Oct. 8, 1968 H. HAAGSMA ET AL 3,404,928

TEXTILE BOBBIN CONTAINER

Filed Feb. 14, 1967 2 Sheets-Sheet 1

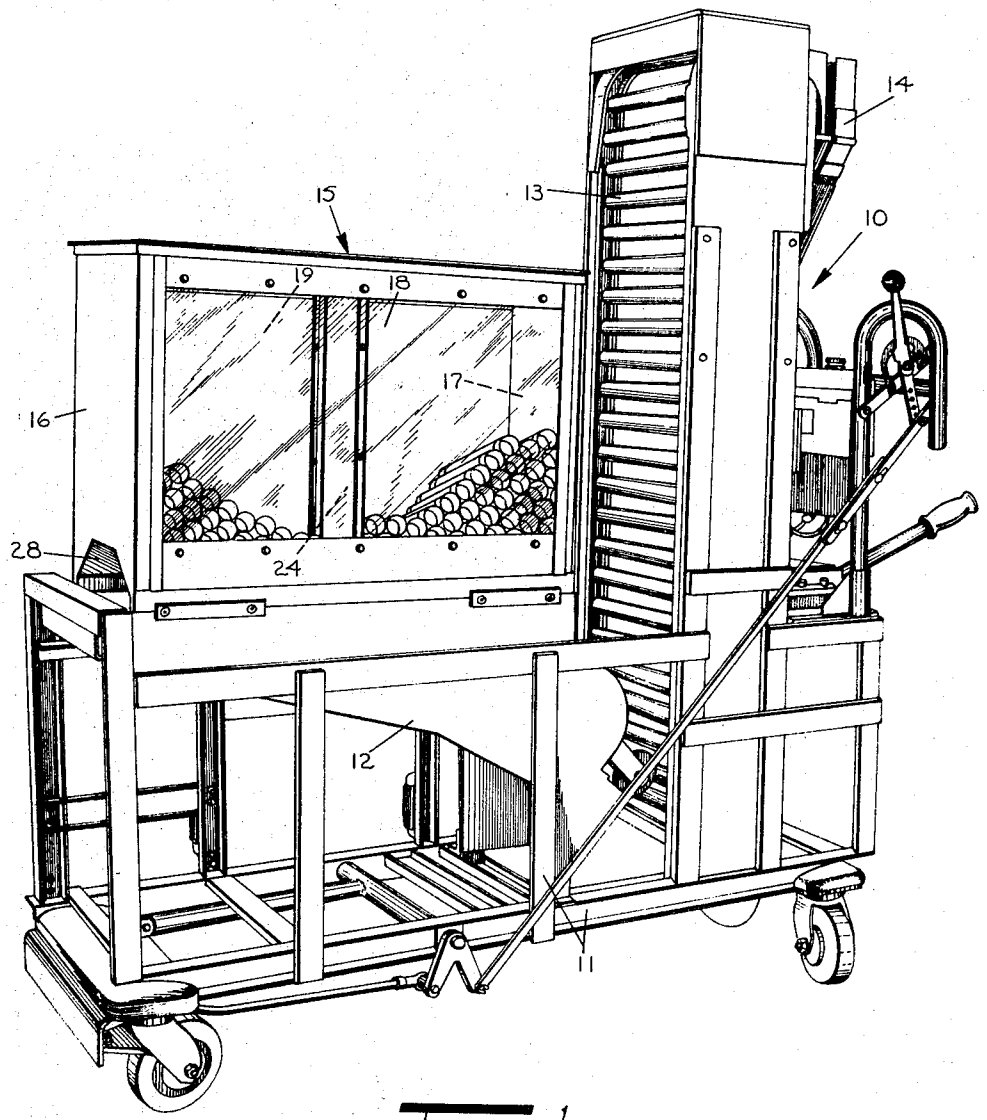


FIG. 1

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Filed Feb. 14, 1967 2 Sheets-Sheet 2

