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H. I. LEIBY

1,852,812

LOOM PICKER

Filed June 30, 1927

Fig.1.

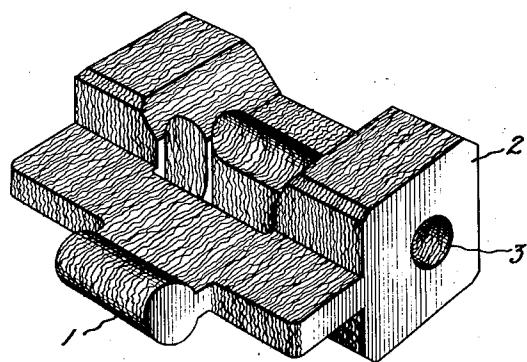
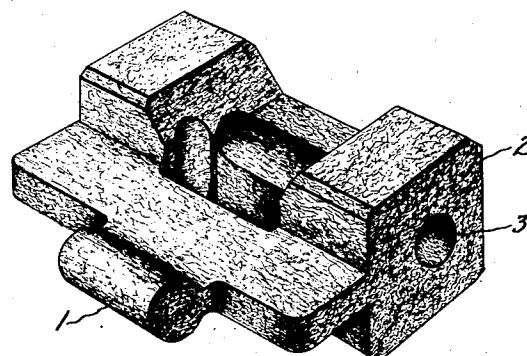


Fig.2.



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UNITED STATES PATENT OFFICE

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LOOM PICKER

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Pickers for looms are subjected to severe service. The requirements are most exacting. In the first instance, the picker must be made from a material which will not dull or damage the metal shuttle point which means that it must be formed from some non-metallic substance. On the other hand, however, it must be formed of a substance which will withstand the severe, rapidly-repeated 10 blows of the metal shuttle point without too rapid wear. Again, it must be of a substance which is absolutely non-elastic so that when it receives the blow of the shuttle and reaches the end of its backward movement, there will 15 be no rebound imparted to the shuttle. And in addition to the foregoing, it should be also a material not adversely affected by the heat and moisture of the weave room.

Heretofore, only rawhide and leather pickers have been used in actual practice, rawhide pickers having been used for certain applications such as at the box end of drop box looms, and leather pickers having been used for certain other applications, such as tail 25 pickers for cotton looms.

Rawhide pickers have many disadvantageous features. They must be made from the best grade of rawhide, the hide of the water or mud buffalo being used extensively. The hide is worked in a moist condition, and 30 seasoned to effect the gradual removal of the moisture. This requires that the pickers be kept in a cool, dry place for some three months. Following this the pickers must be 35 then soaked in oil for at least three months after which they are removed and allowed to dry for from one to three months before being used. This makes a long manufacturing process. Even when thus prepared, 40 however, the finished pickers are very susceptible to moisture and must be stored in a cool, dry room away from the sunlight to prevent them from warping and opening between the layers. Again, the life of a raw- 45 hide picker is comparatively short, often not more than three to six weeks, which means constant replacements. And in operation, rawhide pickers frequently give trouble, one trouble met with being the binding of the 50 picker on the guide rod due to swelling

when subjected to the heat and moisture of the weave room.

Leather is not open to all the objections of rawhide as a material for pickers but its use is limited to certain kinds of pickers, 55 it being unfitted, for example, for box loom pickers which run on guide rods. However for such types of pickers as it is adapted for, leather is by no means a wholly satisfactory substance because the life of a picker 60 made from leather is comparatively short.

In spite of the drawbacks referred to above, rawhide and leather, up to the time of the present invention, have been used exclusively in the manufacture of pickers. This has 65 not been because other substances have not been suggested and tried for such substances as wood, vulcanized fibre, vulcanized canvas and rubber, layers of canvas struck together with cement or glue, and horn have 70 been proposed at different times. No one of these materials, however, has come into use or proved to be a practical substitute for rawhide and leather.

