

United States Patent

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[54] HOLD DOWN CLAMP

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[52] U.S. Cl.242/74.2
[51] Int. Cl.B65h 75/28
[58] Field of Search242/74, 74.2, 125.1

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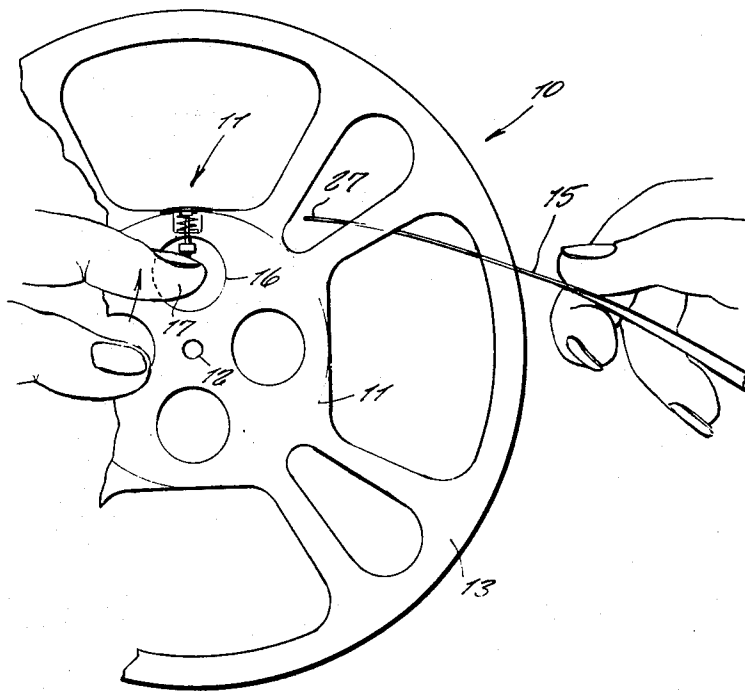
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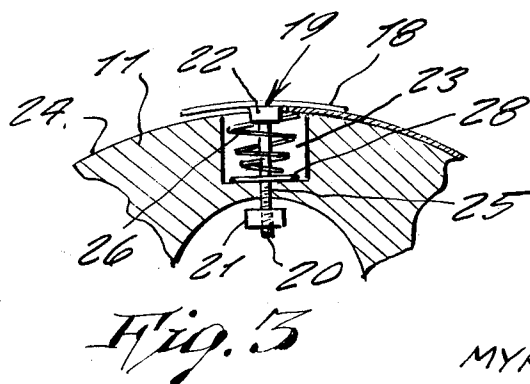
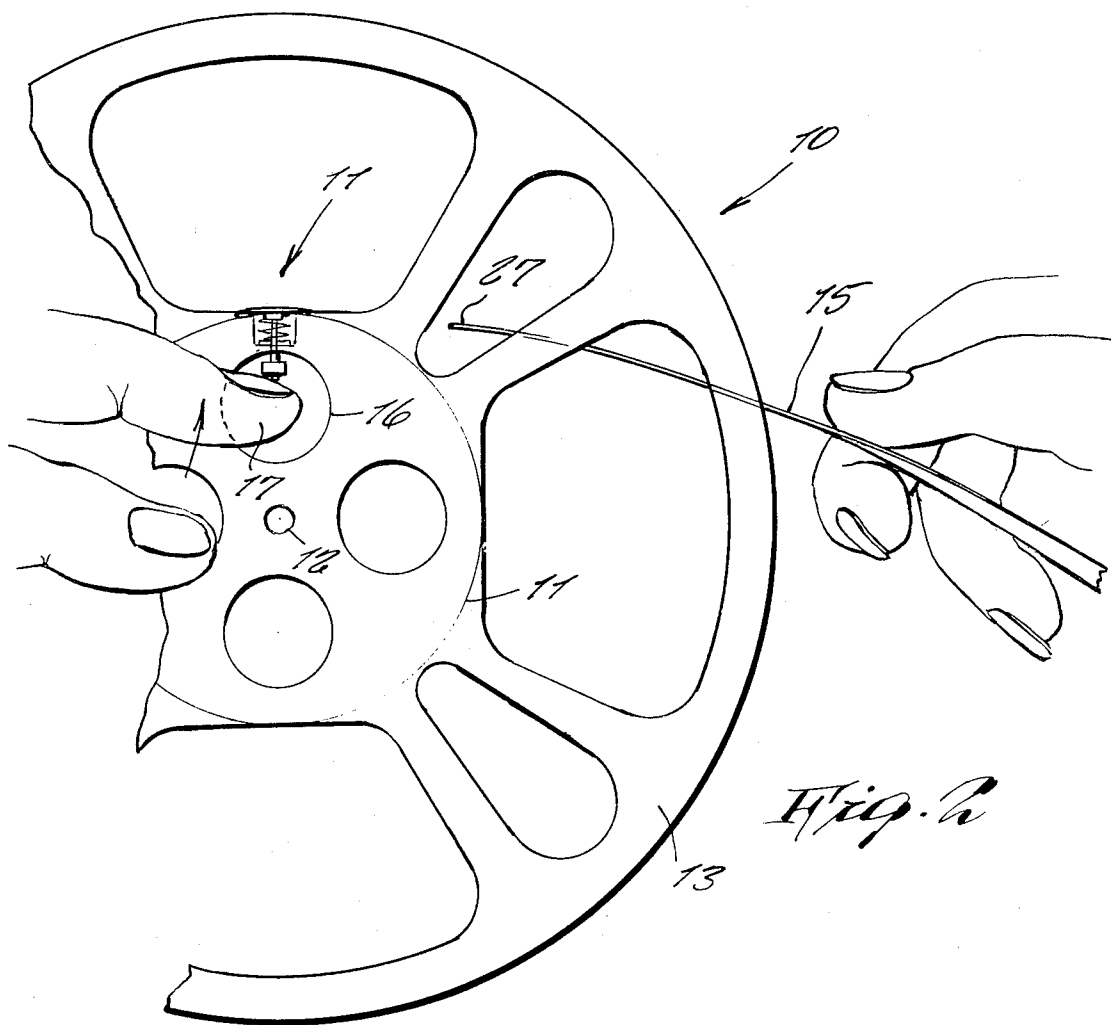
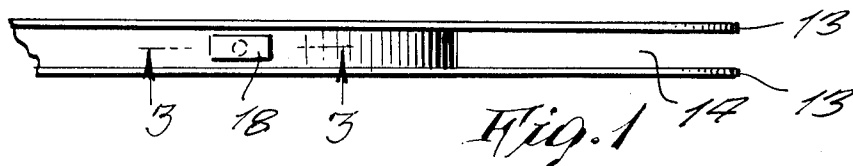
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[57] ABSTRACT

