YARN HEATING CABINET

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5 Claims. (Cl. 312—238)

This invention relates to a heated cabinet adapted to be disposed adjacent the magazine of a box loom and into which a pin board containing bobbins of left twist yarn are adapted to be placed, said cabinet having a hinged door member on top of which is adapted to be supported a second pin board filled with bobbins of right twist yarn. The interior of the housing is provided with heating means such as an electric bulb or an electric heating coil for heating the interior of the box say from twenty to fifty degrees Fahrenheit higher than the room temperature to thus set the twist in the left twist yarn disposed within the housing.

In the weaving of fabrics it is customary to have pattern means controlling the number of picks in which a right twist yarn is used and for controlling the number of picks in which a left twist yarn is used. The number of picks of each of the yarns is controlled by the pattern control means and varies in different mills.

However, it has been found that the left twist yarn is more liable to be affected by the humidity in the mill than the right twist yarn and, therefore, by providing a heated housing for housing the left twist yarn prior to its being transferred into the magazine of a loom, the left twist yarn is set and acted upon by the heat and thus a very much better quality of cloth is produced with a great decrease in the amount of defects in the cloth, due to the heating of the left twist yarn prior to its being used in the loom.

Also, in some instances it is preferable, where a combination yarn, such as a yarn twisted from nylon and rayon, or a mixture of nylon, rayon and cotton, that the quality of the yarn is greatly improved if it is housed within a heated housing immediately prior to being fed into the magazine of the loom. By providing a heated cabinet disposed adjacent the magazine of the loom, this improves the quality of cloth which can be produced by heating the yarn immediately prior to its being placed into the magazine of the loom.

By placing a left twist yarn or a yarn composed of strands of cotton and nylon or cotton and rayon or nylon, rayon and cotton, and the like, in this heated cabinet, the set in the twist is accomplished by heating the same immediately prior to its being placed in the magazine of the loom and by providing a heated cabinet with easily accessible means for withdrawing the yarn from the cabinet and having this means adjacent the loom is very desirable in that much better cloth is produced with less defects than has here-tofore been accomplished by subjecting both yarns to the humidified atmosphere of the mill.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which

Figure 1 is an isometric view of the housing showing the door in open position;

Figure 2 is an elevation of the housing;

Figure 3 is a vertical sectional view taken along the line 3—3 in Figure 2;

Figure 4 is a schematic plan view showing the disposition of the housing relative to the loom with which it is associated.

Referring more specifically to the drawings, the numeral 10 indicates a suitable pedestal adapted to be placed on the floor of a mill having looms wherein and rising therefrom is a hollow pipe 11 which has welded to its upper end a horizontally disposed angle bar 12. Welded to this angle bar member 12 are two short angle bars 13 and 14, and also welded to and abutting against the angle bars 12 and 14 and to the angle bar 12 are angle bars 15 and 16 which project upwardly and rearwardly.

Welded to the short angle iron members 13 and 14 are upright angle bars 20 and 21, and welded between the ends of the angle bars 15 and 16, respectively, and the upper ends of angle bars 20 and 21, respectively, are angle bars 22 and 23. A sheet metal bottom 24 is secured to the upper surfaces of the horizontal portions of angle bars 15 and 16. The upper ends of the angle bars 20 and 21 have adjacent thereto an angle bar 26. Hingedly secured to the rear end of the bottom member 24 as at 27 is a back cover member 28 having a handle 29. There is also welded between the upper surfaces of the angle bars 22 and 23 a plate 30, against the lower edge of which the hinged cover 28 is adapted to fit.

A strap iron member 31 extends between the angle bars 22 and 23, being welded to the proximate edges of the angle bars 22 and 23 and against the lower surface of plate 30. This hinged cover 28 has side angle bars 32, one of which is not shown, joined together at their upper ends by a strap iron member 34. Secured to the rearmost upper surface of bottom member 24 are angle bars 36 and 37 which have their front ends welded to an angle bar 38, which has clips such as 39 welded to each end thereof and also welded to the upright angle bars 20 and 21. These two angle bars 36 and 37 are adapted to support a pin board 39 having a plurality of pins 38 adapted to
hold a plurality of bobbins or quills to be deposited into the magazine of the loom.

Disposed between the angle bars 15, 20 and 22 is a side member S—1 and disposed between and secured to the angle bars 16, 21 and 23 is a side member S—2. Suitable brackets such as 42 are secured to the inner surface of the upper-angle bars 20 and 21 and to angle bars 22 and 23.

The side walls S—1 and S—2 have suitable openings 43 and 44, respectively, therein which are covered by suitable housings 45 and 46 each having a bulb socket 47 therein which has mounted therein a suitable heating element such as an incandescent bulb 50. Leading from these sockets 47 are wires 52 and 53 which pass down along the lower portion of the compartment and pass through an opening in the bottom thereof and down on the inside of the pipe 12 where they are joined together as at 55 and pass outwardly through a suitable opening in the pedestal 10 and have a p'ug-in socket 56 therein adapted to be plugged into a suitable source of electrical energy.

