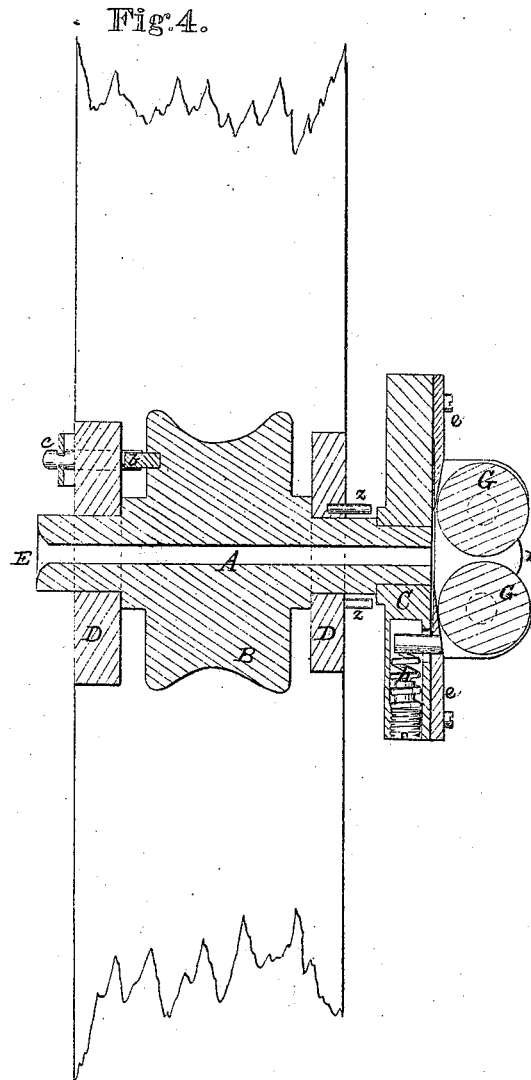


2, Sheets, Sheet, 1.  
*Lawrence, Walden & Huntton,*

*Twisting Head.*

*No. 108,709.*

*Patented Oct. 25, 1870.*



*Witnesses.*

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2, Sheets, Sheet, 2,  
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*Twisting Head.*

*No. 108709,*

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Fig. 1.

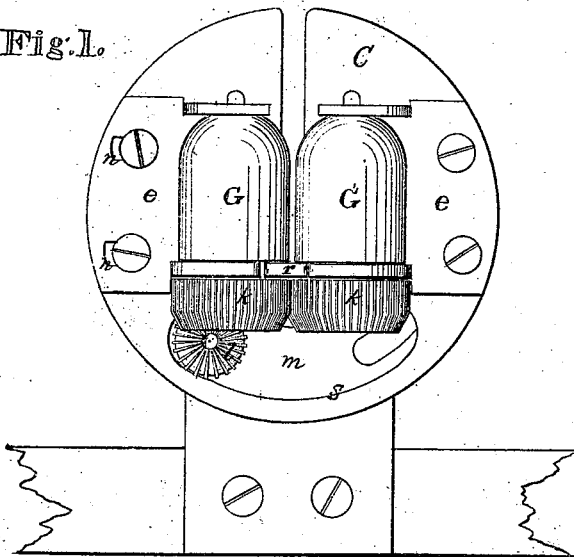


Fig. 2.

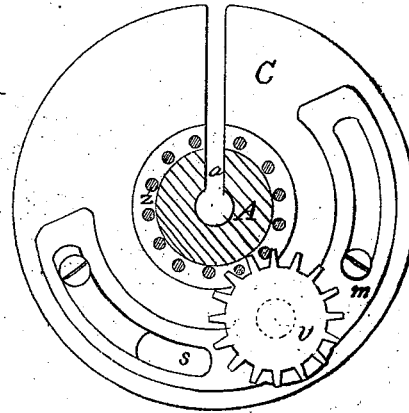
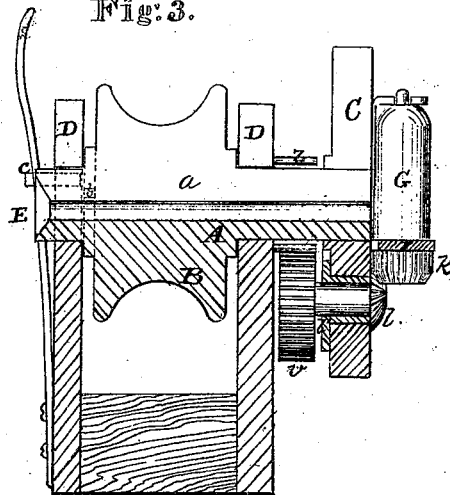


Fig. 3.



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# United States Patent Office.

SAMUEL W. LAWRENCE, PHILO WALDEN, AND JOSEPH W. HUNTOON,  
OF WEST EATON, NEW YORK.

