J. B. THORWARTH & M. HARRISON.

Lock for Spinning Fliers.

No. 209,727. Patented Nov. 5, 1878.

Fig. 1.

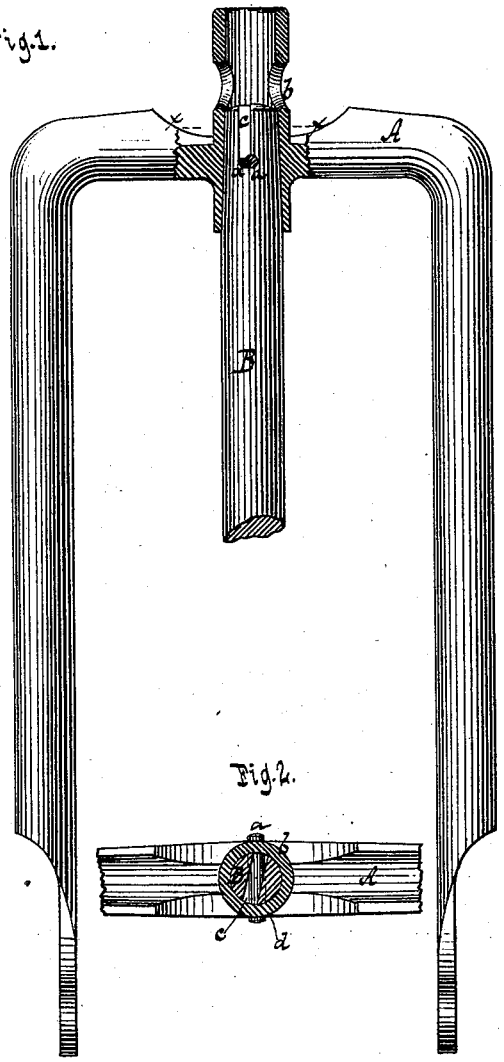

Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN B. THORWARTH AND MIKE HARRISON, OF BROOKLYN, E. D., N. Y.

IMPROVEMENT IN LOCKS FOR SPINNING-FLIERS.

Specification forming part of Letters Patent No. **209,727**, dated November 5, 1878; application filed August 15, 1878.

To all whom it may concern:

Be it known that we, JOHN B. THORWARTH and MIKE HARRISON, both of Brooklyn, E. D., in the county of Kings and State of New York, have invented a new and Improved Lock for Fliers of Spinning and Roving Frames, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a sectional side view of our improvement. Fig. 2 is a horizontal section in the plane *x x*, Fig. 1.

Similar letters indicate corresponding parts.

This invention consists in the combination of a hollow tapering flier-neck, provided with a pin passing diametrically through it and having both ends firmly fixed in the walls thereof, with a tapering spindle having a diametric open slot cut in its upper end, and having its lower end opening into a diametric channel, which is arranged obliquely thereto, so that after the locking-pin of the flier has reached the bottom of the slot in the spindle it can be slightly turned into the oblique channel, and thereby the flier is securely locked in its position.

In order to secure a flier to its spindle, it is the common practice to provide the upper end of the spindle with a key-seat for the reception of a feather-key, which is firmly fastened in the eye of the flier. This arrangement is not very safe. It allows the flier to rise up and to knock against parts of the frame, and as it rises it also turns, and the key-seat in the spindle becomes worn, while the flier is liable to be seriously injured. It has therefore been attempted to form two spiral key-seats in the spindle, one opposite to the other, or to form an L-shaped key-seat; but the operation of producing such seats is very difficult and expensive, and the keys, which are fastened in the eyes of the fliers, are still liable to wear the sides of the key-seats and work loose.

There has also been used a flier-lock in which the neck of the flier is provided with a short inwardly-projecting pin, which slides in a longitudinal groove in the surface of the spindle, and when it reaches the bottom thereof may be turned under a shoulder formed by cutting a circumferential groove in the spindle, and this arrangement has been reversed, so as to have the pin project from the spindle, while the grooves are cut in the inner surface of the flier-neck.

This lock in either form is expensive, owing to the character of the grooves, and is weak, owing to the fact that but one end of the locking-pin is secured, the loose end being liable to be bent to one side.

Our lock consists of a plain round pin, *a*, which is, by preference, made of steel and hardened, and which extends transversely through the eye *b* of the flier A, having its opposite ends secured in the wall of the eye or neck of the flier, so that said pin is always held firmly in proper position.

The upper end of the spindle B is slightly tapering, and it is provided with an open slot, *c*, just wide enough to admit the locking-pin *a*. At the bottom of the slot *c* is formed an oblique channel, *d*, (indicated in dotted lines in Fig. 2,) so that when the locking-pin *a* has reached said bottom the flier can be slightly turned, thereby causing said pin to enter this oblique channel, as shown in the drawing, and prevent the same from rising in the slot *c*.

By this arrangement the flier, after having been placed on the spindle and turned so as to bring the pin *a* in its locking position, is effectually prevented from rising; and since the strain of the yarn itself retains the pin *a* in its locking position, the flier is not liable to work loose, and a lock is obtained which is very simple and cheap in its construction, and which prevents the flier from getting injured by coming in contact with other parts of the machine or its frame.

What we claim as new, and desire to secure by Letters Patent, is—

The combination, with the tapering flier-

neck, provided with the pin *a* extending diametrically therethrough and having its opposite ends firmly fixed in the wall thereof, of the tapering spindle B, having the open longitudinal slot *c* cut diametrically through its top, and the straight channel *d*, communicating with the lower end of said slot, but arranged obliquely thereto, as and for the purpose set forth.

In testimony that we claim the foregoing we hereunto set our hands and seals this 9th day of August, 1878.

JOHN B. THORWARTH. [L. S.]

MIKE his × mark. HARRISON. [L. S.]

Witnesses:

JAMES HARRISON,

JOHN HARRISON.