Sept. 20, 1949. A. BLICKENSTORFER 2,482,149

HEALD SHAFT FOR LOOMS

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FIG. 1

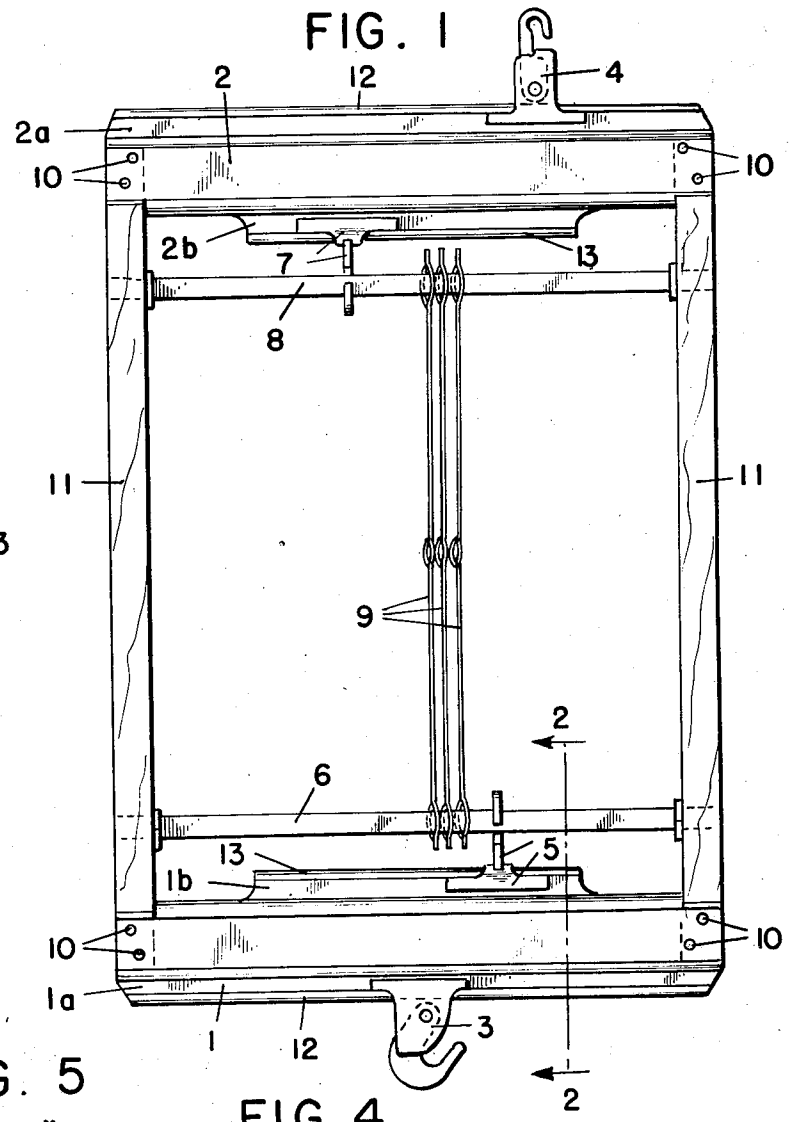


FIG. 2

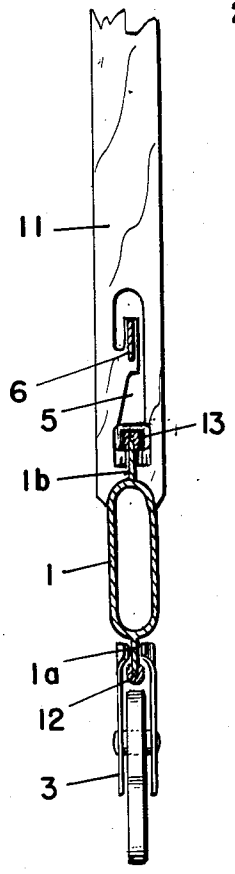


FIG. 5

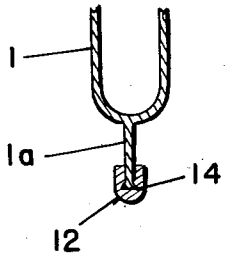


FIG. 4

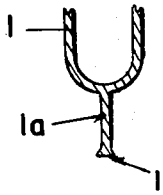


FIG. 3



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HEALD SHAFT FOR LOOMS

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2 Claims. (Cl. 139—92)

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My present invention relates to improvements in heald shafts and in reinforcing same; and the objects of my improvements are, first, to keep down the weight of the shaft, second, to reinforce the stationary portions of the shaft at the points contacted by the movable parts thereof, and third, to generally strengthen the shaft.

