Feb. 6, 1962 E. M. CASTAGLIUOLO 3,019,504

TAPE AND TERMINAL FITTING ASSEMBLY

Filed April 29, 1959

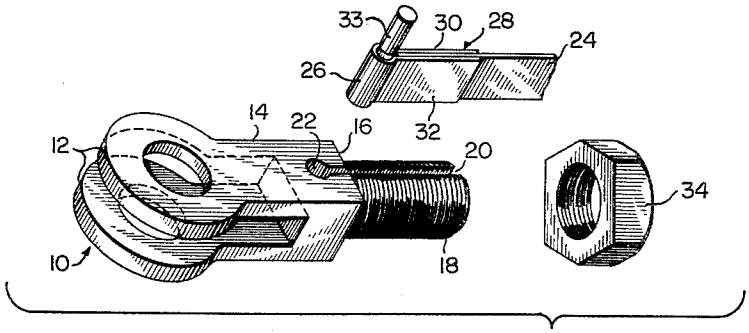

Fig. 1

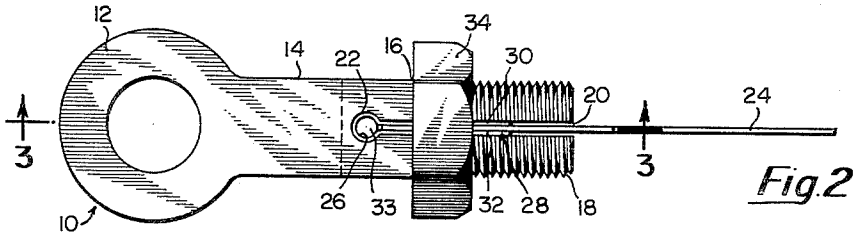

Fig. 2

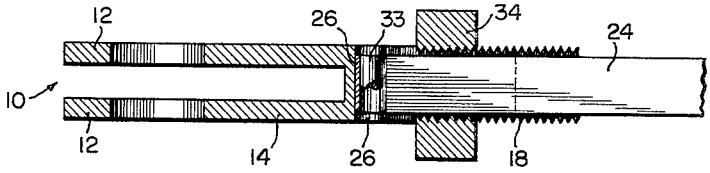

Fig. 3

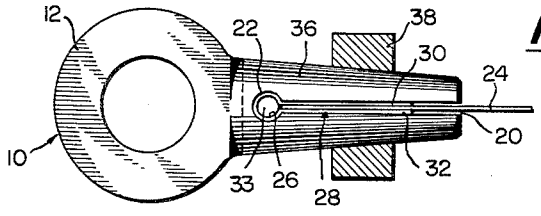

Fig. 4

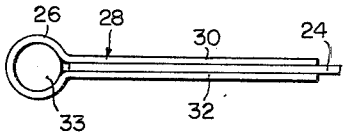

Fig. 6

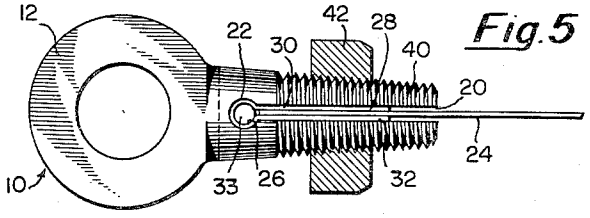

Fig. 5

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TAPE AND TERMINAL FITTING ASSEMBLY

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2 Claims. (Cl. 24—265)

This invention relates generally to mechanical connections and more particularly to flexible tapes and terminal fittings for anchoring the ends of the tapes in machine assemblies.

Heretofore, one method of preparing a connecting portion on the ends of a steel tape or band has been by soldering looped strips to the tape ends. The tape was then assembled into a machine by means of bolts or clevis pins passed through the eyes of the looped ends, thus anchoring the tape to particular parts of the machine.

In certain installations, for example, in business machine printers where such tapes were used for transmitting motion to various parts and mechanisms, it was found that the tensile stresses imposed upon the tapes caused the looped strips at the ends of the tape to break or give way at the soldered connections, thus resulting in frequent tape replacements and down time of the machine.

An object of the invention therefore is to provide a tape and terminal fitting assembly characterized by its increased resistance to tensile stress.

