

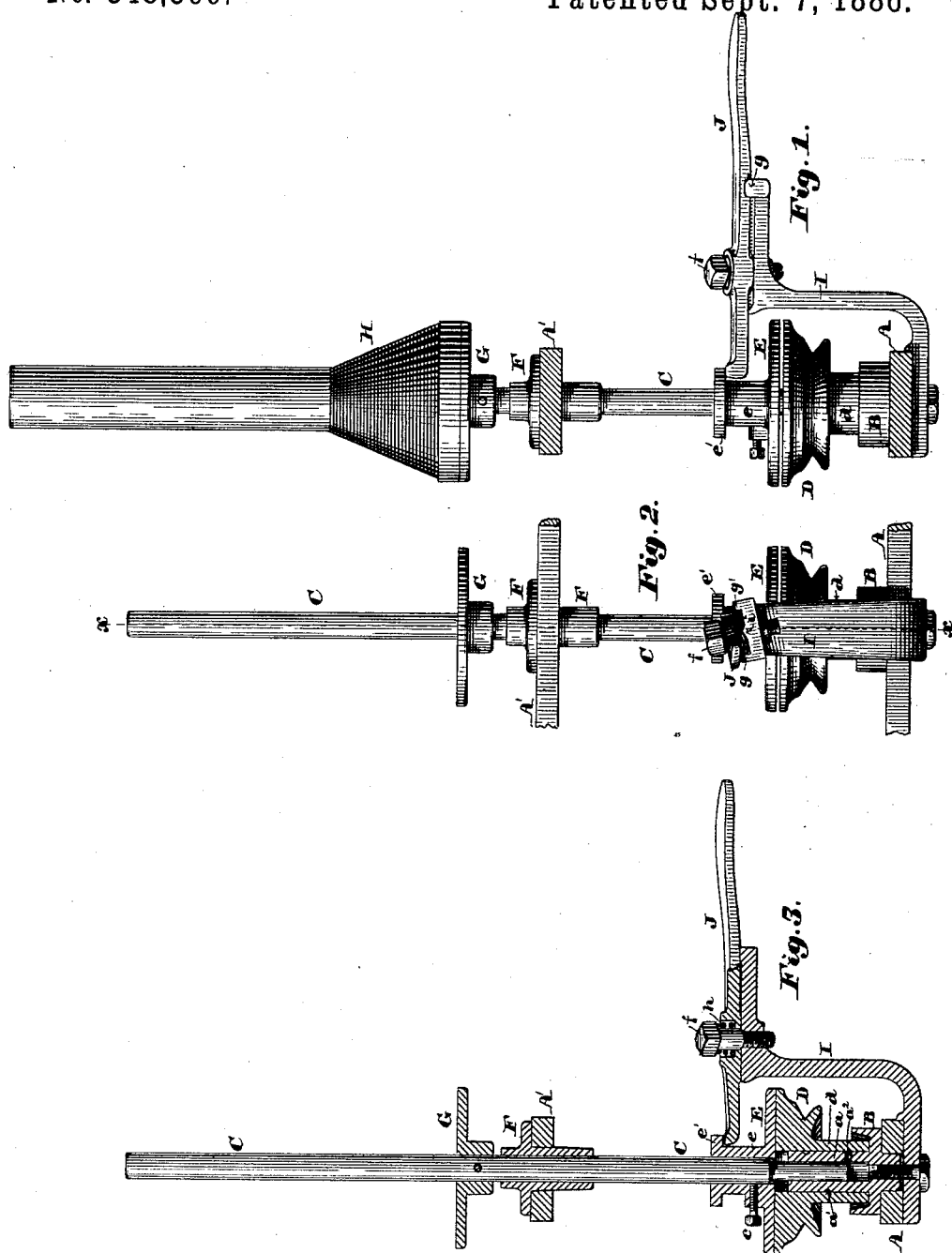
(No Model.)

W. D. HUSE.

SPINDLE FOR YARN WINDING MACHINES.

No. 348,560.

Patented Sept. 7, 1886.



Witnesses:

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UNITED STATES PATENT OFFICE.

WARREN D. HUSE, OF LACONIA, NEW HAMPSHIRE.

SPINDLE FOR YARN-WINDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 348,560, dated September 7, 1886.

Application filed May 8, 1886. Serial No. 201,519. (No model.)

To all whom it may concern:

Be it known that I, WARREN D. HUSE, of Laconia, in the county of Belknap and State of New Hampshire, have invented certain new and useful Improvements in Spindles for Yarn-Winding Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to spindles for yarn-winding machines and the means of operating them; and it consists in certain novel features of construction, arrangement, and combination of parts, which will be readily understood by reference to the description of the drawings, and to the claims to be hereinafter given.

