot for pulling the photosensitive material out of the housing, and two closing pieces connected to the end of the housing and comprising a pivot around which said roll can be unrolled.

Such cassettes destined for phototype setters, scanners and the like are known. The core around which the photosensitive material is wound, usually consists of cardboard. This core is pushed with both ends over the pivots, belonging usually to the closing pieces forming the side walls of the cassette. The photosensitive material is pulled out of the cassette through a lengthwise slot in the housing.

One of the drawbacks of said cassettes is that an irregular force is required for pulling the photosensitive material out of the cassette. Indeed, the force required for pulling the material out of the cassette at a certain speed is dependent on how far the photosensitive material is unrolled.

A second fact is that the photosensitive material is wound on a core, usually a cardboard cylinder. Cardboard is a hydrophilic, liquid absorbing material. The liquid absorbed by the core may have negative effects on the photographic properties of the photosensitive material.

In order to enable to pull the material out of the cassette, a backlash has to be present between the core and the pivots. Due to this backlash, the roll may move into the housing during transport. Hereby the material unrolls until it engages the housing which causes larger tractive forces. Therefore, several manufacturers block the core with respect to the pivot during transport which requires of course additional components and operations.

An object of the present invention is to provide a cassette which does not have the above mentioned drawbacks and other drawbacks known by the skilled men, and which ensures a substantially regular tractive force for pulling the photosensitive material out of the cassette at a constant speed.

In order to realize this according to the present invention, braking means are provided between said pivots and said roll, which braking means are provided for preventing said roll to unroll in an uncontrolled way.

In a preferably applied embodiment of the invention, said closing piece is provided with a pivot which is directed towards said roll, over which pivot a ring can be fittingly pushed. Said ring is provided with inwards directed, springy little teeth gripping around said pivot.

Still according to the invention and omitting the cardboard core, which is usually used for winding the photosensitive material up, said ring with springy little teeth engages the inner cylindrical

space formed by the photosensitive material rolled up without said core.

Other details and advantages of the present invention will become apparent from the following description of a cassette for storing a roll of photosensitive material according to the invention. This description is only given by way of example and does not limit the scope of the invention; The reference numerals relate to the figures annexed hereto.

Figure 1 shows a perspective, exploded view of a roll of photosensitive material and two closing pieces belonging thereto, between which this roll is kept.

Figure 2 shows a side-view on a variant of the invention.

Figure 3 shows a cross-section along line III-III of Figure 2.

Figure 4 shows, at another scale, a longitudinal section through an example of a possible variant of the invention.

Figure 5 shows a front-view on the plug of Figure 4.

Figure 6 shows a perspective, exploded view of a variant of the invention.

The cassette according to Figure 1 comprises also a housing or casing which is not represented in this figure in order to show the other components more clearly. This housing is sideways, at both ends, connected to two closing pieces 1 each provided with a central pivot 2 determining together the axis around which the roll can be unwound.

Up to now, a core was provided in the middle of the roll 3, usually in the form of a cardboard cylinder. According to the invention, that core is now omitted and, on the other hand, a ring 5 is pushed in the central cavity 4 of the roll 3 from both ends.

Both rings 5 can be pushed fittingly over the pivots 2 and are provided with inwards directed, springy little teeth 6. The rings with the springy little teeth provide an appropriate braking of the roll 3.

The rings 5 with their springy little teeth 6 are moulded in one piece and consist of a synthetical material suitable therefor, such as for example polyacetale.

The rings 5 which are pushed over the pivots 2, fit accurately into the central cavity 4 of the roll 3 and grip, on the other hand, with the little teeth 6 around the outer-surface of the pivots 2.

When unwinding a roll 3 of photosensitive material, a remaining and unchanged friction effect arises now which causes the desired braking.

In the embodiment according to Figures 2 and 3, use is made of a structural ring 5 provided with a series of inwards directed, springy little teeth 6. The largest diameter of the insert 7 corresponds to

the inner diameter of the central cavity 8 of the roll of photosensitive material 3. The insert 7 has a slightly beveled edge so that it can be pushed easily into the central cavity 8 of the roll 3. The pivots belonging to the closing pieces of the cassette, over which pivots the ring 5 with the little teeth 6 is pushed, are not shown in these figures.

