

(No Model.)

G. JAQUITH.

WHIRL FOR BOBBIN SPINDLES.

No. 284,429.

Patented Sept. 4, 1883.

Fig. 1.

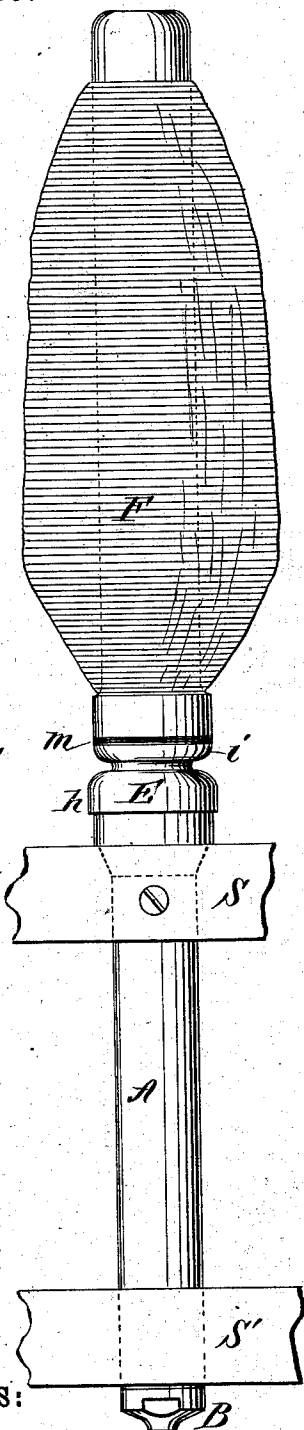


Fig. 3.

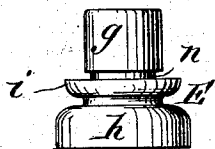


Fig. 2.

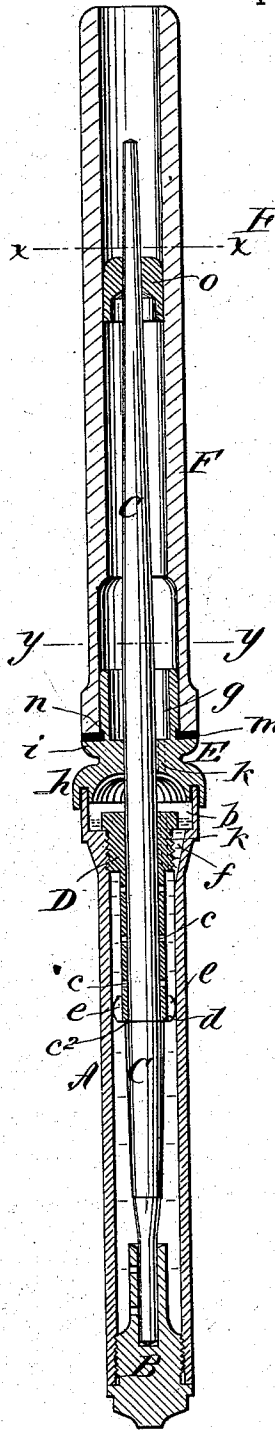


Fig. 4.

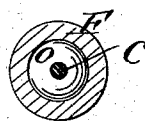
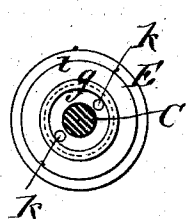


Fig. 5.



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UNITED STATES PATENT OFFICE.

GILMAN JAQUITH, OF MAYSVILLE, KENTUCKY, ASSIGNOR TO HIMSELF AND JANUARY & WOOD, OF SAME PLACE.

WHIRL FOR BOBBIN-SPINDLES.

SPECIFICATION forming part of Letters Patent No. 284,429, dated September 4, 1883.

Application filed September 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, GILMAN JAQUITH, of Maysville, in the county of Mason and State of Kentucky, have invented certain new and useful Improvements in Whirls for Bobbin-Spindles, of which the following is a full, clear, and exact description.

This invention relates to whirls for bobbin-spindles, and is an improvement upon my Patent No. 264,297, September 12, 1882.

The invention consists in a peculiar construction of the upper portion of the whirl, whereby the cup is made to receive the bobbin freely over or on the outside of it, and the bottom of the bobbin is caused to rest on a flange which forms a portion of the whirl, and by the introduction of a friction-washer interposed between it and the bottom of the bobbin assists in driving the bobbin by friction applied to its end, all as hereinafter fully described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 represents an elevation of the bolster of a ring-spinning spindle with whirl, filled bobbin, and upper and lower rails in part, embodying my invention. Fig. 2 is a vertical section, omitting the rails and showing the bobbin before commencing to fill it, the spindle being shown in elevation. Fig. 3 is a side view of the whirl detached. Fig. 4 is a transverse section on the line *xx* in Fig. 2; and Fig. 5, a transverse section on the line *yy* in Fig. 2, omitting the bobbin.

