

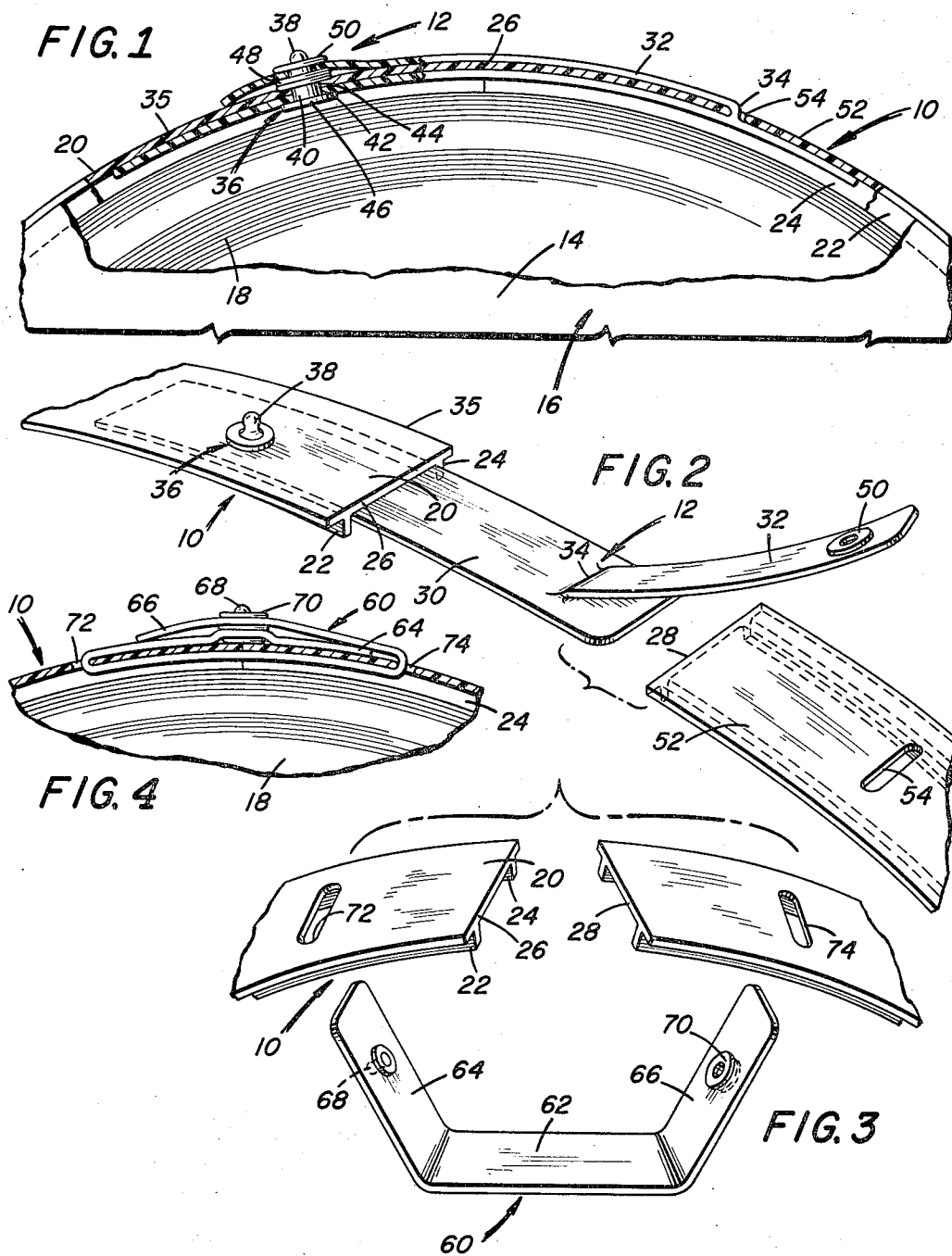
Jan. 20, 1970

T. S. KULKA

3,490,579

LATCHING MEANS FOR REEL BAND

Filed Sept. 11, 1968



INVENTOR
THOMAS S. KULKA

BY *Oberlin, Maly, Donnelly & Renner*
ATTORNEYS

1

3,490,579

LATCHING MEANS FOR REEL BAND

Thomas S. Kulka, 200 Film Bldg., 2108 Payne Ave.,
Cleveland, Ohio 44114

Filed Sept. 11, 1968, Ser. No. 759,059

Int. Cl. B65d 85/67; B65h 55/00, 75/18

U.S. Cl. 206—53

4 Claims

ABSTRACT OF THE DISCLOSURE

A latching means for reel band in the form of a one-piece band for closing the area between the flanges of a tape reel thereby protecting the tape or film wound on the reel. In one form of the invention, the band is provided with openings relatively adjacent the ends thereof and the latching means is adapted to extend through such openings and be temporarily interconnected or latched for removably retaining the band on the reel flanges. In a second form of the invention, the latch is permanently attached at one end to an adjacent end of the band with the free end of the latch extending through an opening in the other end of the band and adapted to be removably fastened to the attached end of said band for temporary retention of the band on the reel flanges.

BACKGROUND OF THE INVENTION

The present invention relates as indicated to a latching means for a reel band adapted to enclose the space between the side flanges of a reel thereby protecting the tape or film wound on the reel from dust, dirt and the like.

Reel bands or closures of the type here concerned have long been in use for the purpose above indicated. Although essentially any type band or closure that serves to fully occupy the space between the flanges outwardly of the tape or film will serve to accomplish the above noted intended purpose, other factors make certain types of reel bands more practical to use than others. The primary factor is essentially economic, with the cost of the reel bands now commercially available varying substantially. As will be understood, if the number of reels to be stored is substantial, the cost of reel bands for protecting the same is correspondingly great.

A further consideration is one of function, that is, the ease and speed with which the reel band can be applied to or removed from the reel flanges, and the degree to which the band fulfills its intended objective of preventing entrance of deleterious material into the area inwardly of the band.

SUMMARY OF THE INVENTION

