Dec. 26, 1933. L. A. BEARDSLEY 1,941,428

BOBBIN CRATE

Filed June 15, 1931

FIG. 1.

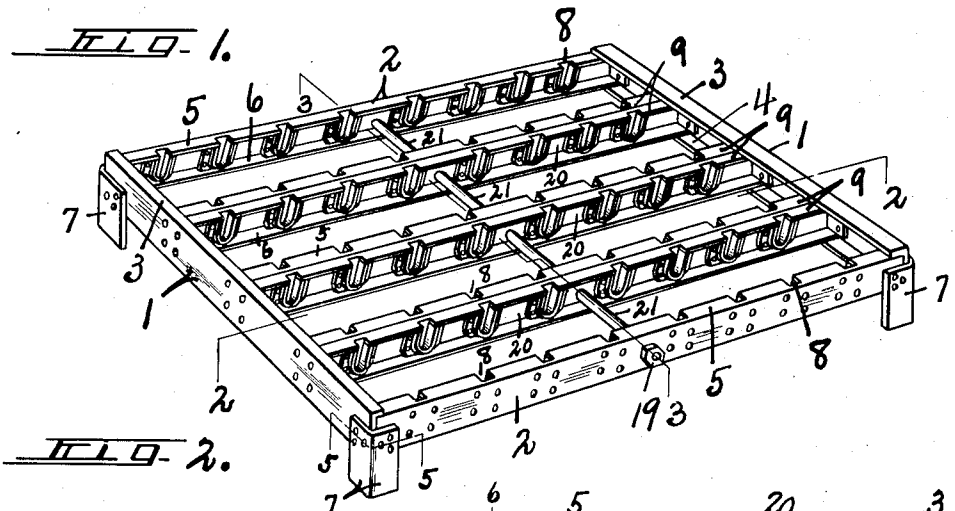


FIG. 2.

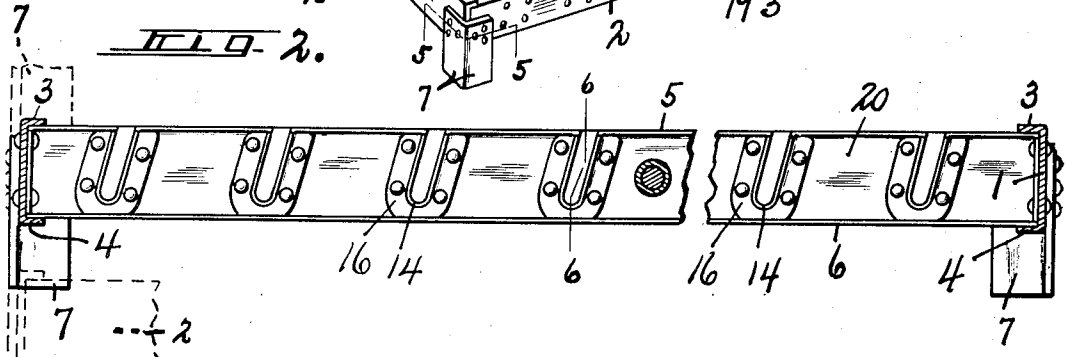


FIG. 3.

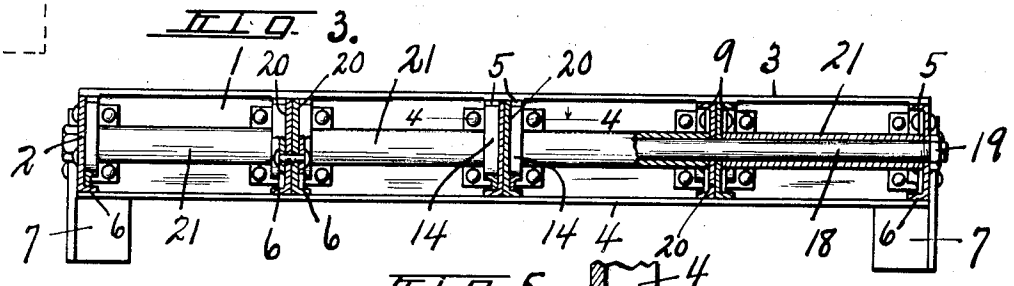


FIG. 4.

