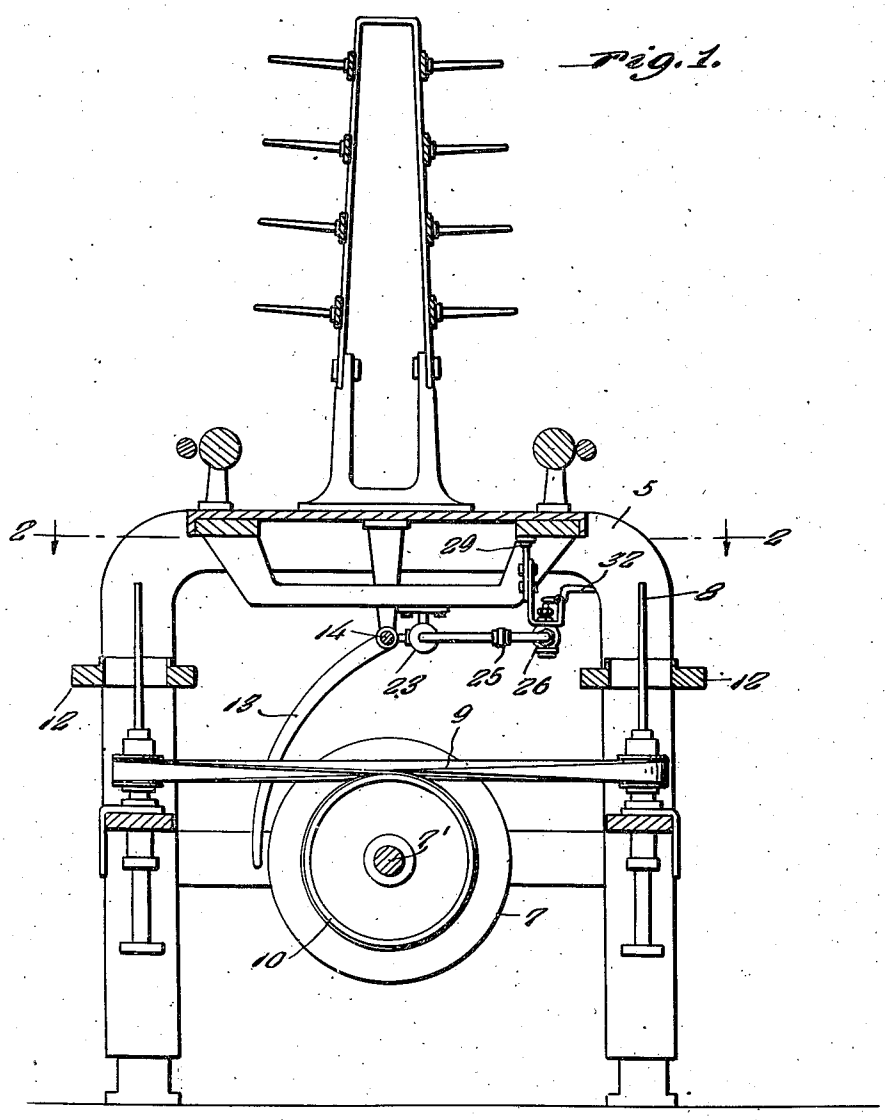
May 19, 1942. H. T. OVERBEY 2,283,283

PNEUMATIC STOP MOTION FOR SPINNING AND TWISTING MACHINES

Filed May 29, 1941 3 Sheets-Sheet 1

Fig. 1.



