

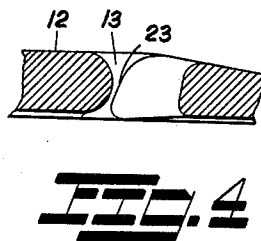
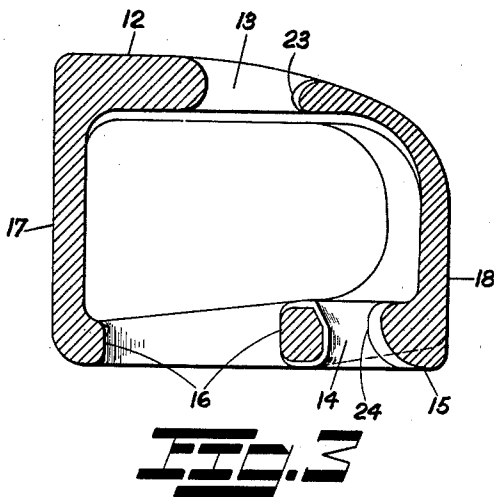
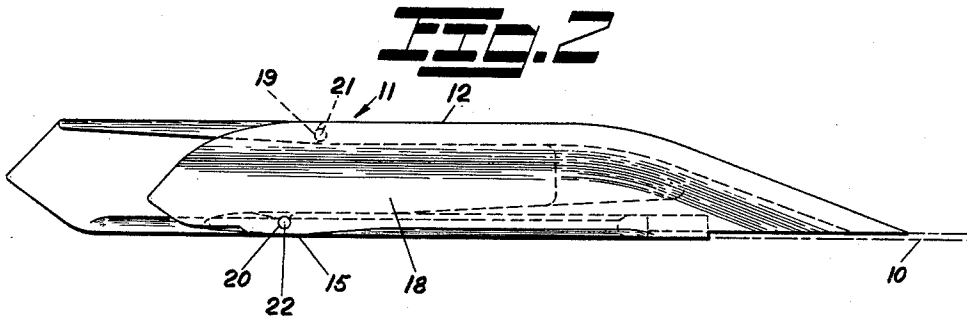
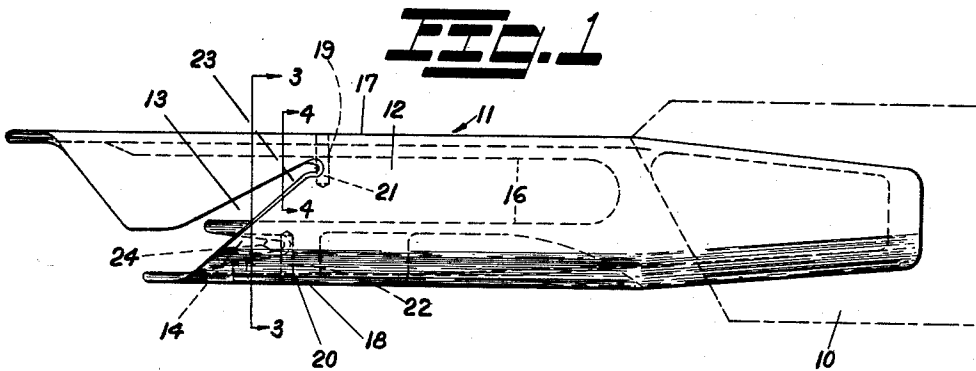
March 19, 1963

E. L. REMINGTON

3,081,796

FILLING CARRIER FOR SHUTTLELESS LOOMS

Filed April 20, 1961



INVENTOR.
ELLIOTT L. REMINGTON.

BY

Rodney C. Southworth

ATTORNEY

1

3,081,796

FILLING CARRIER FOR SHUTTLELESS LOOMS

Elliott L. Remington, Hopkinton, Mass., assignor to Draper Corporation, Hopedale, Mass., a corporation of Maine

Filed Apr. 20, 1961, Ser. No. 104,296

2 Claims. (Cl. 139—122)

This invention pertains to improvements in a filling carrier for use in shuttleless looms, that is, in looms of a type in which the filling is supplied from a source outside of the shuttle or filling inserting means itself.

It is a general object of the invention to improve the operational characteristics and wearing qualities of the filling receiving notches of the filling carrier herein described.

It is a further object to provide a filling inserting carrier with wear resistant inserts in the throat portions of the filling receiving notches to prevent excessive wearing away of material at these points.

It is a further object of the invention to provide novel sides to the filling receiving notches whereby the filling when received by said notches is guided and caused to assume a central location on the wear resistant inserts as it is extended thereacross.

It is a further object to direct the filling yarn across the central portion of the wear resistant inserts and away from the intersecting areas of said inserts and the sides of the filling receiving notches.

Further objects of the invention will become apparent from the following more detailed disclosure.

In so-called shuttleless looms whereby filling yarn is supplied from an outside source and is not carried to and fro through the shed by a shuttle or carrier itself, it is common practice to insert each pick of filling by two reciprocating elements, one of which will hereinafter be referred to as an inserter or inserting member and the other of which receives or has transferred to it that loop of filling yarn projected into the shed by the first member and which will hereinafter be referred to as a filling receiving or filling extending carrier.

These carriers are normally provided with filling receiving notches through and across which the filling yarn is allowed to pass during the period of inserting the filling at one side of the shed and extending it to the opposite side.

The inserting carrier includes both upper and lower filling receiving notches into which the filling yarn is received and guided as this carrier is caused to enter the warp shed to meet and transfer a length of filling which will have been severed to a precise length into the receiving notch of the extending carrier where it is then extended through the remainder of the shed.

