

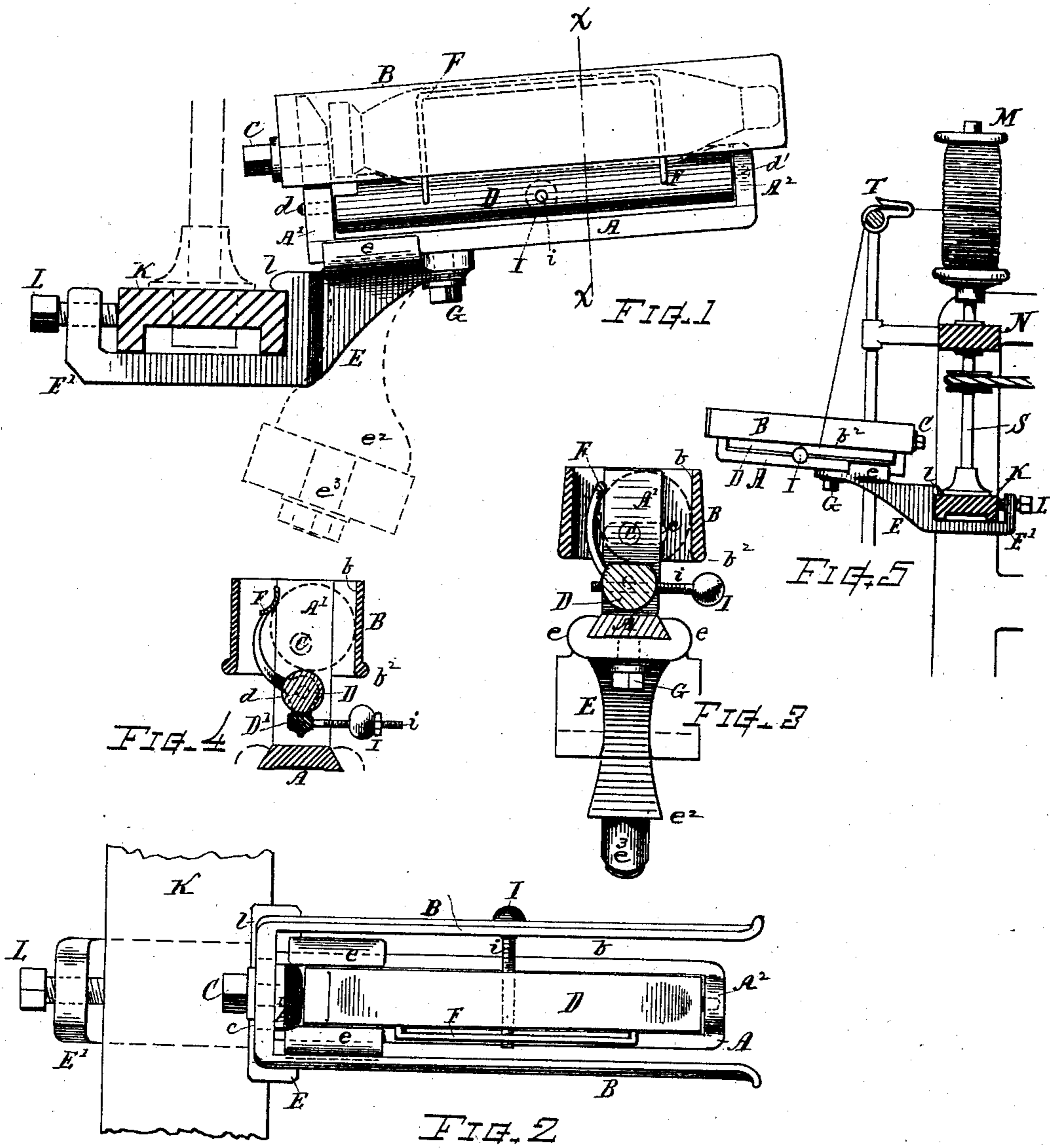
(No Model.)

