

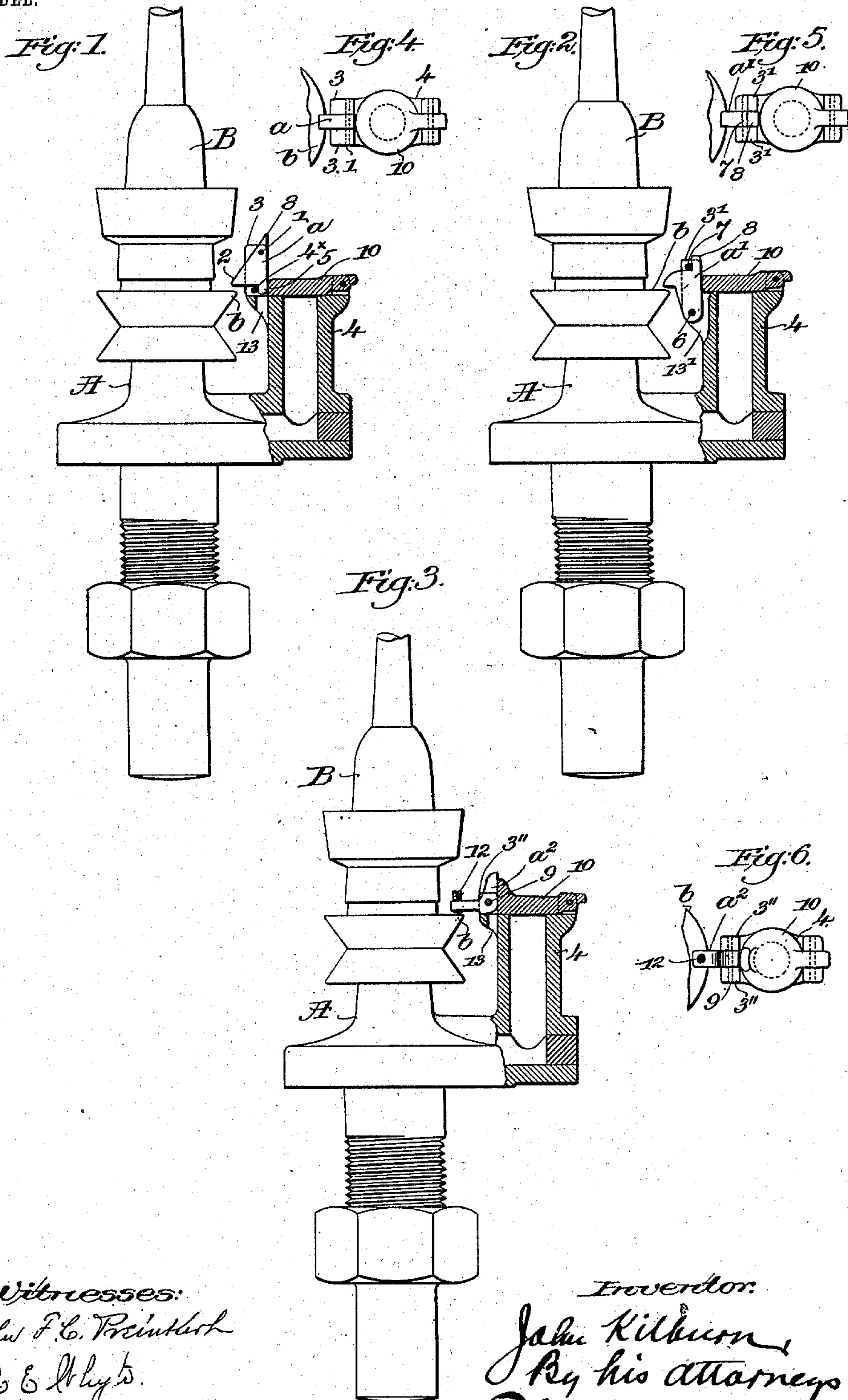
No. 719,812.

PATENTED FEB. 3, 1903.

J. KILBURN.  
DOFFER GUARD.

APPLICATION FILED MAR. 3, 1899.

NO. MODEL.



Witnesses:  
John F. C. Prentiss  
O. E. H. L. L.

Inventor:  
John Kilburn,  
By his attorneys,  
Phillips & Anderson.