Inventor

Herman T. Overbey

By Clarence A. O'Brien

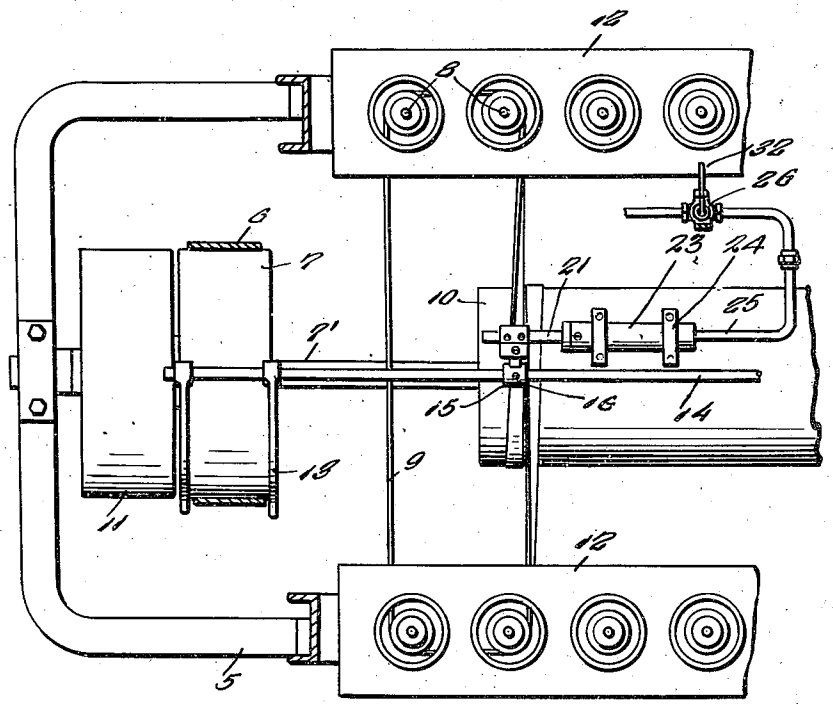
Attorney

May 19, 1942. H. T. OVERBEY 2,283,283

PNEUMATIC STOP MOTION FOR SPINNING AND TWISTING MACHINES

Filed May 29, 1941 3 Sheets-Sheet 2

Fig. 2.



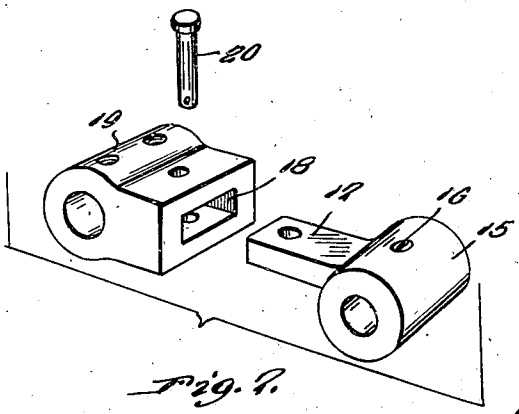


Fig. 1.

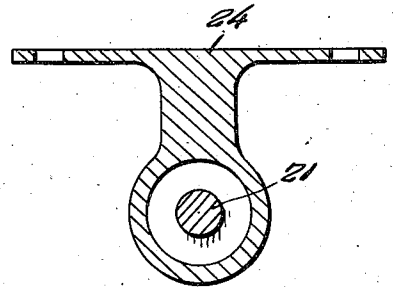


Fig. 3.

Inventor

Herman T. Overbey

By Clarence O'Brien

Attorney

May 19, 1942. H. T. OVERBEY 2,283,283

PNEUMATIC STOP MOTION FOR SPINNING AND TWISTING MACHINES

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Fig. 3.

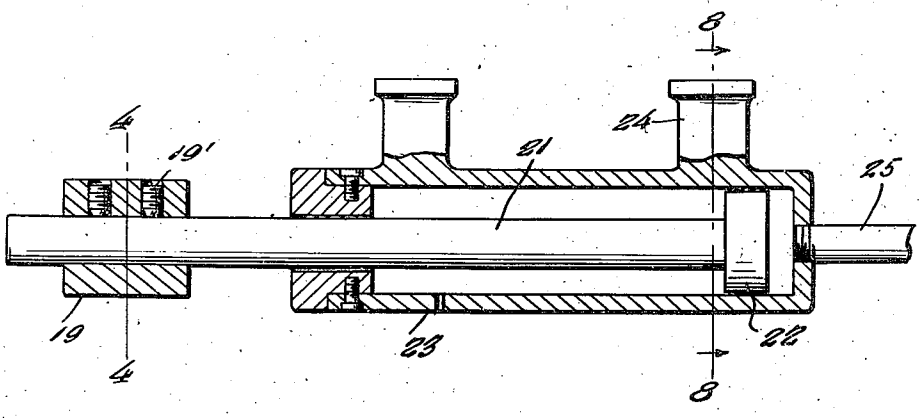


Fig. 4.

