L. Skeels.

Spinning Mach.

No. 52,506. Patented Feb. 6, 1866.

Fig. 1.

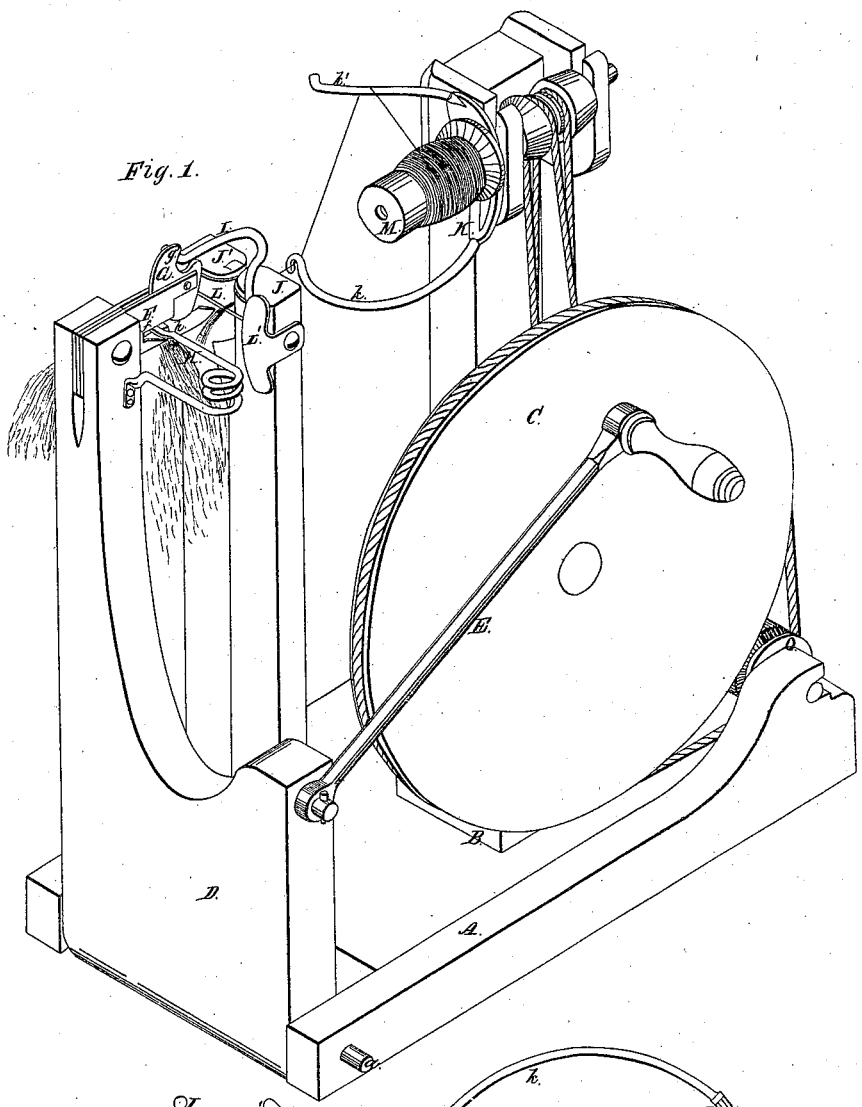
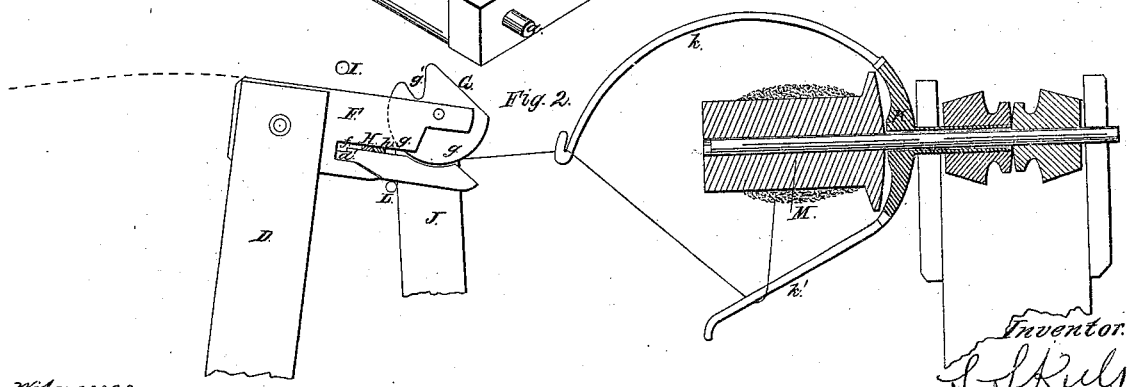


Fig. 2.



Witnesses.
[illegible]
James H. Layman.

