Jan. 18, 1938. D. W. FETHER 2,105,881

FRICTION TAPE WRAPPING

Filed Sept. 10, 1935

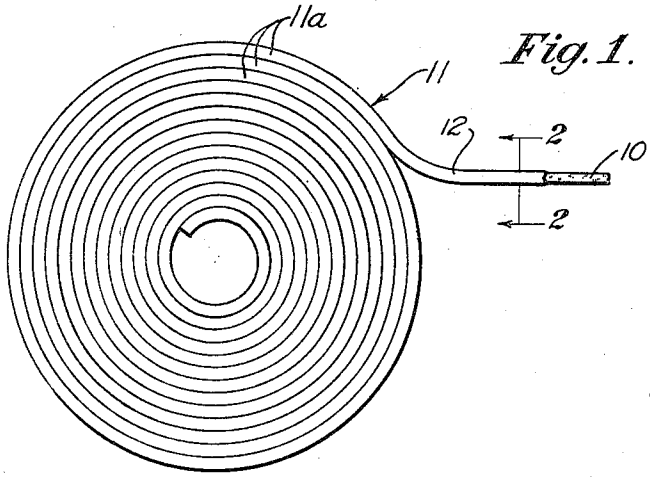


Fig. 1.

Fig. 2.

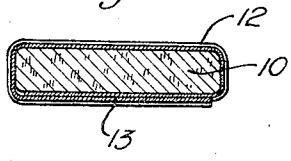
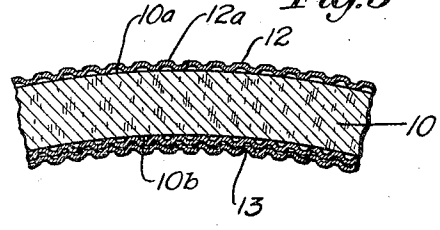


Fig. 3



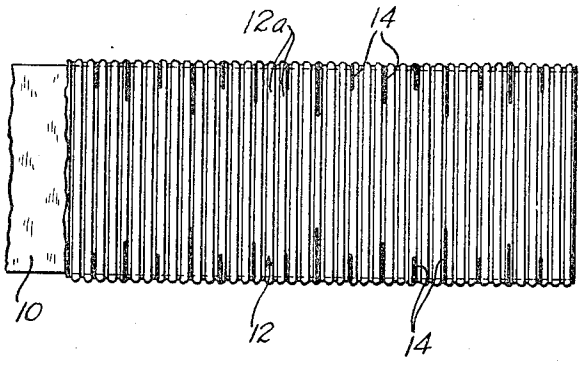


Fig. 4.

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FRICTION TAPE WRAPPING

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2 Claims. (Cl. 229—87)

This invention has to do with improved wrapping for brake lining, hereinafter referred to as friction tape, and has for its principal object to overcome a great many of the disadvantages of heretofore used methods of wrapping rolls of friction tape for distribution to the trade.

Friction tape is wound for distribution in convolute rolls, and in the past these rolls have been enclosed in a wrapping formed by spirally winding paper strip or tape radially from the center of the convolute roll about its outer periphery. Garden hose is frequently wrapped in a similar manner. Although this type of spiral wrapping serves to protect the friction tape during the course of distribution and while in storage, it does not protect the tape at the time when protection is most necessary, that is after the roll has been opened at the shop or garage. Ordinarily only short lengths of the tape are cut off and used at any one time, and long periods may lapse between the cutting of successive pieces of tape from the roll. The spirally wound wrapping has the distinct disadvantage that although only a short piece or at least one layer of the wound tape is required, it is necessary to remove the entire wrapping, and of course this type of wrapping is unadapted to be replaced on the roll. As a result, the tape is in continuous exposure to the air from the time the roll is first opened, with the result that the tape acquires a shop worn appearance in a comparatively short time.

Such exposure also causes the impregnating oils in the lining to dry excessively at the surface, particularly where the tape remains in free exposure to air over a long time, and the tape in initial use to be deprived of the full and proper effect of impregnating oils at the wearing surface. Frequently the opened roll of tape accumulates dirt and grease in the garage and also in the handling of the tape as successive lengths are cut off. The mechanic then is required to grind the surface of the tape to remove dirt and grease in order that when put into the brake shoe, the tape will present a clean surface.

In accordance with the invention, these objectionable aspects are entirely overcome by an improved form of wrapping comprising a sheath of suitable material, preferably paper, which encloses each of the layers of tape in the convolute wound roll and which is coextensive with the tape itself. The advantage of this type of wrapping will be readily apparent. Any length of tape may be severed at one time and the rest of the roll may remain in the garage and in the presence of dirt and grease for an indefinite time without exposure of the unsevered portion of the tape, since, as each length is cut from the roll, only the wrapping enclosing that particular length will be removed from the remaining roll. As an additional feature, a piece of lining may be severed from the roll and drilled to fit the shoe, without having to remove the wrapping from the severed length. Thus the latter can be handled and drilled without the possibility of grease from tools or from the hands of the mechanic, reaching the surface of the tape.