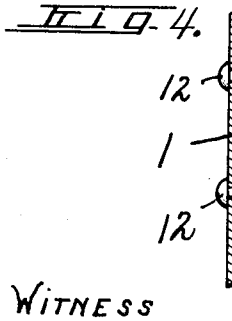


FIG. 5.

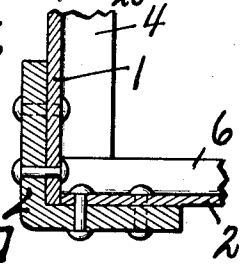
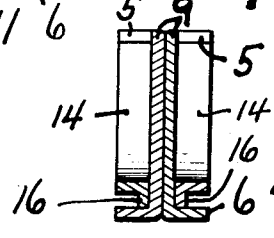


FIG. 6.



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BOBBIN CRATE

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Application June 15, 1931. Serial No. 544,629

18 Claims. (Cl. 242—130)

This invention relates to certain new and useful improvements in bobbin crates.

The main object of the invention is to provide a bobbin crate of strong, rigid and lasting construction adapted to effectively support bobbins to permit subjection of the material upon the bobbins to a steaming process or the like.

A further object resides in the provision of a bobbin crate which may be formed of aluminum strips or sheets to eliminate the danger of the yarn or thread being contaminated by rust.

A further, more detailed advantage, resides in means for supporting a crate in spaced relation with respect to its support, such means also acting to permit stacking of the crates one upon another and maintaining the crates in spaced relation with respect to each other and at the same time, locking or holding the stacked crates in exact registration.

A further object resides in the provision of inclined guide members for receiving bobbin spindles to permit tilting of the crate for the ready insertion or removal of bobbins without danger of the bobbins rolling or sliding out of the guides.

Other objects and advantages relate to the details of the structure, the form and relation of the parts thereof, all as will more fully appear from the following description taken in connection with the accompanying drawing in which:—

Figure 1 is a perspective view of a bobbin crate of this invention.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is a section on line 3—3, Figure 1.

Figure 4 is a section on line 4—4, Figure 3.

Figure 5 is a section on line 5—5, Figure 1.

Figure 6 is a section on line 6—6, Figure 2.

The bobbin crate structure illustrated is preferably formed entirely from aluminum strips or sheets secured together where necessary by means of aluminum rivets so that there is no possibility of any portion of the device becoming rusty.

As shown, the crate comprises two similar end pieces 1, and two similar side pieces 2. The end pieces and the side pieces may be of any desired length and relative width. Each end piece 1 comprises a strip of aluminum provided at its upper and lower edges with inwardly extending flanges 3 and 4 respectively.

These flanges 3 and 4 are arranged to extend inwardly of the frame. Each side piece 2 may also be formed of a strip of aluminum provided at its upper and lower edges with inwardly extending flanges 5 and 6 respectively. The overall width of the side pieces 2 is preferably such that the side pieces will fit tightly within the flanges 3 and 4 of the end pieces. Any suitable means may be provided for connecting the side and end pieces together at the corners of the frame but in the particular construction illustrated, novel means is provided for performing this function which, in this instance, also performs an additional function of spacing the crates from the supporting surface and from each other when stacked and for assuring maintenance of the stacked crates in aligned position. This means takes the form of angle bars 7, one being provided at each corner of the frame, which angle bars may have one flange riveted to the side piece and the other flange riveted to the end piece, these angle bars 7 constituting corner pieces which project, as shown, some distance below the lower edge of the side and end pieces to constitute supporting legs for a crate.

Further, these corner pieces 7 terminate some distance short of the upper edge of the side and end pieces so that when a second crate is stacked upon the top of an underlying crate, the corner pieces 7 upon the upper crate will rest upon the upper edge of the corner pieces 7 of the lower crate and will grip the side and end pieces of the lower crate at the corner so as to assure alignment of stacked crates.

