(No Model.)

# E. GESSNER.

## RING FRAME SPINDLE.

No. 525,200. Patented Aug. 28, 1894.

Fig. 1.

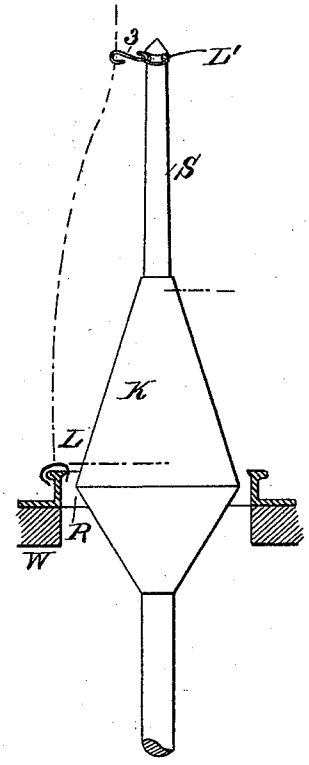



Fig. 1a.

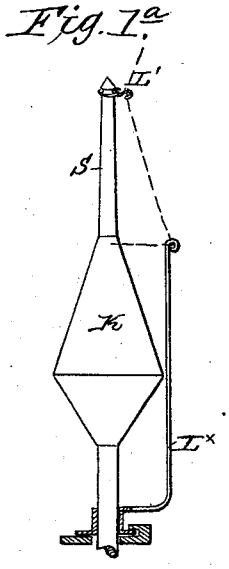
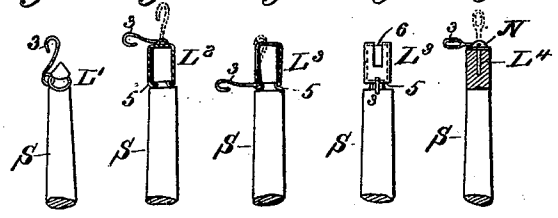



Fig. 2. Fig. 3. Fig. 4. Fig. 5. Fig. 6.




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# UNITED STATES PATENT OFFICE.

ERNST GESSNER, OF AUE, GERMANY.

## RING-FRAME SPINDLE.

SPECIFICATION forming part of Letters Patent No. 525,200, dated August 28, 1894.

Application filed September 11, 1891. Serial No. 405,403. (No model.) Patented in Belgium March 15, 1889, No. 85,120; in England September 4, 1889, No. 13,952; in Switzerland September 16, 1889, No. 1,776; in France November 15, 1889, No. 200,450, and in Austria-Hungary June 3, 1891, No. 35,763.

*To all whom it may concern:*

Be it known that I, ERNST GESSNER, of the city of Aue, Kingdom of Saxony, Empire of Germany, have invented a new and useful Improvement in Ring-Frame Spindles, (for which I have obtained patents in the following countries: England, No. 13,952, dated September 4, 1889; Belgium, No. 85,120, dated March 15, 1889; France, No. 200,450, dated November 15, 1889; Austria-Hungary, No. 35,763, dated June 3, 1891, and Switzerland, No. 1,776, dated September 16, 1889,) of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of the thread guide applied to a ring frame spindle. Fig. 1ª is a similar view showing the thread going to a winder arm. Fig. 2 is a side view of the thread guide showing another position of the same. Fig. 3 is a sectional view of a modification of the thread guide. Figs. 4 and 5 are respectively a sectional and side view of another modification, and Fig. 6 is a sectional view of still another modification.

Ring or throstle frames are supplied with a guide ring arranged above the spindle to prevent the thread from ballooning. In passing through such a ring the thread receives friction while sliding around the inner face of the same, so that the rotation of the traveler or thread-guide is retarded to a certain degree. Besides by bearing on the inner face of said ring the thread is prevented from getting sufficient twist at its upper part, that is between said ring and the delivery rollers, and this causes frequent breakages. To obviate these difficulties I provide a guide of special construction which is rotated, being arranged at the top end of the spindle so as to be in frictional contact with the same. By these means the ballooning of the thread is limited, requiring no guide-ring arranged above the spindle, so that there is no friction to be overcome which retards the motion of the traveler and the thread is free to receive the full twist up to the delivery rollers. The said guide being in frictional contact with the spindle, it aids the thread, and consequently the traveler or thread-guide in being carried along. These advantages are of great value to the production of soft yarns of short staple material. That part of the said guide which is in frictional contact with the spindle, can be varied as to its form and construction.

In the drawings it is shown as a ring, or cap embracing the spindle, or as a pin stuck into a hole in the spindle tip, in each case the thread guide being so constructed as to permit of the doffing of the cop without removing the guide from the spindle. It is necessary however, to remove the thread from the guide before doffing the full cop, and to put it in again when the new cop is to be started. The frictional contact arising between the spindle and said guide is caused by the influence of the pull of the thread and the one-sided strain of the guide.

Fig. 1 is a side view of one form of the guide applied to the top of the spindle and shown in relation to the thread and traveler on the ring rail.

Fig. 2 is a side view of the same thread guide adjusted to the position which permits the cop to be lifted off without removing the guide from the spindle. In this form of the guide the end of the spindle is reduced in size by a circumferential recess in which is permanently held a ring L′ into which is hooked or articulated an eye or hook 3 which may be turned up into alignment with the spindle as in Fig. 2 when the cop is to be doffed.

Fig. 3 is a sectional view of another form of the guide constructed as a cap $L^2$ whose lower edge 5 is flanged or turned inwardly into a circumferential recess of the spindle, the external dimensions of the cap itself being equal to or less than the dimensions of the spindle, the hook 3 being jointed to the top of the cap so as to be turned up into alignment with the spindle when the cop is to be doffed.

Fig. 4 is a similar view of a modification of Fig. 3 in which the hook or eye 3 is hinged to a cap $L^3$ near its bottom edge.

Fig. 5 is a side view of Fig. 4 showing a slot 6 in the top of the cap $L^3$ to receive the hook 3 when it is turned up into alignment.

Fig. 6 shows a sectional view of the spindle

with a central hole bored in its end to receive a swiveling pin or stem $L^4$ to which is attached a cap N carrying a hinged eye or hook 3 that is capable of being turned up into alignment like the others. In each case the thread passes through the swiveling thread guide on the top of the spindle S, goes then to the traveler L on the ring R of rail W, and is then wound upon the cop K. This thread may however pass to a winder arm $L^{\times}$ and thence to the cop as shown in Fig. $1^a$, which winder then takes the place of the traveler L.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A spinning spindle having its tip or extreme upper end recessed and provided with a swiveling frictional thread guide held in said recess, the said thread guide having a loosely hung or jointed hook or loop adapted to be turned up into alignment with the spindle to permit of the doffing of the cop substantially as shown and described.

2. A spinning spindle having its tip or extreme upper end recessed circumferentially and provided with a thread guide consisting of a swiveling frictional cap having an inturned lower edge and a jointed hook or loop adapted to be turned into alignment with the spindle substantially as described.

3. A spinning spindle having its tip or extreme upper end recessed circumferentially and provided with a thread guide consisting of a swiveling frictional cap having an inturned edge and a slot in its upper part, and a hook or loop jointed to be turned up into the slot substantially as shown and described.

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Witnesses:
ALFRED NOEZOLD,
EMIL FALKE.