It is accordingly an object of the present invention to provide a protective reel band and latching means that can be manufactured at relatively low cost, and which can be used with existing reel bands with very little modification required of the latter.

A further object of the present invention is to provide a protective reel band and latching means that can be simply and quickly applied to or removed from the reel flanges. In accordance with one form of the invention, the opposed ends of the band are formed with openings with the separate latch being adapted to extend through such openings and be removably fastened for retaining the band in place on the reel flanges. In a second form of the

2

invention, a substantially permanent connection is provided between one end of the band and the latching member, with the opposite free end of the latch extending through an opening in the adjacent opposed end of the band and temporarily fastened to the permanently connected end of the latch to retain the reel band on the reel flanges.

These and other objects of the invention will become apparent as the following description proceeds.

DESCRIPTION OF THE DRAWING

In said annexed drawing:

FIG. 1 is a fragmentary side elevational view of one form of the present invention with certain parts including the side flanges of the reel being broken away more clearly to expose the invention;

FIG. 2 is an exploded, perspective view of the latching member shown in FIG. 1 and the fragmentary adjacent ends of the reel band;

FIG. 3 is an exploded, perspective view of an alternative form of latching member, adapted to extend through openings formed in the opposed ends of the reel band, and

FIG. 4 is a sectional view of the latch of FIG. 3 in fastened position.

DETAILED DESCRIPTION

Referring now in more detail to the drawing, wherein like parts are indicated by like reference numerals, and initially to FIGURE 1, the present invention comprises a one-piece reel band generally indicated at 10 and a latching member generally indicated at 12 cooperatively engaged in a manner to be presently described so as to enclose the area between the opposed side flanges 14 of a reel generally indicated at 16. The reel 16 per se is conventional and forms no part of the present improvements, with the same being shown having tape or film 18 wound thereon in the usual manner, terminating radially inwardly of the peripheral edges of the side flanges 14 of the reel.