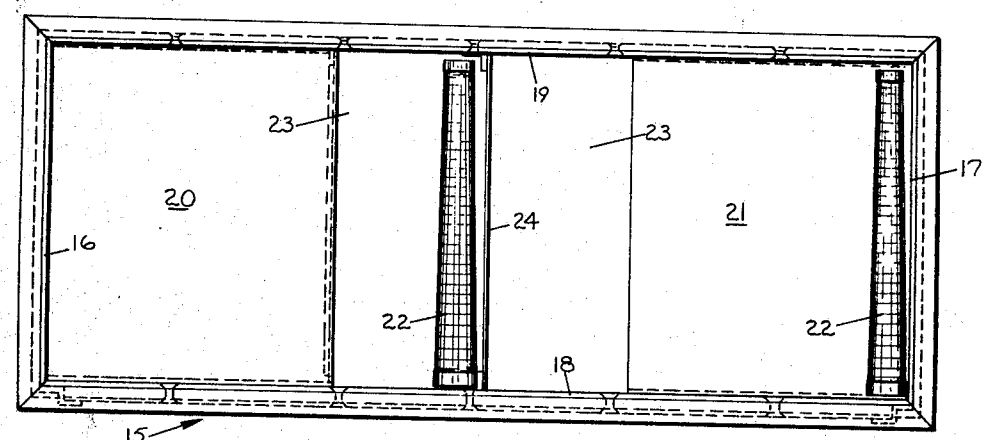


FIG. 2

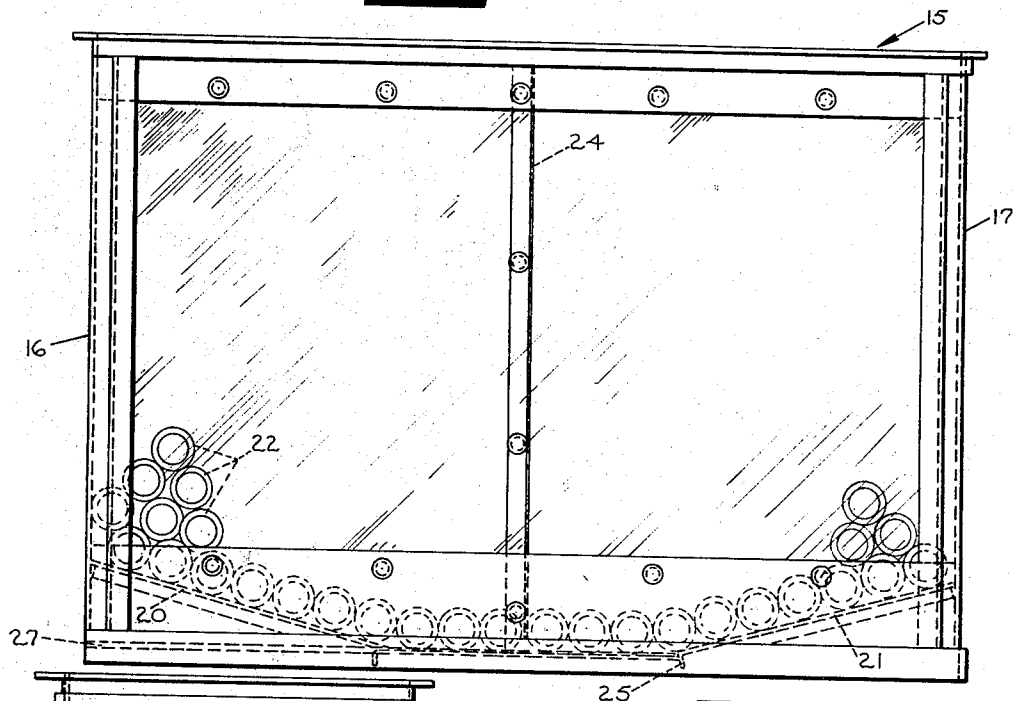


FIG. 3

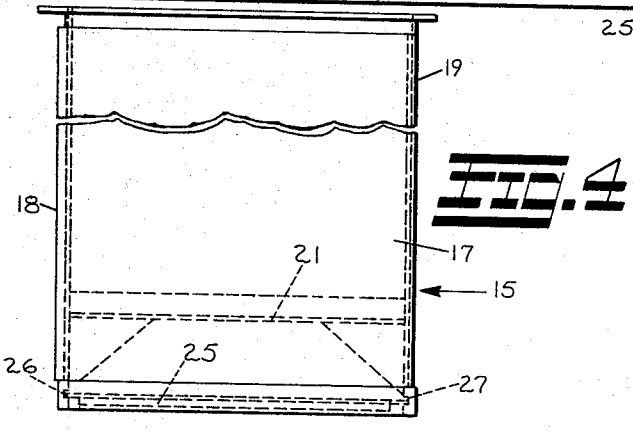


FIG. 4

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United States Patent Office 3,404,928 Patented Oct. 8, 1968

3,404,928

TEXTILE BOBBIN CONTAINER

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Filed Feb. 14, 1967, Ser. No. 615,980
1 Claim. (Cl. 312—72)

ABSTRACT OF THE DISCLOSURE

A hopper for warp bobbins adapted to be positioned on a donning machine and to feed the empty bobbins loosely contained therein through the force of gravity to the bobbin reservoir of said machine.

Background of the invention

The invention pertains to a donning machine movable along the rail of a spinning frame and adapted to impale a supply of empty bobbins on a row of spindles supported by said frame.

In such machines, the bobbins are drawn from a source of supply carried thereby and thence conveyed to the donning apparatus. The source of supply in known forms of donning machines is a form of magazine having a plurality of internal channel-like compartments each of which is adapted to support a plurality of oriented bobbins. The magazine means for supplying bobbins to a donning mechanism is, aside from being a complex structure and one which is relatively expensive to manufacture, considered from an economic stand point to require excessive time and handling of the individual bobbins in the preparatory stages.

The bobbin hopper according to the instant invention is adapted to function in cooperation with the means for guiding and conveying the bobbins to the donning mechanism as shown and described in U.S. Patent Application No. 616,006 filed Feb. 14, 1967. The hopper is of box-like structure with the bobbins oriented but loosely contained therein. An exit port in the funneled bottom thereof permits unrestricted entry of the bobbins through the force of gravity into the bobbin reservoir which is shown and described in the above patent application.

U.S. Patent No. 3,164,946 shows and describes one form of magazine utilized as a bobbin supply for a donning mechanism.

Summary of the invention

The hopper of the present invention is supported by the framework of a donning machine and includes opposed side members disposed in spaced relation and end members which interconnect said side members. The bottom of the hopper comprises a pair of opposed and angularly disposed bobbin support plates which are attached to the end members and a portion of the longitudinal extent of the side members. The angular position of the support plates provides a funneled bottom to the hopper and the space intermediate said plates provides an exit port for the bobbins. To prevent the bobbins from becoming displaced as they approach the exit port, or in other words to assure they pass through said port in a plane normal to the sides of the hopper, a centrally disposed divider is provided which communicates with said port and extends upwardly from substantially the full height of said sides.

Brief description of the drawing

FIG. 1 is a perspective view of a bobbin donning machine showing the bobbin hopper according to the invention positioned thereon;

FIG. 2 is a plan view of the bobbin hopper shown in FIG. 1;

FIG. 3 is a view in side elevation of the hopper shown in FIG. 2; and

FIG. 4 is an end view of the hopper.

Description of the preferred embodiment

Now referring to the figures of drawing enough of a donning machine is shown in FIG. 1 to serve as a basis for a detailed description of the invention applied thereto.

