

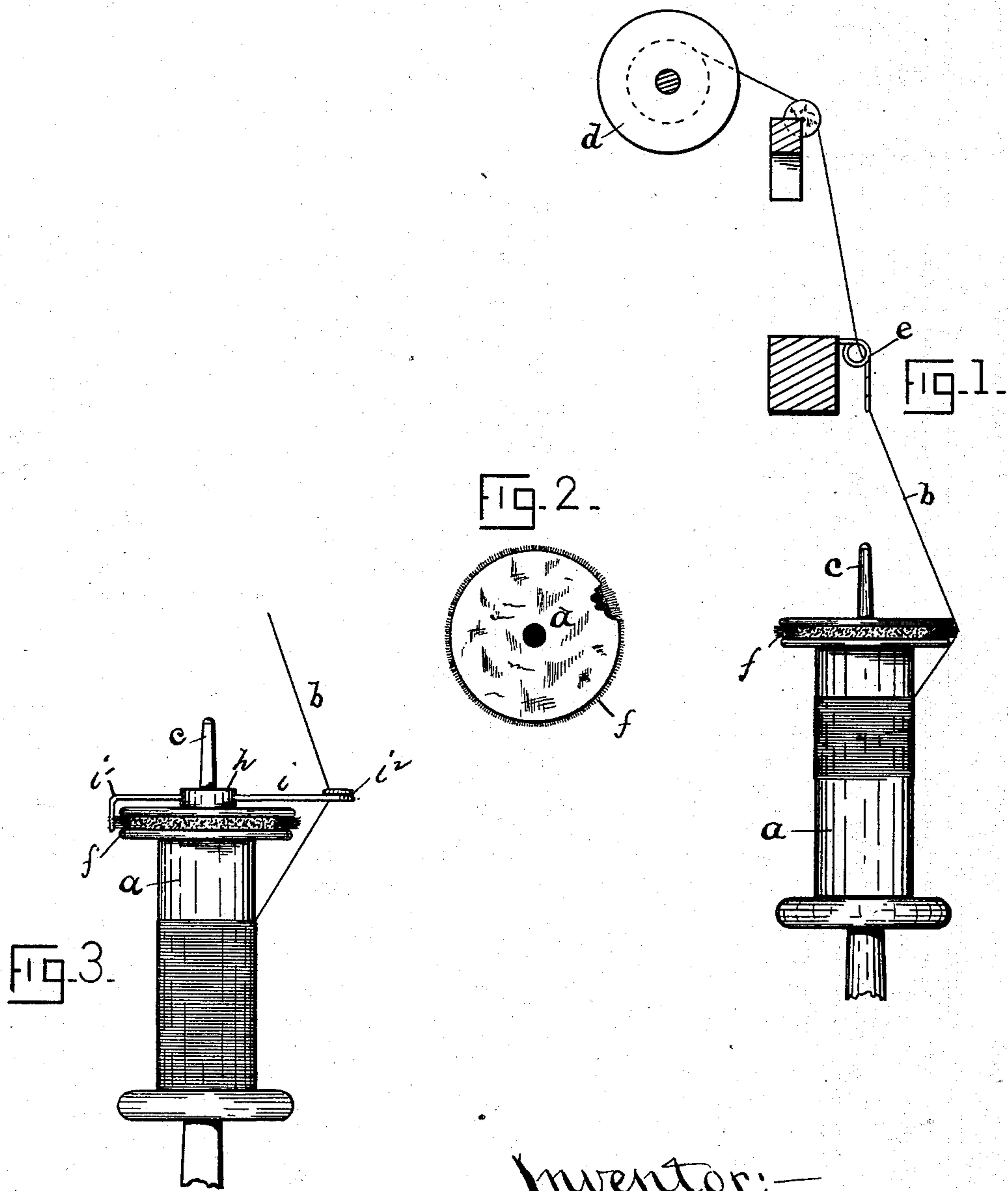
(No Model.)

J. A. CHAPMAN.

KINK PREVENTER FOR SILK SPINNING MACHINES.

No. 384,890.

Patented June 19, 1888.



Witnesses:-  
A. J. Coultas  
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Inventor:-  
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# UNITED STATES PATENT OFFICE.

JOSEPH A. CHAPMAN, OF NEW LONDON, CONNECTICUT.

## KINK-PREVENTER FOR SILK-SPINNING MACHINES.

SPECIFICATION forming part of Letters Patent No. 384,890, dated June 19, 1888.