The cross-sectional shape of the band 10 can best be seen in FIGS. 2 and 3. The band comprises a continuous outer wall 20 and, in the form shown, integrally formed, radially inwardly extending ribs or flanges 22 and 24. The ribs 22 and 24 are transversely spaced so as to be disposed within the reel flanges 14 when the band is applied to the reel. The outer wall 20 of the band is dimensioned laterally so as to extend over the peripheries of the reel flanges, in known manner, so as to preclude the entry of dust, dirt and the like into the area between the outer wall 20 of the band and the outer periphery of the tape 18.

The reel band 10 can be made of any material possessing the characteristics desired, with a plastic, for example, polyethylene or polypropylene being preferred. Although the ribs 22 and 24 are in the form shown integral with the outer wall, with such construction being conveniently formed by extrusion processes, the ribs could be separately formed and secured to the band wall 20.

The latch 12 temporarily retains the band 10 in place on the reel flanges, with the free ends 26 and 28 of the band 10 being in abutting relation, as shown in FIG. 1, when the band is applied. The latch 12 comprises a relatively rigid base section 30 and a flexible free end 32 hinged at 34 to the base section 30 relatively near the end thereof. The width of the base section 30 is such as

3

to be received between the ribs 22 and 24, with a substantial length of such section in the form shown extending between such ribs and under the body portion 20 of the band.

The base section 30 of the latch member can be attached to one end 35 of the band 10 in any suitable manner, for example, by a stud rivet generally indicated at 36 of commercially available construction. The stud rivet 36 includes a male fastening portion 38 exposed outwardly of the band for receiving the free end of the latch in a manner to be presently described for latching the reel band in place. The eyelet 40 of the stud rivet extends through aligned openings 42 and 44 formed in the rigid base 30 and wall 20, respectively, and rivet flanges 46 and 48 serve to secure these members tightly together thereby rigidly supporting the stud rivet on the band. By mounting the stud rivet through two thicknesses, at least one of which is relatively rigid, the fastener life is greatly increased and premature failure of the same due to pulling away from the band substantially precluded.

The free end 32 of the latch member 12 is provided with a female fastener part 50 adapted to receive the male part 38 in the usual manner. The end 52 of the band 10 is formed with an oblong opening 54 spaced from the end 28 thereof, with the opening being dimensioned to receive the end 32 of the latch member. As will be apparent, the position of the opening 54 will correspond with the length of the exposed portion of the base section 30 of the latch and the location of the hinge connection 34, with these several variables being selected so as to provide abutment of the band ends 26 and 28 when the band is applied to the reel flanges and latched.

There is shown in FIGS. 3 and 4 a modified form of the invention. In this form, a latch member generally indicated at 60 is separate from and unattached to the band 10. The latch 60 is of a width to be received between the ribs 22 and 24 of the band and includes a central section 62 and opposed arms 64 and 66. The arm 64 carries a male fastener part 68 and the arm 66 carries a female part 70. The band 10 is formed relatively near the ends thereof with oblong openings 72 and 74 which receive the arms 64 and 66 of the latch 60 when the same is applied to latch the band in place on the reel flanges.

The latch member 60 can be formed of any suitable material. Although the arms 64 and 66 are shown integral with the central section 62, they can be separately formed and hinged thereto. In addition, the thicknesses of the central section 62 and arms 64 and 66 can be varied to achieve the desired rigidity or flexibility.

The manner of use of the latching means illustrated in FIGS. 1-4 should be apparent from the above description. In the FIGS. 1-2 form, the band 10 is positioned over the reel flanges 14 and the ends directed toward each other. The free end 32 of the latch is directed outwardly through opening 54, with the end 32 then being directed toward the opposite end 35 of the band and the fastener parts 38 and 50 snapped into engagement. The fastened condition of the latch is shown in FIG. 1. To remove the band 10 from the reel flanges, the free end 32 of the latch is unfastened and the end 52 of the band moved away sufficiently to remove the band 10 from the reel flanges 14.

