F. VOEGTLI.

Spinning-Wheels.

No. 147,200. Patented Feb. 3, 1874.

Fig. 3.

Fig. 1.

Fig. 4.

Fig. 2.

Fig. 5.

ATTEST:

Robert Burns.
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INVENTOR:

Frang Voegtli
By Wright Bro's Attys.

UNITED STATES PATENT OFFICE.

FRANZ VOEGTLI, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN SPINNING-WHEELS.

Specification forming part of Letters Patent No. **147,200**, dated February 3, 1874; application filed December 23, 1873.

To all whom it may concern:

Be it known that I, FRANZ VOEGTLI, of St. Louis, St. Louis county, Missouri, have invented an Improvement in Treadle Spinning-Machines, of which the following is a specification:

This invention is an improvement on the spinning wheel or machine patented to me February 21, 1871, No. 111,991; and the first part of this improvement relates to the means for causing the reciprocatory movement of the flier in winding the yarn or thread upon the spool. This device consists of an eccentric on the main shaft, a lever oscillated thereby, and carrying a pawl that actuates a ratchet-wheel, on whose shaft is an inclined disk or cam that operates the lever by which the said reciprocation of the flier is effected.

The second part of my improvement relates to a device for regulating the friction between the flier and the lever, by which it has endwise reciprocation. This consists in forking the upper end of the sliding rod attached to the lever, and attaching a friction-shoe to each member of the fork, and placing upon the rod a nut, by which the pressure of the shoes on the sleeve of the flier can be regulated by turning the nut.

In the drawings, Figure 1 is a perspective view of the machine. Fig. 2 is a side elevation of the ratchet-wheel, pawls, lever, and eccentric, forming part of the device, by which the reciprocating movement is given to the flier. Fig. 3 is a side view of the cam. Fig. 4 is a side view of the cam-lever, showing its connection with the flier-sleeve in section. Fig. 5 is a bottom view of the pivoted arm which carries the spiral yarn-guide.

A is the frame of the machine, supporting a treadle-shaft, B, on which is a balance-wheel, C, carrying a belt, D, which runs on a pulley, E, of the spool shaft or spindle F. The spindle turns in boxes *f*, adjusted by the screws *f'*. Upon the spindle is the spool G, which has at one end a nipple, *g*, that is perforated diametrically to receive a split key, H, which passes through the nipple and spindle, to hold the spool in place and insure its turning with the spindle. The spindle also carries the flier, whose hooked arms, *i*, are supported by a collar, I, turning freely on the spindle, and also having regular endwise reciprocation thereon. The collar I has a circumferential groove, J, in which are two curved shoes, K, fitting the groove upon each side, and held in by connection to the two members *l l* of a fork of the rod L, which is screw-theaded a portion of its length, and carries a nut, M, which is screwed up and down to regulate the pressure of the shoes K against the collar I, to retard, more or less, the rotation of the flier with the spindle, and cause the coiling of the thread upon the spool. The rod L is supported in the lever N, fulcrumed at *n*, in such a manner as to allow end motion to the rod in the lever, as the oscillation of the lever and the reciprocation of the flier render such motion necessary. At the bottom of the lever N is a shoe, O, which is acted on by the rotating inclined disk or cam P, to cause the reciprocating end movement of the flier, (by means of the lever and rod N L, shoes K, and sleeve I,) to equally distribute the thread or yarn upon the spool. The cam P is on a shaft, *p*, which also carries a ratchet-wheel, Q, that is rotated by a pawl, R, upon the lever S, fulcrumed at *s*, and having at the lower end a yoke, *s'*, which engages an eccentric, T, on the shaft B, so as to cause the oscillation of the lever and the turning of the wheel Q to the extent of one tooth for each rotation of the main shaft. The retrograde rotation of the wheel Q is prevented by a pawl, R'. U is an arm, having at the end a portion, U', pivoted at *u*, and having at the end a spiral guide-eye, V, in line with the spindle, and through which the yarn passes from the hook of the flier to the hand of the operator. This pivot *u* is for the purpose of allowing the end U' to be turned around out of the way of the spools during the time of removal of the full one, and substitution of an empty one in its place upon the spindle. *w'* is a catch, on which one end of U' engages to hold it in working position. W is a wheel at the rear end of the spindle, which acts as a counter-balance to the spool, and also as a balance or fly wheel to aid the regularity of the rotation of the spindle. The treadle X, pivoted bow *x*, and foot *x'*, pitman Y, and crank Z are similar to those of my former patent, No. 111,991, and to this reference is made for description of these parts.

I claim as my invention—

1. The device for causing the reciprocatory end movement of the flier, consisting of the eccentric T, lever S, ratchet-wheel Q, cam P, lever N, and shoes K, occupying a groove, J, in the sleeve I of the flier, all substantially as set forth.

2. The combination of the flier-sleeve I, friction-shoes K, forked rod L, and nut M, substantially as and for the purpose set forth.

FRANZ VOEGTLI.

Witnesses:

SAML. KNIGHT,

ROBERT BURNS.