Another object of the invention is to provide a quick-change fitting for anchoring an end of a tape, band or the like.

These and other objectives will become more apparent from the following detailed description of specific embodiments of the invention when read in conjunction with the accompanying drawings in which:

FIG. 1 is an exploded view of one form of tape and terminal assembly constructed in accordance with the invention;

FIG. 2 is an enlarged assembled view of the apparatus of FIG. 1;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 2;

FIGS. 4 and 5 illustrate modified forms of the invention; and

FIG. 6 is an enlarged view of the tape end portion.

The preferred form of the invention is illustrated in FIGS. 1 to 3 and comprises a terminal fitting **10** having a bifurcated head **12**, a neck portion **14** terminating at a shoulder **16** and a shank **18** having external threads extending up to shoulder **16**. Shank **18** is provided with a transverse slot **20** which extends into neck **14** and terminates in a transverse substantially circular aperture **22** extending through neck **14**.

While the invention is illustrated in connection with a terminal or eye fitting, it will be understood that any type of fitting may be used to which it is desired to attach an end of a tape or band.

A tape **24** to be secured to terminal fitting **10** is formed with an enlargement at its end which, as illustrated most clearly in FIG. 6, is obtained preferably by means of a loop **26** formed on a strip **28** having leg portions **30** and **32** soldered or otherwise secured to the end portion of tape **24** and a pin **33** secured in the eye of loop **26**.

The looped tape assembly (FIG. 6) is inserted into slot **20** with the loop **26** received in aperture **22**. In this

position it will be seen that the tape assembly is anchored longitudinally to the terminal fitting **10**. A lock-nut **34** is then threaded to shank **18** and tightened against shoulder **16**. As the nut is tightened, the split portions of shank **18** and neck **14** are forced toward each other, in the manner of a spring collet, thus effecting a gripping of the shank against legs **30** and **32** and firmly clamping the tape assembly.

FIG. 4 is an alternative form of the invention in which the terminal fitting shank is now formed as a taper **36** and the locking member is a tapered socket or sleeve **38** which is driven up on the taper to lock the tape assembly in the fitting and to provide a greater gripping force.

FIG. 5 is another alternative form of the invention somewhat similar to that of FIG. 4 in which the shank is formed with a tapered thread **40** and a lock-nut **42** threaded accordingly. This modification, also, provides additional gripping force on the tape assembly.

It will now be apparent that the improved method of anchoring a band or tape provides for greater tensile strength than prior art methods and provides further a mechanical connection for rapid assembly of tape or band members.

While there have been disclosed various embodiments of the invention, it is to be understood that these are specific forms exemplary of the principles of the invention and that the invention is not to be limited thereby but only by the subjoined claims.

What is claimed is:

1. A tape and terminal assembly comprising, an elongated fitting having a connecting portion at one end for connecting the assembly to associated apparatus, a straight threaded shank at the opposite end, a neck portion at its medial region having a transverse aperture therethrough, and a shoulder at the inner end of said threaded shank and normal thereto, said shank having a transverse axial slot extending from the end thereof into said aperture and forming the shank into flexible gripping portions, said aperture being of larger dimension than the width of said slot, a tape, a terminal strip secured to an end of said tape and having a portion in said slot and an enlarged end eye portion in said aperture, a pin filling said end eye portion, and a locknut threaded on said shank and surrounding said terminal strip to retain it in said slot, and wherein tightening of said locknut against said shoulder is accompanied by a reaction force of said shoulder against the locknut to cause said gripping portions to flex and grip said terminal strip.

2. A tape and terminal assembly comprising, an elongated fitting having a connecting portion at one end for connecting the assembly to associated apparatus, a threaded shank of substantially uniform diameter at the opposite end, a neck portion at its medial region having a transverse aperture therethrough, and a shoulder at the inner end of said threaded shank and normal thereto, said shank having a transverse axial slot extending from the end thereof into said aperture and forming the shank into flexible gripping portions, said aperture being of larger dimension than the width of said slot, a tape having an end portion in said slot and an enlarged end eye portion in said aperture, and a locknut threaded on said shank and surrounding said end portion to retain it in said slot, and wherein tightening of said locknut against said shoulder is accompanied by a reaction force to cause said

gripping portions to flex into gripping engagement with said end portion of said tape.

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