July 15, 1952 2,603,242

FEDERICO DE LOS SANTOS IZQUIERDO

LOOM COMB

Filed Dec. 8, 1950 2 SHEETS—SHEET 1

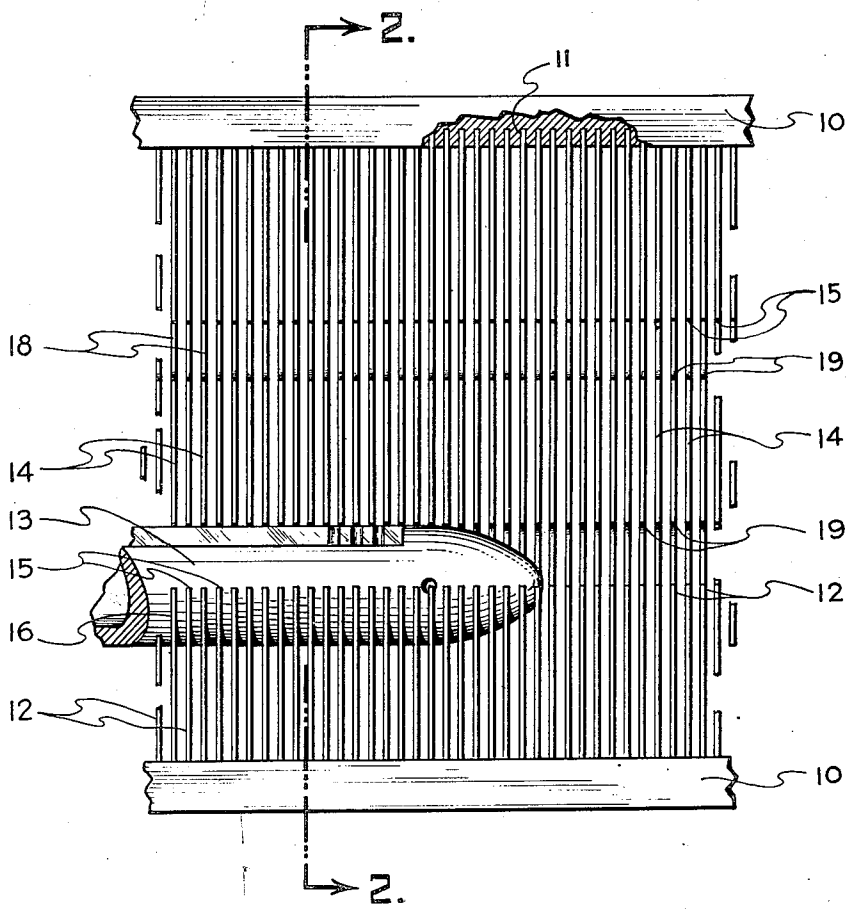


Fig. 1.

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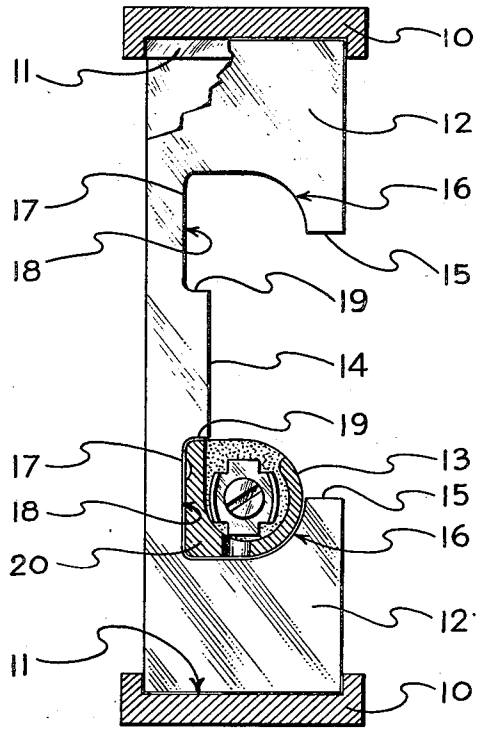


Fig. 2.

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Patented July 15, 1952 2,603,242

UNITED STATES PATENT OFFICE

2,603,242

LOOM COMB

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Mexico City, Mexico

Application December 8, 1950, Serial No. 199,820
In Mexico December 14, 1949

2 Claims. (Cl. 139—192)

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This invention relates to the textile industry, especially to looms and it more particularly relates to certain useful improvements in loom combs providing an article of the type indicated presenting remarkable advantages over the combs heretofore used and known, as those acquainted with this art will readily appreciate in the course of the present description.

The present loom comb, according to the invention, is substantially characterized by the special configuration thereof, which allows the shuttles to run led within a guide or leader provided by the comb itself, in such a manner that, besides its usual operation well known in looms, it acts as a leading member for the shuttle which in this manner is always led and has a greater speed and accuracy.

Besides the above, the invention is also characterized by the fact that the loom comb is especially designed to make double cloths and double velvets by warping, since it allows the passage of two shuttles simultaneously operating, whereby the loom can double its output, because, as previously stated, the shuttles are guided.

Some of the main characteristics and advantages of the improved comb may be described as follows:

A. The present comb is designed especially to make double cloths and double velvets; that is to say, those fabrics which for a better and quicker manufacturing require the use of two shuttles working conjointly.