To further facilitate handling and measuring of the tape, I print on the wrapping a scale extending longitudinally thereof, so that when a definite length of tape is required, that length can be directly measured from the scale on the wrapping, without the necessity of using a separate scale. The wrapping may thus serve to measure as well as to protect the tape.

Due to the fact that the friction lining is flexible and is wound in convolute form or otherwise required to take a longitudinally curved shape, and because of the desirability for enabling the wrapping to fit the lining without splitting or bulging under stress produced by bending the lining, the wrapping is made to have an inherent distensibility so as to in effect stretch at the outer curved surface of the tape, and, preferably, sufficient contractibility to fit the inner curved tape surface without bulging. These characteristics of the wrapping are of primary importance as it has been found that without them, wrappings applied to tape subjected to considerable curvature frequently split and bulge to such a degree as to render the wrapping undesirable or useless. Thus a wrapping of ordinary paper having no appreciable capacity for stretching or contracting cannot be satisfactorily used without resort to some expedient such as I have adopted and will later explain, that will give the paper these properties. It is accordingly my principal object to provide a wrapping inherently capable of such longitudinal deformation as to fit and conform with corresponding deformations in the surfaces of the friction tape under curvature.

The various objects and advantages of the invention will be more fully understood from the following detailed description of the invention in one of its typical and preferred forms. Throughout the description, reference is had to the accompanying drawing, in which:

Fig. 1 shows a convolute wound roll of friction tape to which my improved wrapping is applied;

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Fig. 2 is an enlarged section on line 2—2 of Fig. 1;

Fig. 3 is a fragmentary enlarged longitudinal section showing a curved portion of the friction tape and wrapping; and

Fig. 4 is a fragmentary enlarged plan of the wrapping showing the measured scale.

In Fig. 1, the friction tape 10 is shown to be wound in a convolute roll 11 in which the tape is packed for distribution and storage. The tape 10 is enclosed within a wrapping 12 consisting of a paper sheath extending around each of the individual folds 11*a* of the roll and coextensive with the tape. As best illustrated in Fig. 2, the wrapping preferably comprises a paper sheath having its edges folded into overlapping relation and glued together at 13. It will be understood of course that in the broad aspects of the invention, the wrapping may be applied to the tape in any suitable manner or with any suitable form of joint, if a joint is desired, between the longitudinal edge portions of the paper. The wrapping is folded snugly about the tape, although it may have sufficient looseness to permit it being readily slipped from the tape lengths as they are severed from the roll.

With the wrapping snugly fitting the tape, it will be seen that when the tape is bent or caused to curve longitudinally, as for example when wound in a convolute roll (see Fig. 1) with the degree of curvature and bending increasing toward the center of the roll, the deformation of the tape places the wrapping at the outer curved surface 10*a* (see Fig. 3) of the tape under considerable tension, with the result that if the wrapping does not possess inherent distensibility sufficient to conform with the outer surface deformation of the tape, the wrapping will split transversely and expose the tape. Similarly, as the tape is curved an appreciable degree of contraction occurs at its inner surface 10*b*, and in order to prevent the wrapping 12 from bulging as such contraction occurs, it is desirable that the wrapping possess an inherent contractibility to conform with this inner curved surface of the tape.

As best illustrated in Fig. 3, the wrapping is given these inherent qualities of distensibility and contractibility by forming transverse corrugations 12*a* in the wrapping paper, the size of these corrugations being somewhat exaggerated in Fig. 3 for purposes of illustration. A simple method of giving the paper its corrugated form is to pass it between knurled rolls prior to wrapping it about the tape. As will be immediately apparent, the corrugations 12*a* give the wrapping a capacity for sufficient stretch or distensibility that will enable the tape to be bent to any degree of curvature without causing the wrapping to split at the outer surface 10*a*. Likewise, the corrugated form of the paper enables the wrapping to contract in conformity with the inner curved shaped surface 10*b* without bulging away from the latter. The wrapping thus is enabled to follow and snugly fit the surface of the tape regardless of the longitudinal shape it may take.

The plan view of Fig. 4 shows the measuring scales 14 printed on the tape and affording means whereby any desired length may be directly measured without having to use a separate scale. This view thus illustrates the dual function of the sheath in providing both a protective wrapping for any individual piece of tape in the roll, and a means for measuring the length of that piece.

I claim:

1. A protective wrapping for friction tape adapted to be bent longitudinally in curved form, comprising an elongated paper sheath extending longitudinally of the tape and having its edges folded over the tape, said sheath having corrugations extending at right angles with the edges of the tape so that the sheath is longitudinally distensible in conformity with the curved surface of the tape as the tape is bent into longitudinally curved form.

2. A protective wrapping for friction tape adapted to be bent longitudinally in curved form, comprising an elongated paper sheath extending longitudinally of the tape and having its edges folded and held in overlapping relation about the tape, said sheath having regularly spaced corrugations of uniform size extending continuously at right angles with and between the edges of the tape so that the sheath is longitudinally distensible in conformity with the curved surface of the tape as the tape is bent into curved form.

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