Letters Patent No. 108,709, dated October 25, 1870.

## IMPROVEMENT IN DRAWING AND TWISTING-HEADS FOR SPINNING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that we, SAMUEL W. LAWRENCE, PHILO WALDEN, and JOSEPH W. HUNTOON, of West Eaton, in the county of Madison, and State of New York, have invented a new and valuable Improvement in Spinning-Machines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is an end view of our invention, showing the rotating disk and rollers attached;

Figure 2 is a vertical cross-section;

Figure 3 is a vertical longitudinal section; and

Figure 4 is a horizontal partial section.

Our invention has relation to spinning-machines; and

It consists in the improved construction of the drawing and twisting-tubes, by which the mending or splicing of the broken slivers is facilitated.

The object is accomplished by forming a longitudinal cleft entirely through the wall of the hollow shaft, pulley, and standard.

It also consists in other details of construction hereinafter fully described.

The letter A of the drawing designates the hollow shaft through which the sliver passes;

B is the driving-pulley cast or keyed thereon; and

C is the disk at the end of the shaft, to which the rollers are attached.

A longitudinal cleft, *a*, is formed in the wall of the shaft A, and extends outward through both pulley and disk.

The journal-standards D D are cleft vertically, and it is apparent that, when the fissure of the rotating shaft is vertical, or in line with the clefts of these standards, a longitudinal opening is formed the entire length of the shaft from the entrance E to the rollers. Hence, when in this position, the sliver can be introduced or spliced in a simple manner, and without loss of time, by merely pressing the sliver or the broken ends thereof, down through the fissure into the hollow of the shaft. Usually a number of these rotating shafts are arranged in line and operated by a single band passing under each pulley.

Sometimes alternate bearing-pulleys are placed between the rotating pulleys B, for the purpose of increasing the surface of contact thereof with the driving-band.

In order to avoid the stoppage of all the driving-pulleys upon occasion of mending a single sliver, each

driving-pulley is provided with a stud, *b*, and a spring-stop, *c*, is attached to the standard adjacent thereto.

By pressing the stop *c* inward, either driving-pulley may be rendered stationary, and the stud *b* is so arranged that, when in contact with the bolt of the stop *c*, the fissure *a* will be vertical, and in line with the clefts of the standards D D.

G G represent the drawing-rollers, pivoted to the plates *e e*, which are attached to the disk by means of screws.

Either or both plates may be made movable, being guided and regulated in its motion by slots *n n* formed in the plate, and through which the attaching-screws pass.

Within the disk C is a spring, *h*, designed to keep the drawing-rollers pressed together.

The application of the spring-stop will cause the drawing-rollers to assume a vertical position. Their upper ends are rounded or beveled, to provide for the ready passage of the sliver between them. Their lower ends are provided with spur-wheels *k*, the teeth of which are somewhat beveled on the under side, to engage with the beveled pinion *l*.

*m* is an adjustable, slotted, semicircular plate, attached by set-screws to the inner face of the disk C, and provided with a sleeve, *b'*, which projects through the slot *s* of the disk, and serves to form a bearing for the shaft of the wheel *v*, through which motion is communicated to the pinion *l*.

Rotary motion is imparted to the spur-wheel *v* by its movement around the stationary gear-wheel or trundle *z* attached to the adjacent standard D.

It is apparent that the spur-wheel *v* may be shifted from one end of the slot *s* to the other, thereby causing the pinion *l* to engage with the gear-wheel of the opposite drawing-roller. A very important object is here attained in the simple means thus provided for reversing the motion of the drawing-rollers.

*r* represents a loose plate inserted between the rollers, and kept in place by the nicks thereof between the rollers proper and their gear-wheels. Its object is to prevent the sliver from falling between the teeth of the gearing when the rollers are pressed apart.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The fissured rotating shaft A and stop *b c*, in combination with the slotted disk C, bearing the drawing-rollers G G, which are rotated by the pinion *l* and the spur-wheel *v*, engaging with the stationary gear-wheel or trundle *z*, as and for the purposes specified.

2. In combination with the fissured rotating shaft

A, the cleft bearings D D, fissured pulley B, and beveled rollers G G, having double motion or rotation, as and for the purposes shown and described.

3. In combination with the tube A and drawing-rollers G G, having a double rotary motion, the adjustable plate *m*, slotted disk C, pinion *l*, spur-wheel *v*, and stationary wheel *z*, as and for the purposes specified.

4. In combination with the rollers G G, the slotted bearing-plate D D, cleft rotating disk C, coiled spring *h*, and partition *r*, substantially as shown and described.

In testimony that we claim the above, we have hereunto subscribed our names in the presence of two witnesses.

SAMUEL W. LAWRENCE.  
PHILO WALDEN.  
JOSEPH W. HUNTOON.

Witnesses:

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