Hingedly connected at 69 to the main housing is a cover member C comprising an upright angle bar 63 and angle bars 64 and 65 which are welded thereto which are welded together at their outer ends and a suitable sheet metal covering 61 is secured to these angle bars 63, 64 and 65 to form one side of the cover C. This covering 61 has a suitable transparent window W—1 therein so that the interior of the cabinet may be viewed without opening the door member. Secured to the upright angle bar 63 is an angle bar 70, the other end of angle bar 70 having secured thereon to an angle bar 72 and an angle bar 73 is secured to the lower end of the angle bar 72. Secured to the angle bars 72 and 73 is a side member 74 of sheet metal which has a latch 75 thereto adapted to hook over a pin 76 projecting from the side wall S—1 to hold the cover member in closed position.

The angle bar 73 has secured thereto a suitable handle H, whereby the cover member can be moved from open to closed position and vice versa.

The angle bar 70 as well as the angle bars 72, 73, 65 and 64 have secured thereto a sheet metal member 80 which is bent as at 81 and on its lower end is secured an angle bar 85 which is adapted to rest against the angle bars 13 and 14 when the cabinet is closed.

Secured on the sloping upper surface of the sheet metal member 83 are angle bars 86 and 97, serving as a guide and support for a second pin board P—2. Secured near the point 81 on the sheet metal member 80 is an angle bar 90 adapted to serve as a stop for the pin board P—2 to support the same and a Z angle clip 91 is disposed near the top of the sheet metal member 80 and beneath which the upper end of the pin board P—2 is adapted to be secured.

A suitable bracket, such as 92, is secured to the front angle bar 63 and to the horizontal upper angle bar 70 for lending rigidity to the frame of the cover portion.

The cabinet together with its stand is adapted to be placed in a mill substantially in the position shown in Figure 4 where there is schematically shown a loom 95 having magazines 96 and 97 into which the bobbins are adapted to be placed from the above described mechanism. In Figure 4 the cabinet as a whole is indicated in outline with only a few reference characters applied for identification purposes.

It is thus seen that one of these cabinets can be placed in association with each loom and the yarn having the left twist therein can be housed within the cabinet and heated to the required amount, depending upon the size and wattage of the light bulbs placed therein, to exclude the humidified atmosphere, which is present in the mill, from yarn which is housed within the heated cabinets. The cabinets, when used in the loom will have substantially the same characteristics and overcome the difficulties above enumerated.

In the drawings and specification there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. A cabinet for receiving yarn carriers filled with bobbins comprising a substantially rectangular casing divided into a main section and a cover section substantially from two opposed corners, with the main section at its lowermost corner so that its lowermost corner and uppermost corner will be substantially in the same vertical plane, the rear upper portion of the main portion having a swingable door and through which yarn carriers can be inserted to rest on the bottom of the cabinet, the cover portion being hingedly connected to the main portion at one side thereof and having means for supporting a second yarn carrier on the forwardly sloping top of the cover, and heating means disposed within the main section for heating the interior of the cabinet.

2. A cabinet for receiving yarn carriers filled with bobbins comprising a substantially rectangular casing divided into a main section and a cover section substantially from two opposed corners, means for mounting the main section at its lowermost corner so that its lowermost corner and uppermost corner will be substantially in the same vertical plane, the rear upper portion of the main portion having a swingable door and through which yarn carriers can be inserted to rest on the bottom of the cabinet, the cover portion being hingedly connected to the main portion at one side thereof and having means for supporting a second yarn carrier on the forwardly sloping top of the cover, and heating means disposed within the main section for heating the interior of the cabinet.

3. A yarn cabinet for supporting yarn carriers comprising a rectangular casing divided from opposed corners, means for supporting the casing with its bottom and top portions in inclined position, the casing being divided from its uppermost corner to near its lowermost corner into a main section and a cover section, the main section having a door on the portion thereof remote from the cover section through which yarn carriers may be inserted to rest near the bottom of the main section, the cover section being hingedly connected to the main section at one side thereof and said cover section having means for supporting a second yarn carrier on the forwardly sloping top of the cover, and heating means for heating the interior of the cabinet, and pedestal means for supporting the cabinet adjacent a loom in a mill and the like, whereby unheated yarn packages can be removed from the yarn carrier.
disposed on top of the cover portion and heated yarn packages may be removed from the first-named yarn carrier by swinging the cover portion to open position.

4. A yarn carrier housing adapted to be disposed adjacent a loom in a mill and comprising a cabinet substantially in the form of a hollow cube, means for supporting the cabinet at one corner thereof to cause four of its sides to occupy an inclined position, the cabinet being slit vertically to provide a main portion and a front cover portion, the main portion having a door closing the back upper portion thereof and when opened admitting a yarn package to the interior of the cabinet, the front cover portion being hingedly secured at one of its sides to one of the sides of the main portion and having means on the exterior of its upper forwardly inclined portion for supporting an additional yarn carrier.

5. A yarn cabinet adapted to be associated with a loom and being substantially in the form of a cube, means for supporting the cabinet on one of its corners, to cause its upper corner and its lower corner to occupy substantially the same vertical plane, the cabinet being divided vertically into a front cover portion and a main portion, the main portion having its rearmost upper wall hingedly mounted so as to swing to open position to permit a yarn carrier to be deposited on the sloping floor of the main portion, the front cover portion being hingedly connected at one side to an approximate side edge of the main portion and having means on the exterior of its upper sloping portion for receiving a second yarn carrier, means for heating the interior of the main portion to thereby subject the yarn on the carrier disposed within the main portion to a higher temperature than the yarn on the second carrier.

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