June 15, 1954 A. L. SCOTT 2,681,081

PICKER STICK FOR LOOMS

Filed Jan. 18, 1952

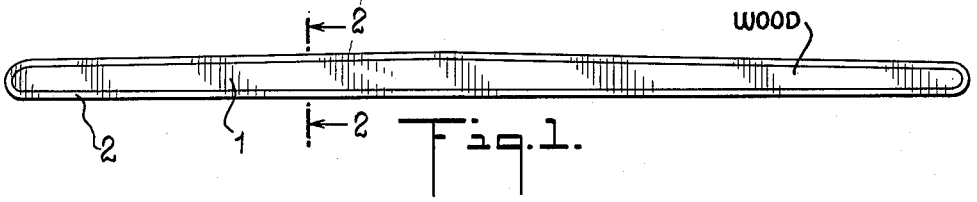


Fig. 1.

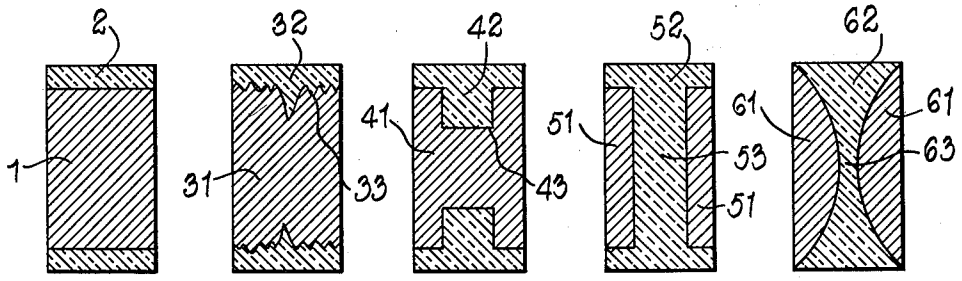


Fig. 2. Fig. 3. Fig. 4. Fig. 5. Fig. 6.

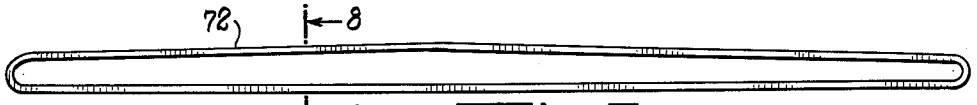


Fig. 7.



Fig. 8.

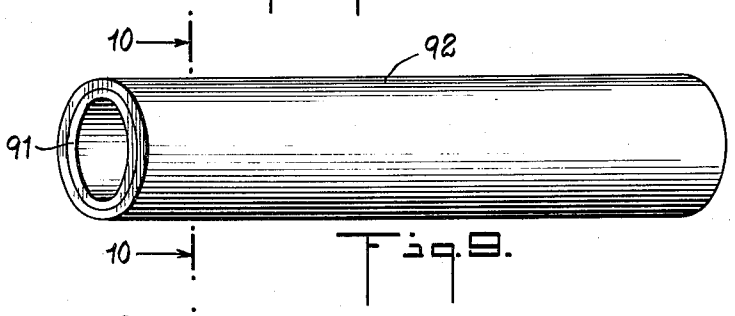


Fig. 9.

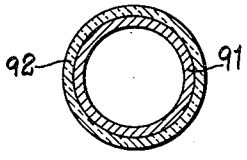


Fig. 10.

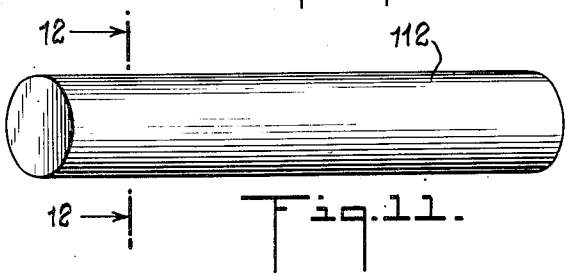


Fig. 11.

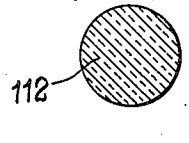


Fig. 12.

