O. SHEEHAN.

Machine for Spinning Rope-Yarn, &c.

No. 220,876. Patented Oct. 21, 1879.

Fig. 1.

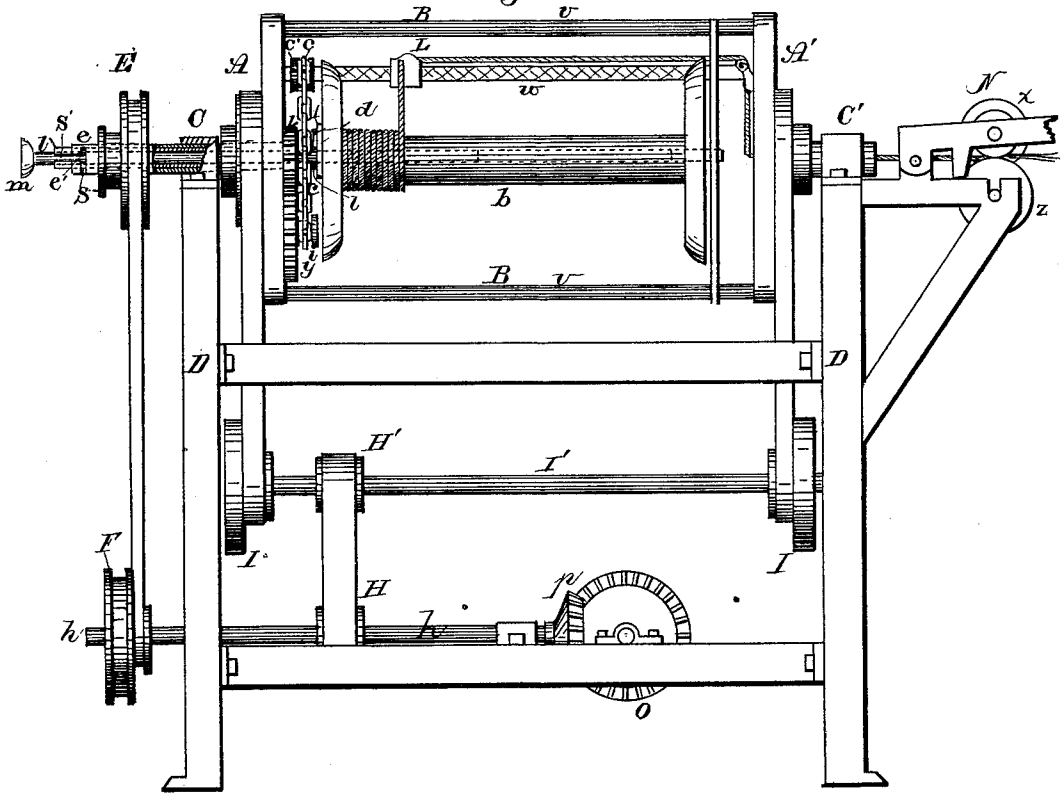
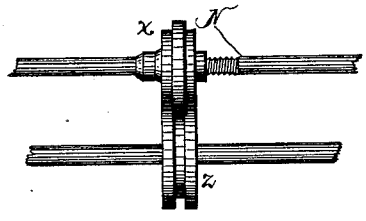


Fig. 2.



Witnesses:

J. W. Garner.

W. S. D. Haines.

Inventor:

Owen Sheehan,

per

F. A. Lehmann,

Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OWEN SHEEHAN, OF NEW BEDFORD, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR SPINNING ROPE-YARN, &c.

Specification forming part of Letters Patent No. **220,876**, dated October 21, 1879; application filed August 24, 1878.

To all whom it may concern:

Be it known that I, OWEN SHEEHAN, of New Bedford, Bristol county, Massachusetts, have invented certain new and useful Improvements in Machines for Spinning Rope-Yarns, Hemp Twine, and Marline, of which the following is a specification.

Figure 1 is a side elevation of my invention, and Fig. 2 is an enlarged detail view of the nipping-rolls.

The object of my invention is to produce a rope-yarn-spinning machine of more simple construction, which is less costly, and which will make a better quality of rope-yarn and more of it in a given time than the machines now in use, as will be more fully described hereinafter.

