Sept. 27, 1938. LE GRAND DALY ET AL 2,131,704

TACKING STRIP

Filed May 28, 1936

Fig. 1

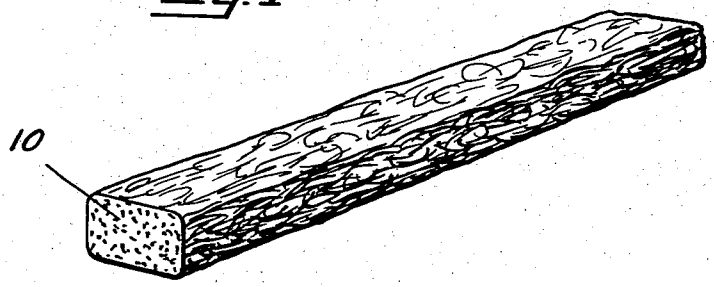


Fig. 2

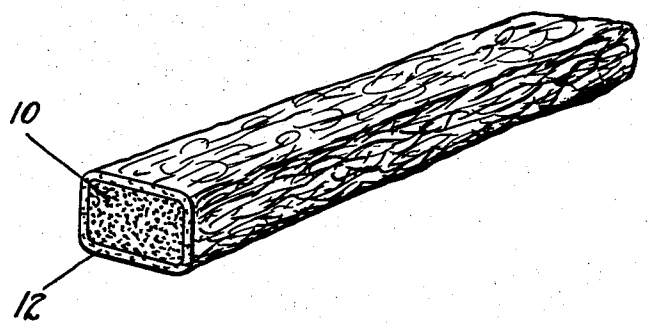


Fig. 3

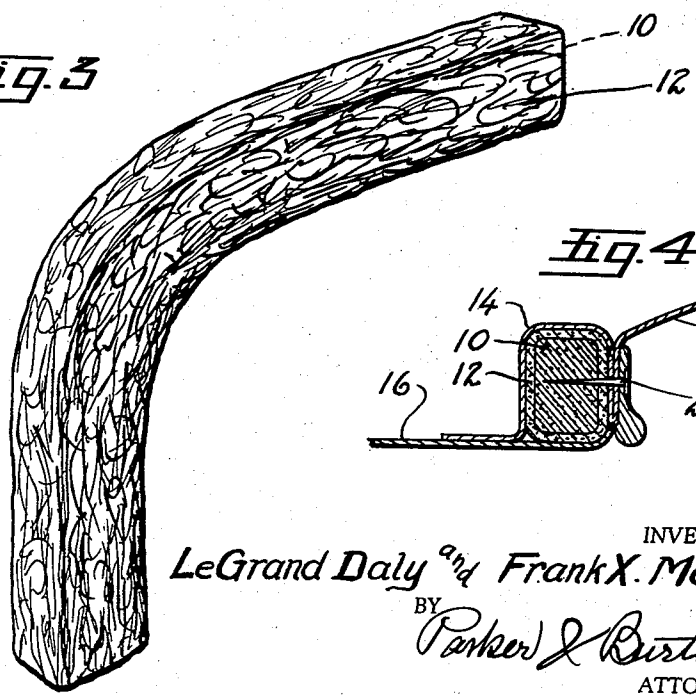


Fig. 4

INVENTORS,
LeGrand Daly and Frank X. Meiners
BY
Parker & Burton
ATTORNEYS.

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TACKING STRIP

Le Grand Daly, Winnetka, and Frank X. Meiners, Chicago, Ill., assignors to Filer Fibre Company, Filer City, Mich., a corporation of Michigan

Application May 28, 1936, Serial No. 82,200

4 Claims. (Cl. 154—43)

Our invention relates to an improved tacking strip.

Tacking strips are used in many different locations to furnish a support to which panels, sheets or trim materials of any desired character can be readily nailed, tacked, or otherwise secured. Such strips are employed in connection with a foundation framework which is not of itself of such a character as to readily receive tacks, nails, or the like. One well known use is in connection with automobile steel bodies. The body framework carries tacking strips to which trim panels may be tacked or nailed.

