

C. NORDELL.
BOBBIN AND SPINDLE CONNECTOR.
APPLICATION FILED JUNE 1, 1911.

1,070,982.

Patented Aug. 19, 1913.

FIG. 1.

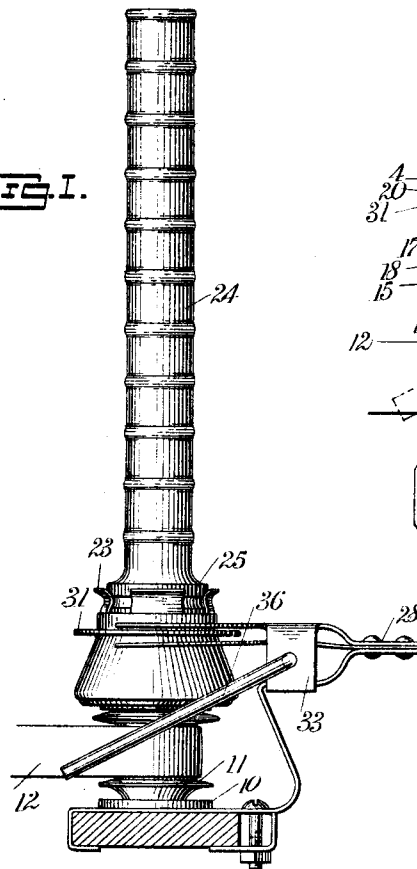
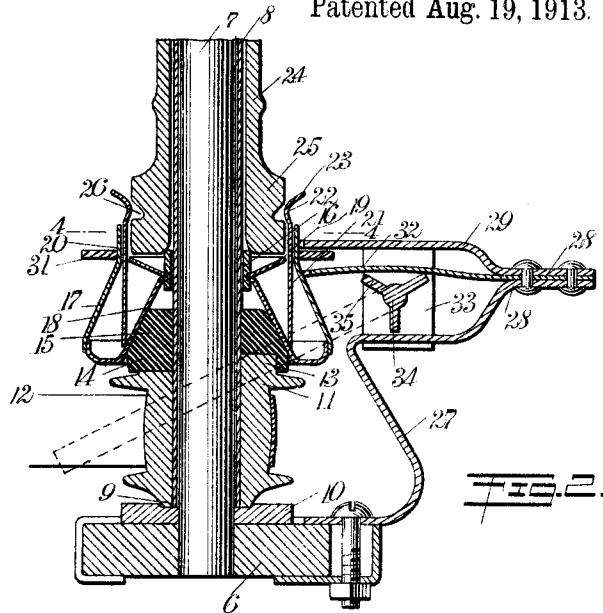


FIG. 2.

FIG. 4.

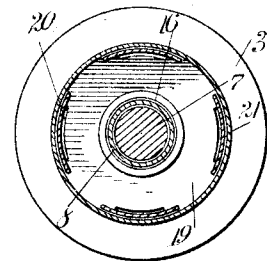
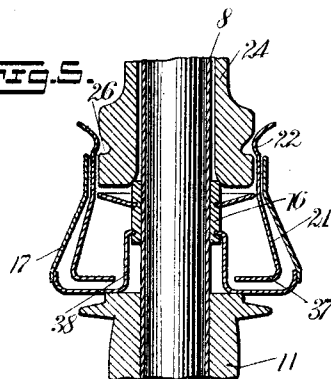
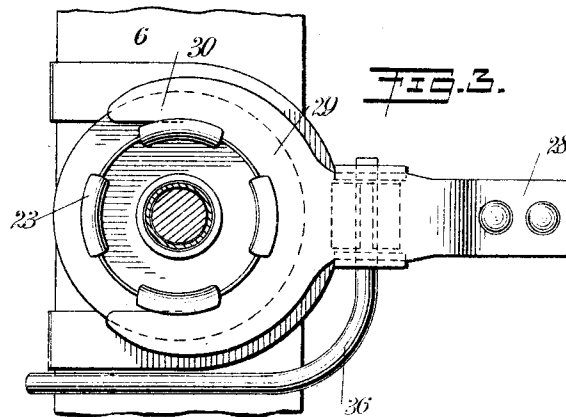


FIG. 5.



WITNESSES
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FIG. 3.



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BOBBIN AND SPINDLE CONNECTOR.

1,070,982.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CARL NORDELL, a citizen of the United States, and a resident of Gilbertville, in the county of Worcester and State of Massachusetts, have invented a new and Improved Bobbin and Spindle Connector, of which the following is a full, clear, and exact description.

My invention relates to a new and improved form of bobbin and spindle connector for a spinning frame.

The object of my invention is to provide a connector which depends on centrifugal force, to form a friction connection between the revolving shaft and the bobbin, and which is very simple, cheap and efficient.

With the above and other objects in view, as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a side elevation of a preferred embodiment of my invention, showing the folded holder and stop mechanism; Fig. 2 is a vertical sectional view taken through the device shown in Fig. 1 in a plane parallel to the plane of the view shown in said figure; Fig. 3 is a plan view looking down on the device as shown in Fig. 2; Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 2; Fig. 5 is a vertical sectional view showing a modified form of bobbin holder.

