Feb. 21, 1950 W. P. SQUIRES 2,498,610

FILLING-FORK GRID

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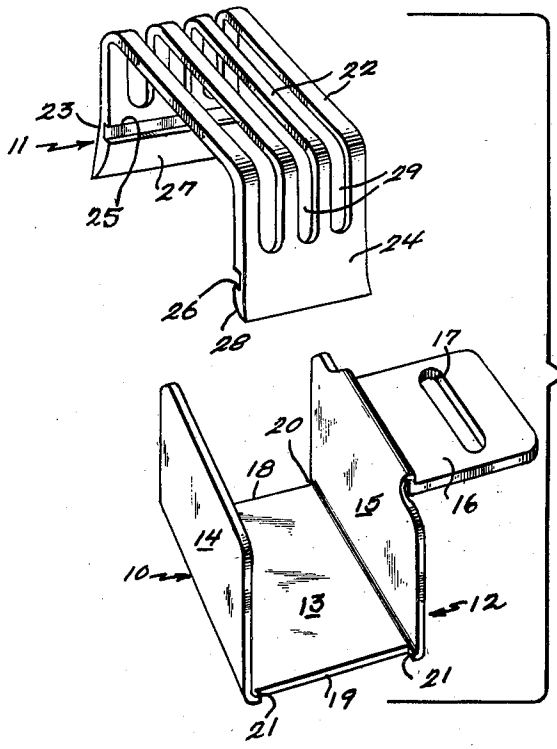



FIG. 1.

FIG. 2.

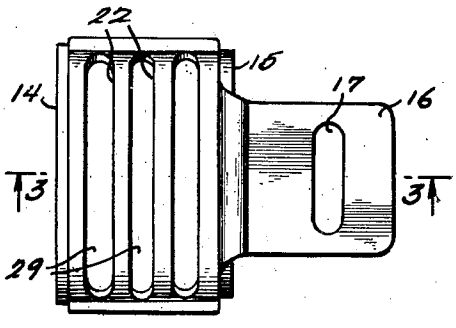
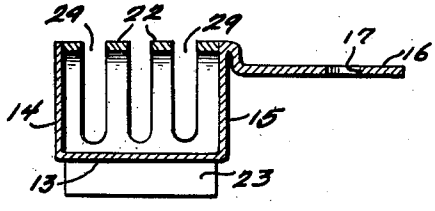



FIG. 3.




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## FILLING-FORK GRID

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6 Claims. (Cl. 139—379)

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This invention relates to looms and has more particular reference to filling-fork grids therefor.

In general practice, the filling-fork grid is precision mounted on the loom in position to cooperate with the filling-fork to determine whether or not filling has been laid in the shed, and, on its absence, to stop the loom to prevent the formation of a thin place in the cloth being woven.

Due to the beating up motion of the loom and other weaving operations, a good amount of fuzz and lint collects in the filling-fork grid which, unless periodically removed, will prevent the tines of the filling-fork from entering the openings between the grid bars to detect the presence or absence of the filling. This is particularly true when dampness, due to high humidity, exists in the weave rooms, as is usually the case. Under such conditions the fuzz and lint form a crust or scale on the bars of the fork-grid, which increases the rapidity with which the fuzz and scale collect and correspondingly reduces the time the loom can be run without stopping it to remove the fuzz and lint.

Due to the fact that the fork-grid is precision mounted on the loom it is not practical to remove the fork-grid to clean it. The usual practice is to clean the fork-grid while it is mounted on the loom, by brushing or mopping it with mineral spirits. This requires the loom to be stopped in order to permit the fork-grid to be cleaned. Under usual operating conditions, the fork-grid requires frequent cleaning, with resultant loss in operating time of the loom.

The primary object of the present invention is to provide an improved filling-fork grid adapted to be precision mounted on a loom in the usual manner and embodying a bracket member adapted to be secured to the loom and carrying a detachable grid member which may quickly be removed and replaced by a clean grid member without disturbing the precision mounting and without involving any substantial stoppage time of the loom.

