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SPOOL FOR FILMS AND SIMILAR ARTICLES

Filed June 16, 1954

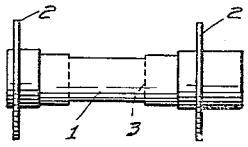


Fig. 1

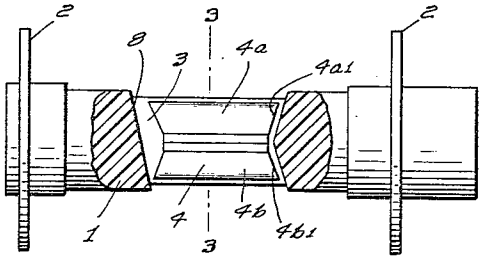


Fig. 2

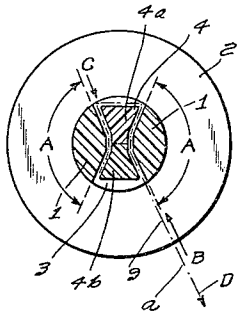


Fig. 3

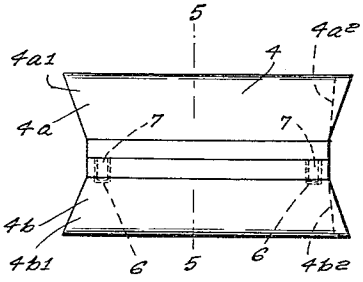


Fig. 4

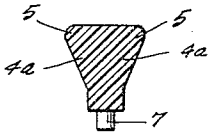


Fig. 5

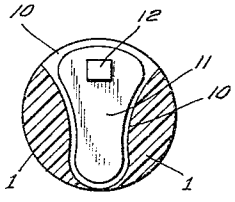


Fig. 6

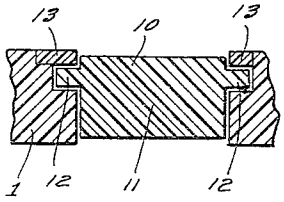


Fig. 7

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SPOOL FOR FILMS AND SIMILAR ARTICLES

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Application June 16, 1954, Serial No. 437,202

4 Claims. (Cl. 242—74)

Spools for film for small cameras and the like, made of sheet metal and having in the cylindrical axis of the spool a cross cut in which metal clamps or holding arrangements are attached for the purpose of securing the beginning of the film strip against pull are known. Also, it is known that for this purpose the body of the spool itself may be made of synthetic material. The holding arrangements, however, for gripping the start of the film strip have heretofore been made of metal.

Film spools of this type are expensive to manufacture and have not proven to be completely effective.

Therefore, in accordance with this invention, a spool for films is provided completely constructed of synthetic materials. The start of the film strip is particularly easy to insert and also may be easily removed when desired, and the anchoring of the film against pull is highly effective. Also, the cost of manufacture is relatively low.

According to this invention, there is provided a spool for films or similar articles wherein the body of the spool is made out of a synthetic, such as polystyrol or the like, and wherein there is a slot cut all the way through the spool and extending for a portion of its length, in which a member is adapted to be inserted. Although the member is in spaced relation to the walls of the slot, said member and said slot cooperate to prevent axial removal of the former.

The invention is shown in the accompanying drawings as follows:

Fig. 1 is a side elevation of a film spool constructed in accordance with the instant invention;

Fig. 2 is a sectional side elevation thereof, on an enlarged scale;

Fig. 3 is a section taken on line 3—3 of Fig. 2;

Fig. 4 is a side elevation, on an enlarged scale, of the clamp body per se;

Fig. 5 is a part section taken on line 5—5 of Fig. 4;

Fig. 6 is an end view in section of a modified form of the instant invention; and

Fig. 7 is a fragmentary side elevational section of the modification shown in Fig. 6.

In the drawings, there is shown as at 1 a cylindrical body of a spool which is made of a synthetic, such as, for example, polystyrol. Flanges 2 are provided to properly position the windings of the film, while at 3 there is shown a slot in the spool body which extends completely therethrough and which extends for a portion of the length of the spool body.

