G. Van Riper.

Spinning Mach.

No. 6,928. Patented Dec. 4, 1849.

Fig. 2.

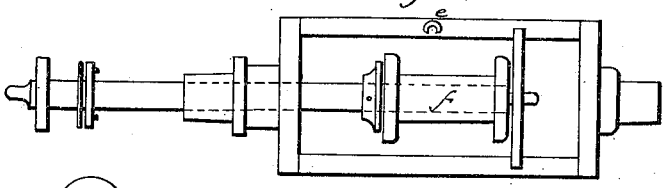


Fig. 6.

Fig. 7.

Fig. 3.

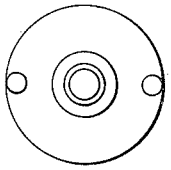


Fig. 1.

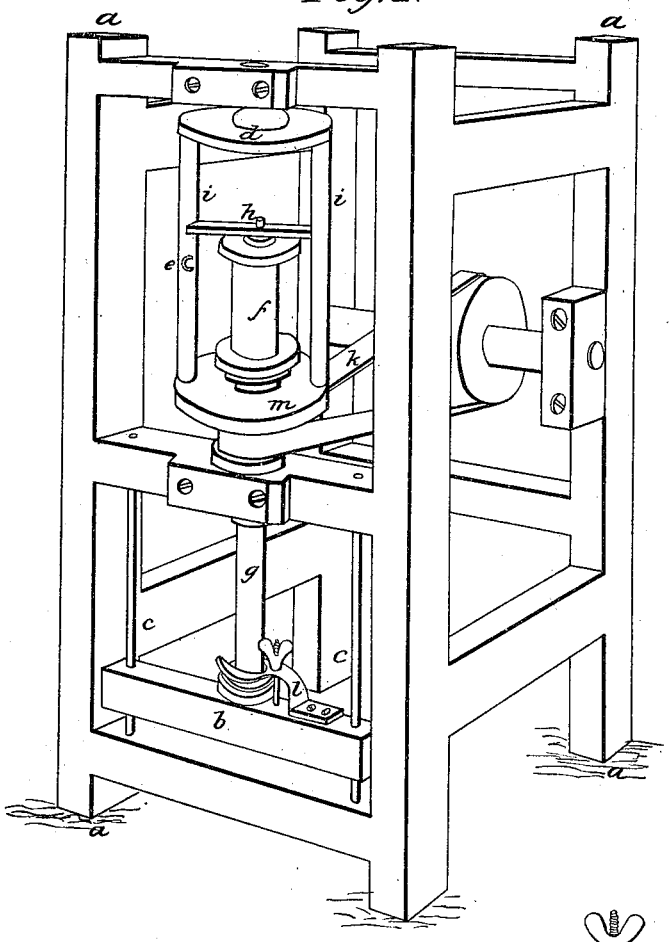
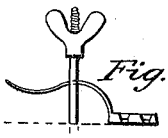


Fig. 5.

Fig. 4.



Witnesses.
Jno. Lamin Martin
Geo. Ashbey.

Inventor
Garret Van Riper

UNITED STATES PATENT OFFICE.

GARRET VAN RIPER, OF JERSEY CITY, NEW JERSEY.

MACHINERY FOR SPINNING HEMP.

Specification of Letters Patent No. 6,928, dated December 4, 1849.

To all whom it may concern:

Be it known that I, GARRET VAN RIPER, of the city of Jersey City, county of Hudson, and State of New Jersey, have invented a new and improved method of constructing fliers used in spinning rope-yarn and other strong yarns and in regulating the speed of the bobbin therein by the application of a spring and screw, as hereafter described.

The nature of my invention as regards the flier consists in composing the ends thereof of circular heads instead of transverse arms as heretofore used. And as regards the speed of the bobbin, in regulating the comparative speed of the bobbin by a simple contrivance susceptible of the nicest gradations, and not subject to any of the inconveniences of the old method of loading.

The following is a full, clear, and exact description and explanation of the principle, construction, and operation of my said improvements, reference being had to the annexed drawings making a part of this specification, in which—

Figure 1 represents a frame for one spindle and bobbin; but as many can be set in one frame as the motive power will drive, and as can conveniently be attended to. Fig. 2 represents horizontally, the spindle, bobbin, and flier fitted together, the spindles in this as other machines can be placed vertically or horizontally. Fig. 3 represents one of the circular flier heads, detached, showing the opening through which the yarn passes. Fig. 4 represents the screw and steel spring, by which the speed of the spindle and bobbin is retarded. Fig. 5 represents the said spring, as if set up on its edge, and Fig. 6 represents the rim of cast or wrought iron, with which the spring when screwed down, comes in contact.