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Patented June 15, 1954 2,681,081

UNITED STATES PATENT OFFICE

2,681,081

PICKER STICK FOR LOOMS

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Application January 18, 1952, Serial No. 267,149

6 Claims. (Cl. 139—157)

1

This invention relates to picker sticks for looms.

One of the objects of the invention is to provide a picker stick which is as satisfactory in operation as the widely used picker stick which is made of hickory and which has the necessary resilience for proper action on the loom, but which will not break or split which is a common fault with the hickory picker stick which has end grain coming to the surface.

Another object of the invention is to provide such a picker stick which will be long-lasting, will not split and which will outlast present-day picker sticks by many times, thus making it unnecessary to shut down the loom for a change in picker sticks with the attendant loss of loom time and further necessity for adjustment with each replacement.

Another object of the invention is to provide picker sticks in which synthetic fibers are employed as tension and compression members extending lengthwise of the picker stick to provide suitable resiliency with high resistance to shock and substantial absence of breakage due to fatigue.

Another object is to provide such a picker stick in which glass fibers are employed as the tension and compression members to provide the desired resiliency and resistance while giving suitable stiffness control and eliminating splitting due to end grain surface conditions.

Other objects and advantages of the invention will appear from a consideration of the following specification and accompanying drawings, in which

Fig. 1 is a top plan view of a picker stick embodying one form of the invention;

Fig. 2 is a detail sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a detailed sectional view corresponding to Fig. 2 showing a different form of the invention;

Figs. 4, 5 and 6 are detail sectional views corresponding to Fig. 2 showing further alternate forms of the invention;

Fig. 7 is a top plan view of a further form of the invention;

Fig. 8 is a detail sectional view taken on the line 8—8 of Fig. 7;

Fig. 9 is a perspective view of a still further form of the invention;

Fig. 10 is a detail sectional view taken on the line 10—10 of Fig. 9;

Fig. 11 is a perspective view of a further form of the invention, and

Fig. 12 is a detail sectional view taken on the line 12—12 of Fig. 1.

2

In the preferred form of the invention, glass fiber filaments are employed as tension members and also as compression members extending longitudinally of the picker stick. These fibers are very fine and may have diameters of approximately two micro inches. Such fibers have a tensile strength of approximately 3,000 pounds per square inch.

The fibers are held in position to serve as tension or compression members by a suitable flexible plastic resin. A resin of the polyester type which may be cured by heating at approximately 190° F. for approximately four hours is satisfactory. It is applied by coating the glass filaments or fibers and it is preferred to use about 30 parts by weight of resin to 70 parts by weight of the fibers, although this proportion may be varied.

The coated fibers are assembled into slivers which are applied to the desired picker stick form. They are then formed to the desired shape and cured.

Although glass fibers are the preferred form because they present a perfectly elastic material with dimensional stability and absence of fatigue, other fibers such as rayon may be employed.

In the form of invention shown in Fig. 1, a central core 1 which is of hickory wood with the grain extending longitudinally is employed. The slivers of fiber are wound at 2 completely around the periphery of this central core 1 forming a continuous strip. The fibers are then conformed to the desired outline with a suitable form and are heated as indicated above to cure the resin. The finished picker stick thus consists of a central core and an outer wrapping of the glass fibers which are bound in place and to one another by the cured resin. The fibers which extend longitudinally of the picker stick serve both as tension and compression members. When the picker stick receives the shuttle, it provides the required elasticity and strength. Vibrations are absorbed although the stick has adequate resiliency to receive and throw the shuttle without undue lag. The glass fibers are particularly desirable because, although resilient, they have remarkable powers of recovery and eliminate excessive vibration because of this property.

In the form of invention shown in Fig. 3, the core 31 which corresponds to the core 1 is grooved longitudinally and irregularly to receive the fibers 32 as indicated at 33. In this form of invention, the fibers are anchored firmly against lateral slippage from the core 31.

In the form of invention shown in Fig. 4, the core 41 which corresponds to the core 1 is grooved to receive the fibers 42 as indicated at 43, thus

anchoring them against slipping laterally as in the case of the picker stick shown in Fig. 3.

In the form of invention shown in Fig. 5, two core members 51 are employed. These core members are spaced apart to receive the fibers 52 which also extend over the edges and centrally as shown at 53 to anchor against lateral slippage and to provide central strength as well as peripheral strength.

