

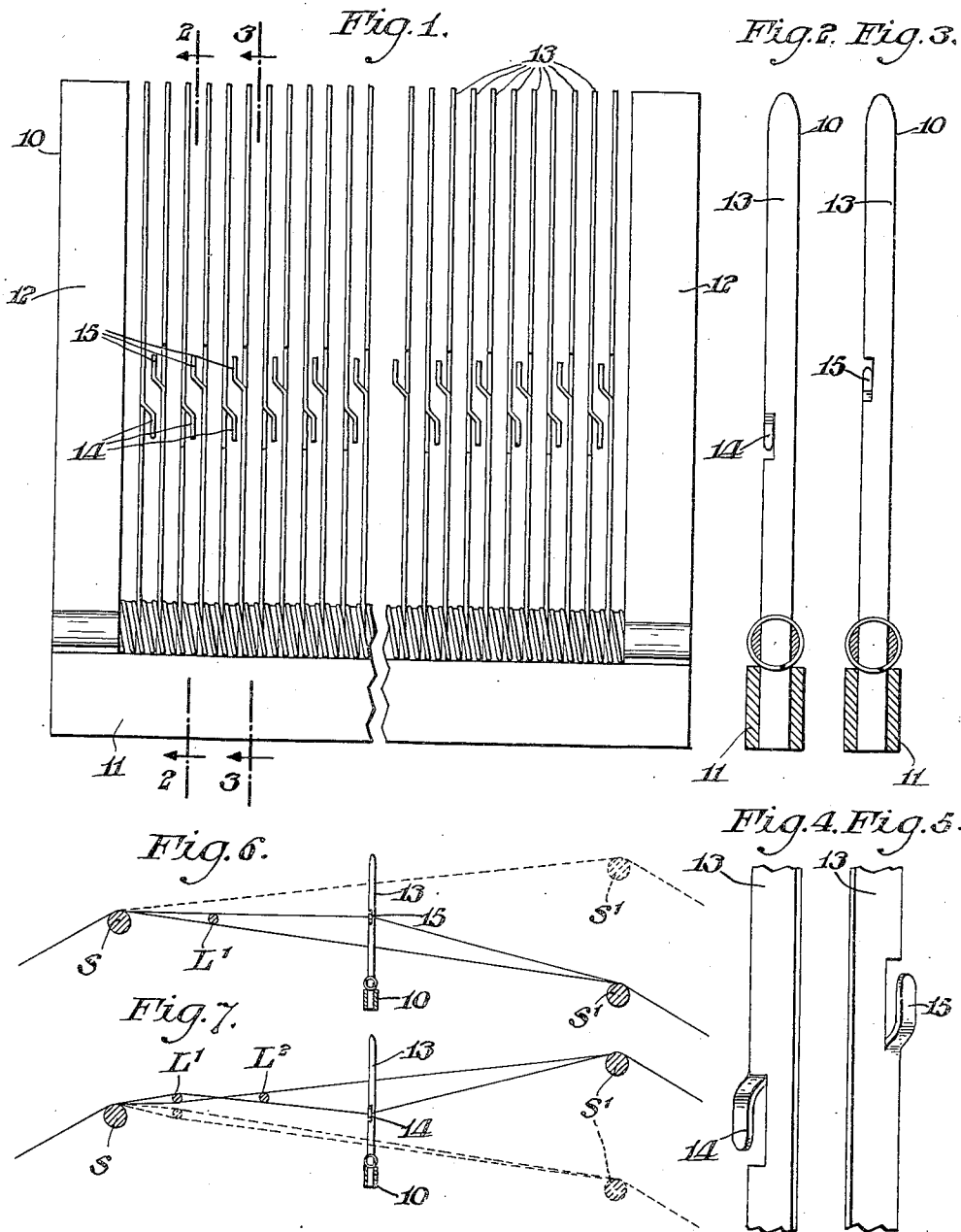
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DEVICE FOR WARP LEASING.

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DEVICE FOR WARP LEASING

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This invention relates to a device for warp leasing, and it has particular relation to novel means for effecting the separation of the warp threads for the insertion of the lease cords or rods which are used to maintain an orderly arrangement of the warp threads, usually at beginning and ending of the warp. The formation of such leases in a warp facilitates the drawing in or laying in the warp in a reed or comb, and, in some instances, the entering of the warp through the harness of a loom.

The present invention is more particularly adaptable for use in the formation of what are known as "pin leases", that is to say, where the lease is so formed that the threads are separated in sets, one set for each dent space of the reed in which the warp is subsequently to be mounted, although, of course, it should be understood that the device may, under certain conditions, be used for the formation of other types of leases if so desired.

