No. 745,897. PATENTED DEC. 1, 1903.

A. PARKER.

SPINNING FRAME.

APPLICATION FILED JUNE 8, 1903.

NO MODEL.

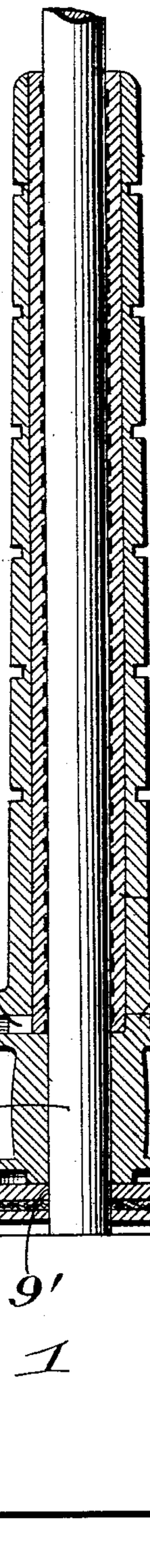

Fig. 1.

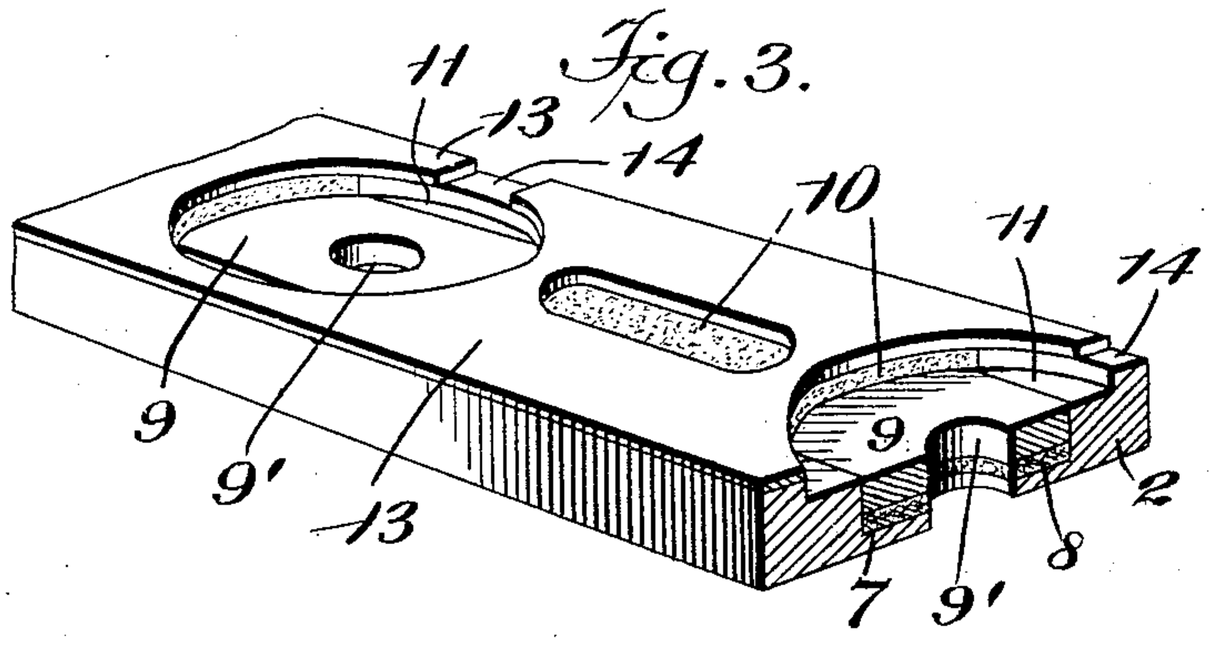

Fig. 3.

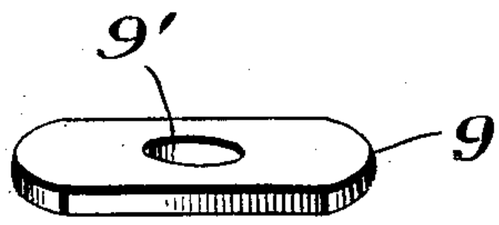

Fig. 4.