According to my present invention, I construct a picker from highly compressed spinable textile fibers held in the highly compressed state by a binder in the form of a resinous condensation product. Such products are characterized in that they are hardened and made dense by the application of heat and pressure. Preferably I use as a binder the substance known in commerce as bakelite, such substance being a condensation product of phenol and formaldehyde. The 80 textile material may be in the form of sheets of woven cloth such as cotton canvas or cotton duck, woven cloth such as trimmings cut into comparatively small pieces or otherwise divided, or it may be unwoven textile material. In the case of sheets of woven cloth, the picker may be made by taking a block comprising woven textile material united by the binder and cutting the picker from it, the arrangement being such preferably that the 85 laminations extend transversely of the head of the picker. In the other cases, the picker may be made by moulding, the unwoven textile material and the uncured resinous condensation product being placed in a mould of 90 95 100

suitable shape and therein compressed and heated. Materials of this character made from woven cloth or from unwoven textile fibres are known in the trade and have been used for certain purposes, among which may be mentioned for insulation, and for non-metallic gear wheels.

In the drawings Figures 1 and 2 are perspective views of pickers embodying the invention.

Referring to the drawings, 1 indicates the head of the picker, i. e., the portion with which the shuttle engages, and 2 indicates the body of the picker, the body being provided with a hole 3 for the loom guide rod. The picker is made from spinnable textile material held in a highly compressed state by a binder such as a phenolic condensation product. In the present instance, I have illustrated by way of example, a picker of the type shown in my Patent 1,443,027, granted January 23, 1923. It is to be understood, however, that this is only by way of example and that a picker of any type desired may be made from the material.

It has been proposed heretofore (Patent No. 649,698 to Lahue and Patent No. 850,088 to Hyde) to make pickers from canvas united by an adhesive such as glue or cement but my invention differs from these proposed arrangements in that the textile fibers are united by an adhesive which is cured by heat and in that pressures of a high order, for example, pressures of the order of five to seven thousand lbs. per square inch are utilized whereby there is obtained a final product having properties entirely different from those obtained by the structures of said patents.

The material is characterized by the fact that it is hard and very tough. As a result it has great wear-resisting qualities but at the same time it does not injure the shuttle points. The material is not affected by heat, moisture or oil and is non-elastic so that it imparts no rebound to the shuttle.

In Fig. 1 the loom picker is illustrated as being formed from woven material such as cotton duck held by a resinous condensation product. In Fig. 2 the loom picker is illustrated as being formed from unwoven or finely divided material held by a resinous condensation product.

What I claim as new and desire to secure by Letters Patent of the United States, is:

1. A loom picker of the type comprising a body portion having a longitudinal guide-rod opening and a head for engagement with a shuttle, characterized by the fact that at least the head of the picker comprises essentially textile fibers held in a highly compressed state by a resinous condensation product.

2. A picker for looms formed entirely from layers of woven textile cloth united and held in a highly compressed state by a resinous

condensation product, said layers being so disposed that the blow struck by the picker is perpendicular to the direction of said textile layers.

3. A picker for looms formed entirely from woven textile cloth united and held in a highly compressed state by a resinous condensation product.

4. A picker for looms having a shuttle engaging portion formed entirely of woven textile cloth united and held in a highly compressed state by a resinous condensation product.

5. A picker for looms having a shuttle engaging portion formed entirely from textile fibers united and held in a high compressed state by a resinous condensation product.

6. A picker for looms formed entirely from textile fibers united and held in a highly compressed state by a resinous condensation product.

7. A picker for looms comprising essentially woven textile cloth united and held in a highly compressed state by a resinous condensation product.

8. A picker for looms having a shuttle engaging portion comprising essentially woven textile cloth united and held in a highly compressed state by a resinous condensation product.

9. A picker for looms having a shuttle engaging portion comprising essentially textile fibers united and held in a highly compressed state by a resinous condensation product.

10. A picker for looms comprising essentially textile fibers united and held in a highly compressed state by a resinous condensation product.

In witness whereof, I have hereunto set my hand this 24 day of June, 1927.

HARVEY I. LEIBY.

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