The pin leases above referred to are used principally when the warp is placed in a slasher preparatory to sizing the yarn. However, the invention is also adaptable to be used in the formation of a lease in a warp prepared on a warping machine.

The principal object of the present invention is to provide a simple, yet efficient, device for effecting the formation of a lease in a warp whereby the lease may be formed in a simple and expeditious manner, and with a simple manipulation by the operator.

A further object of the invention is to provide a device for forming warp leases which may be inexpensively constructed.

The nature and characteristic features of the invention will be more readily understood from the following description, taken in connection with the accompanying drawing forming part hereof, in which:

Fig. 1 is a front elevation of a reed or comb for leasing purposes embodying the main features of the present invention;

Fig. 2 is a vertical section thereof, taken on the line 2—2 of Fig. 1;

Fig. 3 is a vertical section thereof, taken on the line 3—3 of Fig. 1;

Fig. 4 is a perspective view of the hook portion of one of the dents shown in Figs. 1 and 2;

Fig. 5 is a similar view of the hook portion of another of the dents shown in Figs. 1 and 3;

Fig. 6 is a longitudinal section illustrating, to a certain extent diagrammatically, an early step

in the formation of the lease by means of the device of the present invention; and

Fig. 7 is a similar view illustrating a later step in the formation of the lease.

It should, of course, be understood that the drawing and description herein contained are illustrative merely, and that various modifications and changes may be made in the structure disclosed without departing from the spirit of the invention.

Referring more particularly to Figs. 1 to 5 of the drawing, there is there shown a preferred form of construction of a leasing reed or comb embodying the principal features of the present invention and particularly adaptable for use in the formation of a pin lease in a warp. Said device consists of a suitable frame 11 having side struts 12, and disposed between side struts 12, dents 13 are suitably spaced and rigidly secured at their lower ends in the frame 10 in the usual manner of construction of soldered reeds.

As there shown each of the dents 13 comprises a thin flat strip of metal provided intermediate its extremities with a hook, said hook 14 of each alternate dent being open toward the bottom, and the hook 15 of each of the other alternate dents being open toward the top. The hooks 14 and 15 on each adjacent pair of dents extend into the dent spaces between the dents of said respective pairs, so that throughout the reed each alternate dent space has two hooks disposed therein, one open toward the bottom and the other open toward the top; whereas, the other alternate dent spaces are left free and unobstructed at the hook portions.

Each of the said hooks is preferably struck up from the main body portion of the dent a distance sufficient to extend approximately midway the width of the dent space, whereby, when the warp is manipulated to form the lease, as hereinafter more fully set forth, such of the warp ends as are located in the dent spaces in which the hooks 14 and 15 are disposed, will be caught in one set of said hooks accordingly as warp is raised or lowered with respect to the reed; whereas the other warp ends, which are located within the dent spaces in which no hooks are provided, will be permitted to pass freely up and down without restriction.

Preferably the hooks 15, which are open toward the top, are disposed in their respective dent spaces above the hooks 14, which are open toward the bottom; and also preferably all of the hooks 15, which are open toward the top, are

disposed in a single plane, whereas the hooks 14, which are open toward the bottom, are disposed in another and different plane.

The reed or comb 10 formed as aforesaid is preferably open at the top to permit the ready insertion of the warp ends in the proper dent spaces, although it should be understood that, if desired, a cap (not shown) may be placed over the top of the reed or comb as is sometimes done with devices of this character. However, such a cap, if used, is not essential in the device for the formation of the lease, and hence is not shown in the drawing.

It should also be understood that the hooks 15 carried by the dents may be formed in any preferred manner other than that shown, and any of the common hook formations used in hook reeds may, if desired, be substituted for the struck up hooks shown in the drawing.

In the manipulation of the warp to form a lease therein, the comb or reed may be initially positioned, or shifted sidewise if necessary, as to cause the warp ends, which are located in those dent spaces in which the hooks are disposed, to bear against those faces of the dents from which the hook members 15 extend. If, as illustrated in Fig. 6 of the drawing, one of the supports S¹ of the warp is now lowered from the position shown in dotted lines in Fig. 6, to that shown in full lines, the warp ends which are located in the dent spaces in which the hooks are disposed will be caught in the hooks 15, and the other warp ends which are located in the unobstructed dent spaces will be permitted to pass, so that a shed will thus be formed into which may be inserted the first lease rod or cord L¹.

