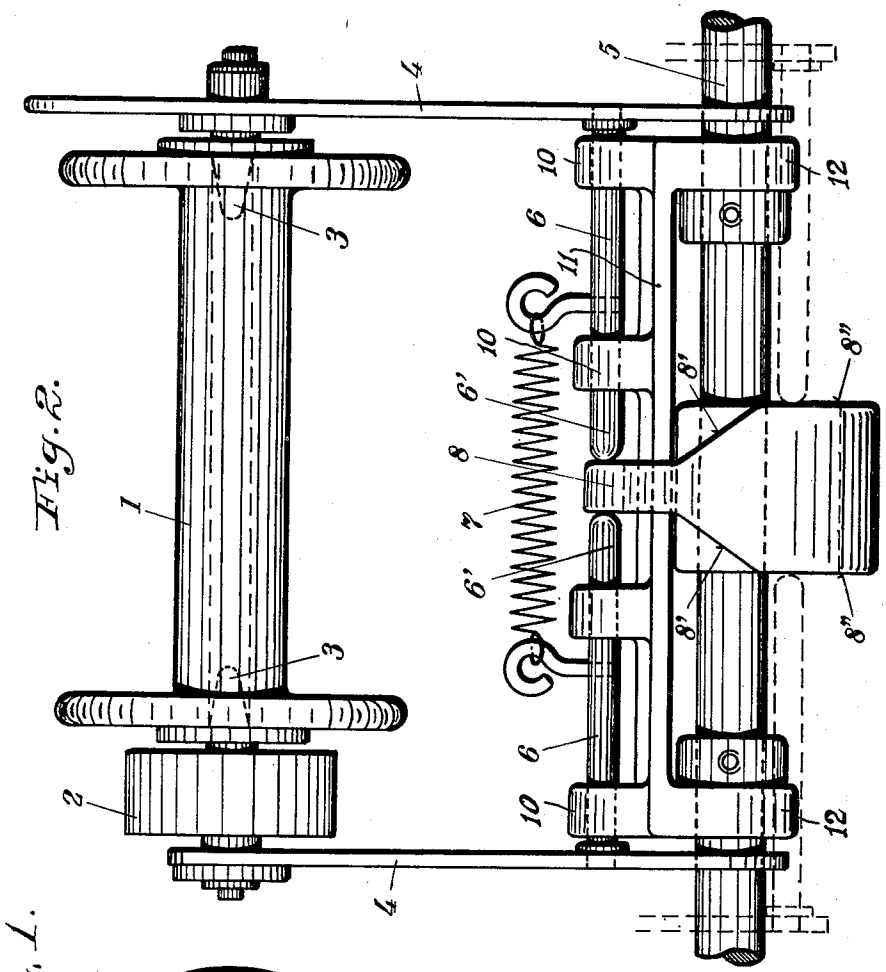
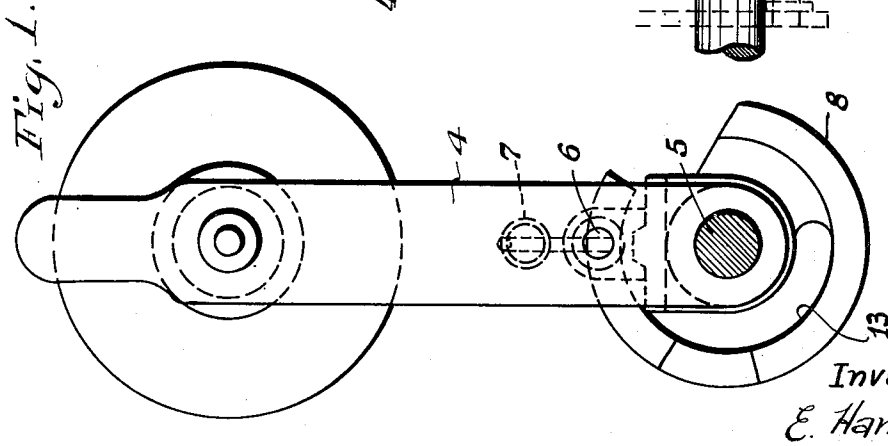
Aug. 27, 1940. E. HAMEL 2,212,776