Another object of the invention is to provide a filling-fork grid, as above characterized, wherein the bracket member provides a protective housing for the back and sides of the grid member, which helps to prevent fuzz and lint from collecting on the bars of the grid member.

Another object of the invention is to provide

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a filling-fork grid, as above characterized, wherein the grid member is detachably secured to the bracket member by a snap-on and snap-off action.

A further object of the invention is to provide a filling-fork grid, as above characterized, which is simple and rugged in construction and efficient in operation.

Other objects and advantages of the invention will be apparent in the following specification when considered in connection with the accompanying drawing, wherein:

Fig. 1 is a perspective exploded view showing a preferred form of a filling-fork grid constructed in accordance with the present invention;

Fig. 2 is a front view of the grid shown in Fig. 1, with the two parts assembled; and

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2.

As above pointed out, due to the fact that filling-fork grids are usually precision mounted on looms, it is impractical to remove them for cleaning purposes and it is common practice to clean them while in place on the loom, with resultant loss in operating time of the loom.

In general, the present invention comprises a filling-fork grid adapted to be precision mounted on a loom in the usual manner and embodies a fork-grid stand or bracket member having an attaching portion adapted to be secured to the loom in the usual manner and a grid supporting portion carrying a grid member having a quick detachable connection thereto which permits the grid member to be quickly removed and replaced by a spare grid member, without disturbing the precision mounting, thereby greatly reducing the time the loom is stopped and increasing the operating efficiency of the loom.

Referring now to the drawing, there is shown, in Fig. 1, an improved filling-fork grid constructed in accordance with the present invention and comprising a grid stand or bracket 10 and a grid or grate member 11 adapted to be detachably secured on the bracket. The grid bracket member and the grid member are preferably made of sheet metal and are stamped or pressed to the desired shape.

In the particular embodiment illustrated, the grid bracket 10 is shown as comprising a channel-shaped supporting portion 12 having a base

or back wall 13 with forwardly projecting integral flanges at each side forming side walls 14, 15, and an attaching portion in the form of a lug or ear 16 projecting laterally from the side wall 15 and provided with a slot 17 for the reception of the usual bolt by which the grid bracket is secured in place on the loom.

The lug 16 is shown as being formed integral with the channel-shaped support member or portion and as having its part joining the side wall 15 bent rearwardly and then forwardly, so that the lug will extend laterally from the side wall 15 in a plane substantially parallel to but rearwardly offset from a plane passing through the front edges of the side walls 14, 15.

The top and bottom edges 18, 19 of the base or back wall 13 are shown as terminating short of the top and bottom edges of the side walls 14, 15, as indicated at 20, 21, respectively, for a purpose hereinafter to be stated.

The grid member 11 comprises a plurality of laterally separated bars 22 having their ends bent downwardly, as viewed in Fig. 1, at substantially right angles and terminating in flat integral connecting webs 23, 24. The webs 23, 24 are provided with longitudinally extending recesses 25, 26, respectively, and have their inner surfaces below the recesses curved downwardly and outwardly, as indicated at 27, 28, respectively, so that the grid member may be snapped onto the grid bracket with the top and bottom edges 18, 19 of the base member 13 received in the recesses 25, 26, respectively, of the webs. The curved surfaces of the top and bottom webs facilitate the snap-on movement; the grid member is sufficiently resilient to permit the webs to be snapped on.