After the lease rod or cord L¹ is inserted in the shed formed as aforesaid, the warp may again be raised by elevating the support S¹ to its initial position, and the reed may then be shifted sidewise to cause the warp ends which are located in the dent spaces in which the hooks are disposed to bear against the faces thereof from which the hooks 14 project. Supports S¹ may then be lowered to the position shown in dotted lines of Fig. 7, it being noted that as this support S¹ is thus lowered, the warp ends, which are located in the dent spaces in which the hooks are disposed, will pass downwardly without being engaged by any of said hooks, passing the hooks 15 on the side thereof and riding over the hooks 14.

The support S¹ of the warp may then be raised to the position shown in full lines in Fig. 7, whereby the warp ends which previously passed the hooks will be engaged by the hooks 14 which are open toward the bottom, and at the same time the other set of warp ends, which are located in the unobstructed dent spaces will be permitted to pass, thereby forming a new shed into which the second lease rod or cord L² may be inserted to complete the lease.

Of course, it will be apparent that, instead of raising or lowering the warp as above described, the lease sheds may be formed by leaving the warp supports stationary, and causing the comb or reed 10 to be raised and lowered whereby the hooks carried by the dents will selectively engage the warp ends in the same manner as above set forth to form the lease sheds, and it will also be apparent that instead of shifting the reed sidewise as above set forth, the entire body of the warp may be shifted sidewise, but in a contrary direction, and the reed left stationary.

It will, of course, be understood that the dents

13, instead of being soldered at their lower ends in the frame 10 may, if desired, be supported at their lower ends by means of suitable springs, as is commonly done in expansion combs which permit the number of dents per inch to be varied to suit the requirements of the user.

It will be noted that the manipulation for the formation of the lease is quite simple, and may be expeditiously performed without requiring any particular skill on the part of the operator, or on the other hand the device may be incorporated in an automatic machine without undue complication.

I claim:

1. A warp leasing device comprising a frame, 15 and a series of dents mounted therein spaced from each other, thereby to provide dent spaces in which the warp is located, said dents being arranged in pairs, one dent of each pair having a hook open in one direction and the other dent 20 of each pair having a hook open in the other direction.

2. A warp leasing device comprising a frame, and a series of dents mounted therein spaced from each other, thereby to provide dent spaces 25 in which the warp is located, said dents being arranged in pairs, one dent of each pair having a hook open in one direction and the other dent of each pair having a hook open in the other direction, and the dent spaces between successive 30 pairs of dents each being unobstructed at the hook portions of the dents.

3. A warp leasing device comprising a frame, and a series of dents mounted therein spaced from each other, thereby to provide dent spaces 35 in which the warp is located, said dents being arranged in pairs, one dent of each pair having a hook open in one direction and the other dent of each pair having a hook open in the other direction, each of said hooks of each pair of dents 40 extending part way into the dent space between said dents leaving a passageway between each hook and the dent which carries the other hook.

4. A warp leasing device comprising a frame, and a series of dents mounted therein spaced 45 from each other, thereby to provide dent spaces in which the warp is located, said dents being arranged in pairs, one dent of each pair having a hook open in one direction and the other dent of 50 each pair having a hook open in the other direction, each of said hooks of each pair of dents extending into the dent space between said dents, and the dent spaces between successive pairs of 55 dents each being unobstructed at the hook portions of the dents.

5. A warp leasing device comprising a frame, and a series of dents mounted therein spaced from each other, thereby to provide dent spaces in which the warp is located, said dents being arranged in pairs, one dent of each pair having a 60 hook open toward the top and the other dent of each pair having a hook open toward the bottom, one of said hooks being disposed above the other in the dent space between said dents.

6. A warp leasing device comprising a frame, 65 and a series of dents mounted therein spaced from each other, thereby to provide dent spaces in which the warp is located, said dents being arranged in pairs, one dent of each pair having a hook open toward the top and the other dent of 70 each pair having a hook open toward the bottom, the hook which is open toward the top being disposed above the hook which is open toward the bottom.

7. A warp leasing device comprising a frame, 75

and a series of dents mounted therein spaced from each other, thereby to provide dent spaces in which the warp is located, said dents being arranged in pairs, one dent of each pair having a hook open in one direction and the other dent of each pair having a hook open in the other direction, the hooks which are open in one direction being disposed in one plane, and the hooks which are open in the other direction being disposed in another and different plane.

8. A warp leasing device comprising a frame, and a series of dents mounted therein spaced

from each other, thereby to provide dent spaces in which the warp is located, said dents being arranged in pairs, one dent of each pair having a hook open in one direction and the other dent of each pair having a hook open in the other direction, each of said hooks of each pair of dents extending into the dent space between said dents, the hooks which are open in one direction being disposed in one plane, and the hooks which are open in the other direction being disposed in another and different plane.

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