

Aug. 3, 1948.

C. W. GEIER

2,446,416

DOFFING AND DONNING APPARATUS

Filed Jan. 2, 1946

2 Sheets-Sheet 1

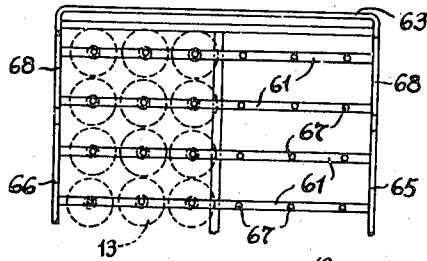


Fig-6

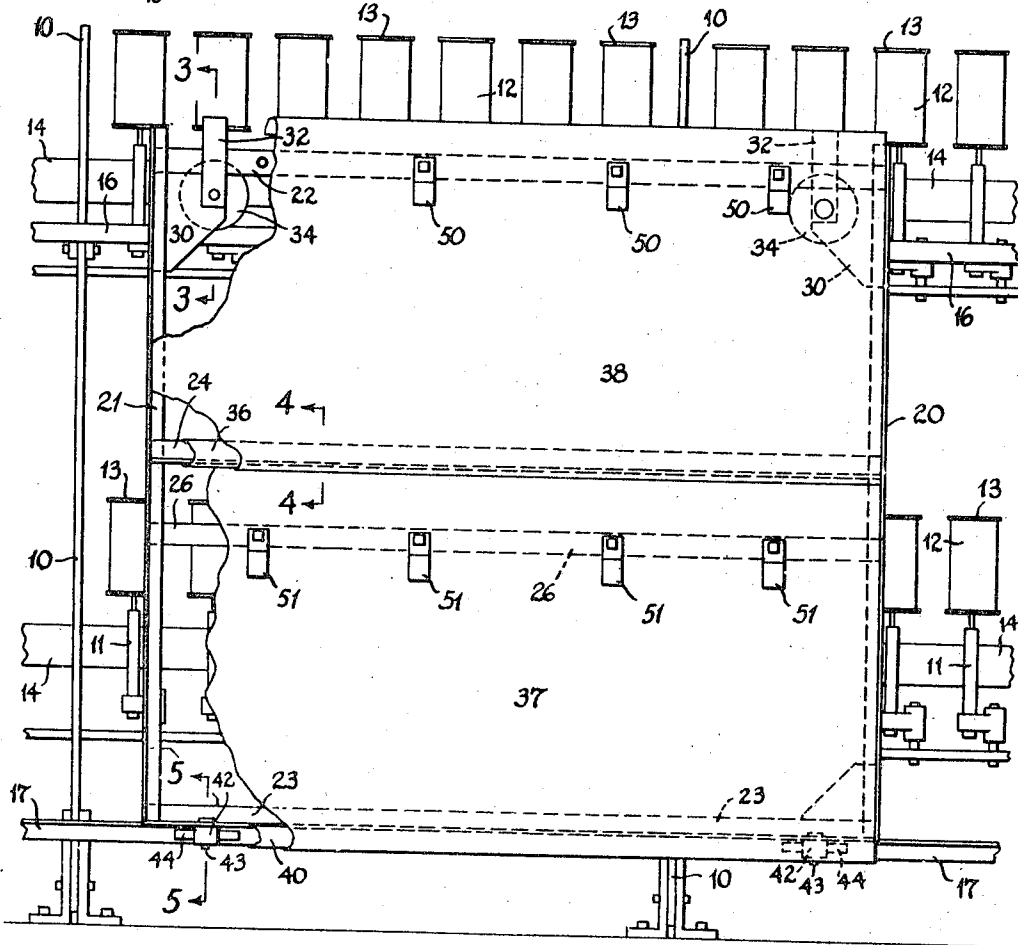


Fig-1

CONRAD WALTER GEIER
Inventor

By

Pauls Katon

Attorney

Aug. 3, 1948.

