

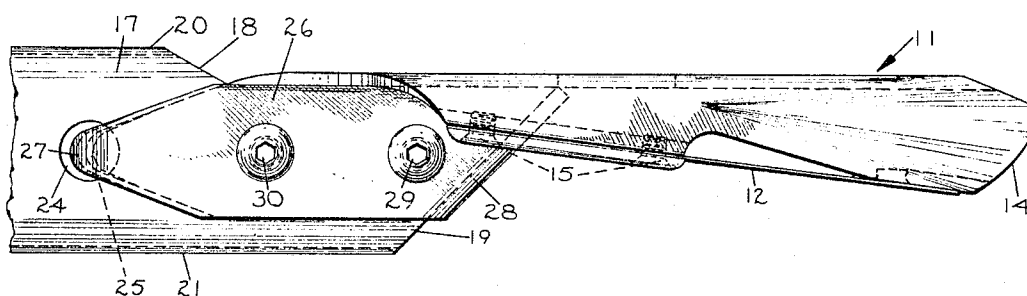
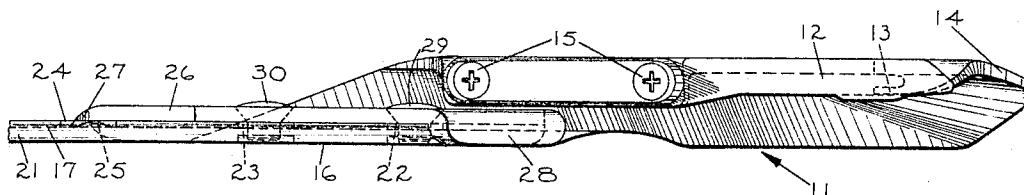
Sept. 13, 1966

P. C. CONSOLETTI

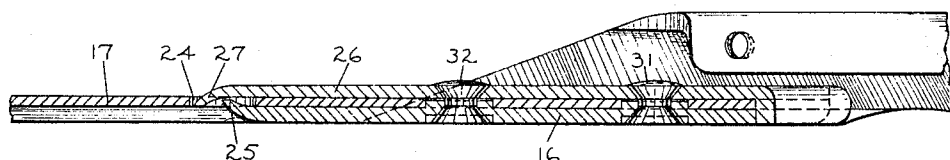
**3,272,237**

# FILLING CARRIERS FOR SHUTTLELESS LOOMS

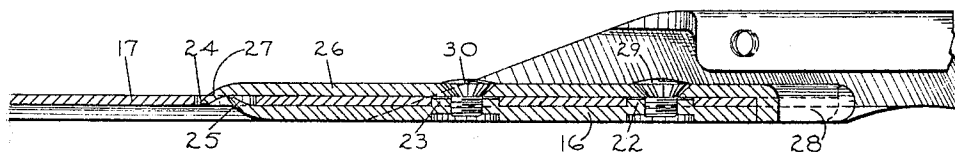
Filed Feb. 8, 1965



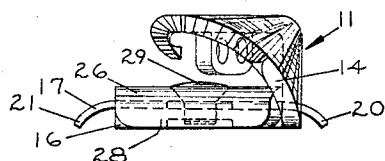
# III.2



### III.4



**III.3**



# EE.S

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1

3,272,237

**FILLING CARRIERS FOR SHUTTLELESS LOOMS**  
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This invention pertains to improvements in filling carriers in shuttleless looms of the type in which the supply of filling yarn is held stationary outside of the loom or filling inserting means itself.

It is a general object of the invention to improve the construction of detachable carriers in a manner to increase the ease of application, or removal, while at the same time guarding against interference with those warp threads through which the carrier must pass.

It is a further object of the invention to devise a carrier which shall be inexpensive to manufacture and which may be easily applied in proper alignment upon a flexible tape.

It is a still further object to devise a filling carrier which may be shaped by cold forming processes so that the exterior surfaces will in no way interfere with the necessary wiping action of the warp threads.