Inventor.
L. Skeels
By Dwight Bros
Attys.

UNITED STATES PATENT OFFICE.

LEVI SKEELS, OF WORTHINGTON, OHIO.

IMPROVEMENT IN FLAX-SPINNING MACHINES.

Specification forming part of Letters Patent No. **52,506**, dated February 6, 1866.

To all whom it may concern:

Be it known that I, LEVI SKEELS, of Worthington, Franklin county, Ohio, have invented a new and useful Flax-Spinner; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to a cheap and simple device for spinning flax into thread or yarn.

Figure 1 is a perspective view of a flax-spinner embodying my improvements. Fig. 2 is an axial section through the bobbin and feeder.

A represents the base of the machine, from which there rises a standard, B, having journal-bearings for the fly-wheel C.

D is a vibratory arm, pivoted to the base at *d* and propelled from the fly-wheel C by means of the connecting-rod or pitman E. The upper or free end of the vibratory arm D is provided with a holder, F, having a slit, *f*, to receive the crude flax. Pivoted near the end of the holder F is a segment-wheel or feeder, G, having one or more nicks or notches, *g*, for forcing small successive quantities of flax out of the holder.

The flax is pressed forward and held in a suitable position to be caught by the feeder by an elastic finger, H.

A leather or india-rubber cushion, *h*, may be interposed to guard the feeder from direct contact of the finger H when the flax has run out.

An alternate semi-rotary movement is imparted to the feeder G by the stud I, which is rigidly secured to the part J of the spring-jaws J J′, hereinafter described, and which engages with the indentation *g* of the feeder at each stroke of the vibratory arm D.

When it is desired to replenish the holder with flax the end of the finger H is temporarily caught in the notch *d*′.

Each successive modicum of crude flax presented by the feeder G is received and grasped by a clamp composed of two spring-jaws, J and J′, faced with leather or rubber, where it becomes entwined with the yarn already being spun, and is drawn and wound onto the bobbin M by the simultaneous rotation at slightly unequal speeds of the said bobbin and of a flier, K. The flier K has a bowed and hooked finger, *k*, and a straight oblique finger, *k*′, which have the form represented in the drawings, and the position also shown in the drawings relatively to each other and to the bobbin, so as to cause the yarn to wind evenly upon the bobbin without the necessity of giving any "travel" to the flier or to the bobbin. In order to effect this purpose the finger *k*′ is placed at such a position as that the portion of the thread which comes from the hook of the finger *k* and that portion thereof which passes to the bobbin form equal angles with said finger *k*′. When the thread is at the middle of the bobbin, or by giving said finger the form of a flat circular arc whose chord is toward the bobbin and at the position stated, the parts of the thread approaching and leaving the finger may be made to form equal angles therewith at every part thereof.

The bobbin and flier are driven at slightly unequal velocities by connection with the driving-wheel, in the customary manner.

L is a yielding rest, which prevents the flax from falling down while held between the jaws J J′.

L′ is a projection on the clamp J, which presses back the finger H so as to enable it to react on the flax at the return-stroke of the arm D.

Operation: The crude flax being placed in the holder F, the fly-wheel C is turned in the direction indicated by the arrow, which movement brings the holder between the jaws J J′ of the clamp, and the projecting stud I having produced a partial revolution of the feeder G, a quantity of the flax is forced out from the holder and is held fast between the jaws of the clamp.

The rotary movement of the bobbin M draws the flax out into a thread or yarn, and the flier K assists in winding it upon the bobbin.

I have selected for illustration the form preferred by me, but do not desire to restrict myself to the precise arrangement described, as various modifications are obviously possible. For example, I have used, instead of the segment-wheel for feeding the flax, a finger or rod having a suitable indentation.

Two small pressure-rollers may be substituted for the jaws J J′.

The counter-shaft O, which drives the bobbin and flier, may be lengthened so as to operate a dozen or more bobbins having a corresponding number of feeders, arranged to be

thrown separately out of gear, for joining any broken thread or replenishing the holder.

By a slight modification of other parts the jaws J J′ may be made to vibrate instead of the holder.

I claim herein as new and of my invention—

1. The arrangement of vibratory slit-holder F *f*, notched feeder G *g*, spring-finger H, and stud I, for detaching and feeding forward the flax, substantially as set forth.

2. In combination with the above-claimed feeding mechanism, the clamp J J′, constructed and operating as set forth.

3. The described arrangement of clamp J J′ and yielding rest L, for the purpose explained.

4. The flier K *k k′*, formed and arranged to wind evenly upon the bobbin, as set forth.

In testimony of which invention I hereunto set my hand.

LEVI SKEELS.

Witnesses:
GEO. H. KNIGHT,
JAMES H. LAYMAN.