C. W. GEIER

2,446,416

DOFFING AND DONNING APPARATUS

Filed Jan. 2, 1946

2 Sheets-Sheet 2

Fig-3

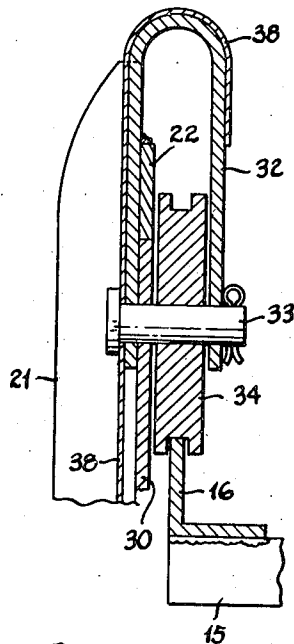


Fig-4

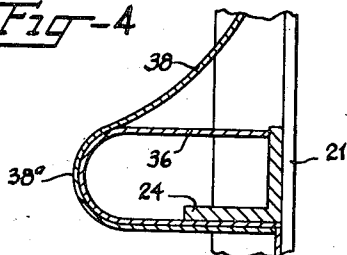


Fig-5

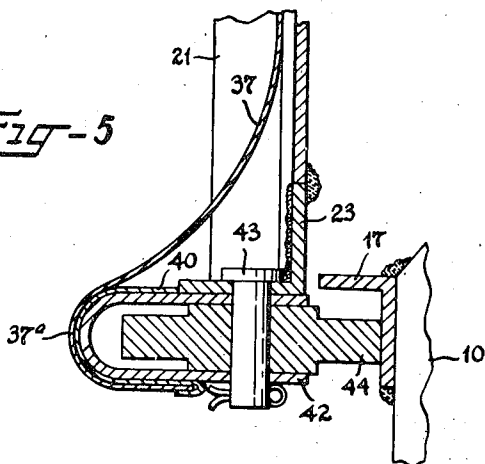
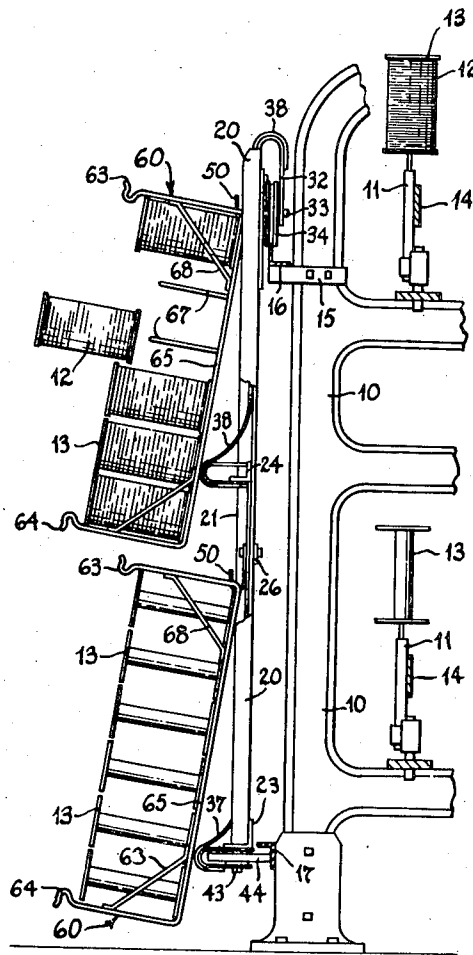


Fig-2

CONRAD WALTER GEIER
Inventor

Paul & Egan

Attorney

UNITED STATES PATENT OFFICE

2,446,416

DOFFING AND DONNING APPARATUS

Conrad Walter Geier, Robbins, N. C., assignor to
Robert E. L. Holt, Jr., Greensboro, N. C.

Application January 2, 1946, Serial No. 638,616

6 Claims. (Cl. 57—52)

1

This invention relates to means for supporting package holders on a suitable carriage mounted on trackways on the side of a twisting frame, spinning frame, and the like, there being provision for two upper package holders and two lower package holders, the upper preferably being filled with complete packages of yarn ready to be installed in the machine while the lower are provided for receiving the empty bobbins, spools, and the like in a doffing and donning operation.

It is an object of this invention to provide suitable trackways on the side of a twisting frame, a spinning frame, and the like and having a wheeled carriage mounted thereon for travel along the trackways, said carriage having means for supporting two pairs of package holders, one pair usually being occupied by filled packages ready to be installed in the machine while the other pair of package holders is adapted to receive the exhausted packages or spools which are removed from the machine in a doffing and donning operation.

It is another object of this invention to provide in a twisting frame, spinning frame, and the like a wheeled carriage mounted on one side of the frame and movable along the entire length of the frame and having means for detachably supporting package holders for placing filled packages into the machine and for receiving empty bobbins, spools, and the like which have been processed in the machine.

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 a front elevation of a portion of a twister frame showing the trackway and the carriage applied thereto;

Figure 2 is an end elevation of the machine and the carriage and spool carriers showing portions thereof broken away;

Figure 3 is a vertical sectional view taken along the line 3—3 in Figure 1 on an enlarged scale;

Figure 4 is a vertical sectional view on an enlarged scale and taken along the line 4—4 in Figure 1;

Figure 5 is a vertical sectional view taken on an enlarged scale along the line 5—5 in Figure 1;

Figure 6 is a plan view of one end of one of the package carriers.

