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SPENT BOBBIN RECEIVER FOR WEFT REPLENISHING LOOMS

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1

This invention relates to improvements in spent bobbin receivers for weft replenishing looms and it is the general object of the invention to provide a flexible bobbin holding bag or the like supported by a light weight frame readily detachable from the loom.

Bobbins which are discharged from depleted shuttles in a weft replenishing loom are generally directed into a receiver or collector from which they are later gathered and stripped of their waste yarn. Heretofore these receivers have been made in the form of sheet metal cans which are heavy and awkward to handle, particularly when the bobbins are being emptied. It is an important object of my present invention to provide a skeleton type supporting frame made preferably of tubular material and having free ends to receive supports or the like for the bobbin bag.

When bobbins are being emptied from the receiver it is customary for the attendant to invert or turn the bag upside down, and during this operation it is desirable to keep the bottom of the bag from falling to such a position as will interfere with movement of bobbins out of the bag. It is another object of my present invention to make the aforesaid skeleton frame of such shape that it will engage a strap on the bottom of the bag and prevent collapse of the bag when it is being emptied. This feature of the invention may be carried into effect either by having the side members of the frame inclined with respect to each other, or formed with shoulders or the like which will engage the strap.

With these and other objects in view which will appear as the description proceeds, my invention resides in the combination and arrangement of parts hereinafter described and set forth.

In the accompanying drawings, wherein two forms of the invention are shown,

Fig. 1 is a front elevation of a part of the loom having the preferred form of my invention applied thereto,

Fig. 2 is a side elevation partly in section looking in the direction of arrow 2, Fig. 1,

Fig. 3 is an enlarged longitudinal section through the upper part of one of the side frame members indicating the manner of supporting the top of the bag,

Fig. 4 is an enlarged section on line 4—4 of Fig. 3,

Fig. 5 is a horizontal section on line 5—5 of Fig. 1, and

Fig. 6 is a view similar to part of Fig. 1 but showing a modified form of skeleton frame.

2

Referring particularly to Figs. 1 and 2, I have shown a loom frame 10 and a lay L mounted on lay swords 11, one of which is shown. By means of connectors 12 the lay is moved backwardly and forwardly in usual manner. The lay is provided with shuttle box 13 which on alternate beats of the loom is occupied by a shuttle S. Depending from the shuttle box is a bobbin guide 14 which is preferably inclined forwardly and downwardly. Replenishing operations of the loom occur when the lay is on the front center position as shown in Fig. 2, and the expelled bobbins move downwardly along the bobbin chute 14 and are directed forwardly thereby.

Secured to the lower part of the loom frame is a bracket or support 15 held in fixed position on the loom frame as at 16. A tongue 17 extends upwardly from the lower part of support 15 and with the latter defines a pocket or bearing 18 which opens upwardly. Bottom side guide lugs 19 are provided on support 15 laterally of tongue 17 and upper guide lugs 20 also on the support 15 are above the lower lugs 19. A spring clip 21 is secured to the support 15 and extends forwardly between top guide lugs 20 and over the pocket 18.

The matter thus far described may be substantially the same as that set forth in my co-pending application Serial No. 636,944 filed December 22, 1945.

My improved spent bobbin receiver is made essentially of two parts, one of which is a skeleton frame F and the other of which is a bobbin receiving cloth or flexible bag B. The frame F has side members 25 and 26 which are joined at their lower ends to form a foot 27 normally received by the pocket 18. The upper end of each side member is bent to provide a downwardly and rearwardly inclined arm 28 the rear end of which is free. An upper cross bar 29 joins the side members near their upper ends to reinforce the latter and provide an upper hand hold. A second cross bar 30 joins the side members near their lower ends and in a position for engagement with the spring clip 21. The lower cross bar also serves as a hand hold. The side members, foot 27, and rearwardly extending arms 28 may if desired be made of a continuous piece of tubing bent to conform substantially to the shape shown in Figs. 1 and 2.

The bag B is made of a durable textile fabric and has front and back walls 35 and 36, respectively, and inner and outer side walls 37 and 38. The bag is provided with an upwardly opening bobbin receiving mouth M and has a bottom 39

3

which may be formed by a plate or the like 40. I wish it to be understood, however, that the bottom can be formed without the plate 40. The upper edges of the inner and outer side walls 37 and 38 are each provided with a hem 45 through which extends a supporting wire or rod 46 the rear end of which is hooked as at 47 and extends into the rear end of the corresponding arm 28. The forward end of each rod or bar 46 extends through appropriately drilled holes in the corresponding side member 25 or 26 and is then bent laterally as at 48 to be held in position on frame F as shown at Fig. 3.

In the preferred form of the invention the side members 25 and 26 converge downwardly and pass between the front wall 35 of the bag and a strap 50 the ends of which are fastened to the front wall of the bag as at 51. That part of the strap which is free from the bag defines a loop 52, Fig. 5, of less length than the distance between the upper ends of the side members 25 and 26. Because of this relationship the bottom of the bag cannot slip along the side members very far when the bag is inverted.

In the modified form of the invention shown in Fig. 6 the skeleton frame 60 will be similar to the frame F except for the lower end thereof. The side members 61 and 62 corresponding to members 25 and 26 may be substantially parallel and connected at their lower ends by a supporting foot 63. Each of the side members 61 and 62 is bent outwardly or away from the other member to form a shoulder 64 located just above the strap 50. The shoulders overhang the ends of loop 52 and the bottom of the bag is thus limited in its motion toward the mouth M.