MOVABLE CARRIER FOR WINDING BOBBINS IN WINDING FRAMES

Filed May 4, 1938 2 Sheets-Sheet 1





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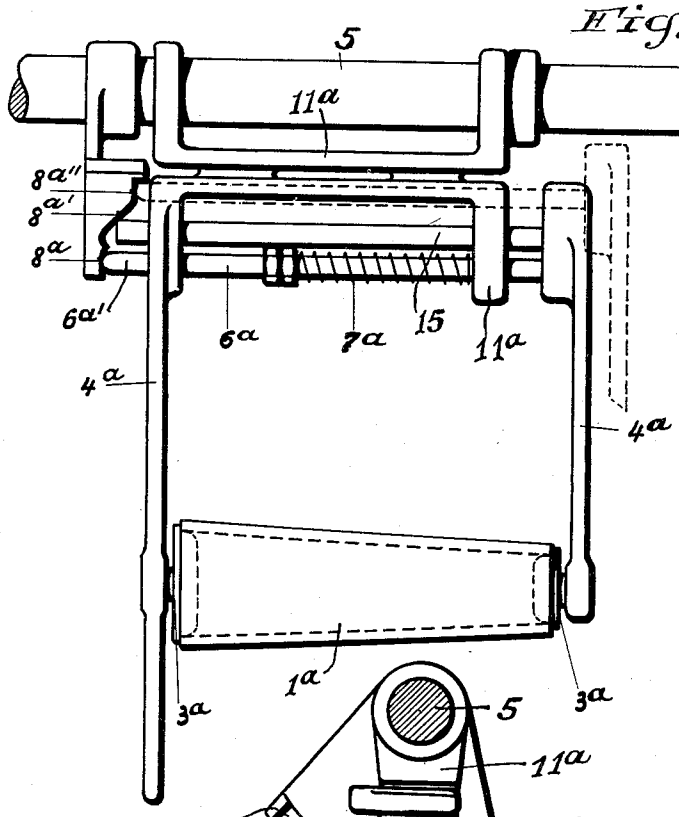
Attorneys.

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Fig. 3.



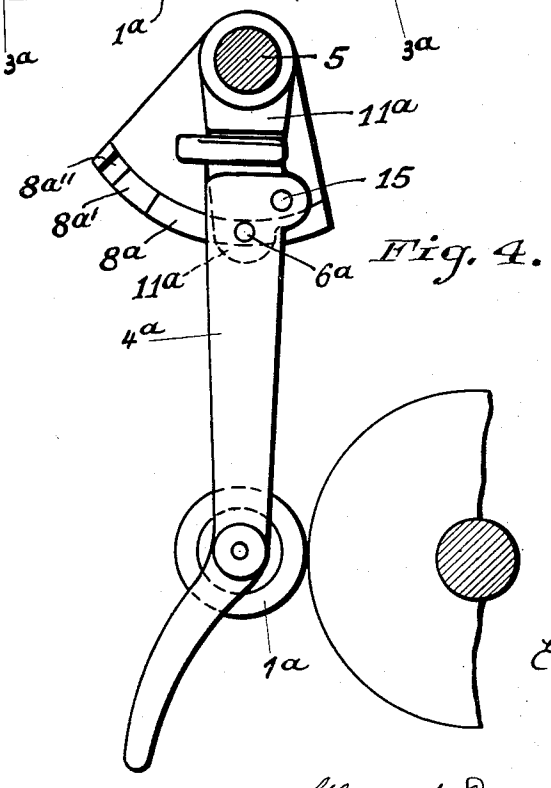


Fig. 4.

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Patented Aug. 27, 1940

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UNITED STATES PATENT OFFICE

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MOVABLE CARRIER FOR WINDING BOBBINS IN WINDING FRAMES

Edmund Hamel, Siegmar-Schonau, near Chemnitz, Germany

Application May 4, 1938, Serial No. 206,074
In Germany September 4, 1936

2 Claims. (Cl. 242—41)

This invention relates to a movable carrier for the winding bobbins in winding frames, which is provided with laterally displaceable holding arms.

Bobbin carriers of this type are employed in winding frames in which the winding bobbin is rotated by a driven friction roll or the circumference of a split or grooved drum which guides the thread. After completion of winding the bobbin is moved upwardly to interrupt further rotation and thereby further drawing of yarn. This upward motion of the bobbin is effected by means of the carrier the holding arms of which are then moved sideways to release the bobbin and to permit its removal.