Further, the length of the legs is such that when the corner pieces of the upper crate rest upon the upper edge of the corner pieces of a lower crate, the stacked crates will be spaced some distance apart to permit uniform subjection of the yarn or thread carried by the bobbins to a treating fluid such as steam.

In order to support a plurality of bobbins in the frame so far described, the upper flanges 5 of the side pieces 2 are provided with cut-out portions forming recesses 8 which may extend substantially the entire width of the flange. In this particular illustration, each end piece is provided with eight such recesses. A plurality of intermediate bars extending parallel with the side bars 2 is provided and in general form, these bars are of uniform shape similar in shape to the side bars; that is, they may be formed of aluminum strips having upper and lower flanges 5 and 6 with recesses 8 provided in the upper flanges.

Each intermediate bar is a composite bar 9 formed of two similar reversely arranged bars 20 similar in form and shape to the bars 2 and arranged with their flat surfaces in contact and the flanges 4 and 5 on one bar extending in the opposite direction from the flanges 4 and 5 on the co-operating bar. Three such composite bars

are here illustrated and the ends of the strips constituting the composite bars 9 are also flanged outwardly in opposite directions to form the attaching flanges 10 and 11 respectively upon opposite ends of the composite bars and which are secured to the end bars 1 as by rivets 12.

The bobbins which this crate is adapted to support are of ordinary spool construction having short journals extending axially from opposite ends of the bobbins and in order to engage and support these short journals, each of the bars 2 and each of the composite bars 9 are provided with a plurality of U-shaped metallic guide members 14 equal in number to the number of recesses 8 in the upper flange of the side member 2. These U-shaped guide members open upwardly, and the distance between the legs of the U-shaped member is preferably substantially the same as the width of the recesses 8, and these guide members or clips are arranged between the flanges of the members 2 and open upwardly so that the openings in the U-shaped members register with respective recesses in the flange 5 of the members 2 and 9.

These U-shaped members may be of a width substantially equal to the width of the flanges 5 and 6 so as to be positioned within the channel of the members 2, and as shown, are arranged in an inclined position so that when the journals of bobbins pass through recesses 8 and into the guide members, the bobbins will be moved somewhat in an endwise direction with respect to the frame as the journals move downwardly in the U-shaped guide members. This permits considerable tilting of the frame without danger of the bobbin sliding out of the guide members.

In order to secure these U-shaped guide members to the side members 2 and the similar members constituting the composite intermediate strips 9, each U-shaped guide member is formed with a laterally extending U-shaped flange 16 at the edge adjacent the member 2 so that this flange will rest in contact with the member 2 or the similar members constituting the composite strips 9, and rivets are then passed through the strip 2 and through the flange 6 to secure the guide members to the side members.

It will be understood that with respect to the intermediate composite strips, each of these strips carries a plurality of guide members and as the recesses 8 in the members constituting the composite strips are in alignment, the U-shaped guide members upon opposite sides of the composite strip will also be in alignment, and in the construction of the composite strip with their guide members, the rivets may be passed through the flange 16 on one guide member through both of the members or strips constituting a composite intermediate strip and through the other U-shaped guide member aligned with the first-named guide member so that these rivets not only secure the U-shaped guide members to respective strips constituting a composite strip but also act to secure the strips of a composite strip together and to the opposed aligned guide members.

The intermediate strips 9, in like manner as the side walls 2, are of a width to fit within the flanges 3 and 4 of the end pieces 1.

It will be apparent that in the manner described, a bobbin crate is produced from strips of aluminum, many of which are of similar form and shape and can, therefore, be more economically produced. Further, a rigid and practically unbreakable frame is produced for effectively supporting bobbins for processing and which are capable of being stacked in overlying relation and are maintained in exact registration or alignment and in spaced position to permit uniform subjection of the materials to the processing. Preferably, a cross bolt 18 is provided extending laterally of the frame between the side pieces 2 and securing them together in any suitable manner as by the use of a nut 19.