Our improved tacking strip is so formed and constructed as to securely hold nails or tacks driven thereinto. It is resistant to the attacks of moisture, acid, chemical cleaning compounds, and changes in temperature. It is inexpensive and is readily adaptable for use as a straight strip or it may be easily curved to conform with the curvatures of the frame elements with which it is associated.

It comprises a core portion of relatively dense material which possesses to a maximum degree the characteristic of tenaciously holding tacks or nails driven thereinto. This core is enclosed within a sheath or envelope of tough, flexible, durable, material which is resistant to the attack of moisture or chemical compounds to which the tacking strip might come into contact in use. The outer sheath or envelope which surrounds the core is of sufficient thickness and strength and so supports the core as to protect it against destructive rupture or breakage when the strip is bent about a radius. Unsupported by this outer sheath the core would tend under adverse flexing to break or rupture and thereby lose its usefulness as a tacking strip. Unprotected by the outer sheath the core structure might be destructively attacked by moisture, chemicals, or the like and lose its effectiveness as a tack retaining element.

Other objects, advantages and meritorious features of our improved structure will more fully appear from the following description, appended claims, and accompanying drawing, wherein:

Figure 1 is a perspective of a preferred type of core element for our improved tacking strip,

Fig. 2 is a similar perspective of the entire strip showing the core enclosed within the outer envelope or protective sheath,

Fig. 3 is a perspective of the improved tacking strip bent about a radius, and

Fig. 4 is a cross sectional view through the tacking strip in use.

Our improved tacking strip comprises a core portion 10 shown specifically in Fig. 1 and an outer protective sheath or covering 12 extending thereabout. The core is formed of relatively hard dense tough material so constituted that it forms a particularly good tack retaining element. It tenaciously grips the nails or tacks driven therein preventing accidental loosening or withdrawal of such nails or tacks therefrom. Such core structure may be formed of paper compressed into a hard dense body. This may be accomplished by twisting paper strands together and compressing them to form a hard dense core which will tenaciously retain nails or tacks driven thereinto. Such a core, however, if unsupported tends to rupture or break open when flexed and such a result destroys its utility as a nail retaining element. It is essential that the dense compact characteristic of the core be retained if its utility as a tack retaining strip is to be preserved.

To preserve the tack retaining tenacity of the core through preservation of its dense compacted character, while permitting flexing thereof, we provide an outer sheath or covering of tough flexible moisture resistant material surrounding and supporting the core so that it may be flexed and bent to conform with required curvatures. The outer sheath of tough flexible material supports the core so that it will not spread apart or separate during bending thereof. Such an outer sheath may be formed of rubber or a suitable rubber compound as hereinafter more particularly described.

As an alternative the core may be formed of composition material including cellulose fibers or the like and a suitable binder. In making up the composition core fibrous material is used as a filler and this fibrous filler is held together by a plastic moisture resistant binder. Waste paper, waste wood products, sawdust, wood flour, or the like may be used as the filler. This filler constitutes 40–80% by weight of the total mass of the product.

The binder may be formed of any suitable tough flexible moisture resisting plastic binder compound of which there are many. A suitable binder is made up of rubber containing a vulcanizing agent, vegetable oils, and hydrocarbons in sufficient quantity tc create a free flowing plastic compound. Resins, either synthetic or natural, may be added to the binder. The rubber may be pure rubber or scrap or reclaimed rubber. The vegetable oils may be soy bean, rape,

or the like. Petroleum products form the basis of the hydrocarbons employed.

The rubber may make up 4–20% by weight and the vegetable oils 4–20% by weight with the hydrocarbons, resins and sulphur making up the balance. Sulphur is used only as a vulcanizing agent and in such quantity as to produce this result. The hydrocarbons are used to produce a free flowing plastic compound. The resins may be added if desired.

The binder is mixed with the fibrous filler and when thoroughly mixed the mixture of fibrous material and binder may be molded or put through an extruding machine such as is well known in the rubber industry to form a core strip of any desired size and shape. Cores which are rectangular in cross section are shown in the drawing but it is obvious that a core of any desired size and shape might be formed.