In the form of invention shown in Fig. 6, there are two core members 61 comparable to the core member 51 in the form of invention shown in Fig. 5. These members are curved inwardly and hold the fibers 62 both at the periphery of the stick and centrally as shown at 63.

In the form of invention shown in Fig. 7, the glass fibers 72 are formed about a removable core. They are then cured and the core is removed, leaving a hollow picker stick made up of peripherally extending glass fibers which are anchored to one another by the cured resin. This form of stick is particularly desirable where extreme resiliency is desired.

In the form of invention shown in Fig. 9, a core 91 consisting of a hollow paper tube is provided. The fibers 92 are applied at the outer periphery of the core. Substantially all of them extend longitudinally of the core and they are anchored to the core and to one another by the cured plastic.

In assembling the invention in this form, the fibers are laid on the core extending longitudinally having previously been coated with the resin. They are then wrapped with a circumferential cellophane wrap which holds them in place during the heating and curing operation. Thereafter, the cellophane is removed.

In the form of invention shown in Fig. 11, the fibers 112 are formed into a single stick substantially all of them extending longitudinally and they are bound to one another by the plastic material. They are formed into the stick and a wrapping of cellophane is placed around them. They are then heated to cure the resin which has been previously applied. The cellophane is then removed.

All of the picker sticks shown are furnished with suitable holes or other means for securing the necessary operating portions of the loom. These have not been shown since they may vary with the different forms. Likewise, the form of the stick may vary to fit various looms.

Picker sticks formed in accordance with this invention can have the necessary resiliency to absorb shock. They also have rigidity to throw the shuttle and do not fatigue or break. They also have dimensional stability. When they are employed on a loom they run many times as long as the hickory picker sticks and thus eliminate loom shutdown and adjustment time which is most undesirable in loom operation.

I claim:

1. A picker stick for looms comprising a wooden core and a plurality of glass fibres extending continuously and longitudinally of said picker stick and along and in contact with opposed sides of and around the ends of said core to form structural members to take tensional and compressive bending stresses of said picker stick when said stick is bent along its longitudinal axis in operation, and a flexible bonding agent, said fibres being bound to one another and to said core by said flexible bonding agent.

2. A picker stick for looms comprising a core and a plurality of glass fibres extending continuously and longitudinally of said picker stick and along and in contact with opposed sides of and around the ends of said core to form structural members to take tensional and compressive bending stresses of said picker stick when said stick is bent along its longitudinal axis in operation, and a flexible bonding agent, said fibres being bound to one another and to said core by said flexible bonding agent.

3. A picker stick for looms comprising a core and a plurality of fibres extending continuously and longitudinally of said picker stick and along and in contact with opposed sides of and around the ends of said core to form structural members to take tensional and compressive bending stresses of said picker stick when said stick is bent along its longitudinal axis in operation, and a flexible bonding agent, said fibres being bound to one another and to said core by said flexible bonding agent.

4. A picker stick for looms comprising a core having a lateral groove and a plurality of glass fibres extending continuously and longitudinally of said picker stick and in said groove along and in contact with opposed sides of and around the ends of said core to form structural members to take tensional and compressive bending stresses of said picker stick when said stick is bent along its longitudinal axis in operation, and a flexible bonding agent, said fibres being bonded together and to said core by said flexible bonding agent.

5. A picker stick for looms comprising a core having a lateral groove and a plurality of fibres extending continuously and longitudinally of said picker stick and in said groove along and in contact with opposed sides of said core to form structural members to take tensional and compressive bending stresses of said picker stick when said stick is bent along its longitudinal axis in operation, and a flexible bonding agent, said fibres being bonded together and to said core by said flexible bonding agent.

6. A picker stick for looms comprising a core having a lateral groove and a plurality of glass fibres extending continuously and longitudinally of said picker stick and in said groove along and in contact with opposed sides of said core to form structural members to take tensional and compressive bending stresses of said picker stick when said stick is bent along its longitudinal axis in operation, and a flexible bonding agent, said fibres being bonded together and to said core by said flexible bonding agent.

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