In the drawings, A indicates a tube or bolster arranged to extend through the rails S S' of the spinning-frame, and with its top, which projects above the upper rail, enlarged to form a cup, *b*.

B is a step-bearing in the bottom of the bolster for the spindle C.

D is a bushing having an enlarged head, which screws into the upper end of the bolster, and rests with a collar-bearing on the base of the cup *b*. Said bushing, which may be divided longitudinally, has perforations *c* for supplying oil from the bolster to the spindle C, and is constructed with a lower steadying-collar, *d*, which rests upon a shoulder, *e*,

formed on the spindle, to prevent the spindle from pulling out when doffing, and which has one or more oil-circulating perforations, *e*, through it. A passage, *f*, is also formed in the bolster A, on one side of the head of the bushing, for establishing circulation of the oil, as required. The bushing D serves to support the spindle in its upright position.

E indicates the driving-whirl of the spindle, and F the bobbin fitted over the upper portion of the spindle. The whirl E is constructed to form an upper oil-cup, *g*, also preferably a lower cup, *h*, which latter is inverted, and may be made to form a free annular tongue-and-groove joint with the upper edge of the stationary cup *b*, to prevent outward passage of the oil. One or more holes, *k*, are made through the whirl and continued into the top of the bushing D. These holes may not only serve to form feed-apertures for the oil into the cup *b*, and from thence down into the body of the bolster, but also to admit of the insertion of a key when it is necessary to unscrew or remove the bushing and spindle from the bolster, which constitutes an oil-reservoir for the spindle. The oil-cup *g* of the whirl, or upper portion of the whirl E, is constructed externally to receive freely over or on the outside of it the lower portion of the bobbin, and the whirl is further constructed at the base of the cup *g* with an outer collar or flange, *i*, on which, or, rather, on a yielding or elastic washer, *m*, of leather or other suitable material thereon, the bottom of the bobbin rests, and whereby the bobbin is driven (as the whirl and its spindle are rotated) in part or mainly by friction applied to its lower end, said bobbin fitting loosely over the upper or cup portion, *g*, of the whirl, which, entering within the eye of the bobbin, steadies or centers the bobbin, and also assists in driving it. To prevent the yielding washer *m* from coming off the whirl when removing the bobbin, the upper portion of the whirl E, immediately above the bobbin-holder or flange *i*, is made with a groove, *n*, within which the inner edges of said washer are sprung when fitting it onto the whirl. The construction also admits of the removal of said friction-washer when necessary to replace it by another.

The spindle C is constructed or provided at

or near its top with a swell or boss, *o*, whereby the bobbin *F* is not only made with an enlarged eye and lighter, but said eye or hole through the bobbin is sufficiently large to put
5 the bobbin on a mandrel to turn it off after its eye is bored, thus securing a perfectly true and well-balanced bobbin, also whereby a steadier and more uniform friction on the bottom of the bobbin is obtained.
10 By extending the cup of the whirl up into the eye or bottom hole of the bobbin and applying the driving-friction to the bottom of the same, as hereinbefore described, conjointly with the ordinary action of the traveler, a
15 uniform tension of the thread may be produced, substantially as follows: Take, say, a traveler twice as great as the tension of the thread ordinarily requires, or as, under previous modes of driving, the bobbin would
20 bear, and then regulate the size of the friction-washer *m* or bottom of the bobbin *F* to give the required tension of the thread. Now, as the amount of friction of the bobbin depends mainly on its weight, as the bobbin fills,
25 its leverage and its weight increase in like ratio, the weight counterbalancing the increased leverage, and thereby securing a uniform tension to the thread all the way through. The bobbin, however, does not wholly depend
30 upon friction applied to its end to drive it, as

such, while sufficient in case of a spool-bobbin, might not be found sufficient for a quill one, which, being without heads, has a reduced area at its end; but the quill-bobbin shown in the drawings is driven partly or mainly by
35 friction applied to its end and partly by friction applied laterally to its interior, as produced by contact of the upper portion or cup, *g*, of the whirl with the eye or bottom hole of the bobbin, into which it extends. 40

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The whirl *E*, provided with the lower inverted cup, *h*, the flange or collar *i*, the upper cup, *g*, projecting above the flange or collar *i*, and the annular groove *n* at the base of the said upper cup, substantially as herein shown and described. 45

2. The combination, with the spindle *C*, of the whirl *E*, provided with the bobbin-supporting flange *i*, and the upper cup, *g*, for extension up into the eye of the bobbin, and the friction-washer *m* upon the upper surface of the flange *i*, substantially as herein shown and described. 55

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Witnesses:

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