In FIG. 1 there is shown a bobbin donning machine generally indicated by numeral **10** having supporting framework **11** and fixedly positioned within the latter an enclosed unit that is identified by numeral **12**. Within the upper portion of this unit there is formed a reservoir (not shown) for receiving the bobbins from the hopper and within the lower portion a guide channel is provided which extends from the reservoir and serves as a means for guiding the bobbins to the conveying apparatus. The conveying apparatus is identified by numeral **13** and is also supported within and adjacent one end of the supporting framework **11**. The conveying apparatus extends upwardly from the framework and as shown in FIG. 1 a portion of the donning mechanism which communicates with said conveying apparatus is shown and depicted by numeral **14**.

The bobbin hopper according to the invention is identified generally in FIG. 1 by numeral **15** and is supported by the upper surfaces of the supporting framework **11** immediately above the bobbin reservoir in the enclosed unit **12** and adjacent the upwardly extending conveying apparatus **13**. The hopper includes opposed side members **16** and **17** which are disposed in spaced relation and end members **18** and **19** which are fixedly attached to and interconnect the ends of said side members.

A pair of opposed and angularly disposed bobbin support plates **20** and **21** (FIGS. 2 and 3) define the bottom of the hopper and serve to support a plurality of bobbins **22** therein. Support plate **20** is fixedly attached to the inner side of end member **16** and for a portion of the longitudinal extent of side members **18** and **19**. Support plate **21** is attached in a like manner to end member **17** and side members **18** and **19**. Both plates **20** and **21** being angularly disposed form a funneled bottom in the hopper and terminating adjacent the center of the latter they form a bobbin exit port **23** therebetween (FIG. 3).

To maintain the bobbins in an oriented position within the hopper and to assure that they pass through the exit port in the same oriented direction which they had within said hopper, a centrally disposed divider **24** is provided. This divider is fixely attached to the side members **18** and **19** with the lowermost end communicating with the exit port **23** and extends upwardly for substantially the full height of said side members.

A slidable gate member **25** (FIGS. 3 and 4) is supported in opposed and longitudinally extending grooves **26** and **27** disposed adjacent the lower edge of the side members **18** and **19** and is selectively slidable in said grooves from and to a position to cover the exit port **23**.

As shown in FIG. 1 an opening **28** is provided at the lower end of the end member **16** which provides access to the gate member **25** for manual movement to either of its two positions.

When loading the hopper the gate member is in that position to cover the bobbin exit port and permits the loaded hopper to be transported from one location to another. Additionally, side member **18** of the hopper is fabricated from a transparent material and provides a means for visual inspection of the bobbins within the hopper to assure said bobbins are properly oriented. After placing the hopper on the donning machine as shown in

FIG. 1, the operator simply slides the gate member **25** away from the exit port **23** which allows a sufficient number of bobbins to pass therethrough to fill the reservoir in the upper portion of the enlosed unit **12**. As the donning mahine is moved along the rail of a spinning frame and the bobbins guided from the reservoir to the donning mechanism, the reservoir is continually replenished by bobbins passing through the exit port from the supply carried in the hopper.

While one embodiment of the invention has been disclosed, it is to be understood that the inventive concept may be carried out in a number of ways. This invention is, therefore, not to be limited to the precise details described, but is intended to embrace all variations and modifications thereof falling within the spirit of the invention and the scope of the claim.

We claim:

1. A bobbin hopper for a bobbin donning machine, said hopper including opposed side members disposed in spaced relation and spaced end members fixedly attached to and interconnecting the ends of said side members, a pair of opposed and angularly disposed bobbin support plates defining the bottom of said hopper, said plates communicating with said end members and for a portion of the longitudinal extent of said side members defining a bobbin exit port therebetween, and means communicating with said exit port to prevent displacement of said bobbins passing therethrough comprising a centrally disposed divider interconnecting said side members and extending for substantially the full height thereof, wherein said side members support a slidable gate element selectively movable from and to a position to cover said exit port.

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