

(No Model.)

W. F. DURGIN.
MECHANISM FOR CLAMPING YARNS TO THE SPINDLES ON SPINNING JACKS
OR MULES IN THE OPERATION OF DOFFING.

No. 342,787.

Patented June 1, 1886.

Fig. 1.

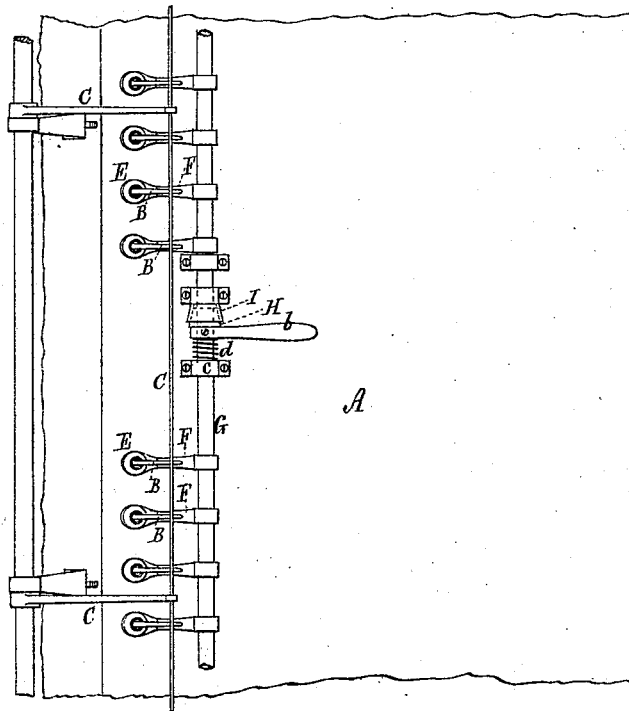


Fig. 3.

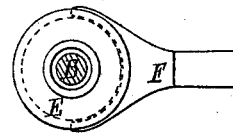


Fig. 4.

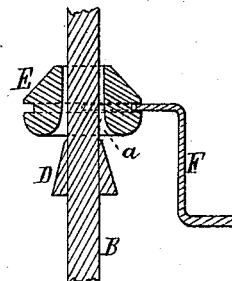
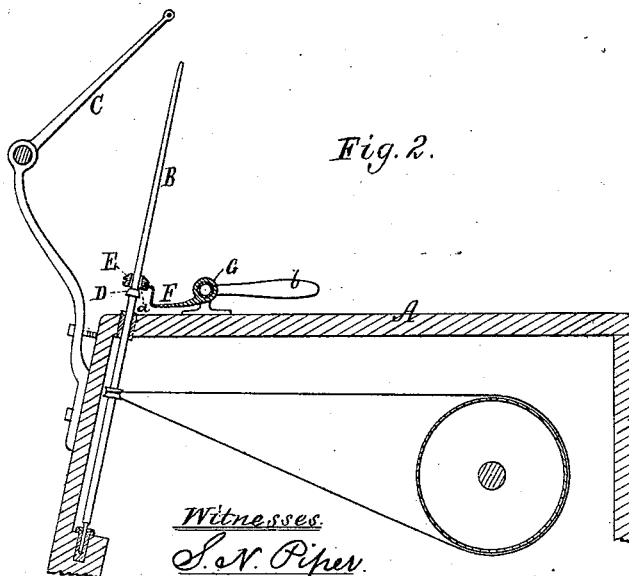


Fig. 2.



Witnesses
S. V. Piper.
R. B. Torrey

Inventor
Wm. F. Durgin
by R. W. Eady atty.

UNITED STATES PATENT OFFICE.

WILLIAM FRANCIS DURGIN, OF IPSWICH, MASSACHUSETTS.

MECHANISM FOR CLAMPING YARNS TO THE SPINDLES ON SPINNING JACKS OR MULES IN THE OPERATION OF DOFFING.

SPECIFICATION forming part of Letters Patent No. 342,787, dated June 1, 1886.