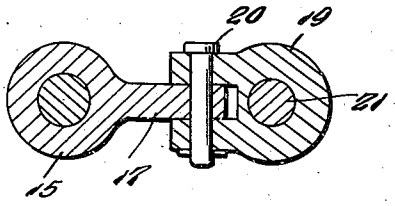
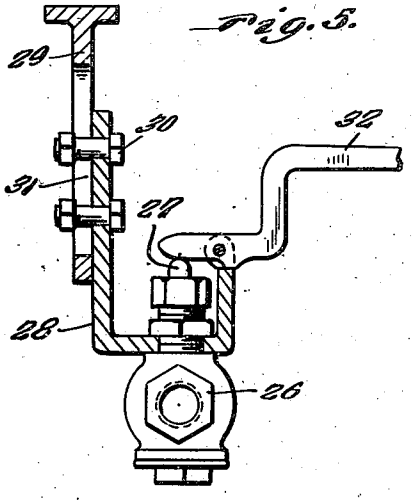


Fig. 5.



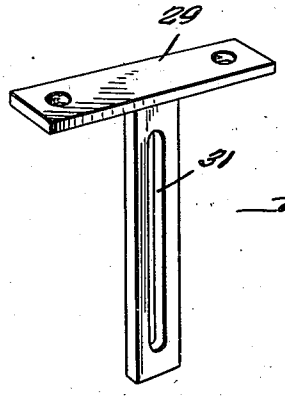


Fig. 6.

Inventor

Herman T. Overbey

By Clarence A. O'Brien

Attorney

Patented May 19, 1942 2,283,283

UNITED STATES PATENT OFFICE

2,283,283

PNEUMATIC STOP MOTION FOR SPINNING AND TWISTING MACHINES

Herman T. Overbey, Wadesboro, N. C., assignor of forty-five per cent to J. F. Martin and ten per cent to H. P. Taylor, both of Wadesboro, N. C.

Application May 29, 1941, Serial No. 395,870

3 Claims. (Cl. 57—79)

The present invention relates to new and useful improvements in stop motions for twisting, spinning and similar types of textile machines wherein it is desired to stop the machine upon the completion of the filling of the thread or yarn on the bobbins to prevent over-filling.

An important object of the invention is to provide pneumatic or air pressure actuated means arranged to throw the drive belt of the machine out of driving position and thus interrupt the operation of the machine until the filled bobbin has been removed and replaced.

A further object is to provide a trip actuated valve in a compressed air line, with the trip arranged in the path of movement of the ring-rail or other moving part of the usual traverse mechanism of the machine to open the valve to permit actuation of a piston by the compressed air and to which the belt shifter is operatively connected.

Another object is to provide a stop motion mechanism controlled by air pressure which may be operatively attached to various types of spinning and twisting machines and which at the same time is simple and practical in construction, efficient and reliable in performance, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like reference numerals refer to like parts throughout, and in which—

Figure 1 is a fragmentary vertical sectional view of a twisting machine showing the stop motion mechanism in position thereon.

Figure 2 is a transverse sectional view taken substantially on a line 2—2 of Figure 1.

Figure 3 is a longitudinal sectional view through the air cylinder.

Figure 4 is a sectional view taken substantially on a line 4—4 of Figure 3.

Figure 5 is a vertical sectional view of the attaching bracket for the trip.

Figure 6 is a perspective view of the bracket.

Figure 7 is a group perspective view of the double collar connector and,

Figure 8 is a transverse sectional view through the air cylinder taken substantially on a line 8—8 of Figure 3.

