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⑤④ **Weft-carrying grippers for shuttleless weaving looms.**

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Description

The present invention concerns important improvements in the weft carrying grippers for shuttleless weaving looms, namely in those members by which the weft yarns are inserted at one end of the loom and are carried to the opposite end thereof through the warp shed.

Up to date, said grippers have always been made either of metal or of synthetic plastic material, suffering in the first case from an excess of weight while involving considerable costs, and in the second case from scarce stiffness. The efforts of designers and constructors have always aimed at reducing said defects, by acting separately on both types of grippers. Thus, improvements have been gradually introduced in each type of gripper, generally concerning the configuration of the gripper itself, said improvements intended — in the case of metal grippers — to reduce the weights and simplify their structure and the methods adopted for the construction thereof, and — in the case of plastic grippers — to stiffen the structure thereof.

In spite of the progress achieved, the metal grippers as well as those of plastic material are still, to date, not quite satisfactory, especially if having to equip the modern looms working at very high speeds.

One such gripper (DE—A—2 020 879) does include a metal part rigidly connected to the body of plastics material. The metal part, however, is intended to promote engagement of the weft yarn, and does not stiffen the gripper body.

The present invention faces the problem of constructing the members carrying the weft yarn through the shed in a fully original way, by taking advantage of the positive aspects of the specific characteristics of the two types of grippers known so far, while eliminating the defects of both.

For this purpose, the pair of grippers according to the invention is substantially characterized in that, each gripper is formed of a composite structure consisting of two metal shells, stiffly connected with a central body of synthetic plastic material, wherein said metal shells are partially incorporated, at least one of the shells extending substantially over the whole length of the gripper body.

Preferably, said shells are provided with hooks, projections, recesses, or like, for anchorage to the central body of plastic material.

The invention will now be described in further detail, with reference to a preferred embodiment thereof, illustrated in the accompanying drawings in which:

Fig. 1 is an exploded perspective view of the carrying gripper forming the pair of grippers according to the invention; and

Fig. 2 is an exploded perspective view of the drawing gripper forming the pair of grippers according to the invention.

With reference to figure 1 of the drawings, the carrying gripper P is shown to be formed of a lower metal shell 1, having a V-shaped section

with the sides joining into a single element 2 at the front and parting into two ears 3 rearwardly, of a central body 4 of synthetic plastic material, and of an upper metal shell 5, in the form of a warp guard for the body 4 and having a front hook end 6 and a rear forked end 7.

According to the invention, the gripper P has its structure formed by the stiff connection — obtained by injection molding of the body 4 between the metal shells 1 and 5 — of the three component elements. Thanks to the shape of the ends of the shells 1 and 5, and to the presence therein of other couplings elements, as recesses 8 or projections, the connection between said elements is most efficiently achieved. The shells 1 and 5 are moreover substantially incorporated into the central body 4 and, once assembled, the structure of the gripper appears as a very compact unit.

The same result is obtained in the drawing gripper T of figure 2, which is formed of a lower metal shell 9, having a shape which is fairly similar to that of the shell 1 of the carrying gripper P, of a central body 10 of synthetic plastic material, and of an upper shell 11, comprising a frame portion 12 and an extension or tail 13 ending with ears 14.

Claims

1. A pair of weft grippers for shuttleless weaving looms, of the type comprising a body of synthetic plastic material and metal parts rigidly connected thereto, characterized in that, each gripper is formed of a composite structure consisting of a central body (4; 10) of synthetic plastic material, wherein two metal shells (1, 5; 9, 11) are partially incorporated, at least one of said shells (5; 11) substantially extending over the whole length of said central body (4; 10).

2. A pair of weft grippers as in claim 1), wherein said shells are provided with hooks, projections, recesses, or like, for anchorage to the central body of plastic material, and said composite structure of the grippers is obtained by injection molding of synthetic plastic material between said shells.

Patentansprüche

1. Ein Paar von Schußfadengreifern für schützenlose Webmaschinen, von der Art bestehend aus einem Körper aus einem synthetischen Kunststoffmaterial und fest mit diesen verbundenen Metallteilen, dadurch gekennzeichnet, daß jeder Greifer aus einem zusammengesetzten Aufbau bestehend aus einem Zentralkörper (4; 10) aus einem synthetischen Kunststoffmaterial geformt ist, in den zwei Metallschalen (1, 5; 9, 11) teilweise eingeschlossen sind, wobei wenigstens die eine der Schalen (5; 11) sich im wesentlichen über die Gesamtlänge des Zentralkörpers (4; 10) erstreckt.

2. Ein Paar von Schußfadengreifern nach Anspruch 1, wobei die Schalen mit Haken, Vor-

sprünge, Ausnehmungen oder dgl. zur Verankerung des zentralen Körpers aus einem Kunststoffmaterial versehen sind, und der zusammengesetzte Aufbau der Greifer durch Spritzgießen eines synthetischen Kunststoffmaterials zwischen die Schalen gewonnen wird.

Revendications

1. Paire d'aiguilles passe-trame pour métier à tisser sans navette, du type comprenant un corps en matière plastique synthétique et des parties en métal reliées rigidement à celui-ci, caractérisée en ce que, chaque aiguille est formée d'une structure composite consistant en un corps central (4; 10)

en matière plastique synthétique, dans lequel deux enveloppes métalliques (1, 5; 9, 11) sont en partie incorporées, une au moins desdites enveloppes métalliques (5; 11) s'étendant substantiellement sur toute la longueur dudit corps central (4; 10).

2. Paire d'aiguilles passe-trame selon la revendication 1, dans laquelle lesdites enveloppes sont dotées de crochets, saillies, encoches, ou analogues, pour s'ancrer au corps central en matière plastique, et ladite structure composite des aiguilles est obtenue par moulage par injection du corps en matière plastique synthétique entre lesdites enveloppes.

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