Referring more specifically to the drawings, the numeral 10 indicates one of the upright frame members of a twisting frame, spinning frame, and the like, which has a plurality of spindles 11 thereon, onto which packages of yarn 12 are

2

placed for processing; many of the conventional features of the machine are omitted as they are not pertinent to this invention. The spindles 11 are driven in a conventional manner by a belt 14. These packages of yarn 12 are usually wound on spools 13; and when one of the spools becomes empty it is necessary to remove the empty spool and place thereon a filled bobbin or spool 13 having yarn 12 thereon. This heretofore has been accomplished by rolling a truck down the aisle having two compartments, one for the reception of the empty bobbins and the other for carrying new, filled packages to be placed on the spindles after the empty package has been removed. This is a laborious operation because of the stooping over and handling of these packages and, furthermore, it takes up a lot of room in the aisle, sometimes damaging the equipment by rolling the truck into the mechanism of the twister and spinning frame.

I have endeavored to overcome this difficulty by affixing a plurality of brackets 15 onto the machine and affixing an angle iron 16 on these brackets to form an upper trackway. There is also secured to the framework of the machine another angle iron 17 to serve as a lower trackway. These trackways extend from one end of the machine to the other, and on these trackways, I mount a suitable carriage mechanism.

This carriage mechanism comprises a rectangular frame comprising angle uprights 20 and 21 having a horizontal strap iron 22 and bottom 23 and intermediate horizontal angle 24. All of these pieces 20 to 24 are welded together to make a unitary frame.

An intermediate horizontal strap 26 is also secured to the upright angles 20 and 21. Upright angles 20 and 21 have welded thereto suitable plates 30 at each upper corner thereof, to which is welded as well as being welded to strap iron 22, an inverted U-shaped member 32 having a pin 33 penetrating both legs thereof and on which is rotatably mounted a grooved wheel 34 which rides on the upright angle of upper angle trackway 16.

The intermediate angle 24 has a U-shaped piece of sheet metal indicated at 36 suitably secured thereto as by welding or soldering, the U-shaped member 36 extending downwardly in the form of sheet metal cover 37. Also, a sheet metal cover 38 covers the inverted U-shaped member 32 and comes down and forms a covering for the front side of the main frame of the carriage and extends downwardly and has a curved portion 39 which fits over the U-shaped portion 36 of sheet

3

metal member 37, all of these being suitably secured to the frame by riveting, soldering, and the like. The lower angle member 23 of the carriage has suitably secured thereto as by welding a U-shaped member 42 which is covered by lower curved portion of sheet metal member 37. This U-shaped member 42 has a suitable pin 43 therein on which is rotatably mounted a wheel 44, there being identical structures at each of the lower corners of the frame and like reference characters will apply.

The lower curved over portion of sheet metal member 37 is indicated at 37a and covers a U-shaped portion 40 fitting over the U-shaped portion 42. The wheel 44 is adapted to press by gravity against the upright portion of angle 14 which acts as a trackway for the lower wheels 44.

The upper portion of the carriage has secured on the outer surface of the sheet metal member 38 by means of suitable bolts or rivets penetrating the bar 22, a plurality of hooks 50, and the lower portion of the sheet metal member has secured thereto a plurality of hooks 51 which are riveted through or bolted through the sheet metal member 37 and secured to the strap member 26. Used in connection with this traveling framework, I provide a plurality of package carriers indicated at 60. These carriers comprise a plurality of bars 61 with a cross bar 62 and end frames 63 and 64 and side bars 65 and 66 and corner braces 68. The bars 61 have a plurality of pins 67 uprising therefrom onto which the empty bobbins 13 or filled bobbins with packages of yarn 12 thereon are placed. The end frames 63 and 65 project upwardly a greater distance than the height of the bobbins and have handle portions on their upper ends adapted to be engaged by the two hands of an operator for lifting the same and placing them on the hooks 51 and for removing the same therefrom.

It is to be noted that the lower portion of the upper carrier rests on the projecting portion 38a; whereas, the lower portion of the lower carrier rests on the projecting portion 37a. This causes the packages or bobbins to be held on the pins 67 by gravity and prevents their jarring off and falling onto the floor.

Method of operation

In operation, a carrier is filled with packages of yarn and placed on the upper hooks 50, and an empty carrier is placed on the lower hooks 51, usually this board is big enough to accommodate two filled carriers on the upper half of the traveling carriage and two empty carriers on the lower half thereof. The carriage is then rolled along the length of the spinning frame by moving it a short distance at a time, and the empty bobbins are removed from the spindles and placed in the lower carriers, and a filled bobbin is removed from one of the upper carriers and placed on this empty spindle. This progresses from one end of the frame to the other, at which time the operation is repeated; and the doffing and donning operation is carried on without the necessity of rolling a truck up and down the aisle between frames.