Referring now to the drawings in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of my invention, the numeral 5 designates part of the frame of a conventional form of twisting machine which is driven by a belt 6 trained over a drive pulley 7, secured to a shaft 7' for rotating the spindles 8 in groups through belt units 9 from the cylinder 10. An idle pulley 11 is freely mounted on the shaft to which the belt 6 may be shifted to interrupt operation of the machine. This operating mechanism of the machine is of conventional form and accordingly a detailed explanation thereof is not deemed necessary it being understood the machine also includes a pair of ring rails 12 for the bobbins operated in the usual manner, the ring rails being moved upwardly gradually as the filling of the bobbins on the spindles 8 progresses.

In order to stop the operation of the machine when the bobbins become filled, a belt shifter is provided, which comprises a yoke 13 between which one flight of the belt 6 travels, the yoke being secured on one end of a rod 14 which is secured to a collar 15 by means of a set screw 16 for adjusting the throw of the rod. The collar 15 is provided with a lateral lug 17 inserted in a socket 18 on one side of a second collar 19 and is pivoted thereto by means of a pin 20.

The collar 19 is secured on a piston rod 21 by means of set screws 19', the rod having a piston 22 attached thereto, which works in a cylinder 23 secured to a suitable part of the frame of the machine by brackets 24. The rod 22 projects from one end of the cylinder and attached to the other end of the cylinder is a compressed air feed pipe 25 leading to a supply of the air under pressure and in the pipe is positioned a conventional form of valve 26, normally closed and arranged for opening movement by a plunger 27 projecting upwardly therefrom.

A U-shaped bracket 28 is secured on the valve 26, with the ends of the bracket rising therefrom, one end of the bracket being secured to a hanger 29 for vertical adjustment by bolts 30 and slot 31, the hanger being secured to a part of the frame of the machine in a suspended position.

To the other end of the bracket is pivotally attached a trip lever 32 having one end engaging the plunger 27 and its other end disposed in the path of upward movement of the ring-rail for opening the valve.

Accordingly as the ring-rail moves upwardly a predetermined distance during the filling of the bobbins, the trip will be actuated in a man-

ner to open the valve and admit compressed air into the cylinder for moving the piston rod outwardly so as to cause the belt shifting yoke to shift the drive belt from the drive pulley to the idle pulley and thus interrupt the operation of the machine until the filled bobbins have been removed and replaced.

While I have illustrated the invention arranged to be operated by the ring-rail of the machine, it will be apparent that the trip may also be positioned for actuation by any moving part of the usual traverse mechanism of the machine. Also the invention is adapted for use as a stop motion mechanism of various types of spinning, twisting and similar textile machines to interrupt the operation thereof upon the completion of the filling of the bobbins, so as to prevent over-filling with the resulting entanglement of the yarn.

It is believed the details of construction, operation and manner of use of the device will be readily understood from the foregoing without further detailed explanation.

What is claimed is:

1. In combination, a textile machine including a ring rail having predetermined movement during operation of the machine, drive means for the machine, an automatic full bobbin stop motion mechanism for the drive means and including pneumatic means for actuating the stop motion mechanism to render the machine inactive, a valve for said pneumatic means disposed in the path of movement of the ring rail for actuation thereby, an adjustable bracket for the valve attaching the latter to a stationary part of the machine, and an operating lever for the valve pivotally mounted on the bracket, said lever having a free end engageable by the ring rail.

2. An automatic full bobbin stop motion for spinning and twisting machines and comprising an actuating member for a power cut-off device, fluid-responsive means controlled by a predetermined movement of the machine, and means connecting said member to the fluid-responsive means and comprising a pair of members adjustably carried respectively by the actuating member and by the fluid-responsive means, and a detachable connection between said last-named members.

3. An automatic full bobbin stop motion for spinning and twisting machines and comprising an actuating member for a power cut-off device, fluid-responsive means controlled by a predetermined movement of the machine, and means connecting said member to the fluid-responsive means, and comprising a pair of sleeves adjustably carried respectively by the actuating member and by the fluid-responsive means, a lateral socket in one sleeve and a lateral tongue on the other sleeve and detachably engaged in the socket.

HERMAN T. OVERBEY.