P. LAFLIN.

BOBBIN HOLDER FOR SPOOLING MACHINES.

No. 375,880.

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WITNESSES.

D. R. Barton
Ella P. Blum

INVENTOR.

Perley Laflin
By Chas. H. Dunleigh
Attorney

UNITED STATES PATENT OFFICE.

PERLEY LAFLIN, OF WARREN, ASSIGNOR TO THEODORE C. BATES, OF
NORTH BROOKFIELD, MASSACHUSETTS.

BOBBIN-HOLDER FOR SPOOLING-MACHINES.

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To all whom it may concern:

Be it known that I, PERLEY LAFLIN, a citizen of the United States, residing at Warren, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Bobbin-Holders for Spooling-Machines, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

My present invention relates to the construction of bobbin-holders for spooling-machines and to the manner of supporting the same in combination with the rail or frame of the machine, the prime objects of the invention being, first, to provide a bobbin-holder that is convenient for the introduction and discharge of the bobbins and for the observation of the same while running; second, to provide convenient facilities for the regulation of the friction or tension on the bobbin by means of a laterally-adjustable weight, whereby the holder is adapted for heavy or light work; third, to afford facilities for the adjustment of the holder longitudinally in relation to its support; fourth, to provide means for the lateral adjustment of the guard to accommodate bobbins of different diameters; fifth, to provide a rolling or rocking bed or support for the bobbin and means for retaining the bobbin laterally, as more fully hereinafter set forth, and, sixth, to provide means for supporting the bobbin-holder in combination with the spindle step-rail of the spooling-machine, as hereinafter described. These objects I attain by mechanism the nature, construction, and operation of which is explained in the following description, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a side view of a bobbin-holder constructed in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is a section of the same at line *x x*, Fig. 1. Fig. 4 is a sectional view showing a modification of the construction. Fig. 5 is a view showing the relative arrangement of the bobbin-holder, the spindle-supporting rails, the spindle, spool, and thread-guiding devices in the spooling-machine.

In the drawings, A denotes the frame or base of the bobbin-holder, which is made dovetailed, or with beveled or flanged sides along its opposite parallel edges, and is provided at its rear end with an upward-projecting arm, A', and with an ear, A², at its front end.

B indicates a forked guard or cradle, having an interior space for receiving the bobbin of somewhat greater width than the diameter of the bobbin or cop. One side of the guard is fitted with an upright inner surface, *b*, against which the bobbin rests when in operation. Said guard B is attached at its rear end to the upright arm A' of the frame by means of a screw or bolt, C, which passes through a laterally-extending slot, *c*, formed in the end of the guard in a manner to afford lateral adjustment of the guard upon the frame A. The lower edge of the guard is rounded at *b*² for the passage of the thread beneath the same.

D indicates the bobbin-supporting bed, which is pivoted in the frame at *d d'*, longitudinally parallel with and in position to support the bobbin at the proper height in relation to the side of the guard. Said bed is formed as a roll or rocking piece, upon the top of which the bobbin is supported with its side parallel with and against the inner surface, *b*, of the guard. The position of the bobbin is shown by dotted lines in Figs. 1, 3, and 4.

F indicates an upwardly-projecting arm or presser-bar, preferably formed of wire and connected with the bed D, or supported on the pivoted journals thereof, to swing or rock back and forth at its top end, and serving to press against the bobbin and retain it against the surface *b* of the guard, thereby confining it steadily in position while imparting the required degree of tension when the thread is being unwound.

I indicates a ball or weight mounted on a screw-threaded stud, *i*, which is fitted in the supporting-bed in such manner that it can be turned in or out to increase or diminish the leverage, or to carry the weight nearer to or farther from the axis of the bed and presser for increasing or diminishing the force with which the presser F is caused to bear against the bobbin, and the consequent variation of the pressure of the bobbin against the surface *b*, thus increasing or diminishing the tension

or draft upon the thread as it is drawn from the bobbin to the spool.