In normal use the receiver will be in the position shown in Figs. 1 and 2. As successive replenishing operations of the loom occur the expelled bobbins or weft carriers W will accumulate in the bag B. The spring clip 21 and the tongue 17 together with the lugs 19 and 20 cooperate to hold the frame F in position on the support 15. When it is necessary to empty the bag the upper cross bar 29 is pulled forwardly to detach the lower cross bar 30 from the clip 21 and the frame is then lifted upwardly out of pocket 18. During the emptying operation the bag is inverted, but its bottom end will be prevented from moving toward the mouth M by cooperation of the strap 50 and the side members 25 and 26 in the preferred form of the invention, or the shoulders 64 in the modified form.

From the foregoing it will be seen that I have provided a bobbin receiver having a skeleton frame made of a tube bent to form side members and arms 28 the open free ends of which receive the hooked ends of the bag supporting rods 46 in hems 45. It will also be seen that the forward end of these rods pass through their respective side members and are then bent so that they are held in position on frame F. It will further be seen that the skeleton frame is so formed as to cooperate with the strap 50 and limit movement of the bottom of the bag toward the mouth M when the bag is inverted for the purpose of emptying bobbins B therein. The bag therefore retains its shape and does not collapse during the emptying operation. This result may be accomplished either by having the side members oblique with respect to each other with their lower ends nearer than their upper ends, or by means of the shoulders 64.

Having thus described my invention it will be seen that changes and modifications may be made

4

therein by those skilled in the art without departing from the spirit and scope of the invention and I do not wish to be limited to the details herein disclosed, but what I claim is:

1. In a spent bobbin receiver for a weft replenishing loom, a skeleton frame having vertically extending side members each provided at the upper end thereof with a rearwardly extending arm, a bobbin receiving bag having hems formed on the upper part thereof under said arms, and a support extending through each hem and having the rear part thereof supported by the rear end of the corresponding arm and having the forward end thereof supported by the corresponding side member.

2. In a spent bobbin receiver for a weft replenishing loom, a skeleton frame including tubular side members having their upper parts bent rearwardly to form free ends, a bobbin supporting flexible bag, and means supporting the upper portions of the bag and extending into said free ends and held connected to said side members.

3. In a spent bobbin receiver for a weft replenishing loom, a skeleton frame having side members terminating at their upper ends in rearwardly extending free tubular arms, a bobbin receiving flexible bag having hems extending under said arms, and a support extending through each hem having the rear end thereof projecting into the rear end of the corresponding arm and having the forward end thereof secured to the corresponding side member.

4. In a spent bobbin receiver for a weft replenishing loom, a skeleton frame formed of a tube bent to have vertically extending side members each terminating at the upper end thereof in rearwardly extending free arms, a flexible bobbin receiving bag having hems along the upper edge thereof under said arms, and a bag supporting rod extending through each hem and having the rear end thereof hooked shaped and extending into the corresponding arm and having the forward end thereof secured to the corresponding side member.

5. In a spent bobbin receiver for a weft replenishing loom, a skeleton frame having vertically extending side members, a flexible bobbin receiving bag having a mouth at the upper end thereof and supported by said frame and having a bottom to support bobbins, and a strap secured to said bag adjacent to the bottom thereof, the side members extending between the strap and the bag and being so formed as to cooperate with said strap and limit movement of the bottom of the bag toward the mouth thereof when the receiver is inverted.

6. In a spent bobbin receiver for a weft replenishing loom, a skeleton frame having side members inclined with respect to each other and having their lower ends nearer together than their upper ends, a flexible bobbin receiving bag depending from the upper part of the frame, and a strap secured to the bag near the bottom thereof, said side members extending between said strap and bag and cooperating with said strap due to the fact that said side members are inclined with respect to each other to limit movement of the bottom of the bag toward the mouth thereof when the receiver is inverted.

7. In a spent bobbin receiver for a weft replenishing loom, a flexible bobbin receiving bag having a mouth at the upper end thereof and having a bobbin supporting bottom, a strap secured to the front part of the bag near the bottom thereof, and a supporting frame for the bag

5

having side members passing between the strap and the bag and diverging upwardly and cooperating with the strap to limit movement of the bottom of the bag toward the mouth thereof when the receiver is inverted.

8. In a spent bobbin receiver for a weft replenishing loom, a flexible bobbin receiving bag having a mouth at the upper end thereof and having a bobbin supporting bottom, a horizontal strap secured to the front part of the bag near the bottom thereof and having the ends thereof attached to the bag at points spaced by a given distance, and a supporting frame for the bag having side members extending between the strap and the bag and having the upper ends thereof separated by a distance greater than said given distance.

9. In a spent bobbin receiver for a weft replenishing loom, a flexible bobbin receiving bag having a mouth at the upper end thereof and a

6

bobbin supporting bottom, a horizontally extending strap secured to the bag near the bottom thereof, a supporting frame for the bag extending between the strap and the bag and having side members, and shoulders formed on said side members for engagement with the strap to limit movement of the bottom of the bag toward the mouth thereof.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,296,982	Cobb -----	Sept. 29, 1942
2,350,317	Nichols -----	May 30, 1944
2,401,602	Belforti -----	June 4, 1946