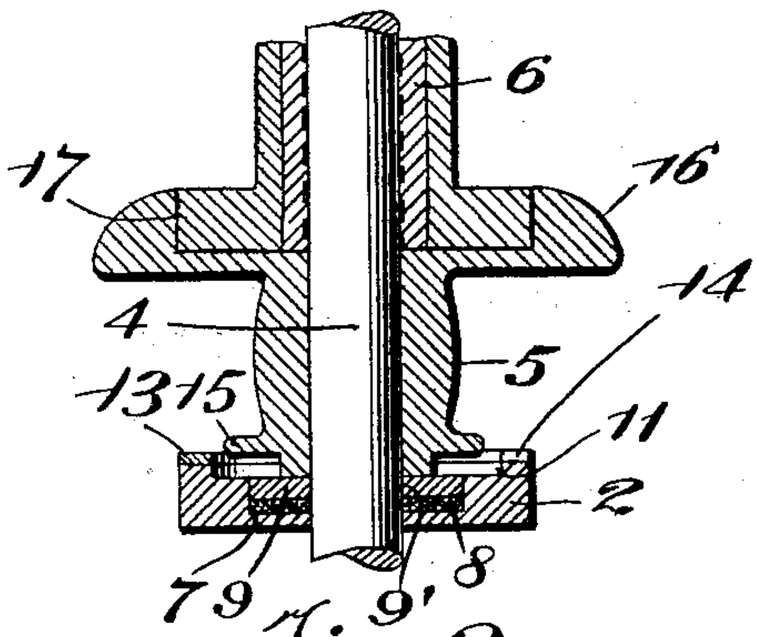

Fig. 2.

Witnesses
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No. 745,897. Patented December 1, 1903.

UNITED STATES PATENT OFFICE.

ALFRED PARKER, OF METHUEN, MASSACHUSETTS, ASSIGNOR TO FRANCIS A. HALL AND PERCY HALL, OF METHUEN, MASSACHUSETTS.

SPINNING-FRAME.

SPECIFICATION forming part of Letters Patent No. 745,897, dated December 1, 1903.

Application filed June 8, 1903. Serial No. 160,568. (No model.)

To all whom it may concern:

Be it known that I, ALFRED PARKER, a subject of the King of England, residing at Methuen, in the county of Essex and State of Massachusetts, have invented a new and useful Spinning-Frame, of which the following is a specification.

This invention relates to certain improvements in spindles and spindle-bearings, and has for its principal object to provide a construction of whirl and bobbin-tube on which a much longer bobbin may be wound than can now be accomplished without change in the length of the spindle, thus increasing the capacity of the machine and the ready winding of considerably more yarn on a single bobbin.

A still further object of the invention is to provide a construction of whirl and bobbin in which the two are so connected as to effect a steadier motion of the bobbin, and thus reduce the power necessary for revolving the same and at the same time permit of faster winding.

A still further object of the invention is to provide improved means for lubricating the spindle, permitting the ready addition of lubricant while the frame is running, and in which provision is made for the retention of a considerable quantity of lubricant, so that the spindle will at all times be properly lubricated and the necessity of frequent attention will be avoided.

A still further object of the invention is to provide a combined lifter-plate and lubricator, so arranged as to allow the lowering of the whirl and to permit of the better distribution of the lubricant to the cylinder in part by the action of the lifter-frame.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a sectional elevation of the improved tube, whirl, and a portion of the lubricator forming the subject of the present invention. Fig. 2 is a transverse sectional elevation of a portion of the same. Fig. 3 is a detail perspective view of a portion of the lifter-plate. Fig. 4 is a detail perspective view of one of the whirl-supporting washers detached.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In the drawings, 1 designates a portion of the frame, and 2 a lifter-plate, connected to rods 3 in the usual manner for effecting vertical movement of the bobbin during the winding operation.

The spindle 4 is of the ordinary construction and extends through a suitable opening in the lifter-plate, and on said spindle is mounted a whirl 5 and bobbin-receiving tube 6, the latter being preferably provided with an internal thread or groove in order to permit the passage of the lubricant and keep all portions of the spindle supplied therewith.