E indicates a supporting-bracket having dovetailed or undercut ears e , that embrace the sides of the frame A, and between which said frame is arranged to adjust or slide longitudinally, and a set-screw, G, is provided for retaining said frame at positions of adjustment. The rear part of said bracket E is made of suitable form to embrace the spindle step-rail K, substantially in the manner illustrated, and provided with a lip, l , that locks over the upper corner of said rail, and with a backwardly-projecting arm, E', that extends around to the rear of said rail and is furnished with a set-screw, L, to be turned in against the rear side of the rail for securing or clamping the bracket firmly in position thereon.

In Fig. 5, M indicates the spool; S, the spindle, which is supported in bearings on the step-rail K and bolster rail N, in the ordinary manner.

T indicates the thread-guide, which is of ordinary form, and is adapted to be raised and depressed by the usual mechanism to traverse the thread from one end of the spool to the other as it is wound thereupon, in the usual manner.

The bobbin is placed in the holder from the top by tipping back the bar F and dropping the bobbin upon the bed or roll D, the end of the thread being then passed under the guard at b^2 , and carried up through the guide T and onto the spool M, in the manner indicated. The draft on the thread causes the bobbin to revolve within the holder as it lies against the guard-surface b and upon the top of the bed, while the presser F confines it and causes it to rotate steadily and without jumping about. If more or less friction is required for giving the desired tension, it can be attained by turning the ball I so as to screw it more or less to or from the axis of the supporting-bed and presser.

In Fig. 4 I have illustrated a modification of construction adapted to very fine light work, or where light friction and tension is essential. In this the bed is made as a roll to revolve freely with the rotary movement of the bobbin. The presser-arms in this case are pivoted on the axis or journals d d' at the ends of the rolls, and an auxiliary bar, D', is employed for connecting the arms from end to end of the bed, and the tension-adjusting weight I is combined with said auxiliary bar, instead of being combined directly with the bed itself. In this instance I have also shown the weight I made as a nut to traverse on the screw i , which latter is fixed in the bar D', instead of the weight being made the head of the screw-stud, as in Fig. 3. I prefer, however, the form shown in Fig. 3 as being the simplest construction.

In cases where it is desired to use this improved bobbin-holder upon the old style of spooling-machines, in which an inclined spindle-rail exists, it can be done by substitut-

ing a supporting-bracket of the form substantially as indicated by dotted lines e^2 on Fig. 1 and at e^2 on Fig. 3, such bracket being provided with a shank, e^3 , to be inserted into the hole in said rail where the old bobbin-supporting spindles are taken out. This form of bracket would be provided with a head having the undercut or dovetailed ears e and the set-screw G, as above described.

My improved bobbin holder can also, when desired, be supported in connection with a round rod, such as is used in many existing machines, by simply making the bracket of a form that will embrace said rod and be attached to it substantially in the manner as are the bobbin-holders such as are now in use.

The advantages incident to my invention are, that the bobbin-holder is open at the top, so that the bobbin is in plain sight of the attendant, who can thus the better observe the operation of the work.

Another advantage is that the bobbin is retained steadily in position while allowed a free and easy rotation as the thread is unwound therefrom, so that the spools are wound with an even tension and density, while the degree of tension can be readily varied as desired.

Another advantage, and one incident to the rocking or rolling bed, is that any tendency of the bobbin to become cramped or wedged between the guard-surface b and the supporting-bed surface by the downward draft on the thread, is counteracted by the backward roll or rocking action of the bed, which overcomes the wedging tendency, and instantly relieves any excess of friction due to this cause. As the diameter of the bobbin decreases, the presser-arm friction-bar F swings over toward the surface b of the guard, and the bobbin descends lower between the bed D and said surface b . This somewhat releases the friction as the size of the bobbin decreases, thus giving a more nearly uniform draft between the large and small diameter. This also insures the more perfect running of or unwinding of the yarn or thread, and by consequent avoidance of frequent breakages greatly lessens the labor of attendance and the loss of time in the running of the machines, which is an item of considerable importance where many bobbin-holders and spooling-machines are in use.

