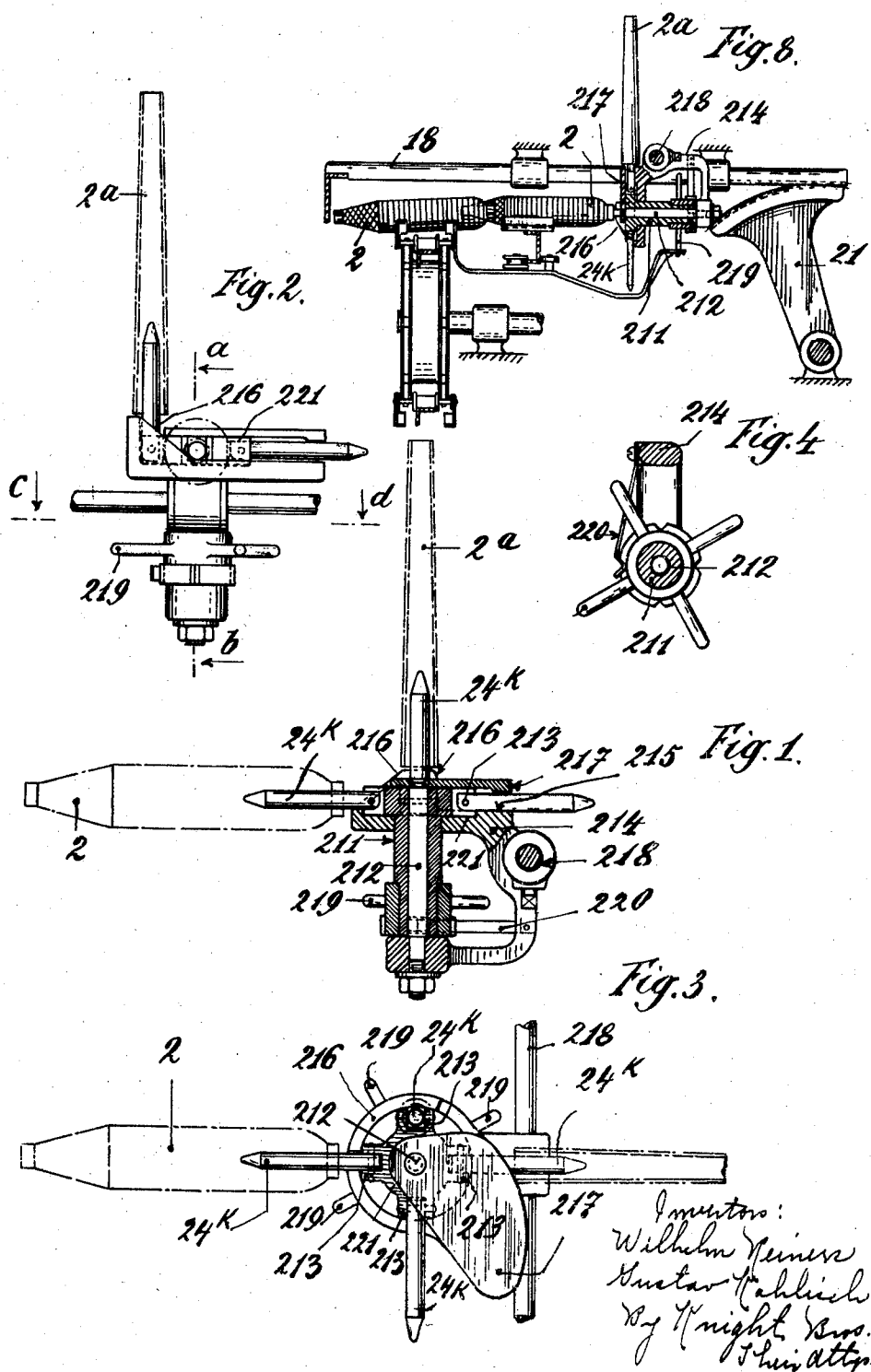


Oct. 30, 1934.

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 SUPPLY HOLDER FOR WINDING MACHINES WITH AUTOMATIC
 FEED OF THE FULL SUPPLY BOBBINS
 Original Filed Sept. 14, 1932 2 Sheets-Sheet 1

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Inventors:
 Wilhelm Reiners
 Gustav Fahlisch
 By Knight Bros.
 Their Atty.