The present invention concerns itself primarily with the inserting carrier and as this carrier is actuated in the same manner as similar carriers of the prior art, it is considered sufficient at this point merely to call attention to certain patents which are illustrative of the type of loom concerned. Accordingly, reference is hereby made to United States Patents Nos. 2,586,638; 2,604,123; 2,705,508 and 2,928,427.

Inserting carriers of the prior art are often subjected to very undesirable conditions whereby they are caused to become excessively worn in those areas through and across which the filling yarn travels as it is in the process of being placed within the shed.

Excessive wearing of this nature renders these carriers unsatisfactory for further use in a period of time far less than the normal life expectancy of such carriers. This wearing condition is attributed to the abrasiveness of certain types of filling yarns; while soft and low twist yarns have little or no effect on these carriers, hard and

2

high twist yarns as well as certain synthetics possess very abrasive characteristics detrimental to the aforementioned surfaces of the carriers over which the filling yarn is caused to travel.

According to the novel characteristics of the instant invention this undesirable condition can be eliminated by means of wear resistant insert pins positioned within the throat portions of the filling receiving notches and the guiding and camming means by which the filling is caused to assume a centralized position on the insert pins after being received by said notches. As this carrier projects inwardly to transfer a loop of filling to the extending carrier, the filling yarn is caused to move over and across the central portion of these pins free from interference that could become detrimental to either the filling yarn or carrier itself.

The invention will be described hereinafter in greater detail by reference to the accompanying figures of drawing, in which:

FIG. 1 is a plan view showing the operating end of the filling inserting carrier with the novel characteristics of the present invention applied thereto;

FIG. 2 is a side elevation of the carrier shown in FIG. 1;

FIG. 3 is a sectional view looking in the direction of the arrows on line 3—3 of FIG. 1;

FIG. 4 is a sectional view looking in the direction of the arrows on line 4—4 of FIG. 1.

Now referring to the figures of drawing the inserting carrier with which the present invention is concerned is formed as a functionally integral member at the free end of a flexible reciprocating member or tape 10. This tape is utilized to reciprocate the thread carrying member itself which is caused to enter the shed formed by warp threads and to be withdrawn therefrom. The general structure of this inserting carrier is formed substantially the same as the inserting carrier disclosed in United States Patent No. 2,928,427 and it is considered sufficient to described and set forth more fully that portion of the carrier to which the present invention relates. It includes the conventional box-like structure generally indicated by numeral 11 which comprises a top planar portion 12 having a filling receiving notch 13 that cooperates with an offset filling receiving notch 14 included in a lower or bottom surface 15 of this structure.

This bottom surface 15 is partially cut away to an extent defined by the parallel sides 16 which provide therein a recess or cut-out portion for entry of the cooperating portion of a filling extending carrier (not shown). Sides 17 and 18 of this box-like structure are provided with inwardly directed holes 19 and 20 formed at right angles to said sides. Holes 19 and 20 pass through and beyond the inner side walls of the filling receiving notches 13 and 14 and are adapted to receive wear resistant insert pins 21 and 22 therein. Insertion of these pins then forms the throat portions of the filling receiving notches 13 and 14 through and across which the filling yarn is caused to travel during its insertion into the shed. The filling yarn when received by notches 13 and 14 is caused to be crammed and guided to those surfaces of pins 21 and 22 which form the throat portions of said notches and is also caused to be drawn over the central part of these surfaces and away from the intersecting areas of the pins where they pass through the sides of said notches.

The sides of the filling receiving notches 13 and 14 are formed in such a manner, as at 23 and 24 respectively, that the filling yarn when entering said notches and at the angle created by the offset relationship of these notches, is caused to be cammed and guided by the formed sides and then in a positive manner is centrally positioned in the throat portions of the notches.

In operation, the filling yarn moving over the wear re-

3

sistant insert pins has corrected the undesirable condition which frequently prevails in carriers of the prior art where excessive wearing away of material in the throat portions of such carriers is experienced. Although soft and low twist yarns have little or no effect on the filling carriers, hard and high twist yarns as well as certain synthetic yarns have proven to have very abrasive qualities that contribute considerably to prematurely placing such carriers in a condition whereby their replacement is required.

The wear resistant insert pins herein described are produced from materials of far greater hardness than the carriers themselves. Many such materials which possess qualities of wear resistant nature may be utilized such, for example, as AlSiMag, Heanium, chromalloy steel or nitrided steel.

While one embodiment of the invention has been disclosed, it is to be understood that the inventive concept may be carried out in a number of ways. This invention is, therefore, not to be limited to the precise details described, but is intended to embrace all variations and modifications thereof falling within the spirit of the invention and the scope of the claims.

I claim:

1. For a loom having reciprocable carriers by which filling from an outside source of supply is inserted within

4

sheds formed by warp threads, a filling inserting carrier having a pair of filling receiving notches, wear resistant inserts forming the throat portions of said notches, the sides of said filling receiving notches being formed so as to cam and guide said filling when received by said notches away from the intersecting areas of said wear resistant inserts in said notches.

2. For a loom having reciprocable carriers by which filling from an outside source of supply is inserted within sheds formed by warp threads, a filling inserting carrier having a pair of filling receiving notches extending inwardly from the leading end of said carrier and terminating in the form of a semi-circular groove, wear resistant insert pins intersecting and extending beyond said grooves and forming the throat portion of said notches, the sides of said notches being formed so as to cam and guide said filling received therein in a centrally disposed position within said groove as it is drawn thereacross and away from said intersecting areas of said wear resistant pins and said grooves.

References Cited in the file of this patent

UNITED STATES PATENTS

449,336	Skinner et al. -----	Mar. 31, 1891
2,336,937	Kaufmann -----	Dec. 14, 1943
2,586,638	Flamand -----	Feb. 19, 1952