In the upper surface of the lifter-plate is formed an elongated groove 7, which may extend throughout the full length of the lifter-plate or may be formed in a number of sections properly spaced from each other at points where the lifter-rods are connected. These grooves are comparatively deep and being preferably extended to nearly the lower surface of the lifter-plate, and along the bottom of the groove is placed a continuous strip 8, of felt, wicking, or some similar material capable of absorbing the lubricant, the strip being provided at intervals with suitable openings for the passage of the spindles. On this strip of felt are placed washers 9, formed of any suitable material and provided with spindle-openings 9′, while between the adjacent ends of the washers are placed felt strips 10, the groove as a whole serving as an oil-reservoir and splashing of the lubricant being prevented by the employment of the felt or similar absorbent material. In the top of the lifter-plate are circular recesses 11, the lower walls of which are about on a level with the upper surface of the washers 9, and as the washers are provided with straight side portions engaged by the plate side walls of the groove, and thus prevented from turn-

ing, there is formed a substantially flat base covering the lower felt strip, while the recess permits the entrance of the lower portion of the whirl 5. The lifter-plate further is covered by an auxiliary protecting-strip 13, which is provided at intervals with suitable openings arranged preferably between the spindles, so that lubricating material may be conveniently introduced through these openings to the absorbent material in the reservoir, while at the front of the plate the strip is cut away, as indicated at 14, so that further quantities of lubricant may be introduced directly under the whirl.

The whirl as ordinarily constructed is of such height as to take up a considerable portion of the length of the spindle, and thus reduce the length of the bobbin which can be wound. In carrying out the present invention it is designed to materially increase the length of the bobbin by reducing vertical height of the whirl, and this is accomplished by placing the lower flange 15 at the lower portion of the belt-surface, slightly within the circular recess formed in the top of the lifter-plate and in the covering-strip 13 for the purpose. The upper flange of the whirl is of greater diameter than the usual, as indicated at 16, and is provided with an annular flange forming a circular recess 17 to receive the lower end of the bobbin and serving, in connection with the usual pins 18, to hold the bobbin steady during the operation of the frame.

The tube 6, on which the bobbin is received, is of the ordinary construction and is secured at its lower end to the whirl.

In the operation of the device the lifter-plate is actuated in the usual manner, and as the whirl and tube are raised a slight suction is created at the lower end of the tube, serving to draw up oil from the reservoir, and during a rapid rotative movement of the tube and whirl 6 oil is forced up to the upper portion of the spindle and thoroughly lubricates the same.

By dispensing with the usual lubricating device on top of the lifter-plate and by shortening the vertical height of the whirl a bobbin of much greater length may be wound on the same spindle than is possible at the present time, thus increasing the quantity of yarn and reducing the number of doffing operations, so that the same frame may accomplish a greater amount of work than frames as ordinarily constructed. Aside from this the construction of the whirl and its position are such that the driving motion will be more steady and uniform, and as the bobbin is received within a recessed portion of the whirl it will be held steadier and may be revolved at a much greater rate of speed than is now possible.

Having thus described the invention, what is claimed is—

1. In a spinning-frame, a spindle, a tube and whirl mounted thereon, a lifter-plate having its upper face recessed to form a lubricant-reservoir, absorbent material disposed within the reservoir, and washers resting on a portion of the absorbent material and serving to support the weight of the tube and whirl.

2. In a spinning-frame, a lifter-plate having its upper face recessed to form a lubricant-reservoir, absorbent material disposed in the reservoir, and a tube and whirl-supporting washer supported by a portion of such absorbent material.

3. In a spinning-frame, a lifter-plate having in its upper face an elongated recess having a lubricant-reservoir, absorbent material disposed in the reservoir, said plate being further provided with spaced recesses, washers arranged within said recesses and supported by the absorbent material, spindles extending through the lifter-plate and washers, and tubes and whirls mounted on the spindles, the lower portions of said tubes and whirls being received within the spaced recesses, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALFRED PARKER.

Witnesses:
ELI FURNEAUX,
CHRISTOPHER RUSSELL.