# UNITED STATES PATENT OFFICE.

JOHN KILBURN, OF BELMONT, MASSACHUSETTS, ASSIGNOR TO THE SAWYER SPINDLE COMPANY, OF MAINE, A CORPORATION OF MAINE.

## DOFFER-GUARD.

SPECIFICATION forming part of Letters Patent No. 719,812, dated February 3, 1903.

Application filed March 3, 1899. Serial No. 707,582. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN KILBURN, a citizen of the United States, residing at Belmont, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Doffer-Guards; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to an improvement in spindle-supports, and more particularly to an improved doffer-guard for spindles of spinning-machines.

The objects of the present invention are to provide a spindle-support with a doffer-guard to hold the spindle in the bearing during the doffing and at the same time to prevent excessive movement of the spindle in the bearing before it is engaged by the guard to hold it therein and to make the doffer-guard simple, easy of operation, and positive in action.

To these ends, therefore, the present invention consists in the spindle support hereinafter described, and more particularly set forth in the claims.

In the accompanying drawings, Figure 1 is a side elevation, partially in section, illustrating the preferred form of my invention. Figs. 2 and 3 are similar views illustrating modifications thereof. Figs. 4, 5, and 6 are partial plan views of the several forms illustrated in Figs. 1, 2, and 3, respectively.

A designates in a general way the bolster-case. B designates the spindle supported therein, which may and preferably will be, except as hereinafter stated, the same as is usual in this class of spindles.

My invention contemplates the employment of a detent supported on the bolster-case or appurtenant part and having a projection adapted when a pull is exerted upon the spindle in doffing to engage with an annular protuberance carried by the spindle and means to positively lock or hold such detent in operative position. The detent in the illustrated embodiments of my invention consists of a latch supported on a pivot mounted on an arm carried by the bolster-case, having a member adapted to be projected over the pro-

tuberance *b* of the spindle, which conveniently consists of the whirl. It is immaterial whether the detent is pivoted above the level of the upper surface of the protuberance *b*, as shown in Fig. 1, or below it, as shown in Fig. 2, or substantially on a level therewith, as shown in Fig. 3, for in each case a movement of the detent about its pivot withdraws the detent from operative position and permits the spindle to be lifted out of the bearing.

In Figs. 1 and 4 the detent is shown as a triangularly-shaped piece *a*, loosely supported upon a pin 1, upon which it is free to be turned. One corner 2 of the triangle is adapted to be projected forward over the protuberance *b* of the spindle, so that when a pull is exerted upon the spindle in doffing the protuberance *b* will engage with the corner 2 of the detent and the spindle will be held thereby in its bearing. The pin 1 is mounted in ears 3, projected upwardly from the base of the bolster-case and preferably from the oil-well 4. It is to be noted that in this construction the center of gravity of the detent *a* is so located with relation to the pin 1 that the detent normally tends to withdraw its corner 2 from over the protuberance *b* of the spindle. Suitable means is provided to prevent the detent from being moved too far in the direction of the spindle, and in this embodiment of my invention such means consists of a pin 4<sup>x</sup>, supported in the ears 3 and adapted to engage a portion of the detent, such as the depending lug 5. In Figs. 2 and 5 the detent is shown as a hook *a'*, loosely supported upon a pin 6, upon which it is free to be turned. The nose of the hook projects over the protuberance *b* of the spindle, and means is provided for limiting the movement of the hook toward the spindle, which consists in this embodiment of the invention of the pin 7, mounted in the ears 3', similar to the ears 3, above referred to. In both of these forms of my invention the detent is provided with a portion 8, which projects above the ears 3 or 3', which is adapted to be engaged by the finger of the operator when it is desired to withdraw the detent from operative position. It is also to be noted that in both of these constructions the end of the doffer-guard, adapted to project over the protuberance on the spindle, is beveled, so that when



the spindle is inserted the doffer-guard will be forced back and the spindle may enter its bearing without separate manipulation of the guard by the operator.