Application filed October 29, 1887. Serial No. 253,758. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH A. CHAPMAN, a citizen of the United States, residing in the city and county of New London and State of Connecticut, have invented certain new and useful Improvements in Kink-Preventers for Silk-Spinning Machines, which improvements are fully set forth and described in the following specification, reference being had to the accompanying sheet of drawings, in which—

Figure 1 is an elevation of a bobbin and a portion of the spindle, and shows also the take-up spool and tension-eye. Fig. 2 is a top end view of the bobbin in Fig. 1, and Fig. 3 is an elevation of a bobbin and spindle having connected therewith a flier for use with bobbins having broken or mutilated heads.

My invention relates to machinery for spinning or for doubling and twisting silk, and is provided to overcome a common tendency on the part of the fine strands of silk to kink as the spindles are stopped. This is caused chiefly by the fact that the bobbin continues to rotate (by its momentum) after the drawing rolls or take-up spool stop, leaving the silk slack, and, as a natural consequence, this slack portion immediately doubles and twists together. Owing to the strands being very fine and easily broken, the operation of straightening out such kinks becomes both a tiresome and expensive one.

My invention is intended to overcome this serious difficulty, and accomplishes the desired result by providing an annulus of plush or similar fibrous springy material around the head of the bobbin.

My simplest and preferred form of construction is illustrated in Fig. 1 of the drawings, the bobbin proper being indicated by the letter *a* and the strand of silk by letter *b*. *c* indicates the spindle which carries the bobbin; *d*, the take-up spool, and *e* the tension and guide eye. The bobbin *a* in said Fig. 1 has an annular groove turned in the head at the upper or delivery end, and in this groove is cemented or otherwise securely fastened, preferably, a narrow strip of plush, *f*, whose wiry nap projects radially a slight distance beyond the adjacent bobbin-head into the path of the silken strand. (See Fig. 2.) When the bobbin is swiftly rotated, in the act of spinning or doubling, the fine strand *f* is drawn off from bob-

bin *a* against the elastic force of the plush, which yields readily to the power of the drawing-rolls; but when the bobbin is stopped the plush acts as a multiple of minute springs, with strength enough to prevent the strand from slipping forward and becoming slack. By thus preventing the slackening of the strand I avoid all tendency to kink.

I am aware of Patent No. 364,516, issued June 7, 1887, in which a kink-preventer is made substantially as a cone or sugar-loaf-shaped extension seated on the bobbin and on which the strand of silk may drop when the bobbin stops. In said invention no provision is made for preventing the slack caused by the momentum of the bobbin, the intent of said prior invention being only to provide a surface adjacent to the whirling silk on which it may drop and remain extended the instant it stops. In my present device the silk draws constantly across the projecting nap of the plush and laterally against its elastic force as it is delivered from the bobbin, and, while not unduly restrained by such contact with the plush, is always in position to be held taut and carried around by said nap whenever for any reason said bobbin is slackened or stopped.

In a patent, No. 350,345, issued to me October 5, 1886, for a kink-preventer a fixed ring of plush with nap projecting inward is provided around the bobbin-head; but such a form requires special and expensive mechanism to be added to the spinning machinery to operate said kink-preventing device, and I have also found that it is difficult to maintain the bobbin-head and the surrounding fixed ring of plush concentric with each other. In my present form these objections are removed.

The strand of silk as it leaves bobbin *a* draws against the wooden head of said bobbin, and this head or flange sometimes becomes broken or mutilated by hard and constant usage, and if used in such condition the silk would be quickly broken when brought in contact with such mutilated portions.

To make mutilated bobbins of my new construction available for further use, I provide what I term a "flier," formed of a collar, *h*, fitted loosely on the spindle, independent of the bobbin, and having radial wires *i*, the former of which terminates in an eye, *i*<sup>2</sup>, through which the silk passes, the latter being

bent downward into engagement with the nap of the plush annulus. Eye *i*<sup>2</sup> holds the silk from engagement with the mutilated bobbin-head, and the bent wire *i'* co-operates with the plush to produce the same degree of friction and the same general result as when said silk is in direct contact with the plush, as first above described.

I have referred generally to plush as the material which I employ around the bobbin-head; but bristles, hair, vegetable fiber, or any other material by which an extremely sensitive yielding annulus can be attached to and formed around said bobbin-head may be used as well.

It will thus be noted that my invention in

its simplest form is, in fact, an improved form of bobbin, and when so used does not require any changes whatever in the spinning mechanism.

Having described my invention, I claim as new and wish to secure by Letters Patent—

A bobbin for silk-spinning, having the flange or head at the delivery end grooved annularly and having fixed within said groove a ring of plush or similar material, whose nap projects outward into the path of the strand of silk, substantially as and for the purpose specified.

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