

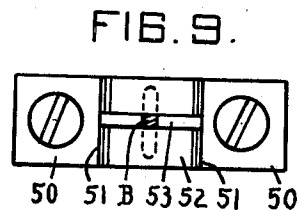
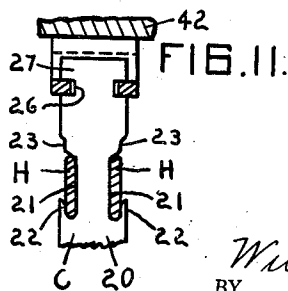
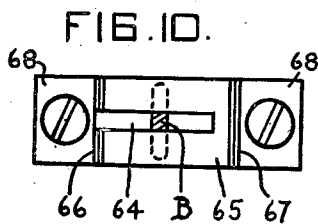
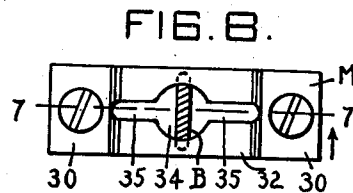
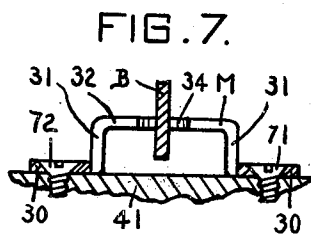
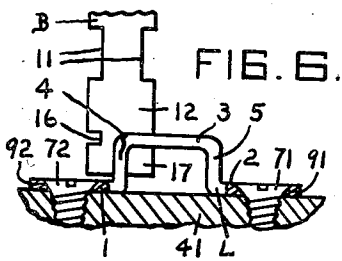
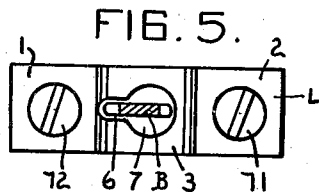
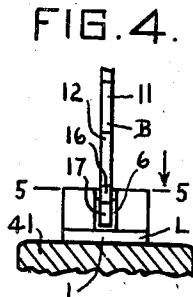
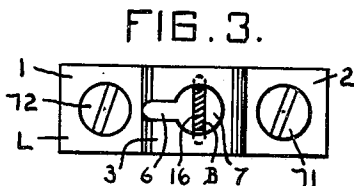
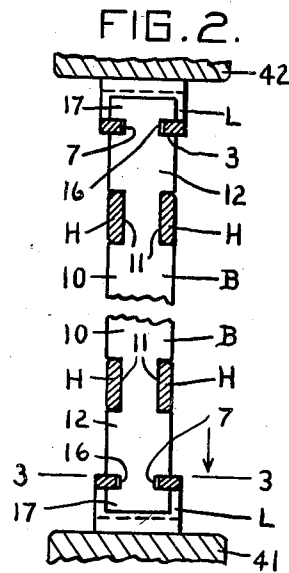
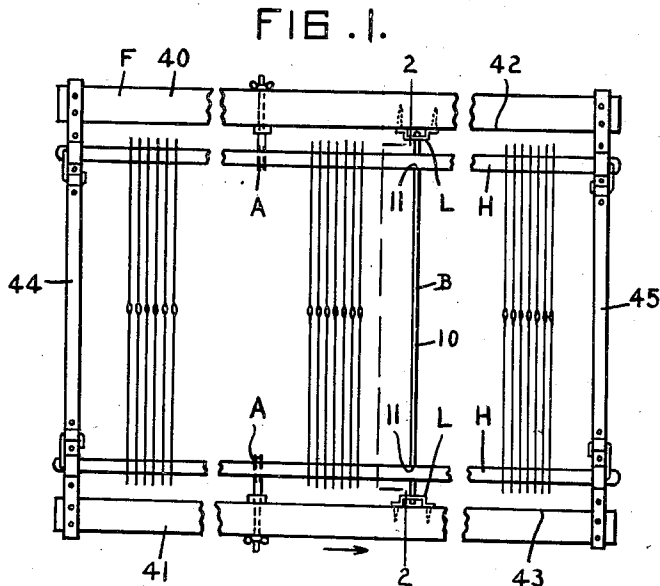
April 5, 1938.