In the particular embodiment illustrated, the grid member is shown as having four spaced substantially parallel bars 22 to provide the three openings 29 for the tines of the filling-fork, such forks normally comprising three tines. The outer two of the bars 22 are preferably made of a slightly greater width than the two inner bars for purposes of strength. However, the openings between the bars are susbtantially uniform. The combined width of the bars and the openings is such that, when the grid member is snapped on the bracket, the outer surfaces of the two outer bars engage the inner surfaces of the side walls 14, 15 of the bracket. Due to the top and bottom edges of the base or back wall 13 of the bracket member terminating short of the top and bottom walls of the side walls 14, 15, when the grid member is mounted on the stand, the top and bottom surfaces of the grid bars, as viewed in Fig. 2, will be in substantial alignment with the surface of the top and bottom edges of the side walls 14, 15. Also, the distance between the horizontal grooves in the webs and the upright portions of the bars is such that, when the grid member is snapped on the bracket with the top and bottom edges 18, 19 of the base of the bracket received in the grooves of the webs, the outer surfaces of the upright portions of the bars are in substantial alignment with the surfaces of the front edges of the side walls 14, 15, as viewed in Fig. 2. Further, the curvature of the top and bottom end portions of the cross bars is substantially the same as the curvature of the top and bottom edges of the side walls. The construction and arrangement being such that the back and side walls of the bracket member form a protective housing for the grid member and helps keep fuzz and lint from settling on the bars of the grid member, thus increasing the time the loom may be operated before the bars of the grid member become fouled, necessitating its removal and replacement with a clean grid member.



From the foregoing, it readily will be seen that there has been provided an improved filling-fork grid which is simple and rugged in construction and which greatly increases the efficiency of the loom, due to the short period of time the loom has to be stopped to enable a fouled grid member to be removed and replaced with a clean grid member. Further, the protective bracket housing in which the grid member is mounted increases the period of time in which the loom may be operated without the grid member becoming fouled.

Obviously, the invention is not restricted to the particular shape of the bracket member or grid member, or the particular quick detachable connection as shown in the particular embodiment of the invention illustrated, as these may be varied without departing from the spirit and scope of the invention as expressed in the appended claims.

Having thus described the invention, what is claimed is:

1. A filling-fork grid adapted to be precision mounted on a loom, comprising a bracket member having an attaching portion adapted to be secured to the loom and a grid supporting portion; and a grid member carried by said supporting portion in a fixed position relative to said attaching portion, said grid having a quick detachable snap action connection to said grid supporting portion permitting the grid member to be readily removed and replaced in its fixed position relative to the attaching portion without disturbing the precision mounting.

2. A filling-fork grid adapted to be precision mounted on a loom, comprising a bracket member having an attaching portion adapted to be secured to the loom and a grid supporting portion; and a U-shaped grid member having its legs detachably interlocked with the grid supporting portion of said bracket whereby the grid member may be readily removed and replaced without disturbing the precision mounting.

3. A filling-fork grid adapted to be precision mounted on a loom, comprising a bracket member having an attaching portion adapted to be secured to the loom and a grid supporting portion, said grid supporting portion being rearwardly offset from the attaching portion and having a pair of spaced parallel edges; and a U-shaped grid member having attaching portions removably secured to said parallel edges whereby the grid member may be removed and replaced without disturbing the precision mounting.

4. A filling-fork grid comprising a bracket member having a back wall and side walls extending forwardly from the back wall with a rearwardly offset attaching lug extending laterally from one side wall and a grid member having a plurality of upright laterally separated bars bent rearwardly at their upper and lower ends and terminating in integral connecting webs each having a longitudinally extending groove formed therein, said grid member being adapted to be mounted on and removed from said bracket member with a snap action with the upper and lower edges of the back wall of the bracket member received in the grooves in the webs of the grid member.

5. A filling-fork grid as set forth in claim 4,

wherein the side walls of said bracket member extend forwardly from the back wall thereof a distance sufficient to permit their front vertical edges to lie in substantially the same vertical plane with the front vertical surfaces of the bars of the grid member so that the back and side walls of the bracket member form a protective housing for the grid member.

6. A filling-fork grid as set forth in claim 4, wherein said webs have their inner surfaces below said grooves curved outwardly to facilitate their being snapped on and off said bracket member.



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