Other objects will become apparent from the following disclosure.

In shuttleless looms of the type where filling is supplied from an outside source and is not carried through the shed upon an unwinding bobbin, it is customary to place each pick by cooperating reciprocable elements, one of which would be an inserting member and the other a receiving or extending member. The inserting and extending carriers have been fastened to and propelled by flexible flat tapes which reciprocate in unison in a manner well known to those familiar with this art. A clear explanation of this weaving means and method is contained in two United States Patents Nos. 2,586,638 and 2,604,124. It is not believed necessary to review those details in this specification. While in this preferred embodiment, flat flexible tapes are disclosed as the propelling means, it will be understood that the instant invention would be applicable to other types as well, such as straight rods or rapier type of inserters.

Carriers of the prior art have been comparatively expensive to fabricate and have been difficult to apply in proper alignment with the propelling member. It has been generally necessary to remove the tape and carrier to a working area where a suitable fixture could be used for positioning each carrier in relation to the carrying tape. The instant invention discloses improvements in those carriers of the prior art which have been removably applied to reciprocable tapes. The drawings show a carrier suitable for use in receiving or extending a filling end, but it will be understood that the disclosure would cover an inserting carrier equally well.

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

FIG. 1 is a side elevational view of a filling extending carrier;

FIG. 2 is a plan view of that shown in FIG. 1;

FIG. 3 is an enlarged portion of FIG. 1 shown partially in section;

FIG. 4 is similar to FIG. 3 with a modified fastening means; and

FIG. 5 is a forward end elevation of that shown in FIG. 1.

Now referring to the figures of drawing, a filling extending carrier generally designated 11 is shown with a tension pad 12, a filling catching hook 13 and a forward end 14 which becomes the leading edge when the carrier is inserted into a shed. The tension pad 12 is secured to the carrier 11 in any suitable manner as by flat head screws

2

15 and will serve to trap and pay out the filling yarn as is well understood by those familiar with this type of loom. This portion of the filling extending carrier is well known and is merely to position that which is novel in this carrier by way of means for its ease of removal and proper application.

The carrier 11 has a generally flat trailing surface 16 which will lie in a more or less horizontal plane, parallel with the filling placing tape to which it will be secured. The flat flexible tape 17 is reduced in width as at 18 and 19 (FIG. 2) to generally follow the conformation of the central portion of the carrier 11. Both edges 20 and 21 of the tape 17 are curved downwardly as shown in FIGS. 2 and 5 to approximately the plane of the lower edge of the trailing surface 16. These downwardly curved edges may extend longitudinally of the tape 17 a distance in the range of three to four inches where the surface will then become flat (not shown).

On the upper side of the surface 16 are two circular bosses 22 and 23 (FIGS. 1 and 3) which are spaced apart along the longitudinal center line of the surface 16. The bosses 22 and 23 are of a size to fit securely into two matching apertures longitudinally spaced upon the free end of the tape 17. The free end of the tape referred to is that end to which the carrier is attached and which is free to enter and to retreat from the warp shed.

A third aperture 24 (FIGS. 1 and 2) through the tape 17 is spaced apart from the other two apertures and is in line therewith. The surface 16 narrows to an upwardly deflected trailing end 25, positioned so as to extend into the aperture 24. The combination of the positioning bosses 22 and 23 on the carrier 11 which will be encompassed by the tape apertures and the trailing end 25 which will extend into the aperture 24 will locate any replacement carrier in proper alignment without further fixtures.

A pressure plate 26 of flat metallic stock shaped generally to conform with the flat trailing surface 16 of the carrier 11 is placed overlying the free end of the tape 17. The plate 26 has a flat central portion with two fastener holes lying directly above the bosses 22 and 23 and the apertures in the tape 17.