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2,113,154

HEDDLE FRAME

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2,113,154

HEDDLE FRAME

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6 Claims. (Cl. 139—92)

This invention relates to heddle frames for looms, and more particularly to devices located between the ends for strengthening and stiffening the top and bottom rails of the frame. Such devices are known as brace rods or stay bars.

My purpose is to provide one or more of such stay bars or brace rods to prevent the frame from springing and to hold the heddle bars in the desired position parallel with each other so that the heddles can move freely on the heddle bars.

Further objects are to provide such a stay bar or brace rod which can be easily and quickly put in position or detached from the frame, so that when it becomes desirable to shift the heddles from one side of a brace rod to the other, they may always be correctly arranged in the frame.

In the drawing,

Fig. 1 is a front elevation of a heddle frame with one brace rod and two bar locks in position, the frame being broken for convenience.

Fig. 2 is a vertical section on the line 2, 2 of Fig. 1 as viewed from the left, parts being broken for convenience.

Fig. 3 is a sectional view on the line 3, 3 of Fig. 2.

Fig. 4 is a view similar to Fig. 2 of one end of a brace rod with the heddle bars removed and the brace rod turned and ready to be separated from its bow lock.

Fig. 5 is a sectional view on the line 5, 5 of Fig. 4.

Fig. 6 is a side elevation as from the right of Fig. 4.

Fig. 7 is a sectional view on the line 7, 7 of Fig. 8.

Fig. 8 is a view similar to Fig. 3 of a modified type of bow lock.

Fig. 9 is a view similar to Fig. 3 of another type of bow lock.

Fig. 10 is still another view similar to Fig. 3 of another type of bow lock.

Fig. 11 is a view similar to Fig. 2 showing one end of a slightly different type of brace rod.

In the drawing, F represents a harness or heddle frame of the type in common use in looms wherein steel heddles are used.

44 and 45 represent the ends which hold together the top rail 40 and bottom 41 which, as shown, are of wood but might be of any other suitable material. 42 indicates what I will call the inner side of top rail 40 and 43 the inner side of bottom rail 41.

L, L represent what I will call bow locks which, as shown, are fastened respectively to the inner

sides of the top and bottom rails 40 and 41 by screws such as 71 and 72 which pass through suitable screw holes 91 and 92 in the ends 1 and 2. These bow locks, as shown, are made of flat metal with a hump formed by a flat part 3 parallel with ends 1 and 2 and lifted therefrom by arms 4 and 5.

Through the top 3 is a round hole 7 and connecting with it is a slot 6 which extends out and down past a bend into arm 4 thus forming a sort of bent keyhole.

B represents a brace rod shown as made of a flat strip of metal having a middle portion or body 10 and near each end on each edge having the heddle bar recesses 11, 11 for heddle bars H, H.

The part beyond these recesses 11, 11 at 12 is, as shown, of the same size as the part 10 but beyond this is a neck 16 and a head 17.

The neck and head are of such size that they can be passed into the keyhole by sliding in through slot 6 to hole 7 from left to right as shown in Fig. 6. They can be removed by the reverse process. The width of the head 17 is greater than the diameter of hole 7 while the width of the neck 16 is less than the diameter of hole 7 so that when the brace rod B is pushed in through the slots 6, 6 edgewise it can then be turned crossways as shown in Fig. 2 and, as the length of the necks 17, 17 is slightly greater than the thickness of the stock of the bow lock L, the brace rod B holds the top and bottom rails 40 and 41 firmly in place and parallel.

Now when the heddle bars H, H are slipped into the recesses 11, 11, they prevent brace rod B from turning and the parts are all locked in position.

