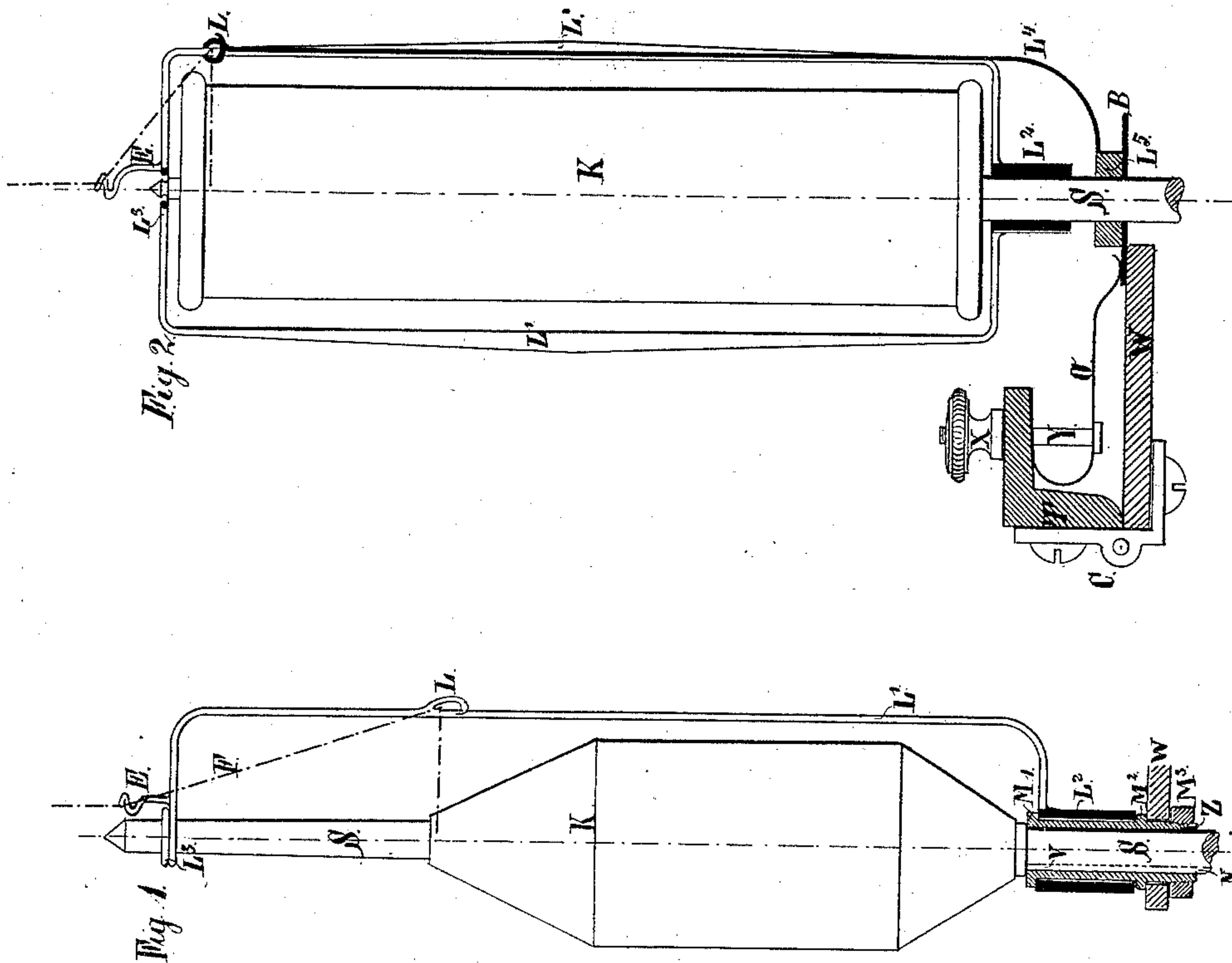


(No Model.)

E. GESSNER.  
SPINNING MACHINE.

No. 409,960.

Patented Aug. 27, 1889.



Witnesses  
*Fred G. Dieterich*  
*Edw. W. Byrn*

Inventor:  
ERNST GESSNER  
By *Munn & Co*  
Attorneys.

# UNITED STATES PATENT OFFICE.

ERNST GESSNER, OF AUE, SAXONY, GERMANY.

## SPINNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 409,960, dated August 27, 1889.

Application filed January 5, 1889. Serial No. 295,491. (No model.)

*To all whom it may concern:*

Be it known that I, ERNST GESSNER, of Aue, Saxony, Germany, have invented a new and useful Improvement in Spinning-Machines, of which the following is a specification.