A downwardly directed trailing end 27 is adapted to extend into the aperture 24 overlapping and in some pressure contact with the upwardly deflected trailing end 25. A yarn protecting forward shoulder 28 which is formed as a part of the pressure plate 26 will overlap the forward edges of both the tape 17 and the carrier surface 16 (FIGS. 1 and 2).

The free end of the tape 17, when properly positioned between the carrier surface 16 and the pressure plate 26, can be firmly secured in a number of ways, as for instance, by countersunk socket cap screws 29 and 30 (FIGS. 1 and 2). The bosses 22 and 23 would have been drilled and tapped to receive set screws. In the modification shown in FIG. 4 the fastening means is a pair of rivets 31 and 32 while other methods of fastening may also be considered.

It will be seen that this carrier may be readily applied to a tape while still upon a loom and it will be in a true setting without the need of further adjustment. The carrier in such looms must be free of any snagging or projecting surfaces or points in order not to interfere with the wiping action of the warp threads as it enters or leaves the shed. This freedom from snagging is taken care of on the inward motion by the shoulder 28 which protects the edges of the tape and the carrier. The downwardly curved edges 20 and 21 of the tape are such as to pass the yarn of the lower shed beneath the carrier without damage. On the outward movement of the tape and carrier, the warp yarns of the shed will be gently separated by the curved ends 25 and 27. The yarn can in no

3

way become caught or snagged and warp yarn breakage is held at a minimum.

While one embodiment and one modification have 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 shuttleless loom having reciprocable filling placing members by which picks of filling are introduced from a stationary outside source into sheds formed of warp threads, the free end of each one of said placing members having apertures longitudinally spaced there-through, a filling carrier including an upwardly deflecting trailing end, at least one positioning boss formed with said carrier and adapted to be encompassed by said aperture, and fastening means whereby said carrier may be detachably secured to said filling placing member.

2. For a shuttleless loom having reciprocable filling placing members by which picks of filling are introduced from a stationary outside source into sheds formed of warp threads, the free end of each one of said placing members having a plurality of apertures longitudinally spaced therethrough, a filling carrier including an upwardly deflected trailing end, said end being positioned so as to extend into one of said apertures, at least one positioning boss formed with said carrier and adapted to be encompassed by said aperture, and fastening means whereby said carrier may be detachably secured to said filling placing member.

3. For a shuttleless loom having reciprocable filling placing members by which picks of filling are introduced from a stationary outside source into sheds formed of warp threads, said filling placing member comprising a generally flat flexible tape, the free end of said tape having a plurality of longitudinally spaced apertures therethrough, a filling carrier including an upwardly deflected trailing end, said end being positioned so as to extend into one of said apertures, two positioning bosses formed upon said carrier in spaced relationship and adapted to

4

be encompassed by said apertures, a pressure plate adapted to overlie said free end of said tape, and fastening means whereby said carrier and said plate may be detachably secured to said tape.

4. The structure of claim 3 wherein said pressure plate includes a generally flat central portion having fastener holes cooperatively spaced above said apertures.

5. The structure of claim 4 wherein said pressure plate also includes a downwardly directed trailing end, said downwardly directed end extending into said aperture overlapping and in pressure contact with said upwardly deflected trailing end.

6. For a loom having reciprocable filling placing flexible tapes by which picks of filling are introduced from a stationary outside source into sheds formed of warp threads, the free end of said tape having a plurality of longitudinally spaced apertures therethrough, a filling carrier including an upwardly deflected trailing end, said end extending into one of said apertures, at least two positioning bosses formed upon said carrier in spaced relationship and adapted to be encompassed by said apertures, a pressure plate adapted to overlie said free end of said tape, a unitary yarn protecting forward shoulder extending from said pressure plate, said pressure plate including a generally flat central portion having fastener holes cooperatively spaced above said apertures, a downwardly directed trailing end, said downwardly directed end extending into said aperture overlapping and in pressure contact with said upwardly deflected trailing end, and fastening means whereby said carrier and said plate may be detachably secured to said tape.

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