B. Due to the fact that both shuttles have an unvariable separation throughout the comb (on account of the guide provided thereby), their movements are accomplished, without interfering with the warp threads.

C. This separation between the two shuttles (30 mm. and even more) allows the adjustment of the height of the valvet pile.

D. The shuttles never interfere with the warp threads and therefore these will not be subject to any abrasion.

E. Since the shuttles are guided, the speed of the loom is increased.

F. All devices or mechanisms meant for the protection of the shuttles, and others meant to keep the shuttle from tripping and causing accidents among the workers are no longer necessary, since, as previously stated, the shuttles run on a guide provided by the comb itself.

G. This system when adapted to any loom doubles the production and allows, besides, for a greater number of picks per minute.

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The comb of the invention may also operate with one shuttle and reduce the width thereof to one half; it can also operate with the usual known shuttles or with any other type of shuttles, if the cut of the teeth thereof is accomplished—to form the longitudinal guide—according to the section of the shuttles.

These and other advantages, characteristics and details of the loom combs of the invention will become clearly apparent in the course of the following description, as well as the from the accompanying drawings as an illustration thereof, the same reference numbers being used therein to indicate the same parts in the two figures shown.

According to said drawings:

Fig. 1 shows a side elevation or view of a section of a loom comb built in accordance with the invention, wherein the special shape of its teeth or bars and how they provide the guide or rail on which the shuttles run can be readily appreciated, a shuttle being also shown in a sectional view more clearly to show the shape of the section thereof.

Fig. 2 illustrates a cross sectional view taken on the line 2—2 of Figure 1.

As illustrated in the accompanying drawings, the loom comb of my invention consists of two rectangular bars or sills 10, parallelly disposed and longitudinally mounted with respect to the comb; said bars or sills having longitudinal grooves 11, wherein the teeth or bars 12 forming the comb are mounted, for which purpose said grooves or slots 11 are made face to face on the respective bars 10. The teeth or bars 12 of the comb are spaced apart and firmly secured to said bars 10, between the grooves 11 thereof, and are preferably welded to the sills.

The teeth or bars 12 are specially shaped and constructed to form a comb through which shuttles can with certainty freely pass.

Each tooth or bar is provided with a cut-away portion open at the front and formed with a short upper and lower horizontal edge 15. The rear wall of the cut-away portion is provided with upper and lower cut-in portions or depressions 17 to form abutments 18, and an intermediate projecting portion 14. The upper and lower walls of the cut-away portion extend forwardly from the abutments in a horizontal direction and then curve inwardly toward the center of the cut-away portion to the upper and lower edges 15. The vertical abutments 17 and the upper and lower edges 19 of the projecting portion 14 and the horizontal and curved

portions of the walls 16, when the bars are assembled in comb form, provide a horizontal passage in the comb for reciprocal shuttles, as clearly shown in Figure 2.

As the shuttle or shuttles 13 glide on the guideway provided by the special cuts of the teeth 12 of the comb, it becomes impossible for said shuttles to deviate from their course, and still more difficult for said shuttles to trip from the machine, which would endanger the operator, as it occurs in the methods known at present.

The insertion of the weft or woof and the beating thereon is accomplished in the middle portion 14 of the comb, that is to say of its teeth 12.

The shuttles 13 have also a special design that allows them to pass with very little friction, while their profile or section prevents them from varying their position as they run within the guide formed by the teeth 12 of the comb, as previously described. Figure 1 of the accompanying drawings shows the shuttles 13 in a cross sectional view, this figure also showing quite clearly their special section or profile, which is characterized in that it has a flat portion 20, which is the portion that glides on the surface 18 of the comb.

The loom is to be provided with a double box for lodging the two shuttles 13, and the usual means to operate the shuttles, which will have the same profile as the shuttles; these are propelled outwards like a bullet through the barrel of a gun, and it will be evident that by the improved comb of the invention, it will be possible to give the shuttles a greater speed than is given to the usual known shuttles, as in the present case they are perfectly guided and directed.

Having thus described the invention, what I consider as new and desire to secure by Letters Patent is:

1. A comb for looms, comprising upper and lower horizontal bars, spaced-apart vertical bars connected to the upper and lower horizontal bars, each vertical bar having a cut-away portion open at the front, the rear wall of the cut-away portion of each vertical bar having a cut in portion to form a vertical abutment, and a horizontal wall extending forwardly from the abutments and then curving inwardly toward the center of the cut-away portion, the vertical abutments and the horizontal and curved walls forming a confining horizontal passage in the comb for reciprocating shuttles.

2. A comb for a loom, comprising upper and lower horizontal bars, spaced-apart vertical bars connected to the upper and lower horizontal bars, each vertical bar having a cut-away portion open at the front, the rear wall of the cut-away portion of each vertical bar having upper and lower cut-in portions to form vertical abutments, and a central projecting portion between the abutments, the upper and lower walls of the cut-away portion extending forwardly from the abutments and then curving inwardly toward the center of the cut-away portion, the vertical abutments and the horizontal and curved walls forming horizontal confining passages in the comb for reciprocal shuttles.

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