

Aug. 21, 1962

H. D. POST

3,050,184

DETACHABLE CLIP ARRANGEMENT FOR FILM STRIP

Filed March 16, 1960

FIG. 1

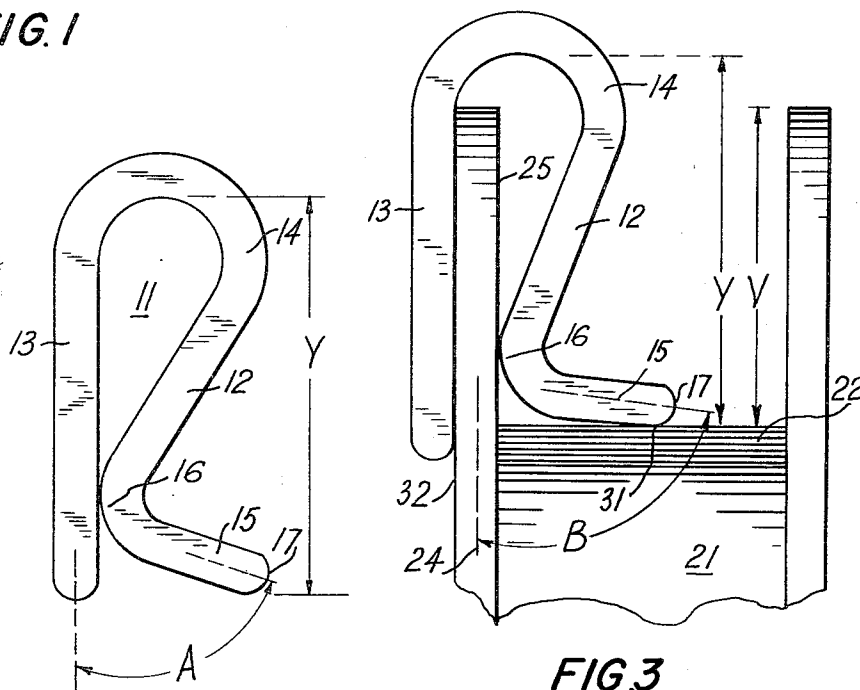


FIG. 3

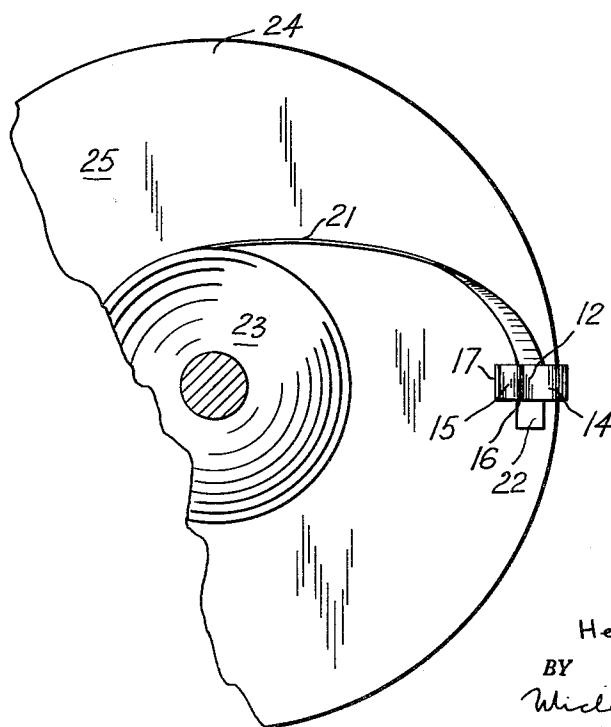


FIG. 2

INVENTOR.  
Hermann D. Post  
BY  
Michael S. Stiller  
Attorney

1

2

**3,050,184  
DETACHABLE CLIP ARRANGEMENT FOR  
FILM STRIP****Herman D. Post, Flushing, N.Y.  
Filed Mar. 16, 1960, Ser. No. 15,478  
1 Claim. (Cl. 206—53)**

The present invention relates to a detachable clip arrangement for a film strip. More particularly, the invention relates to a detachable clip arrangement for preventing unwinding of a film strip wound on a reel having a flange.

The principal object of the present invention is to provide a detachable clip arrangement for preventing unwinding of a film strip from a reel on which said film strip is wound.

An object of the present invention is to provide a detachable clip arrangement for preventing unwinding of a film strip wound on a reel having a flange by holding the end of said film strip to said flange.

Another object of the present invention is to provide a detachable clip arrangement for preventing unwinding of a film strip wound on a reel having a flange by holding said film strip in its wound position on said reel.

Another object of the present invention is to provide a detachable clip arrangement for preventing unwinding of a film strip wound on a reel having a flange in a secure and effective manner by simple means.

Another object of the present invention is to provide a detachable clip arrangement for preventing unwinding of a film strip from a reel on which said film strip is wound by simple means permitting close stacking of a plurality of said reels.