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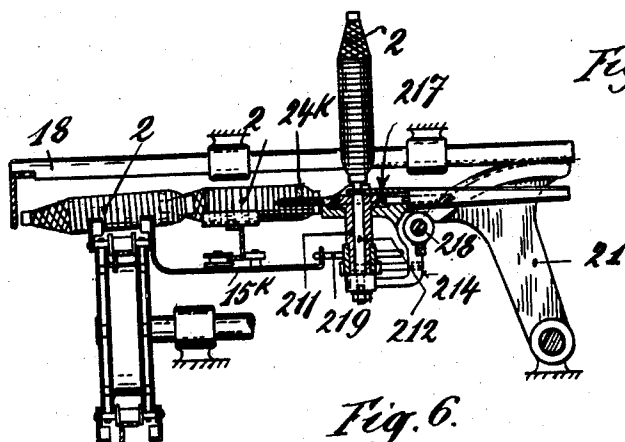


Fig. 5.

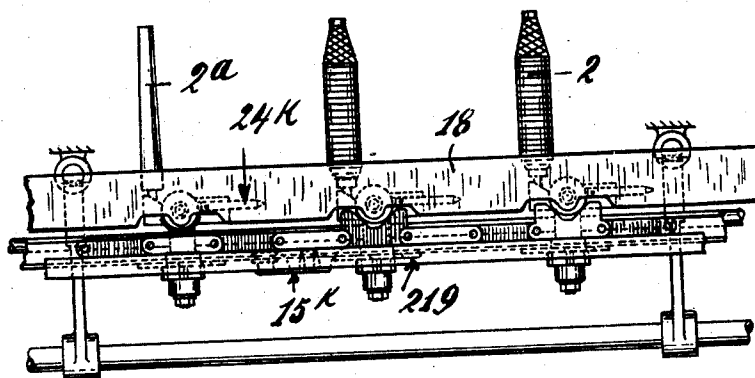


Fig. 6.

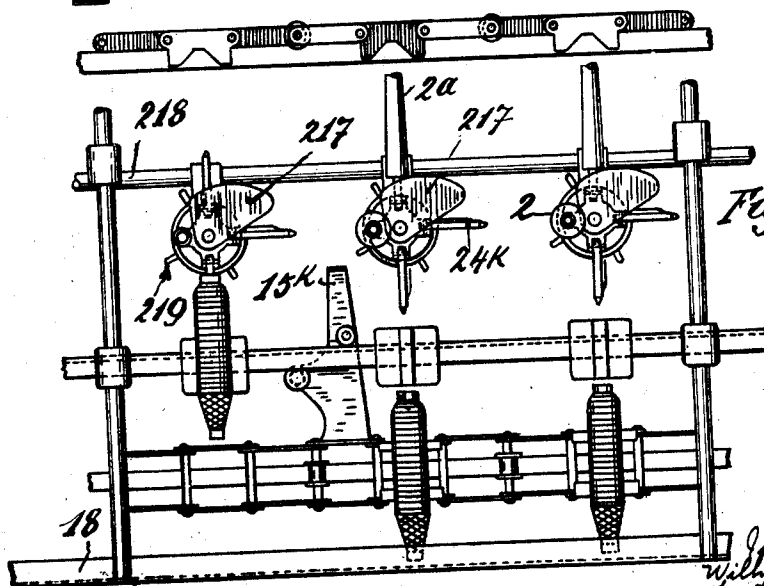


Fig. 7.

Inventors:
Wilhelm Reiners
Austar Rablrich
By Knight, & Co.

UNITED STATES PATENT OFFICE

1,978,550

SUPPLY HOLDER FOR WINDING MACHINES
WITH AUTOMATIC FEED OF THE FULL
SUPPLY BOBBINS

Wilhelm Reiners and Gustav Kahlisch, Munich-Gladbach, Germany, assignors to W. Schlafhorst & Company, Munich-Gladbach, Germany

Original application September 14, 1932, Serial No. 633,196, now Patent No. 1,970,188, dated August 14, 1934. Divided and this application August 19, 1933, Serial No. 685,953. In Germany October 8, 1931

11 Claims. (Cl. 242—35.5)

This application is a division of our copending application, Serial No. 633,196, filed September 14, 1932, now Patent No. 1,970,188, issued Aug. 14, 1934, and a certain modification of our copending prior application Serial No. 516,448, filed February 17, 1931.