This invention is in the nature of a spindle with a winder consisting, essentially, of an arm or bow connected with the thread-guide and having its upper and lower ends held and carried on the spindle above and below the cop, so as to be in frictional contact with the same. The winder being in frictional contact with the spindle is not only rotated by the strain of the thread, but is also aided in its rotation by friction from the spindle, which relieves the thread in pulling the winder along with it, and thus diminishing the tension of the thread to a certain extent, and thereby permitting soft or slack-twisted yarns of short or poor material to be spun on the bare spindle. The arm or bow carrying the thread-guide embraces and is held on the spindle above the cop and fixed with its bottom end to a socket fitting on the spindle below the cop either direct or on an intermediate sleeve rotated with the spindle, the socket or intermediate sleeve being carried up and down over the spindle for building the bobbin. The arm or bow may, however, remain stationary as far as its vertical movement is concerned, in which case the top end of the arm or bow is held on the spindle tip, while the thread-guide is loosely attached, sliding over the said arm or bow and being carried separately up and down by an extra arm secured to it and fixed to a socket embracing the spindle and carried by the coping-rail below the arm or bow, as hereinafter described.

Figure 1 is a side elevation, partly in section, of a winder with the thread-guide fixed to it, the whole winder being adapted to traverse the spindle vertically. Fig. 2 is a similar view of a modification, showing a winder held on the spindle without vertical movement, the thread-guide itself being arranged to slide vertically over the arm of the winder.

Referring to Fig. 1, the winder consists of an arm  $L'$ , carrying the thread-guide  $L$ , formed with a ring  $L^3$  at its upper end embracing the spindle above the cop  $K$  and secured at its

lower end to a friction-socket  $L^2$  below the cop, which is seated on and in frictional contact with an intermediate sleeve  $Z$ . The said sleeve has a key  $V$ , which slides in a longitudinal groove  $N$  in the spindle, so that the sleeve is rotated with the spindle and free to move vertically over the same. The sleeve  $Z$  is held in a bearing of the coping-rail  $W$  by flanges  $M^2$  and  $M^3$ , projecting from it above and below said rail. The friction-socket  $L^2$  is held between flanges  $M^2$  and  $M'$ . The upper part of the winder carries a second guide  $E$ , through which the thread  $F$  passes for the purpose of preventing ballooning of the thread. The building of the cop is accomplished by traversing the winder over the spindle; but the same result may be attained if the winder be held against vertical movement and the spindle traversed in like manner. The spindle  $S$  is made of a length to rise above or clear of the full size of the cop far enough to permit the traverse of the arm bearing the thread-guide without slipping off the spindle. The arm  $L'$  is elastic, so as to permit the ring  $L^3$  to be lifted over the spindle tip to give room for doffing the cops. Friction is imparted to the winder by the socket  $L^2$ , as well as by the ring  $L^3$ , embracing the spindle. Centrifugal action causes the socket  $L^2$  and ring  $L^3$  to bear tighter against the spindle, and consequently increases the influence of friction. Instead of using an intermediate sleeve  $Z$ , the socket  $L^2$  may lie directly in contact with the spindle.

In Fig. 2 the winder has the shape of a rectangular frame consisting of two arms or legs  $L'$ , joined at the top and held on the spindle tip by a ring  $L^3$  and with their bottom ends fixed to a friction-socket  $L^2$ . The thread-guide  $L$  in traversing the spindles slides loosely in vertical direction over one of the arms  $L'$ , being carried separately by an arm  $L^4$ , secured to ring or socket  $L^5$ , which is provided with a flange  $B$ , seated on the coping-rail  $W$  and held on the said rail by a spring  $O$ . The winder carries a second guide  $E$  above the spindle tip. The ring  $L^3$  can be lifted off the spindle tip and pulled aside to give room for doffing the cop or bobbin  $K$ . The spring  $O$  is secured to a rail  $T$  and rendered adjustable by means of bolt  $Y$  and nut  $X$ , and by



pressing against the flange B it serves as a brake to the winder for regulating the tension of the thread. The rail T is jointed to the coping-rail W by a hinge C, and when adjusted about the axis of its hinges the pressure of all the springs O against flanges B may be increased or lessened, so that all the winders are regulated simultaneously alike. A similar brake may be applied to the winders shown in Fig. 1.

In defining the relation of this case to another filed January 2, 1889, Serial No. 295,136, I would state that in that prior application I have described and claimed a winder composed of a guide piece or socket embracing the spindle at its top, so as to be in frictional contact therewith, and provided with an arm and thread-guide held on the coping-rail, the spindle being made long enough to allow the traverse of the winder in building the cop, and I make no claim to such construction in this case.

Having thus described my invention, what I claim as new is—

1. The combination, with a spinning-spindle, of a winder composed of friction-socket  $L^2$ , arm or bow  $L'$ , thread-guide L, carried by said arm, ring  $L^3$ , and guide E, and means whereby the whole winder is traversed or carried up and down over the spindle, the spindle being lengthened to correspond to the length of the traverse of the winder, substantially as described.

2. The combination, with a spinning-spindle, of a winder composed of socket  $L^2$ , arm or bow  $L'$ , thread-guide L, ring  $L^3$ , and guide E, and an intermediate sleeve Z, upon which the said socket  $L^2$  is seated, rotated, and traversed over the spindle, substantially as described.

ERNST GESSNER.

Witnesses:

ALFRED NOEZOLD,  
ERNST GESSNER, Junior.