In accordance with the present invention, a detachable clip arrangement for preventing unwinding of a film strip wound on a reel having a flange comprises two resilient arms adapted to resiliently engage and be carried by said flange. In one manner of use of the detachable clip arrangement of the present invention, one arm abuts against the end portion of the film strip wound on the reel so that the end of said film strip is held adjacent said flange, the other arm being substantially flat so as to extend substantially parallel to the outer face of the flange superimposed thereon. In another manner of use of the detachable clip arrangement of the present invention, said one arm abuts against a portion of the film strip in wound position on the reel, the other arm being substantially flat so as to extend substantially parallel to the outer face of the flange superimposed thereon.

In order that the present invention may be readily carried into effect it will now be described with references to the accompanying drawing, wherein:

FIG. 1 is a side view, in exaggerated dimension, of an embodiment of the detachable clip arrangement of the present invention;

FIG. 2 is a view of the embodiment of FIG. 1 in combination with a reel in one manner of use of the clip arrangement of the present invention; and

FIG. 3 is a side view, in exaggerated dimension, of the embodiment of FIG. 1 in combination with a reel in another manner of use of the clip arrangement of the present invention.

In FIG. 1, the detachable clip arrangement 11 comprises a first resilient arm 12 and a second resilient arm 13. The detachable clip arrangement 11 may be formed by folding a strip of resilient material into substantially R-configuration so that the first resilient arm 12 is of substantially S-configuration having an upper portion 14, equivalent to the head or closed portion of the R-configuration, and a lower portion 15.

The upper portion 14 of the first arm 12 is concave in relation to the second arm 13 which is substantially

flat and normally provides a closed loop with said second arm. The lower portion 15 of the first arm 12 forms a projection at the free end of said first arm extending transversely to the remainder of the said first arm. The upper and lower portions of the first arm form a knee 16 of a curve which is convex with relation to the first arm. The knee 16 of the first arm 12 normally abuts the second arm 13 due to the resiliency of the material of which the clip arrangement is formed. The clip arrangement of the present invention may comprise any type of material having suitable resiliency characteristics of the type described herein, such as, for example, any plastic-type material. The lower portion 15 of the first arm 12 is preferably substantially flat.

As a matter of fact, the first arm 12 need not be of S-configuration, but may be of any suitable configuration which comprises a knee 16 which normally abuts the second arm 13 and a transversely extending projection forming a lower portion 15, such as, for example, Z-configuration. The lower portion 15 preferably extends from the knee 16 to the free end 17 of the first arm 12 and serves to provide important aspects of the present invention.

In FIG. 1, the detachable clip arrangement of the present invention is shown in its normal or unused condition. The principal features of the clip arrangement of the present invention are the substantially flat second arm 13, and the lower portion 15 of the first arm 12. In FIG. 1, the knee 16 normally tends to abut the second arm 13 and the lower portion 15 is positioned at a predetermined acute angle A with said second arm. The acute angle A formed by the lower portion 15 of the first arm 12 and the second arm 13 in the normal condition of the clip arrangement may have any suitable magnitude within a range of 40 to 90 degrees, said magnitude being preferably about 80 degrees.

FIG. 2 is a view of the embodiment of FIG. 1 in combination with a reel in one manner of use of the clip arrangement of the present invention. In FIG. 2, a film strip 21 having an end portion 22 is wound on a reel 23 having a flange 24. The flange 24 has an inner face 25 adjacent the film strip 21 and an outer face (shown in FIG. 3). The resilient arms 12 and 13 (shown in FIG. 3) resiliently engage and are carried by the flange 24 of the reel 23 abutting with the knee 16 of the first arm against the inner face 25 of the flange 24. The end 22 of the film strip 21 is thus held adjacent the inner face 25 of the flange 24 by the pressure of the abutting knee 16 against said flange so that said end of said film strip is prevented from moving and unwinding of the film strip from the reel 23 is thereby prevented. The second arm 13 extends substantially parallel to the outer face of the flange and is superimposed thereon (as shown in FIG. 3). The manner of use illustrated in FIG. 2 is especially advantageous when the film strip 21 is wound on the reel 25 to a point less than the maximum capacity of said reel where the end portion 22 in its wound position is a greater radial distance from the outer peripheral edge of the flange 24 than the lineal distance Y between the free end 17 of the lower portion 15 of the first arm 12 and the lower or inside surface of the upper portion 14 of the head of the clip arrangement. In other words, as clearly illustrated by FIG. 3 and the description of FIG. 3, the manner of use of FIG. 2 is advantageous in situations where the manner of use of FIG. 3 is not applicable.

FIG. 3 is a side view, in exaggerated dimension, of the embodiment of FIG. 1 in combination with a reel in another manner of use of the clip arrangement of the present invention. In FIG. 3, the film strip 21 and its end portion 22 are indicated by the surface presented thereby when said film strip is wound on the reel. In FIG. 3, the film strip 21 is wound to a point where the

end portion 22 in its wound position is a lesser radial distance V from the outer peripheral edge of the flange 24 than the lineal distance Y between the free end 17 of the lower portion 15 of the first arm 12 and the inside surface of the upper portion 14 of the head of the clip arrangement. In the manner of use shown in FIG. 3, the lower portion 15 of the first arm 12 abuts against the film strip 21 along at least a lower or inside portion 31 thereof. The second arm 13 extends substantially parallel to the outer face 32 of the flange 24 and is superimposed thereon; both arms 12 and 13 resiliently engage and being carried by said flange.

