

(No Model.)

E. H. KIERNAN.
SPINNING JENNY.

No. 453,399.

Patented June 2, 1891.

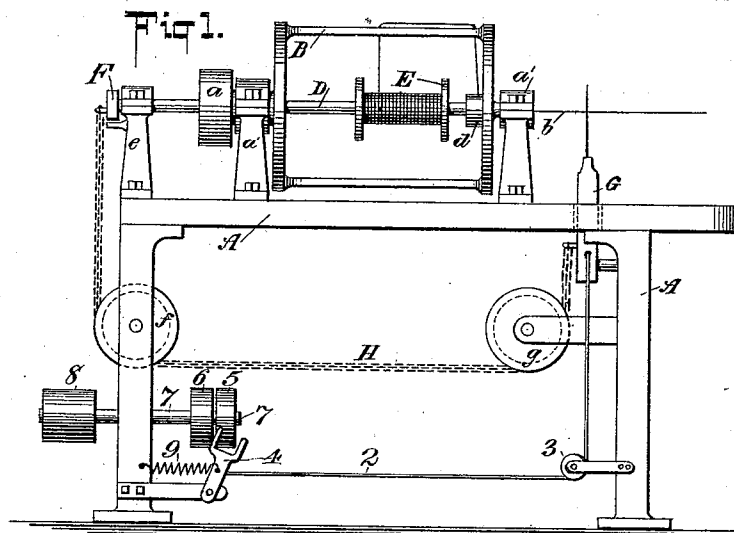


Fig. 2.

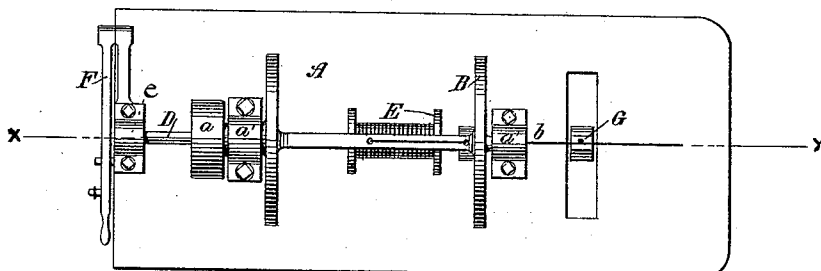
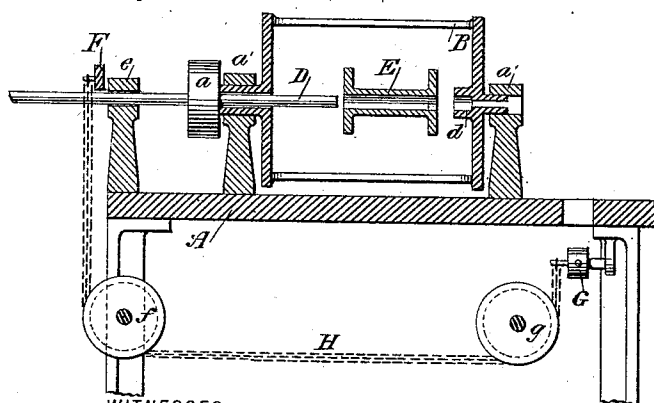


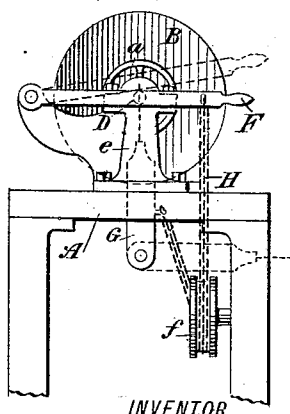
Fig. 3.



WITNESSES:

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Fig. 4.



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SPINNING-JENNY.

SPECIFICATION forming part of Letters Patent No. 453,399, dated June 2, 1891.

Application filed March 24, 1890. Serial No. 345,071. (No model.)

To all whom it may concern:

Be it known that I, EUGENE H. KIERNAN, a resident of Hoboken, Hudson county, New Jersey, have invented certain new and useful Improvements in Spinning-Jennies, of which the following is a specification.

The object of my invention is to prevent the machine from being operated until the bobbin is properly adjusted upon its spindle and until the spindle is in its proper position.

The invention consists in the novel details of improvement and the combinations of parts that will be more fully hereinafter set forth, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is a side elevation of a spinning-jenny embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal section on the plane of the line *xx*, Fig. 2, certain parts being in elevation; and Fig. 4 is an end view of the machine.

Referring to the accompanying drawings, the letter A indicates the frame of a spinning-jenny, in suitable bearings *a'* in which is journaled a flier B, as shown. The flier B has connected to it a pulley *a*, by which it is rotated. The journals of the flier B are hollow, so that a thread *b* can pass through one journal and a spindle D pass through the other journal, as shown. The flier B has a box or bearing *d* on its inner side, in which one end of the spindle D rests, while the outer end of the spindle rests in a suitable bearing *e*, as shown.