In Fig. 1 "*a a a a*" represent the frame which may be made in any of the common and known manners that represented in the plate is as convenient as any I know of. "*b*" is the spindle rail in which is a bush, in which the step of the spindle rests, which rail traverses on the bars "*c c*," the traverse motion being communicated in the usual manner by a mangle wheel or otherwise, by this motion every portion of the bobbin receives its equal portion of the yarn, which is fed through the center of the circular head "*d*" as shown in Fig. 3 and passes through the staple "*e*" from which it passes to the bobbin "*f*." The bobbin (which is of wood) rests on a plate attached to the spindle, and is held in its place by a pin in the plate, which plate and pin are represented detached in Fig. 7. The spindle is marked "*g*" and should be made of steel or iron, its step rests in a bush in the spindle rail "*b*," and the spindle extends up through the frame and bobbin to the transverse bar "*h*," which bar traverses on the connecting bars "*i, i.*"

The driving belt on the drawing is marked "*k*," the retarding spring and screw "*l*," the circular heads of the flier "*d*" and "*m.*" These I prefer making of cast iron turned and polished, and of having the journal of the head "*d*" extend through the top rail of the frame. The head "*m*" is to be cast with a neck or flange extending downward of sufficient width to receive the driving belt and also to extend through the rail on which it rests, and having a hole through its center to receive the spindle. The two heads are to be connected by two bars "*i, i*" made of wrought iron, riveted or screwed into the heads. I prefer riveting them, as it renders the flier heads steadier and less liable to derangement.

The improvements produced by the use of circular heads, which I claim as my improvement, instead of the mere transverse arms, and all other modes heretofore used, are, the great steadiness given to the revolutions of the flier, and the greater velocity imparted to it. The circular heads operating as a fly wheel or regulator.

The other improvement I claim as mine is, the mode of retarding the velocity of the spindle in an expeditious and easy mode, and to the nicest degree. To effect this, I attach to the spindle rail "*b*" in a substantial manner, the spring "*l*" which is composed of steel, bent so as to rise from the rail and to receive in a tongued end, without touching it, the shaft of the spindle. Then at a convenient distance, between the base of the spring and the spindle, I cause a fine threaded iron screw to be fastened in the frame, passing up through the spring and having a thumb nut on the end, the operation of this is, that when the thumb nut is screwed down the tongues of the spring rest on the washer or friction plate hereafter described, and thus bind the foot of the spindle, around which is a rim or shoulder, as shown in the drawings, acting as a friction plate. Between the rim or shoul-

der and the spring, I use two washers on the spindle, the lower of leather and the upper of cast or wrought iron turned and polished, and having in its upper surface two pins passing through corresponding holes in the tongues of the spring. An adjustable lever may sometimes be employed in place of the spring to produce the dragging friction, between the flanch or shoulder and the washer.

I do not claim as my invention the spinning frame, nor the spindle, nor bobbin, nor the use of a flier, or the mode of operating same; but

What I do claim as my invention or improvement, and desire to secure by Letters Patent, is—

1. The use of a circular headed flier having a circular head at each end constructed and operating substantially as shown above.

2. I also claim in combination with a flanch or shoulder near the foot of the spindle and permanently attached thereto, the use of a movable friction plate of metal, when the same is pressed to the flanch or shoulder or upon an interposed washer by an adjustable spring or lever, pressing on both sides of the spindle, and thereby producing a drag or retardation, while by its longitudinal action it retains the spindle steadily in its step, at the same time increasing the friction and retardation, whereby I am enabled to impart any required degree of tightness to the yarn as spun, and give it a greater uniformiture of texture, than can be done by any other known method, as herein set forth.

My improvements were intended for the purpose of spinning rope yarn, from all sorts of hemp and flax, but are equally useful for spinning yarn for sail cloth from hemp or flax. Also yarn for bagging from hemp, flax, or cotton. Also for spinning worsted yarns—in short for strong yarns from any material—and are also well calculated for making rovings; also for making cotton twine from cotton yarn—and also for doubling and twisting all sorts of yarn and twines.

New York 18 February 1848.

GARRET VAN RIPER.

Witnesses:

JNO. LANIN MARTIN,

GEO. A. HALSEY.