The object of the invention is a particular development of the holding devices for the supply. This development consists in hinging the holding 10 pegs for the supply bobbins on their carriers in such a fashion that the aforementioned pegs are in a horizontal position when receiving the bobbin and that they are automatically transferred to the vertical unwinding position.

The invention is best illustrated by the following description of two embodiments thereof, in conjunction with the accompanying drawings, wherein

Fig. 1 is a sectional view across one of the bobbin holding devices having a vertical shaft and 20 pivoted pegs,

Fig. 2 is a front elevation thereof,

Fig. 3 is a plan view of Fig. 2,

Fig. 4 is a horizontal sectional view of Fig. 1,

Fig. 5 is a sectional view with certain parts in elevation of the charging mechanism for the bobbin holders,

Fig. 6 is a front elevation of the machine incorporating bobbin holding devices in accordance 30 with the instant invention,

Fig. 7 is a plan view of Fig. 6, and

Fig. 8 is a sectional view across a different embodiment of a bobbin holding device in which the bobbin holding device is mounted on a horizontal 35 shaft parallel to the axis of the bobbin being shifted onto the holder.

Figures 1 to 7 show one embodiment of the invention in different views and partly in cross section. In these figures, 2 is a supply bobbin to 40 be unwound, 2a is a supply bobbin tube, 24k are holding pegs for the supply bobbins and 211 their carrier which may rotate on a vertical shaft 212, as shown in Figs. 1 to 7. In a second embodiment of the invention, shown in Fig. 8, the carrier 211 45 rotates on the horizontally disposed shaft 212, parallel to the axis of the bobbin.

In both embodiments, the bobbin peg 24k is connected by a hinge 213 to the carrier 211 which in turn is rotatable around a shaft 212 in such a 50 fashion that it can be made to change its position by sweeping through an angle of say 90 degrees.

In Figs. 1-7 a head 221 is rotatably mounted upon a vertical axis 212. Pegs 24k are pivoted 55 to the head by pins 213, so that the pegs can swing

from a radial charging position to an unwinding position parallel to the axis. Fig. 8 is similar except that the axis 212 is horizontal and the pegs 24k are parallel to the axis in the charging position and radial in the unwinding position. In 60 each case, the bobbin holder is so guided in the support 214 which carries the axis 212 that the swinging pegs engage a surface 215 of the support up to a point where each peg in succession is to be swung inward to bring the bobbin which has 65 been received into unwinding position (Fig. 1), or to assume the position for receiving a bobbin (Fig. 8).

For this purpose the support 214 has an inclined cam surface 216 by which the pegs are successively 70 automatically brought into a vertical position, parallel to the axis 212, in Fig. 1, and perpendicular thereto in Fig. 8. In order to provide a positive guidance for the other pegs not in the displaced position, the support 214 is provided with 75 a guide plate 217, so that the pegs cannot tilt over, particularly in the embodiment shown in Fig. 8. All of the supports 214 on one side of the winding machine, or a group of such supports, can be mounted upon a common frame bar 218 and ac- 80 curately adjusted thereon.

For the purpose of advancing the bobbin holders, the hub 211 of each holder may have secured to it a shifting star 219, which also has the notches 85 for the centering spring 220 which serves to accurately position the pegs in the receiving position and the mounted bobbins in the unwinding position.

The advancement of the bobbin holder can be performed in the same way as described in the 90 aforesaid copending applications, by means of a deflector 15k (Figs. 5-7), or deflectors which come into engagement with the shifting star 219.

The shifting of the bobbins which have been brought by the conveyor into charging position in the manner described in the aforesaid copending application onto the pegs 24k can be accomplished by the mechanism, including the shifter 18, shown in the copending application, Serial 100 No. 633,196. In the embodiment shown in Figs. 5-8 it is assumed that the shifter 18 is moved back and forth by a toothed segment 21 to shift the bobbin from the conveyor onto the peg of the bobbin holder which stands in receiving position. 105

In all the embodiments shown in Figs. 1-8, the guide plate 217 can serve additionally as the tube stripper, that is, to strip off the empty cop tubes from the pegs 24k after the unwinding operation is concluded.