This method is bothersome and requires much time, as always both hands are needed for carrying out the operations mentioned and, moreover, some skill is necessary for properly performing the three functions which make up the exchange operation.

The object of the invention is to facilitate the exchange of the fully wound bobbins in a winding frame having a movable carrier of the kind mentioned and to connect the exchange operation with the interruption of rotation of the bobbins due to the raising of the carrier.

The invention attains its object by causing the laterally movable holding arms of the carrier, by means of a peg-like projection provided on each arm, to be brought into contact with a stationary cam path portion through elastic force or weighted pull, the cam path being provided with inclined surfaces in such manner that when the carrier is moved into exchange position the holding arms are moved away from the bobbin.

The upward motion of the carrier releases therefore the full bobbins which either drop into a channel or may be removed by hand. When the carrier is swung back into original position, the newly inserted tubes are caught again and secured.

By way of example, the invention is illustrated in the accompanying drawings, in which Figure 1 is a front view of the device, in which the bobbin is started by a roll connected with the bearing pin and driven through frictional contact with another roll; Fig. 2, a plan of Fig. 1 with the operating position indicated by solid lines and the exchange position by dotted lines; Fig. 3, a view of a modified construction, in which the bobbin rests on the circumference of a roller or split drum and is driven thereby; and Fig. 4, a front view of the device shown in Fig. 3.

As shown in Fig. 1, the bobbin is rotated by a roll 2 connected with the bearing pin and driven by a driving roll. The bobbin is held by the pins 3 of the movable arms 4 which are arranged on the shaft 5. The arms 4 are provided with long pins 6 and drawn toward each other by a spring 7, so that the points 6' of the long pins 6 owing to the pull of the spring 7 lie against the opposite sides of a cam 8. The pins 6 are slidable in guides 10 fixed to a carrier 11, the latter being mounted on the shaft 5 and held against axial displacement thereon by collars 12. The medial portion of the carrier 11 is movable in an acuate slot 13 formed in the cam 8 so as to permit limited relative rotary movement between said cam and the carrier 11. The inclined faces 8' of the cam are disposed between the raised portion 8'' and the portions of less height. In the position show in full lines in Figs. 1 and 2, the spring 7 draws the arms 4 toward one another and the pins 3 operatively support the bobbin 1.

When the carrier is turned relative to the cam, the pin ends 6' slide from the low surface 8 over to the high surface 8'', whereby, according to the extent of the turning motion of the carrier, the pins 3 are withdrawn and the bobbin 1 is released.

In the example shown in Figs. 1 and 2 both holding arms are movable, though it is possible of course to render only one arm movable and still to attain the same effect if the cam path is correspondingly altered. Such an arrangement is shown in Figures 3 and 4 in which a bobbin 1*a* is supported on pins 3*a* attached to arms 4*a*. One of the arms 4*a* is rigidly attached to the carrier 11*a* whereas the other arm 4*a* is slidable, the pin 6*a* thereof being normally urged by a spring 7*a* tending to draw the arms together into operative positions. A guide pin 15 is provided on the slidable arm and is slidable in the carrier 11*a*. The terminal 6*a*' of the pin 6*a* engages the low surface of the cam 8*a* but during relative rotation of the cam and carrier, the pin 6*a* moves along the inclined cam surface 8*a*' and engages the raised portion 8*a*'' thereby separating the arms 4*a* and permitting removal of the bobbin 1*a*.

I claim:

1. A carrier for winding bobbins in winding frames comprising a pair of bobbin holding arms mounted to swing simultaneously about a common axis and movable relative to each other, projections on said arms, a double cam coacting with said projections and adapted during relative rotational movement of the cam and arms, to cause said arms to move apart, and means normally tending to draw said arms together.

2. A carrier for winding bobbins in winding

frames comprising a support, a pair of bobbin holding arms mounted for swinging movement about the axis of said support, at least one of said arms being mounted for rectilinear movement in a direction parallel to said axis, a cam coacting with said rectillinearly movable arm for effecting displacement thereof parallel to said axis during swinging movement of the arms about said support, and means normally urging said arm in one direction.

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