This core is then subjected to heat treatment which may continue for ten or twenty minutes or whatever time is necessary to produce such a degree of hardness that when the strip is completely cured the core will have the desired characteristic of hardness. Following this preliminary curing of the core the outer covering or sheath is then applied to the core to form a protective enclosure thereabout and a support therefor. In the drawing this outer covering is indicated as 12. It is integral with the core and is shown as completely enclosing the same.

The outer covering whether used about the hard compressed twisted paper core or the composition core may be formed of a suitable tough, durable, flexible, resistant rubber compound or it may be formed of a composition of substantially the same character as the composition core itself. In the fabrication of the structure embodying the composition core and the composition outer sheath the combined structure is subjected to a heat treatment which may be of the same length of time as that to which the core had theretofore been subjected or a greater or less length of time depending upon the result desired. Due to this second heat treatment the composition core portion is cured to a hardness substantially greater than that of the outer portion 12. The core will, as a result of this second heat treatment, possess a hardness characteristic which will cause the core to tenaciously retain nails or tacks driven thereinto against accidental loosening or withdrawal therefrom. The hardness of the core is such, however, that unsupported it cannot be readily bent without destructive rupture or breakage.

The outer sheath or envelope 12 having been cured to a substantially less extent than the core retains sufficient toughness and flexibility so that it may be bent to any desired curvature. The purpose of the cure and intent of the treatment is that the outer sheath portion 12 will, following its cure, possess a tough, strong, durable, flexible characteristic sufficient to permit its being flexed or bent to any desired curvature, and in the thickness shown it is sufficient to support the core againt destructive rupture upon the bending of the entire strip. Not only does it support the core against destructive breakage but should the core be formed of material, such as twisted paper strands, which would disintegrate under the attack of moisture or separate upon bending, the outer envelope will protect the same against such attack and prevent such separation and disintegration.

In Fig. 4 I have shown such a tacking strip in use. It is here supported by metal parts 14 and 16. A sheet or panel 18 may be secured thereto by a tack 20. The tack is driven into the core so that it is held by the core structure. It will be noted that the core structure is of sufficient dimension relative to the cross sectional area of the tacking strip that a nail or tack driven into the strip will ordinarily strike such core.

The cure of the strip is such that in one preferred embodiment it will be found that if the core structure and the outer envelope structure are respectively tested with a Shore "D" durometer the core 10 will have a hardness characteristic of 60–100% while the exterior sheath 12 will have a hardness characteristic of only 20–60%. The density and hardness of the core is, therefore, substantially greater than that of the outer sheath.

What we claim:

1. A tacking strip formed throughout of fibrous material held together by a moisture resistant plastic binder containing rubber and a vulcanizing agent and the interior core portion of said strip cured to a substantially greater degree of hardness and tack retaining density than the exterior portion thereof, said exterior portion forming a relatively strong, tough, flexible outer covering about said core.

2. A tacking strip comprising an interior core portion formed of cellulose material and held together by a plastic binder containing rubber and cured sufficiently hard to be incapable when unsupported of substantial flexing without rupture and adapted to receive and tenaciously retain tacks driven thereinto, and an outer exterior of cellulose material held together by a plastic binder containing rubber enclosing said core but cured to a substantially less degree of hardness and being strong, tough, and relatively flexible and protectively enclosing said core portion.

3. A tacking strip formed throughout of fibrous material held together by a binder including rubber, vegetable oils and a hydrocarbon, of the petroleum group, the interior core of said strip possessing substantially greater hardness and density than the outer portion thereof and adapted to receive and tenaciously retain tacks driven thereinto, said outer portion being relatively yielding and flexible, said inner core portion being relatively unyielding and inflexible, said outer portion forming a protective supporting enclosure about the core permitting flexing thereof without destructive rupture.

4. A tacking strip formed throughout of fibrous material held together by a binder including rubber, vegetable oils and hydrocarbons of the petroleum group, the core portion of said strip being cured to a substantially greater degree of hardness, density and tack retaining tenacity than its outer portion, said core portion being relatively inflexible without rupture when unsupported, said outer portion being relatively flexible and supporting the core portion to permit flexing thereof.

LE GRAND DALY.
FRANK X. MEINERS.