An improved reel upon which film is wound up, the reel including a hold down clamp to which one end of the film is removably secured, the hold down clamp comprising a spring loaded clip under which the end of the film is inserted when the clip is raised manually.

2 Claims, 3 Drawing Figures





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HOLD DOWN CLAMP

This invention relates generally to reels for film and the like.

It is generally well known to those skilled in the art that a method for securing the end of a film to the reel has not been provided as yet which can be easily accomplished and which does not in any way distort the end of the film. Many of the reels commercially available provide a radially extending slot on the hub of the reel into which the end of the film is inserted however, this causes a sharp end between the radially extending portion of the film and that portion which is wound upon the hub, thus misshaping the same. This is of course objectionable and in want of improvement.

Accordingly it is a principal object of the present invention to provide an improved reel having a novel self contained hold down clamp.

Another object of the present invention is to provide an improved reel with a hold down clamp which will not in any way disfigure the end of the film and which is particularly quick for establishing a film securement to the reel.

Other objects of the present invention are to provide an improved reel having a self contained hold down clamp which is simple in design, inexpensive to manufacture, rugged in construction, easy to use and efficient in operation.

These and other objects will be readily evident upon a study of the following specification and the accompanying drawing wherein:

FIG. 1 is a fragmentary edge view of a reel incorporating the present invention;

FIG. 2 is a side elevation view thereof shown in operative use; and

FIG. 3 is an enlarged cross sectional view taken on the line 3—3 of FIG. 1.