We claim:

1. In a device of the class described, a holder for supporting bobbins to be unwound, said holder comprising a rotatable head, and pegs pivoted on said head adapted to enter bobbin tubes, said pegs being movable from a horizontal position for receiving bobbins to a vertical position for unwinding said bobbins, and a stationary guide plate to successively shift said pegs to said vertical position and back to said horizontal position as said head rotates.
2. The combination with the device as described in claim 1 of means for aligning new bobbins with said pegs as they assume said horizontal position, and means for shifting said bobbins onto said pegs.
3. In a device of the class described, a holder for supporting bobbins to be unwound, said holder comprising a rotatable head, and pegs pivoted on said head adapted to enter bobbin tubes, said pegs being movable from a horizontal position for receiving bobbins to a vertical position for unwinding said bobbins, an annular guide plate for guiding said pegs in a plane perpendicular to the axis of rotation of said head, and an inclination in said guide plate for disposing said pegs in parallel to said axis of rotation by the rotation of said head.
4. In a device of the class described, a holder for supporting bobbins to be unwound, said holder comprising a rotatable head, and pegs pivoted on said head adapted to enter bobbin tubes, said pegs being movable from a horizontal position for receiving bobbins to a vertical position for unwinding said bobbins, a stationary guide plate to successively shift said pegs to said vertical position and back to said horizontal position as said head rotates, and a stationary camming plate associated with said guide plate adapted to contact with the empty bobbin tubes on said pegs to strip said tubes from said pegs by the rotation of said head.
5. In a device of the class described, a holder for supporting bobbins to be unwound, said holder comprising a rotatable head and pegs pivoted on said head adapted to enter bobbin tubes, said pegs being movable from a radial position to a position parallel to the axis of said head, an annular guide plate for guiding said pegs in a plane perpendicular to the axis of rotation of said head, and an inclination in said guide plate for disposing said pegs in parallel to said axis of rotation by the rotation of said head.
6. In a device of the class described, a holder for supporting bobbins to be unwound, said holder

comprising a rotatable head and pegs pivoted on said head adapted to enter bobbin tubes, said pegs being movable from a radial position to a position parallel to the axis of said head, and stationary guide plates to successively shift said pegs to said parallel position and back to said radial position as said head rotates.

7. The combination with a device as described in claim 6, of means for aligning new bobbins with said pegs as they assume said position parallel to the axis of said head, and means for shifting said bobbins onto said pegs.

8. A device as described in claim 6, in which said head is rotatable on a vertical axis and the bobbins are unwound while supported upon one of said pegs standing parallel to said axis, in combination with means for successively feeding new bobbins to the radially extending pegs as they reach a certain angular position during the rotation of said head.

9. A device as described in claim 6, in which said guide plates are adapted to engage the bases of empty tubes as said head rotates and strip them off said pegs.

10. In a device of the class described, a holder for supporting bobbins to be unwound, said holder comprising a head rotatable on a horizontal axis and pegs pivoted on said head adapted to enter bobbin tubes, said pegs being movable in an arc of 90° from a radial position to a position parallel to the axis of said head, a stationary guiding surface for successively shifting said pegs from said first position to said second position for charging bobbins thereon and back to said first position for unwinding, and a vertically disposed plate for retaining said pivoted pegs in their radial position.

11. In a device of the class described, a holder for supporting bobbins to be unwound, said holder comprising a head rotatable on a horizontal axis and pegs pivoted on said head adapted to enter bobbin tubes, said pegs being movable in an arc of 90° from a radial position to a position parallel to the axis of said head, a stationary guiding surface for successively shifting said pegs from said first position to said second position for charging bobbins thereon and back to said first position for unwinding, and a vertically disposed plate for retaining said pivoted pegs in their radial position, said plate having a camming edge for stripping the empty bobbin tubes from said pegs.

WILHELM REINERS.
GUSTAV KAHLISCH.