The longitudinal adjustment of the frame upon its supporting-bracket permits of the bobbin-holder being placed in such relation to the guide T that the draft on the thread will be substantially direct and uniform, whether running from the point or the head of the bobbin.

What I claim as of my invention, and desire to secure by Letters Patent, is--

1. A bobbin-holder provided with an axially-pivoted rolling support or bed upon which the bobbin lies, a guard or side plate having an upright surface, as b , against which the bobbin rests, and an upwardly-projecting swinging presser opposite thereto, between which and said surface the bobbin is confined, in the

manner described, and permitted rotary movement as the thread is drawn therefrom around the lower edge of said guard, substantially as set forth.

5 2. A bobbin-holder provided with an axially-pivoted bobbin-supporting bed, having a swinging presser connected therewith for bearing the bobbin against the side of the holder, and a laterally-projecting stud or arm, in connection with the pivotal axis thereof, 10 having a weight or ball-head disposed at one side of said axis, for the purpose set forth.

3. A bobbin-holder having an axially-pivoted bobbin-support, an open-topped cradle or 15 guard with side bearing-surface, a presser-arm for retaining the bobbin against said guard-surface, swinging on an axis which is below the bobbin, and a laterally-adjustable weight in combination therewith for regulating the pressure of said arm thereof against the bobbin, 20 substantially as described.

4. The combination, with the bobbin-holder frame and the bobbin-supporting bed, of the guard attached to said frame and laterally 25 adjustable in relation to said bed, substantially as and for the purpose set forth.

5. The combination, with the bobbin-holder frame and the guard or cradle having sides for retaining a bobbin, of an axially-pivoted roll 30 or bed disposed parallel with the sides of the guard at a position for supporting the bobbin between the same, substantially as described.

6. The combination of the frame A, having the upward projection A', the forked guard B, 35 supported thereon and attached by the screw at its rear end, the supporting-bed axially pivoted in said frame, the presser-arm F, and the adjustable stud carrying the weight I, substantially as and for the purpose set forth.

40 7. The combination, with a supporting-bracket having means for its attachment to a spool-

ing-machine, of a longitudinally-adjustable bobbin-holder frame carrying a bobbin-supporting cradle or guard and mounted to slide upon said bracket, and a clamping-screw for securing 45 the parts together, substantially as and for the purpose set forth.

8. The supporting-bracket E, having dove-tailed guides or retaining-ears e, in combination with the bobbin-holder frame A, fitted 50 thereto and longitudinally adjustable upon said bracket, and means for confining said frame at positions of adjustment, substantially as set forth.

9. The combination, with the spindle step-rail K, in a spooling-machine, of the bobbin-holder-supporting bracket E, having the lip l, 55 backwardly-extended arm E', and clamp-screw L, embracing said spindle step-rail, and the forwardly-extended seat and under cut ears e, 60 supporting the bobbin-holder frame, which is longitudinally adjustable thereon, and the set-screw G, substantially as and for the purposes set forth.

10. The combination of the supporting- 65 bracket E, the frame A, adjustable thereon, the guard B, having the bearing-surface b, the bobbin-support bed D, journaled at its ends on the frame A, the presser F, adapted to swing on the same axis as the bed, and the threaded stud 70 carrying the weight I, connected therewith and laterally adjustable in relation to the axis, substantially as and for the purposes set forth.

Witness my hand this 20th day of June, A. D. 1887.

PERLEY ^{his} X LAFLIN.
mark

Witnesses:

CHAS. H. BURLEIGH,
BENJ. L. SAMPSON.