To prevent the heddle bars H, H from slipping out of the recesses 11, 11, I prefer to use two or more pairs of bar locks such as A or any well-known type which together with the fact that they are held at the ends keeps the heddle bars from slipping out of the recesses 11.

In place of brace rods having rectangular open heddle bar recesses such as 11, 11, I can use brace rods such as shown at C in Fig. 11 wherein 20 is the body, 26 the neck and 27 the head, while the heddle bar recesses are indicated by 21, 21. At the lower outside edge of each recess is a finger 22 and at the upper edge is a cut away part 23 whereby a heddle bar can be sprung into the recess 21 and will be held there by finger 22 without the use of any bar locks such as A.

In Figs. 7 and 8 is shown at M a modification of the bow lock. It is of the same humped shape

as L with ends 30, 30 and arms 31, 31 which support a top 32 parallel with the ends 30, 30. The arms and top form a hump through which there is a round hole 34 from each side of which extend the slots 35, 35 out to and down through the arms 31, 31.

In Fig. 9 is shown another variation of the bow lock in which the ends are 50, 50, the arms 51, 51 and the top 52. In this case there is a slot 53 which is of the same width lengthways of the top 52 and which extends down through the arms 51, 51.

In the construction shown in Figures 7, 8 and 9, the brace rod can be put in place from either side and when turned will be kept between the arms of the hump and kept from turning by the heddle bars, bar locks A, A, and ends 44, 45 of the frame.

In Fig. 10 the construction is similar to that of Fig. 9 except that the slot 64 extends through the top 65, and out and down through one arm 66, but not through the other arm 67. 68, 68 are the ends.

I claim:

1. In a heddle frame, the combination of top and bottom rails; with flat bow lock members mounted on the inner side of each top and bottom rail, each bow lock member having a hump with arms and a top between them, there being a slot through the top which extends from the hole to a bend and down one arm and at one place in the top is enlarged forming a round hole; and a flat brace rod having recesses for heddle bars, a neck and a head at each end, each head and neck being thin enough to pass through the slot, the neck being of a width to turn in the hole and the head being of a greater width than the diameter of the hole.

2. In a heddle frame, the combination of top and bottom rails; with flat bow lock members mounted on the inner side of each top and bottom rail, each bow lock member having a hump with arms and a top, there being a slot through the top which extends to a bend and down one arm; and a flat brace rod having recesses for

heddle bars, a neck and a head at each end of a size to pass through the slot, the neck being of a width to turn in the slot and the head being of a greater width than the width of the slot.

3. In a heddle frame, the combination of top and bottom rails; with flat bow lock members mounted on the inner side of each top and bottom rail, each bow lock having a hump with arms and a top, there being a slot through the top and down an arm; and a flat brace rod having a recess for a heddle bar, a neck and a head at each end of a size to pass through the slot, the neck being of a width to turn in the slot and the head being of a greater width than the diameter of the slot; together with means to prevent the heddle bar from slipping out of its slot.

4. The combination in a bracing device for heddle frames; of two flat bow lock members, each including a hump formed of two arms and a top, there being a slot through the top and down an arm; with a flat brace rod having a recess for a heddle bar, a neck and a head at each end of a size to pass through the slot in a bow lock member, the neck being of a width to turn in the slot and the head being of a greater width than the diameter of the slot.

5. The combination in a bracing device for heddle frames; of two flat bow lock members, each including a hump formed of two arms and a top, there being a slot through the top; with a flat brace rod having a recess for a heddle bar, a neck and a head at each end of a size to pass through the slot in a bow lock member, the neck being of a width to turn in the slot and the head being of a greater width than the diameter of the slot.

6. A brace rod for heddle frames made of a strip of flat metal of greater width than thickness, said rod having a recess near each end in one edge for a heddle bar and in addition thereto and nearer each end oppositely disposed recesses forming a flat neck and beyond each neck at each end a flat head which projects on each side of the neck.

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