In the embodiment according to Figure 6, the pivot 2, over which the ring 5 with springy little teeth 6 is fittingly pushed, is not fixed to the closing piece 1 but to a plate fitting in such a manner in the inside of the cassette that the pivot 2 cannot rotate.

In both embodiments, the inner core can be omitted thanks to the structure according to the present invention. This involves not only a considerable saving of material but especially the problems arising when transporting the cassette, and described in the preamble of the present patent application, are definitively solved.

Finally, Figures 4 and 5 relate to a possible variant wherein a plug 10 is pushed into the roll 11. On this plug 10 are provided springy little teeth 12 pressing onto a raised edge of the closing piece 1'. In this way, the desired braking is also obtained.

All the hereabove described embodiments allow to omit the central core and allow to pull the photographic with a constant tractive force out of the cassette.

The present invention is not limited to the embodiments described hereabove and various modifications could be brought thereon without leaving the scope of the present patent application.

Claims

1. A cassette for storing a roll of photosensitive material comprising a housing with a lengthwise slot for pulling the photosensitive material out of the housing, and two closing pieces connected to the ends of the housing and comprising a pivot around which said roll can be unrolled, characterized in that braking means are provided between said closing pieces (1,1') and said roll (3,11), which braking means are provided for preventing said roll to unroll in an uncontrolled way.
2. A cassette according to claim 1, characterized in that said pivot (2) is removably mounted in the cassette.
3. A cassette according to claim 2, characterized in that said pivots (2) belong to a plate (9) which fits into said cassette.
4. A cassette according to claim 1, characterized in that said closing piece (1) is provided with a pivot (2) which is directed towards said roll (3), and over which pivot a ring (5) can be pushed, which ring (5) fits on said pivot and is provided with inwards

directed, springy little teeth (6) gripping around said pivot (2).

5. A cassette according to claim 3, characterized in that said plate (9) is provided with a pivot (2) which is directed towards said roll (3), and over which pivot a ring (5) can be pushed, which ring (5) fits on said pivot and is provided with inwards directed, springy little teeth (6) gripping around said pivot (2).

6. A cassette according to either one of the claims 4 or 5, characterized in that said ring (5) with springy little teeth (6) engages the wall of an inner, cylindrical cavity (4) formed by the photosensitive material rolled up without a core.

7. A cassette according to either one of the claims 4 or 5, characterized in that said ring (5) with springy little teeth (6) engages the inner wall of a cylindrical core, around which the photosensitive material is wound.