In order to cause this bolt to act as an exact spacing means for the composite strips 9 and the side pieces 2, sleeves 21 are mounted upon the bolt between each side piece, and its adjacent intermediate strip and between adjacent intermediate strips, and which sleeves act to hold the intermediate strips and the side strips in predetermined spaced relation.

Although I have shown and described a particular detailed construction of bobbin crate, I do not desire to restrict myself to the exact form and relation of the parts or to the specific material described, as various and many changes may be made in each of the same, without departing from the scope of this invention, as set forth in the appended claims.

I claim:

1. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, and guide members adapted to receive bobbin parts secured to the inner side of the side walls and to the opposite sides of the intermediate wall, the side walls being of channel shape and having their flanges extending toward each other and the upper flanges having recesses registering with the upper end of the guide members to permit the passage of bobbin parts into the guide members.

2. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, and U-shaped guide members secured to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, the side walls being of channel shape and having their flanges extending toward each other and the upper flanges having recesses registering with the upper end of the guide members to permit the passage of bobbin parts into the guide members.

3. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, and U-shaped guide members secured in an inclined position to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, the side walls being of channel shape and having their flanges extending toward each other and the upper flanges having recesses registering with the upper end of the guide members to permit the passage of bobbin parts into the guide members.

4. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, and guide members adapted to receive bobbin parts secured to the inner side of the side walls and to the opposite sides of the intermediate wall, the side and end walls each being of channel shape and having their flanges extending inwardly of the frame and the upper flanges on the side walls having recesses registering with the upper ends of the guide members to permit the passage of bobbin parts to

the guide members and the side walls being fitted into the channel between the flanges on the end walls.

5. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, and U-shaped guide members secured to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, the side and end walls each being of channel shape and having their flanges extending inwardly of the frame and the upper flanges on the side walls having recesses registering with the upper ends of the guide members to permit the passage of bobbin parts to the guide members and the side walls being fitted into the channel between the flanges on the end walls.

6. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, and U-shaped guide members secured in an inclined position to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, the side and end walls each being of channel shape and having their flanges extending inwardly of the frame and the upper flanges on the side walls having recesses registering with the upper ends of the guide members to permit the passage of bobbin parts to the guide members and the side walls being fitted into the channel between the flanges on the end walls.

7. A bobbin crate comprising end walls and side walls secured together to form a frame, each of said walls being of channel form, a plurality of intermediate strips extending between and secured to the end walls and being substantially parallel with the side walls, each of said intermediate strips comprising two channel-shaped members arranged back to back with their flanges extending in opposite directions, and guide members for receiving bobbins secured to the inner side of the side walls and to opposite sides of the intermediate walls.

8. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, U-shaped guide members secured in an inclined position to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, and a separate supporting member secured to the frame at each of its corners and terminating short of the upper edge of the side and end walls of the frame and extending below the lower edge of the side and end walls of the frame.

9. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, U-shaped guide members secured to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, the side walls being of channel shape and having their flanges extending toward each other and the upper flanges having recesses registering with the upper end of the guide members to permit the passage of bobbin parts into the guide members, and a separate supporting member secured to the frame at each of its corners and terminating short of the upper edge of the side and end walls of the frame and extending below the lower edge of the side and end walls of the frame.

10. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, U-shaped guide members secured in an inclined position to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, the side walls being of channel shape and having their flanges extending toward each other and the upper flanges having recesses registering with the upper end of the guide members to permit the passage of bobbin parts into the guide members, and a separate supporting member secured to the frame at each of its corners and terminating short of the upper edge of the side and end walls of the frame and extending below the lower edge of the side and end walls of the frame.

11. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, guide members adapted to receive bobbin parts secured to the inner side of the side walls and to the opposite sides of the intermediate wall, the side and end walls each being of channel shape and having their flanges extending inwardly of the frame and the upper flanges on the side walls having recesses registering with the upper ends of the guide members to permit the passage of bobbin parts to the guide members and the side walls being fitted into the channel between the flanges on the end walls, and a separate supporting member secured to the frame at each of its corners and terminating short of the upper edge of the side and end walls of the frame and extending below the lower edge of the side and end walls of the frame.

12. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, U-shaped guide members secured to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, the side and end walls each being of channel shape and having their flanges extending inwardly of the frame and the upper flanges on the side walls having recesses registering with the upper ends of the guide members to permit the passage of bobbin parts to the guide members and the side walls being fitted into the channel between the flanges on the end walls, and a separate supporting member secured to the frame at each of its corners and terminating short of the upper edge of the side and end walls of the frame and extending below the lower edge of the side and end walls of the frame.

13. A bobbin crate comprising end walls and side walls secured together to form a frame, an intermediate strip extending between and secured to the end walls, U-shaped guide members secured in an inclined position to the inner side of the side walls and to opposite sides of the intermediate wall for receiving bobbin parts, the side and end walls each being of channel shape and having their flanges extending inwardly of the frame and the upper flanges on the side walls having recesses registering with the upper ends of the guide members to permit the passage of bobbin parts to the guide members and the side walls being fitted into the channel between the flanges on the end walls, and a separate supporting member secured to the frame at each of its corners and terminating short of the upper edge of the side and end walls of the frame and extending below the lower edge of the side and end walls of the frame.

14. A bobbin crate comprising end walls and side walls secured together to form a frame, each

of said walls being of channel form, a plurality of intermediate strips extending between and secured to the end walls and being substantially parallel with the side walls, each of said intermediate strips comprising two channel-shaped members arranged back to back with their flanges extending in opposite directions, guide members for receiving bobbins secured to the inner side of the side walls and to opposite sides of the intermediate walls, and a separate supporting member secured to the frame at each of its corners and terminating short of the upper edge of the side and end walls of the frame and extending below the lower edge of the side and end walls of the frame.

15. A bobbin crate comprising end walls and side walls secured together to form a frame, each of said walls being of channel form, a plurality of intermediate strips extending between and secured to the end walls and being substantially parallel with the side walls, each of said intermediate strips comprising two channel-shaped members arranged back to back with their flanges extending in opposite directions, guide members for receiving bobbins secured to the inner side of the side walls and to opposite sides of the intermediate walls and the upper flanges on said side walls and said intermediate strips being formed with recesses registering with said guide members to permit the passage of bobbin parts to the guide members, and a separate supporting member secured to the frame at each of its corners and terminating short of the upper edge of the side and end walls of the frame and extending below the lower edge of the side and end walls of the frame.

16. A bobbin crate comprising a frame having means for supporting it in horizontal position, said frame including end walls and side walls secured together at their contiguous ends to form a rigid structure, a plurality of intermediate strips extending between and secured to the end walls and spaced from each other and from the side walls a substantially uniform distance for receiving bobbins in the spaces so formed, and a plurality of U-shaped guide members secured to opposite faces of the intermediate strips and the inner face of the side members and having their U-portions extending obliquely at a substantial angle to the horizontal when the frame rests on its horizontal support.

17. A bobbin crate comprising a metallic frame having means for supporting it in substantially horizontal position, said frame including metallic strips forming the end walls and side walls of the frame and secured together at their contiguous ends to form a rigid structure, a plurality of flat metallic strips of greater width than thickness extending between and secured to the end walls with their width vertically disposed and spaced from each other and from the side walls a substantially uniform distance for receiving bobbins in the spaces so formed, and a plurality of U-shaped metallic guide members secured to opposite faces of the intermediate strips and the inner face of the side members and having their U-portions extending obliquely at a substantial angle to the horizontal when the frame rests on its horizontal support.

18. A bobbin crate comprising a frame having means for supporting it in horizontal position, said frame including end walls and side walls secured together at their contiguous ends to form a rigid structure, a plurality of intermediate strips extending between and secured to the end walls and spaced from each other and from the side walls a substantially uniform distance for receiving bobbins in the spaces so formed, and a plurality of U-shaped guide members secured to opposite faces of the intermediate strips and the inner face of the side members, and opening upwardly for receiving bobbin journals when the frame is in horizontal position.

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