Referring now to the drawing in detail, the reference numeral 10 represents an improved reel according to the present invention wherein there is incorporated a hold down clamp 11.

The reel 10 is comprised of a hub 12 of circular configuration and having a concentric central opening 13 for being received upon a spindle of a machine. A pair of parallel, spaced apart flanges 13 form a recess 14 therebetween within which a length of film 15 is wound upon the hub 11.

As shown in FIG. 2 of the drawing, it is to be noted that the hub is provided with a plurality of openings 16 therethrough, one of the openings 16 being used for cooperation with the hold down clamp 11. The openings 16 as indicated are of a relatively sufficient size so as to permit a finger 17 of a person to be inserted thereinto. The hold down clamp includes a clip plate 18 positioned adjacent the outer face of the hub, the clip plate accordingly being of slightly arcuate configuration as is indicated in FIG. 3 of the drawing. A small bolt 19 is rigidly affixed to the underside of the clip plate, the bolt having a threaded shank 20 for threadingly engaging a nut 21, while the bolt head 22 is positioned adjacent the underside of the clip plate.

A cylindrical opening 23 is made along a radially extending axis within the hub and communicating with the surface 24 of the hub. A relatively smaller opening 25 is made concentric with the opening 23 and communicates between the lower portion of the opening 23 and one of the transverse openings

16 extending through the hub. A compression coil spring 26 is placed within the opening 23 and the bolt is extended through the spring and through the opening 25 after which the nut 21 is threadingly engaged upon the bolt. Thus as is indicated in FIG. 2, the end of the bolt and the nut may be readily pushed upwardly by the finger 17 of a person.

In operative use, when it is desired to attach the end 27 of the film 15 to the reel, a person merely places his finger 17 into the opening 16 and pushes upwardly against the underside of the bolt and nut, thus causing the clip plate 18 to be raised upwardly of the surface 24 so as to cause a space therebetween into which the end 27 of the film 15 is inserted. Thereafter the person removes his finger 17 thus causing the tension spring 26 to pull the clip tight downward and squeeze the end of the film against the surface of the hub. As shown in FIG. 3, the end of the film is in no way disturbed by such a grasp thereof.

It is of course understood that the tension spring 26 positioned adjacent a washer 28 may be secured thereto and the washer made stationary in the bottom of the opening 23 while the opposite end of the spring 26 extends through a slot or opening through the head of the bolt thus normally forcing the clip plate radially inward.

It is to be further noted that while the present invention may be indicated for use upon film for movie cameras, that the invention is readily applicable also for use for holding magnetic tape of tape recorders in a like manner to a reel.

What I now claim is:

1. In an improved reel with a hold down clamp, the combination of a reel including a hub of circular configuration, said hub being integral with a pair of parallel, spaced apart flanges extending radially outwardly respective to said hub, said flanges defining a recess therebetween into which a length of film may be wound upon said hub, and said reel incorporating a hold down clamp unit so to effect a quick and efficient attachment of an end of said film to said reel, wherein said hold down clamp unit includes a clip plate, said clip plate being positioned adjacent the outer side of said hub, said clip plate accordingly being of correspondingly arcuate configuration as said hub surface, a bolt secured to the underside of said clip plate, said bolt including a head adjacent said plate and a threaded shank, said threaded shank supporting a threaded nut, wherein said hub is provided with a transverse opening therethrough of sufficient size for receiving a person's finger thereinto, said hub having a radially extending opening in communication with said hub surface, said radially extending opening being in axial alignment with a relatively smaller opening which communicates with said transverse opening of said hub, said bolt extending through said aligned opening for radial movement therein.

2. The combination as set forth in claim 1 wherein a tension coil spring is secured at one end to said bolt head and at its other end to a washer placed in the bottom of said first radially extending opening for normally pulling said clip plate radially inward, said threaded shank of said bolt extending through both said openings in alignment with each other and having said nut mounted upon said shank and positioned within said transverse opening of said hub.

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