Figure 1 of the drawings is a vertical transverse section through the spindle-rails of a winding-machine, and showing one of my improved spindles and its shipping mechanism in elevation with a bobbin mounted upon said spindle. Fig. 2 is a front elevation of said spindle, the shipping mechanism, and portions of the supporting-rails with the bobbin removed; and Fig. 3 is a vertical section on line *xx* on Fig. 2, except that the spindle and set-screws are shown in elevation.

In the drawings, A and A' are the spindle-supporting rails of a yarn-winding machine, which are maintained in their proper relative positions by the end frames (not shown) of the machine in a well-known manner.

B is an oil-cup set in a fixed position in the rail A, and provided with an upwardly-projecting central hub, *a*, in the periphery of which is formed the spiral groove *a'*, extending from the upper end to near the lower end of said hub, where it communicates by means of the hole *a''* with the interior of the cylindrical chamber formed in the center of said hub, and in which the lower end of the spindle C has its bearing.

D is a grooved pulley, provided with the downwardly-projecting hub *d*, and mounted upon the hub *a* of the oil-cup B, with the lower end of its hub *d* resting upon the bottom of said oil-cup, said pulley being arranged to revolve freely upon the hub *a* without any contact whatever with the spindle C. The upper end of the pulley D is a flat circular plane at right angles to its axis of revolution, and arranged to engaged with a corresponding face on the under surface of the disk E, which is

provided with the hub *e*, having upon its upper end the collar or flange *e'*, and secured firmly to the spindle C by means of the set-screw *c*, or in any other well-known manner. The spindle C has its upper bearing in the bushing F, set in the rail A', and has firmly secured thereon, above said upper bearing, the disk G, upon which the bobbin H rests when placed upon the spindle C.

I is a bracket or stand secured to the lower spindle-rail, A, and having pivoted thereon the shipper-lever J by means of the inclined pivot bolt *f*, about the axis of which said lever may be vibrated a distance limited by the ears *g* and *g'* on the front end of the bracket I, as shown in Fig. 2. The inner end of the lever J extends under the collar *e'* on the hub of the disk E, so that when the front or outer end of the lever J is moved to the left about its inclined fulcrum-pin *f* its inner end will engage with said collar and lift the disk E away from contact with the pulley D, carrying with it the spindle C and the bobbin H, as shown in Figs. 1 and 2.

The operation of my invention is as follows: The parts being in the positions shown in Figs. 1 and 2, and the bobbin being placed upon the spindle, and the yarn being properly connected to said bobbin, the front or outer end of the lever J is moved to the right about its fulcrum-bolt *f*, when the bobbin, the spindle, and the disk E all move downward until the lower surface of the said disk comes in contact with the upper surface of the pulley, when said disk, spindle, and bobbin will be revolved by virtue of the friction between the contiguous surfaces of said disk and pulley, caused by the force of gravity or the weight of the parts. The commencement of the revolution of the spindle is very easy and gradual, and therefore is much less liable to break the yarn in starting than when the old-fashioned clutch is used. When it becomes desirable to stop the revolution of the bobbin, the front end of the lever J is moved to the left to lift the disk E from contact with the pulley D, as before described. A spring, *h*, is interposed between the head of the fulcrum-bolt *f* and the lever J, by compressing which the lever J may be raised over the ears *g* or *g'* and swung at right angles to its normal position whenever it is desired to remove the spindle. The front end of the bracket I has

formed thereon intermediate between the ears *g* and *g'* the raised nib *i*, which serves to retain the lever *J* in either position in which it may be placed between the ears *g* and *g'*.

5 The lever *J* may be mounted upon a horizontal pin and move in a vertical plane, instead of an inclined plane, as shown, if desired, without departing from the principles of my invention, though I prefer the arrangement shown.

10 What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination of the spindle *C*, the disk *E*, firmly secured to said spindle and provided
15 with the hub *e* and collar *e'*, the loose pulley *D*, a fixed bearing for said pulley, the bracket *I*, provided with the ears *g* and *g'* and the nib *i*, the lever *J*, and the inclined fulcrum-pin *f*, all constructed, arranged, and adapted to op-

erate substantially as and for the purposes described. 20

2. In combination with the vertically-movable spindle *C*, the disk *E*, provided with the collar *e'*, and the lever *J*, for raising the same, the bracket *I*, provided with the ears *g g'* and
25 the nib *i*, the fulcrum-bolt *f*, the spring *h*, interposed between said lever and the head of said bolt, and the pulley *D*, all constructed, arranged, and operating substantially as and for the purposes described.

30 In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 6th day of May, A. D. 1886.

WARREN D. HUSE.

Witnesses:

N. C. LOMBARD,

WALTER E. LOMBARD.