E is a bobbin or spool upon which the thread *b* is to be wound, and said bobbin is adapted to be supported on the spindle D and within the flier B, as shown. To place the bobbin on the spindle, the spindle is first moved outward, as in Fig. 3, then passed through the bobbin, and its end rested in the bearing *d*, as shown. As the flier rotates the thread will be wound on the bobbin. The above parts are all old and well known and need no further description, being here shown to illustrate the connection of my improvement with said parts or their equivalent. To prevent the spindle D from sliding outward when the bobbin is in position, a lever or catch F is connected to the support or bearing-piece

e or other part so that it will come in front of the end of the spindle, as in Figs. 1 and 2. When said lever or catch is raised, the spindle can be moved longitudinally, as in Fig. 3.

G is a finger, handle, or the like for shipping a belt when the thread *b* breaks, which finger is shown pivoted to the frame A, and which rests against and is supported by the thread *b* when the thread is in position.

One means for connecting the finger G with the belt-shipper is as follows: To the finger G is connected a cord or connection 2, that passes over a pulley 3, hung on the frame A, said cord passing to a belt-shipper 4, adapted to move a belt (not shown, but which drives pulley *a*) from the fast pulley 5 to the loose pulley 6 on a shaft 7, carried in the frame A, said shaft carrying the main pulley 8. A spring 9, connected to the shipper 4 and to the frame A, tends to move the belt upon the loose pulley 6 when the finger G is down; but when the finger G is raised the cord 2 will pull the shipper 4, and thus move the belt upon the fast pulley; but the above arrangement can be altered as desired.

The lever or catch F and finger or shipper G are connected together by a suitable chain, cord, or other connection H, as shown, which chain or connection passes over suitable pulleys or rollers *f g*, hung in the frame A, as shown. The chain or connection H is so adjusted that when the lever or catch F is down, as in Figs. 1 and 4, the finger or shipper G can be raised; but when the lever or catch F is raised, as in dotted lines in Fig. 4 and full lines in Fig. 3, the finger or shipper G cannot be raised.

Heretofore the finger that rested against the thread or its equivalent—that is to say, the part that was actuated by the breaking of the thread to ship the belt—was free to be raised or actuated whether the spindle was in its proper position or not, and, as it frequently happened, this finger or shipper would be raised and the machine started before the spindle and bobbin were in the proper place, and thereby great damage would occur. As the finger G was connected by suitable mechanism with the belt-shipper, the machine would start when the finger was raised whether the spindle was in the proper position or not. With my improvement it will be practically

impossible to raise the finger G (and thereby start the machine) unless the spindle is in the proper position for the following reasons: It is necessary to first raise the lever or catch F in order to draw out the spindle D to place the bobbin E on the spindle, the lever or catch F then resting on the spindle, all as in Fig. 3. When the lever or catch F is raised, the chain H will be drawn and the finger G consequently bedown or out of perpendicular, as in full lines, Fig. 3, and dotted lines, Fig. 4, and the belt will be on the loose pulley 6. If the operator now through carelessness or by mistake tries to raise the finger G or actuate the belt-shipper connected with the lever or catch F before the spindle D is put back to the proper position, the chain H will draw upon the lever or catch F, and as said lever or catch is held up by the spindle D, which it now rests upon, (see Fig. 3,) the finger G cannot be placed in the desired position. This will be a notice to the operator to push in the spindle to its proper position. When this is done, the lever or catch F will descend to its normal position, as in Fig. 1, and as the chain is now free or lengthened the finger G or shipper can be raised to permit the machine to start.

With my improvement a great deal of trouble and annoyance, besides much time and expense, will be saved, because the spindle will always have to be in its proper position before the finger can be raised to start the machine, and thereby breakage and damage will be avoided.

Another advantage is that the lever or catch cannot be raised while the machine is in operation, which has heretofore been done, with great damage to the attendant as well as to the machine, because the spindle and bobbin would slip out of place.

I claim as my invention—

1. In a spinning-jenny, a lever or catch at the end of the spindle and a chain or connection H secured thereto, combined with a finger to rest against a thread and also connected to said chain or connection H, said connection H extending from the catch to the finger to regulate the movement of one by the other, whereby when said lever or catch is not in its proper position the finger cannot be raised to rest against a thread, substantially as described.

2. In a spinning-jenny, the combination of the finger or handle G and lever or catch F with a chain or connection extending from said finger to said lever, said connection being secured to both the finger and catch, whereby the finger G cannot be raised until the lever or catch F is in its proper position, substantially as shown and described.

3. In a spinning-jenny, the combination of the flier B, spindle D, finger G, and lever F with a chain or connection secured to the finger and extending direct to the lever F, to which it is also secured, whereby the finger cannot be raised until the spindle is in its proper position, substantially as shown and described.

4. In a spinning-jenny, the combination of the finger G, spindle D, lever or catch F, chain or connection H, and pulleys *f g*, said chain or connection being secured to the finger G and extending direct around said pulleys to the lever or catch F, to which it is also secured, whereby when the spindle is drawn out and supports the lever F the finger G cannot be raised, substantially as described.

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Witnesses:

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