In accordance with the instant invention, there is provided as at 4 a clamp body adapted to be mounted in this slot in spaced relation to the walls thereof whereby a certain amount of play or movement is possible. As will be obvious, however, the clamp body 4 is maintained against any pull exerted in a direction perpendicular to the axis of the spool.

In the structure illustrated in Figs. 1 through 5, the dimension of the slot wall is larger in the direction of the circumference A of the spool body than that of the middle part of the spool body, and therefore, the clamp body 4 has a double conical configuration in cross section. Preferably, the outside edges of the clamp body 4 are somewhat rounded off, as shown at 5 in Fig. 5.

In order to facilitate the insertion of the clamp body into the slot of the spool, it is preferred to make this clamp body out of two parts, 4*a* and 4*b*, which parts can be joined by means of connecting members, such as recesses 6 and projections 7. A drop of dissolving material, for example, benzol, on these spots creates an extremely strong connection or bonding of the parts.

As will be obvious, it is possible that the slant of the sides $4a^1$ and $4b^1$ of parts 4*a* and 4*b*, respectively, could be much smaller with respect to the connecting surface of these parts, such as, for example, is shown at $4a^2$ and $4b^2$, respectively. Even in this configuration, ejection out of the fabricating mold would not be hampered.

If desired, the length of the slot 3 may be made larger on one side of the spool body than on the opposite side. This is accomplished by slanting the wall 8 of the slot 3, as indicated on the left-hand side in Fig. 2.

In operation and use, the beginning of the film strip 9 is inserted in the direction of the arrow B into the space between spool body 1 and clamp body 4. The film is then bent over the top of the clamp body and is inserted in the direction of the arrow C on the other side thereof. Thus, the film will be tight and secured against any pull in the direction of the arrow D and the film may now be tightly wound.

In the illustration of Figs. 6 and 7, a slightly modified form of our invention is shown wherein the spool body 1 has a slot 10 which in cross section is substantially an inverted triangle gently curved at the apex or lowermost portion which opens up to one side of the spool body. In this form, a substantially triangular and preferably somewhat bulging body 11 is inserted into the slot 10 and is so designed so as to be in spaced relation with respect to the walls thereof whereby to enable a certain amount of play or movement to exist therebetween. The body 11 is maintained in the slot 10 by means of retaining members, such as pins or extensions shown at 12. The extensions cooperate with pieces 13 and are maintained against removal by said pieces in a manner thought to be obvious from inspection of Fig. 7. The pieces 13 may be secured in proper position with the use of benzol or the like.

It will be understood that the invention as aforedescribed is not necessarily limited to the manufacture of spools made of polystyrol, but rather any synthetic material which can be formed through molding or the like may be utilized.

The instant invention furthermore applies to any kind of spool wherein a strip of material is to be wound thereabout, thereby necessitating that the beginning of the strip be securely maintained against pull in order that the strip material may be tightly wound around the spool body. Generally, at least the beginning portion of the strip will be relatively stiff.

The embodiment of our invention as shown in Figs. 1 through 5 is advantageous in that the film can be inserted into the spool body in either direction, whereas such is not the case with respect to the modified form of our invention, as depicted in Figs. 6 and 7.

We claim:

1. A spool for photographic film, comprising a cylindrical body with two circular end flanges, said body having an axial slot, and a clamp element loosely mounted in said slot and having oppositely disposed sides conforming in shape to the shape of the slot walls, whereby a film or film support end passed between one clamp element side and its contiguous slot wall and over between

the other clamp element side and the other slot wall is firmly gripped upon turning of the spool.

2. In the structure of claim 1, said axial slot having an hour-glass shape and said clamp element having a corresponding cross-section.

3. In the structure of claim 2, said clamp element including an upper and a lower section secured together.

4. In the structure of claim 1, said slot being a recess of generally inverted triangular form and said clamp element being movably pivoted adjacent the recess inlet to loosely fit therein, and conforming in shape to the recess.

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