The end 22 of the film strip 21 is thus held adjacent the body of the wound film strip by the pressure of the abutting portion 31 of the lower portion 15 of the first arm 12 against said wound film strip so that said end of said film strip is prevented from moving and unwinding of the film strip from the reel 23 is thereby prevented.

As illustrated in FIG. 3, the interposition of the flange 24 between the arms 12 and 13 of the clip arrangement, when said arms resiliently engage and are carried by said flange, causes the lower portion 15 of the first arm 12 to increase the magnitude of the acute angle A between said lower portion and said second arm. The increase of the angle A to a greater magnitude angle B permits a greater portion 31 of the lower portion 15 of the first arm 12 to abut against the film strip 21, since the closer the angle between the lower portion 15 and the second arm 13 is to 90 degrees, the greater said abutting portion will be; the lesser the magnitude of said angle, the lesser said abutting portion will be.

It is thus seen that in the normal condition of the clip arrangement of the present invention, the knee 16 tends to abut against the second arm 13, the lower portion 15 of the first arm 12 forming an acute angle A with said second arm. In the manners of use illustrated in FIGS. 2 and 3, the second arm 13 extends substantially parallel to the outer face 32 of the flange 24 and is superimposed thereon thereby providing a large contact area of the clip arrangement on the outer face of the reel 23 which results in very good contact between said clip arrangement and said reel. The substantially flat configuration of the second arm 13 permits a plurality of reels to be closely stacked thereby reducing separation between adjoining stacked reels and permitting great conservation of space and therefore great economy in storage. Neither the advantage of superior contact of the clip arrangement and the reel nor that of close stacking is evident in any arrangement lacking the flat arm 13.

It is also seen that in the manner of use illustrated in each of FIGS. 2 and 3, the two resilient arms 12 and 13 resiliently engage and are carried by the flange 24 of the reel 23 with the knee 16 being resiliently urged to abut the second arm 13 so that the clip arrangement is securely but detachably carried on the reel with the flange interpositioned between said knee and said second arm. In FIG. 2, the abutting action of the knee 16 and the second arm 13 on the flange 24 is utilized to hold the end portion 22 of the film strip 21 adjacent the inner face 25 of the flange 24. In FIG. 3, however, the abutting portion 31 of the lower portion 15 of the first arm 12 on the film strip 21 in wound position on the reel is utilized to hold the end portion 22 of said film strip in its wound position. Thus, unwinding of the film strip from the

reel is prevented in both manners of use in a secure and effective manner by simple means.

The detachable clip arrangement of the present invention may comprise any material having suitable resiliency characteristics, such as for example butyrate, and may of course comprise either a suitable metallic or non-metallic material. The detachable clip arrangement of the present invention may of course have dimensions of a large variety dependent upon the size of the film strip and reel with which said clip arrangement is intended to be utilized. For a reel and film strip of the usual 50 to 400 foot length used with home-type movie projectors, tape recorders and the like, the second arm 13 is preferably approximately  $\frac{1}{2}$  inch in length equivalent to the dimension Y, the width of both arms is approximately  $\frac{1}{4}$  inch, and the length of the lower portion 15 of the first arm 12 from the knee 16 to the free end 17 is preferably approximately  $\frac{3}{16}$  inch.

The free end of either or both of the arms 12 and 13 may be tapered if desired, and may be rounded to avoid the presence of sharp edges.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claim.

What is claimed as new and desired to be secured by Letters Patent is:

An arrangement for preventing unwinding of a film strip from a reel comprising, in combination, a reel including a flange having an inner face and an outer face; a film strip wound on said reel adjacent the inner face of said flange and having an outer annular peripheral face; and a clip arrangement comprising a strip of resilient material folded in substantially R-configuration to form only two resilient arms, a first of said arms being of substantially S-configuration and having an upper portion and a lower portion at the free end thereof projecting transversely from the remainder of said first arm and forming a knee with the upper portion of said first arm and the second of said arms being substantially flat, said clip arrangement resiliently engaging and carried by the flange of said reel and abutting with the lower projecting portion of said first arm against the outer face of the film strip wound on said reel, with the knee of the said first arm abutting the inner face of the flange of said reel, and with said second arm extending substantially parallel to and adjacent with the outer face of the flange of said reel.

#### References Cited in the file of this patent

##### UNITED STATES PATENTS

|           |                |               |
|-----------|----------------|---------------|
| 1,675,286 | Van Valkenburg | June 26, 1928 |
| 2,273,701 | Funke          | Feb. 17, 1942 |
| 2,584,194 | Drury          | Feb. 5, 1952  |
| 2,927,688 | Loewe          | Mar. 8, 1960  |
| 2,930,156 | Jones          | Mar. 29, 1960 |
| 2,985,290 | Locklin        | May 23, 1961  |