I attain these and related objects by the reinforced shaft shown in a single embodiment in the accompanying drawing, in which—

Fig. 1 is a front elevation of the shaft; Fig. 2 a section thereof on the line 2—2 of Fig. 1 in a larger scale; Fig. 3 a cross-section of one of the four reinforcing flanges before being rolled down on and clamped fast to the top and bottom rail of the shaft; Fig. 4 a cross-section through the bottom portion of one of the said two rails, before securing the said reinforcing flanges thereto; and Fig. 5 a similar cross-section with the said reinforcing flange fastly secured to the end of the rail web.

The shaft according to Fig. 1 comprises a bottom rail 1 and a top rail 2 which are made for the sake of a reduction in weight, of light metal and, for the sake of strength, of flattened tubular section. The said rails are provided with a top and a bottom web each, drawn integral therewith and designated by 1*a*, 1*b* and 2*a*, 2*b* respectively.

A lifting hook 4 and a lowering hook 3 ride longitudinally displaceable along the webs 1*a* and 2*a* of the bottom and the top rail 1 and 2 respectively, and may be disengageably clamped thereto. A slide bracket 5 engaging the healdstringup stave 6 hook-like, and a slide bracket 7 similarly engaging the stave 8, are mounted longitudinally displaceable on the webs 1*b* and 2*b* of the said rails 1 and 2 respectively. The healds or heddles 9 are mounted displaceable on the said staves 6 and 8.

Frames 11 are fastly secured to the ends of the said rails 1 and 2, e. g., by means of the rivets 10 or in any other suitable manner, and the ends of the said staves 6 and 8 are supported therein. The frames 11 are made for example of wood. The said frames 11, together with the said rails 1 and 2, afford a very rigid stay which, in normal operation, is not deflected or warped.

The webs 1*a*, 1*b* and 2*a*, 2*b* of the rails 1 and 2 are subjected to a comparatively great wear

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from the part of the slide hooks 3, 4 and the slide brackets 5 and 7 respectively. The main object of my present invention, now, is to reduce this wear as much as possible, while, at the same time, keep down the weight of the shaft by the use of structural material in the form of light metal; and this is accomplished in one form of invention through the application of steel reinforcing-strips to the said webs at the points of contact with the said hooks and slide brackets.

In the example of a heald shaft shown, therefore, the said webs are provided with steel flanges 12 and 13 which form abutments for the hooks 3, 4 and the slide brackets 5, 7 respectively. The rails 1, 2 and their integral webs 1*a*, 1*b* and 2*a*, 2*b* are made of light metal, while the said flanges are made of steel and may be hardened.

The reinforcing flanges, which may be designated as the rails proper, are of wide U-section before being mounted on the said webs. The latter are bulbed at their free ends 14 (Figs. 4 and 5) so as to afford a good anchorage for the reinforcing flanges which are rolled and pressed down thereonto (Fig. 5). Since the web-reinforcing and track-forming flanges 12 and 13 are of comparatively small width, taken at right angles to the said webs, the slide members 3, 4, 5 and 7, in particular the last two, may be made of a correspondingly narrow width too so as to take up only very little space in the direction of the passing warp threads.

What I claim and desire to secure by Lettters Patent is:

1. In a heald shaft for looms having two stationary rails connected by side supports and movable members thereon, each of said rails comprising a flattened tubular section of light low strength metal, a top and bottom web formed on each said rail, reinforcing means secured on the free ends of each said web, said reinforcing means being of a higher strength material than said rails, said reinforcing means providing running tracks for said movable members whereby a light weight, durable heald shaft is obtained.

2. In a heald shaft for looms as claimed in claim 1, said webs having enlarged bulb shaped free end portions, said reinforcing means being members generally U-shaped in cross-section and of a hardened steel, said reinforcing members being clamped around said bulb shaped portions

and having flat free end portions providing the track for said movable members.

ALBERT BLICKENSTORFER.

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