In the FIGS. 3-4 form, the band 10 is applied to the reel flanges and the free ends of the reel band spaced approximately as shown in FIG. 3. The arms 64 and 66 of the latch 60 are then inserted through the openings 72 and 74, respectively, and the fastener parts 68 and 70 snapped, with the latched condition of the band being shown in FIG. 4. To remove and band the reverse procedure is followed.

It will thus be seen that the objects of the invention have been accomplished. Latching means have been provided which can be simply and quickly applied to or removed from the reel flanges. The latching members are simple in construction, and can be manufactured at relatively low cost. In addition, they can be used with known

4

bands with very little modification of the latter being required. In the FIGS. 3-4 form, the band can simply be formed with openings to receive the latch. In the FIGS. 1-2 form, the latch is secured to one end of the band and an opening formed in the other end.

Minor departures from the above description will suggest themselves to one skilled in the art without, however, departing from the scope of the invention as defined by the appended claims. For example, a fastening stud could be molded integrally with the latch and the latter secured in any suitable manner to the band, reference being made to the FIGS. 1-2 form of the invention. Further, the latch section 30 in the FIGS. 1-2 could be formed less rigid and a separate reinforcing member employed around the stud rivet to rigidify this region for the purpose indicated. Similarly, other desirable features could be additionally provided, for example, the band could be formed with a hook to permit convenient storage of the reel.

It will be apparent that the particular details herein set forth may be modified or varied without departing from the principles of the invention.

I claim:

1. A latching member for latching a reel band around the flanges of a reel, said band being formed with means for enclosing the space between the side flanges of a reel thereby protecting the tape or film wound thereon, said band being formed with at least one opening adjacent one end of said band, means for attaching one end of said latching member to said band at the other end of said band, said latching member including a free end portion adapted to extend through said opening formed in said end of said band, and cooperable fastener means exposed on the exterior of said other end of said band and on said free end portion of said latching member and adapted when fastened, to latch said band in place on said reel flanges.

2. A latching member for latching a reel band around the flanges of a reel, said band being formed with at least one opening adjacent one end of said band, said latching member including a rigid base section permanently attached to the other end of said band by means of a stud rivet extending through and connecting said band and said base section, said stud rivet having associated therewith a male snap fastener member, said latching member further including a free end portion carrying a cooperating female type fastener member and adapted to extend through said opening formed in said one end of said band to latch said band in place on said reel flanges.

3. The latching member of claim 2 wherein said rigid base section is relatively elongated so as to extend partially outwardly of said other end of said band when said latching member is permanently attached thereto, said free end portion of said latching member being hinged to said rigid base section, the hinge location relative to the leading edge of said other end of said band corresponding to the distance of said opening in said one end of said band from the leading edge of such band whereby the leading edges of said band ends are in abutment when said latching member is latched.

4. Latching means for a reel band adapted to close the space between the side flanges of a reel thereby protecting the tape or film wound thereon, said band being of one-piece construction extending circumferentially around said reel and including a continuous outer wall and means adapted to engage the outer peripheral edges of the side flanges of said reel for enclosing the same, said outer wall of said band being formed with an opening relatively adjacent each end thereof, said openings being predeterminedly spaced when said band is applied to said reel flanges, said latching means comprising a central section and opposed arms integrally formed therewith and adapted to extend through said openings in said reel band, and cooperating fastener means carried by said latching means adapted when fastened to latch said band in place on said reel flanges, said fastener means comprising a

3,490,579

5

female part carried by one of said arms and a cooperating
male part carried by the other of said arms.

References Cited

UNITED STATES PATENTS

849,516 4/1907 Van Cleve-- ----- 24—265
1,979,575 11/1934 Rood ----- 150—54

5

WILLIAM T. DIXSON, JR., Primary Examiner

U.C. Cl. X.R.

6

2,445,921 7/1948 Ostolaza et al. ----- 24—201
2,933,793 4/1960 Steinberg et al. ----- 24—208
3,124,243 3/1964 Kulka ----- 206—53