Application filed April 1, 1886. Serial No. 197,409. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FRANCIS DURGIN, of Ipswich, in the county of Essex, of the Commonwealth of Massachusetts, have invented a new and useful Improvement in Mechanism for Clamping Yarns to the Spindles on Spinning Jacks or Mules in the Operation of Doffing; and I do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view of a series of jack-spindles provided with my invention. Such figure also shows portions of the carriage, faller-shaft, and wire, Fig. 2 being a vertical section of the parts exhibited in Fig. 1 and of the spindle-driving drum, some parts being represented in elevation. Fig. 3 exhibits in top view, and Fig. 4 in vertical section, on an enlarged scale, part of a spindle, together with the mechanism applied to it for clamping to it the yarn preparatory to doffing a cop from such spindle, such clamping of the yarn being the object of my invention.

In the ordinary process of connecting the yarn to the spindle of a spinning jack or mule before removal of a cop or bobbin from such spindle it is customary to depress the faller upon the yarn, so as to force such yarn below the cop or bobbin, and next to revolve the spindle so as to wind the yarn several times about it. The amount of yarn thus wound on the spindle has afterward to be removed therefrom and becomes so much waste. By my invention there is very little, if any, such waste, as the yarn, on being depressed by the faller, is caught between and clamped by the conic frustum and ring, as hereinafter described, applied to the spindle.

In the drawings, A denotes the upper part of the jack-carriage, B B, &c., being a series of its spindles, and C the faller. On each spindle there is fastened concentrically with it, at the foot of its blade, a conic frustum, D, and above such and to slide vertically and turn on the spindle there is an annulus, E, which has within its lower part a tapering or conic recess or mouth, a, to receive and fit to the frustum. This ring is grooved around its

periphery to receive a furcated arm or elastic carrier, F, projecting from a horizontal shaft, G. The said shaft has a cone, H, fixed on it concentrically to enter a corresponding stationary hollow cone, I, fixed to the jack-carriage. A handle, b, projects from the shaft, and there is fixed on the shaft to bear against one of its bearings c a spiral spring, d, which operates to force the cone H firmly into the cone I. By turning the shaft one way by means of its handle the clamping-rings may be forced down upon the frusta. So, by turning the shaft the opposite way, such rings may be raised off the frusta, the rings by the friction of one cone within the other being held in either position. On the faller being depressed sufficiently when the clamping-rings are raised off the frusta the yarns may be caused to pass between such rings and frusta, each yarn going between the ring and frustum of its spindle. This having been done, the rings are to be depressed so as to clamp the yarns to the frusta. The cops or bobbins can next be removed from the spindles, after which the spindles are to be put in operation so as to wind the yarns a little on the fresh bobbins or cop-tubes, after which the carriage is to be run out in order to draw and twist the yarn.

I do not claim a spindle provided with a box, latches, and operative spring, and a yarn-clamping cup and mechanism for simply raising and lowering the cup on the spindle, all being as represented in the United States Patent No. 326,900, as such mechanism is without any devices for performing the function of automatically holding the supporting-shaft of the furcated carrier of the thread-clamping device from moving downward while clamping the yarn.

I claim—

1. The combination, with each spindle of a spinning jack or mule, of mechanism, substantially as described, for clamping the yarn to such spindle, such mechanism consisting of the frustum, the grooved ring, the furcated carrier, the supporting-shaft of such carrier, and its mechanism for holding it from accidentally turning when the ring is in either of its positions on the spindle, all being arranged

and to operate essentially as set forth, such shaft having a handle extending from it, as represented.

2. The combination, with the spindle of a
5 spinning jack or mule, of mechanism, substantially as described, for clamping the yarn to each spindle, such mechanism consisting of the frustum D, grooved annulus E, furcated

carrier F, the supporting-shaft G, its handle b, cone H, fixed to the shaft, the stationary 10 hollow cone I, and the spring d, all arranged essentially and to operate as represented.

WILLIAM FRANCIS DURGIN.

Witnesses:

R. H. EDDY,

R. B. TORREY.