5 In Figs. 3 and 6 the detent is shown as an angularly-shaped piece  $a^2$ , loosely supported upon the pin 9, supported in the ears 3'', and having one arm projected over the protuberance  $b$  of the spindle. To prevent the piece  
10  $a^2$  from falling down upon the protuberance, I let its under side rest upon the bottom of the slot between the ears 3''. As shown in the embodiment of my invention illustrated in Figs. 3 and 6, the arm of the angular piece  $a^2$ ,  
15 which when in operative position extends over the protuberance  $b$ , is provided with an adjustable screw 12, tapped into a threaded bearing in said arm, and by adjusting such screw up or down in the piece  $a^2$  its lower end  
20 may be moved toward and away from the upper surface of the protuberance  $b$  to regulate the amount of play between the detent and the protuberance  $b$  of the spindle, thereby providing for taking up the wear of the parts  
25 and insuring the control and regulation of the amount of vertical movement permitted to the spindle when doffing.

In all of these forms of my invention suitable means is provided to lock or hold the de-  
30 tent in operative position and is illustrated as a pivoted block 10, adapted to be partially rotated upon its pivot to withdraw it from behind the detent, thus when withdrawn permitting the latter to be withdrawn from over  
35 the protuberance of the spindle and when in position holding the detent positively in operative position. In practice this lock conveniently consists of the pivoted cover for the oil-well, although of course it is by no means  
40 necessary that it should have this additional function.

It will of course be understood that the spindle might be provided with any suitable equivalent in lieu of the protuberance and  
45 that wherever in the claims I have used the expression "protuberance" I intend thereby to cover any equivalent construction.

It is to be noted that in the illustrated embodiments of my invention wherein I have  
50 employed or adapted the cover of the oil-well as a detent for the doffer-guard the construction and arrangement is such that the closing of the cover of the oil-well into operative position will by the contact of its forward  
55 end with the pivoted doffer-guard automatically set the doffer-guard in operative position to engage the protuberance or whirl of the spindle.

In Figs. 1 and 3 I have shown a passage or  
60 hole 13 extending from the bottom of the space between the ears 3 3 and 3'' 3'', respectively, which is adapted to carry away any oil that may be accidentally spilled upon the upper surface of the oil-well 4, thereby  
65 preventing the same from creeping along the

doffer-guard and being deposited upon the whirl  $b$ . In Fig. 3 I have shown the inwardly-projected arm of the piece  $a^2$  as slightly raised above the level of the bottom of the piece which rests upon the upper surface of  
70 the oil-well, which construction affords additional security against creeping of the oil to the whirl. In Fig. 2 the slot 13' is enlarged behind the detent  $a'$  for the same purpose that the hole 13 is provided in the constructions  
75 illustrated in Figs. 1 and 3.

Having thus described my invention and without limiting myself to the precise construction shown, I claim as new and desire to secure by Letters Patent of the United  
80 States—

1. A spindle-support, having, in combination, a bolster-case provided with a laterally-projected oil-well, a spindle provided with a  
85 protuberance, a doffer-guard pivotally supported on the oil-well and adapted to be projected over the protuberance, said doffer-guard having its center of gravity so located with relation to its pivot as normally to tend  
90 to withdraw it from over the protuberance, and an oil-well cover pivoted on the opposite side of the oil-well from the spindle, said oil-well cover cooperating with the doffer-guard to automatically lock and hold the latter in  
95 operative position by the closing of the cover, substantially as described.

2. A spindle-support, having, in combination, a bolster-case provided with a laterally-projected oil-well, a spindle provided with a  
100 whirl, a doffer-guard pivotally supported on the oil-well, having a beveled end adapted to project over the whirl so as to be displaced thereby when the spindle is inserted in its bearing, and an oil-well cover pivoted on the  
105 opposite side of the oil-well from the spindle, adapted when closed to engage and hold the end of the doffer-guard over the whirl and when raised to permit easy access of the fingers to the doffer-guard, substantially as de-  
110 scribed.

3. A spindle-support, having, in combination, a bolster-case provided with a laterally-projected oil-well, a spindle provided with a  
115 whirl, a doffer-guard pivotally supported on the oil-well on a pivot located at or above the upper surface of the whirl and having an end adapted to project over said upper surface of the whirl, and an oil-well cover pivoted upon  
120 said oil-well being so pivoted and arranged that the portion thereof the most distant from the pivot is adapted when closed to engage the doffer-guard and hold the same in position with its end projected over the upper surface of the whirl, substantially as described.

In testimony whereof I affix my signature  
125 in presence of two witnesses.

JOHN KILBURN.

Witnesses:

T. HART ANDERSON,  
HORACE VAN EVEREN.