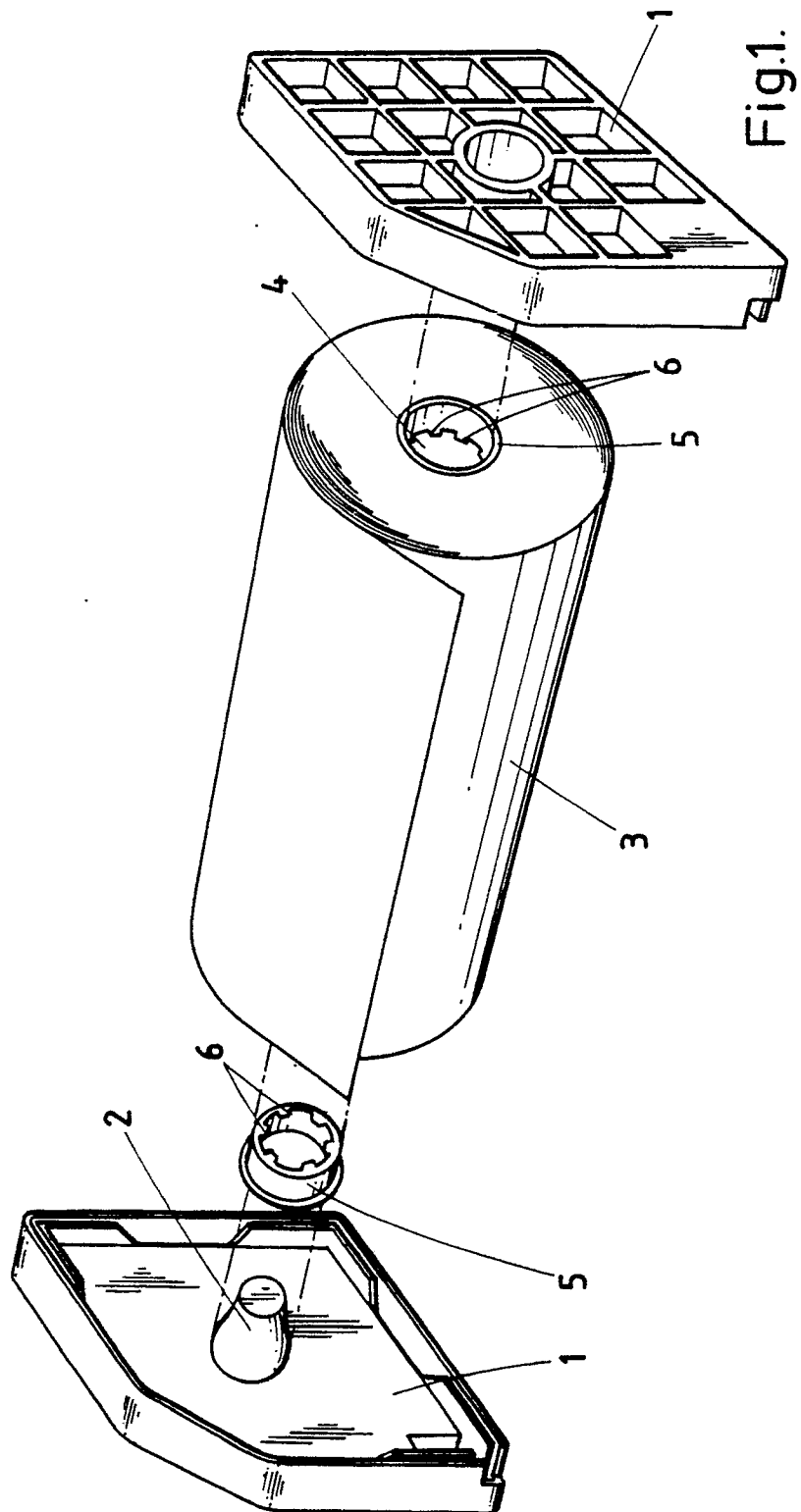
8. A cassette according to any one of the claims 4 to 5, characterized in that said ring (5) with springy little teeth (6) forms a middle part of an insert (7) which fits into the inner, cylindrical cavity (8) formed by the photosensitive material rolled up without a core.

9. A cassette according to either one of the claims 4 or 5, characterized in that said ring (5) with springy little teeth (6) forms a middle part of an insert (7) which fits into an inner, cylindrical cavity (8) of a core.

10. A cassette according to claim 1, characterized in that said braking means comprise a plug (10) with springy little teeth (12) which, in the position for use, are directed towards the closing piece (1') and press onto the latter in such a manner that the pressure of said little teeth (12) on said closing piece (1') causes the desired braking.

11. A cassette according to any one of the claims 4 to 9, characterized in that said ring (5) is made of a synthetic material.

12. A cassette according to claim 11, characterized in that said synthetic material is polyacetale or another material with technically equivalent properties, which material guarantees the braking aimed at.





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EUROPEAN SEARCH REPORT

Application Number

EP 90 20 2598

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	US-A-3 880 372 (H.WITTE) * column 4, lines 41 - 56; claims ; figure 4 * - - - -	1-12	G 03 C 3/00
Y	EP-A-0 196 577 (FUJI PHOTO FILM) * claims ; figures 1-3 * - - - -	2-3	
Y	US-A-2 699 903 (F.B.MONTGOMERY) * the whole document * - - - -	4-11	
Y	EN-A- (INCL. MACHINE SHOP MAGAZINE)vol. 218, no. 8, August 1978, LONDON GB pages 776 - 777; J.POPE: "PLASTICS AS ENGINEERING MATERIALS ACETALS" * the whole document * - - - -	12	
A	US-A-4 680 248 (D.J.ROACH) * column 1, line 65 - column 2, line 12; figure * - - - -	1	
A	EP-A-0 198 124 (AGFA-GEVAERT) * page 1, lines 1 - 25; figures 1, 2 ** page 3, line 25 - page 5, line 22 * - - - - -	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			G 03 C 3/00 G 03 B 27/58 B 65 D 85/672 A 47 K 10/38 A 47 K 10/16 C 08 L 59/02
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of search 07 January 91	Examiner PHILOSOPH L.P.
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