D represents a suitable frame, in the lower part of which is journaled the shaft *h*, having the beveled wheel *p* upon its inner end, to receive motion from the wheel O on the driving-shaft of the machine. Upon this shaft *h* are secured the small pulley H and the cone-pulley F. Above the shaft *h* there is journaled in the frame the shaft I′, which is provided with a pulley, H′, for receiving motion through a belt from the shaft *h*, and with a cone-pulley, I, at each end, for operating the flier B through suitable belts.

From the cone-pulley F there passes a belt up over the cone-pulley E on the sleeve *e*, which has a longitudinal and transverse slot, *s*. Both of the pulleys F E are "slip-belt pulleys," so termed from the fact that at certain times, hereinafter explained, the belt which connects them is designed to slip, the edges of the pulleys being raised, so as to prevent the belt from slipping off.

Passing through the sleeve *e* is the tube *l*, having a slot, *s′*, to correspond with the one *s* in the sleeve *e*, and which sleeve extends through the sleeve and hollow stud C to the bobbin *b*, at which point there is attached to it the arm 1, to catch behind the projection *d* on the bobbin; also, fastened to the inner end of this tube is a pinion, *k*.

The two flier-heads A A′ are journaled in the two studs C C′, which are bolted on top of the frame D, and these heads consist of two cone-pulleys firmly connected together by the bars *v*. By imparting motion to the flier by belts running on the pulleys of which the flier-heads are composed, a greater speed can be obtained with safety than by other methods; and by making the heads of cone-pulleys the speed of the flier can be regulated without changing the speed of the driving-shaft.

Extending through the tube *l* is a rod, *m*, which extends into the bobbin *b* far enough to form a support for that end of the bobbin. The other end of the bobbin is supported by a pin or stud fixed in the cross-bar *g*. This rod *m* is provided with a pin or stud to engage with the slots *s s′*, so that when the slip-belt pulley E is revolved the sleeve *e*, to which it is secured, gives motion to the rod *m* by means of the pin or stud *e′*, which engages with the slot *s* in the sleeve. This sleeve also causes the tube *l* to revolve as the pin or stud *e′* catches in the slot *s′*. When the tube *l* is revolved by the pulley E and pin *e′*, the arm *d* engages with the pin or projection on the end of the bobbin *b*, and thus causes the bobbin to revolve also.

Inside of the flier-head A is pivoted the toothed wheel *y*, which receives its motion from the pinion *k*, which pinion is secured to the tube *l*. Secured to or forming part of this wheel *y* is the small chain-wheel *i*, around which wheel *i* and the one *c′* on the endless screw *w* passes the endless chain *c*. The screw *w*, being journaled in the two flier-heads, is carried around the bobbin, and as it is carried around the screw is made to slowly revolve upon its own axis for the purpose of moving the guide L back and forth. When the endless screw is revolved the guide L, which guides or supports the yarn, moves automatically back and forth along the length of the screw, by which means the yarn is guided so as to be evenly wound upon the bobbin.

The flier receiving motion as described has a much greater speed than the pulley E, and the bobbin *b* has the same speed as the tube *l* and pulley E. The difference between the speeds of the flier and the bobbin caused by having the belts run the flier much more rapidly than the bobbin is run causes the yarn to be wound on the bobbin and creates a tension or draft on the yarn, so that it is drawn into the flier and spooled as fast as it is spun. When an obstruction occurs in the sliver which pre-

vents it from passing freely through the mechanism of the gill which regulates the size of the yarn, the belt which connects the pulleys F and E slips, and the bobbin revolves at the same or nearly the same speed as the flier until the obstruction is passed. The difference in speed between the bobbin and the flier also causes the endless screw to revolve by the means before described, and thus evenly wind the yarn upon the bobbin.

The nipping-rolls (shown in Fig. 2) consist of the grooved roll *z*, which is rigidly secured to its shaft, and the roll *x*, having a flange to work in the groove, which roll *x* is made removable from its shaft N, so that different rolls may be used, according to the amount of tension necessary.

Having thus described my invention, I claim—

1. In a rope-yarn-spinning machine, the combination of the slip-belt pulley E, sleeve *e*, having slot *s*, tube *l*, having slot *s'*, arm *d*, and the rod *m*, having the pin *e'*, substantially as shown and described.

2. The combination of the flier of a rope-yarn-spinning machine and its actuating mechanism with the pinion *k*, wheels *y i c'*, chain *c*, endless screw *w*, and box L, substantially as set forth.

OWEN SHEEHAN.

Witnesses:
HOSEA M. KNOWLTON,
WM. B. SMITT.