Described more in detail, I have shown a support 6, projecting from and rigidly connected to which is a stationary shaft. Rotatably mounted upon the shaft 7 is a sleeve 8, and disposed between the inner end 9 of which sleeve and the support 6 is a bushing 10. The end 9 has rigidly mounted thereupon and bearing on the bushing 10, a pulley wheel 11 actuated by any suitable source of power through a power belt 12. It will be seen that by this connection the sleeve 8 is continuously rotated.

Rigidly mounted upon the sleeve 8 and rotated by means of a lug 13 projecting from the outer end of the pulley wheel 11, is a rubber clutch member 14, having its outer

end in the form of a truncated cone 15. Slidably mounted upon the sleeve 8 is a ring 16, rigidly attached to which is a hollow shell 17, which shell has an inner cone-shaped wall 18 in the form of a clutch member adapted to rest on and engage the clutch member 14. Extending rigidly from the ring 16 and adapted to close the top of the shell 17, is a dish shaped disk 19, which disk has a series of curved recesses 20 in its outer periphery, each of said recesses forming with the outside of the shell 17, a slot, and fulcrumed within each of said slots is a finger 21. The upper end of each of the fingers 21 projecting beyond the disk 19, is materially shorter and lighter than the part within the shell below the disk 19 and has a bead 22 adjacent its upper end, the extreme upper end of said finger being bent inwardly and then outwardly as shown at 23.

Freely mounted upon the sleeve 8 is a bobbin 24, the lower end of which has an enlarged portion 25, which enlarged portion has a circumferentially disposed groove 26, into which groove fits the beads 22 of the fingers 21. It will be seen by this construction, that motion is communicated from the pulley 11 through the clutch member 14 and shell 17, the rotation of which shell will tend to throw the lower heavy end of the fingers 21 outward in the shell 17, thereby forcing the beads 22 into engagement with the bobbin 24, to rotate the same, thus affording a light frictional clutch between the bobbin and the rotating mechanism.

Should it be desired to stop the rotating shell in order to remove the bobbin without stopping the rotating sleeve, a stop is provided, which stop comprises a bracket 27 mounted on the support 6, the upper end of which bracket is bent outward, as shown at 28, in line with the ring 16, which extending portion of the bracket supports a yoke 29, the forks 30 of which encircle the upper end of the shell 17, said forks being disposed a short distance above a ring 31 rigidly positioned on the shell 17 adjacent its upper end. Disposed below the ring 31 and encircling the shell 17, is a spring yoke arm 32, similar in construction to the yoke 29 and also fastened to the outwardly bent portion 28. Adjacent the outwardly bent portion 28, the yoke 29 has depending therefrom and on opposite transverse sides, integral plates 33, which plates afford a bearing for a shaft 34, said shaft having mounted thereon three

- plates 35 extending outwardly from said shaft at an angle of one hundred and twenty degrees from each other. The yoke arm 32 rests upon these plates 35, and as shown in Fig. 1, out of engagement with the ring 31. Rotating the shaft 34 by means of a lever arm 36, one of the plates 35 will bear on the yoke 32, to raise the ring 31 and the shell 17 into frictional engagement with the upper yoke 29, thereby firmly clamping the shell immovably on the support and raising the shell out of contact with the revolving clutch 14. By this means, a quick disengagement of the shell and bobbin from the revolving clutch is obtained, and when a new bobbin is placed on the shaft 7 and the lever arm 36 is thrown into the position shown in Figs. 1 and 2, the bobbin is promptly thrown into the high speed of the revolving clutch 14.
- A modification of the device hereinbefore disclosed is shown in Fig. 5, in which the rubber clutch is omitted and the ring 16 is fastened to the sleeve 8, which causes the shell 17 to rotate continuously. As shown in this disclosure, the lower end of the fingers 21 are bent inwardly to form a flange 37, which flange has a limited movement between an inner tubular portion 38 of the shell 17 and its outer wall. In this case, the rotation of the shell 17 will cause the lower heavy portion of the fingers to fly outwardly through the action of centrifugal force, pressing the bead 22 into engagement with the groove 26 on the bobbin 24.
- Many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof.
- It is intended that all matters contained herein in the above description or shown in the accompanying drawings, shall be interpreted as illustrative and not in a limiting sense.
- It is also to be understood that the lan-

guage used in the following claims is merely intended to cover all the generic and specific features, of the invention herein described, and is intended to cover the full scope of the invention, which, as a matter of language, might be said to fall therebetween, and that materials, sizes and relativities of parts are non-essential, except as called for in the claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a bobbin holder, a stationary spindle, a rotating sleeve on the spindle, a shell open at the top and surrounding the sleeve, means for revolving the shell from the sleeve, a disk closing the top of the shell and provided with a plurality of recesses in its periphery, said recesses forming with the shell slots, and fingers fulcrumed in the said slots at one side of their center of length, the longer ends of the fingers extending into the shell and their outer shorter ends projecting above the disk and formed with beads adapted to engage a groove in a bobbin on the sleeve.

2. In a bobbin holder, a stationary spindle, a sleeve loosely mounted on the spindle, a pulley secured on the sleeve and carrying a clutch member at its upper end, a shell loosely mounted on the sleeve and having openings in its top and a clutch member engaging the clutch member of the pulley, and fingers fulcrumed in the shell intermediate of their ends with their upper ends projecting through the openings of the shell and adapted to engage a bobbin on said sleeve.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL NORDELL.

Witnesses:

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