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:

4

1. In a twisting frame, spinning frame, and the like, upper and lower rails secured to the side of the twisting frame, spinning frame, and the like and extending from one end of the frame to the other, a vertically disposed carriage having upper and lower wheels mounted on the rails, means on the carriage for detachably suspending upper and lower yarn package carriers so that empty bobbins can be removed from the spindles of the machine and deposited in one package carrier and filled bobbins can be removed from another package carrier and deposited onto the spindles from whence the empty bobbins were removed, and outwardly projecting portions extending from the outer face of the carriage and against which the lower portions of the yarn package carriers may rest to hold the package carriers in inclined position.

2. Apparatus for doffing and donning twisting frames, spinning frames, and the like comprising a trackway disposed along the length of the frame near the top of the frame and a second trackway disposed along the lower portion of the frame, a vertically disposed wheeled framework mounted for movement along the trackways, hooks on the framework for supporting upper and lower depending package carriers from whence filled packages of yarn can be removed from one carrier and deposited into the frame and empty packages can be removed from the frame and deposited into another package carrier carried by the wheeled framework, and outwardly projecting portions extending from the outer face of the carriage and against which the lower portions of the yarn package carriers may rest to hold the package carriers in inclined position.

3. In a textile fiber preparation machine such as a spinning frame, twisting frame, spooler, and the like, upper and lower trackways mounted along one side of the frame, a vertically disposed movable carriage mounted on the trackways and having wheels engaging the trackways to permit movement of the carriage along the trackways, hooks on the carriage for supporting depending upper and lower carriers for packages of yarn so that filled packages can be removed from one of the carriers and placed onto the spindles of the frame and the empty packages in the frame can be removed and placed in another carrier suspended on the wheeled framework, and outwardly projecting portions extending from the outer face of the carriage and against which the lower portions of the yarn package carriers may rest to hold the package carriers in inclined position.

4. Doffing and donning apparatus for twister frames, spinning frames, and the like, comprising upper and lower trackways extending along the machine, a vertically disposed wheeled framework mounted for movement along the trackways, hooks carried by the wheeled framework for supporting upper and lower yarn package carriers from some of which packages of yarn can be removed and deposited into the frame, and empty packages can be removed from the frame and deposited into the other carriers, and outwardly projecting portions extending from the outer face of the carriage and against which the lower portions of the yarn package carriers may rest to hold the package carriers in inclined position.

5. Doffing and donning apparatus for spinning frames, twisting frames and the like comprising an upper trackway disposed along one side of the frame and extending the length of

5

the frame and being secured near the top portion of the frame and a lower trackway secured to the frame near the bottom thereof and extending along one side thereof for the length of the frame, a vertically disposed framework having a pair of wheels secured to the side thereof next to the frame and resting on the upper trackway and a pair of horizontally disposed wheels mounted on the lower end of the framework and adapted to rest against the outer side of the lower trackway, a plurality of upper hooks disposed near the top of the framework on which are adapted to be suspended package carrier frames, a plurality of other hooks disposed on the lower portion of the framework from which are adapted to be suspended lower yarn package carrier frames, outwardly projecting portions extending from the framework and against which the lower portions of the package carrier frames are adapted to rest to hold the package carrier frames in an inclined position to prevent the packages from jarring off the package carrier frames, whereby filled yarn packages can be removed from the upper carrier frames and placed in the spinning frame, twisting frame and the like after the empty carrier has been deposited in one of the lower package carrier frames.

6. In a spinning frame, twisting frame and the like an upper and lower trackway secured to the side of the frame and extending the length of the frame, a vertically disposed framework having vertically disposed wheels mounted near the upper end of the framework and on the side thereof next to the spinning frame, twisting

6

frame and the like, a plurality of wheels secured on vertical axes at the lower end of the framework and adapted to rest against the side of the lower trackway, a plurality of yarn package carrier frames, means on the outside of the framework for supporting in a depending manner upper and lower yarn package carrier frames, a pair of spaced outwardly projecting portions extending longitudinally of the framework against which the lower portions of the yarn package carrier frames are adapted to rest to hold the yarn package carrier frames in a position inclined from the vertical to prevent jarring of the spinning frame, twisting frame and the like causing the yarn packages to be removed from the carrier frames, whereby as the wheeled framework is moved along the trackway in step-by-step movements, the empty yarn packages can be removed from the spindles and deposited in the lower yarn package carrier frames while filled yarn packages can be removed from the upper yarn package carrier frames and placed on spindles.

CONRAD WALTER GEIER.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
691,677	Tichen et al.	Jan. 21, 1902
1,142,013	Beezer, Jr., et al.	June 8, 1915
1,245,874	Colman	Nov. 6, 1917