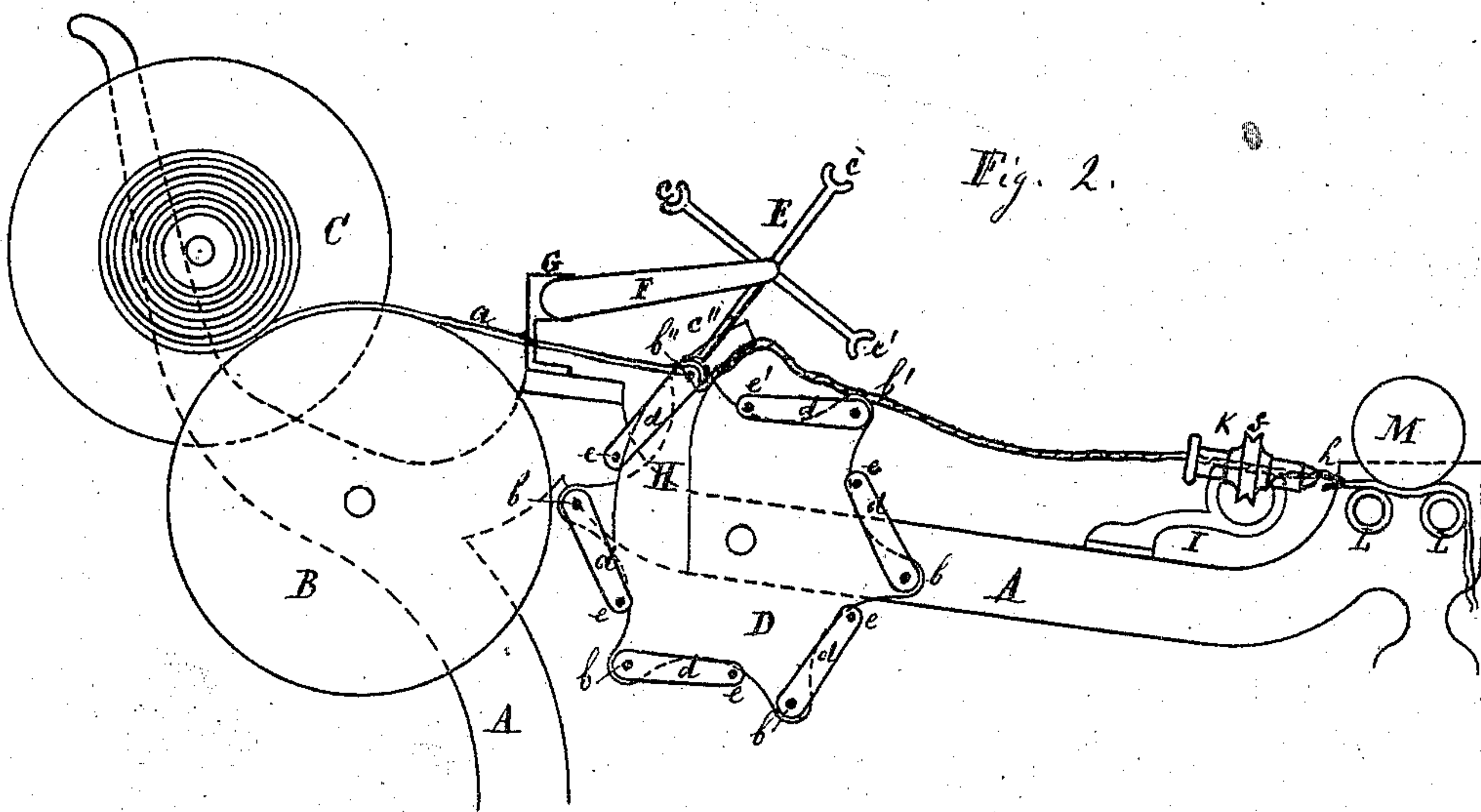
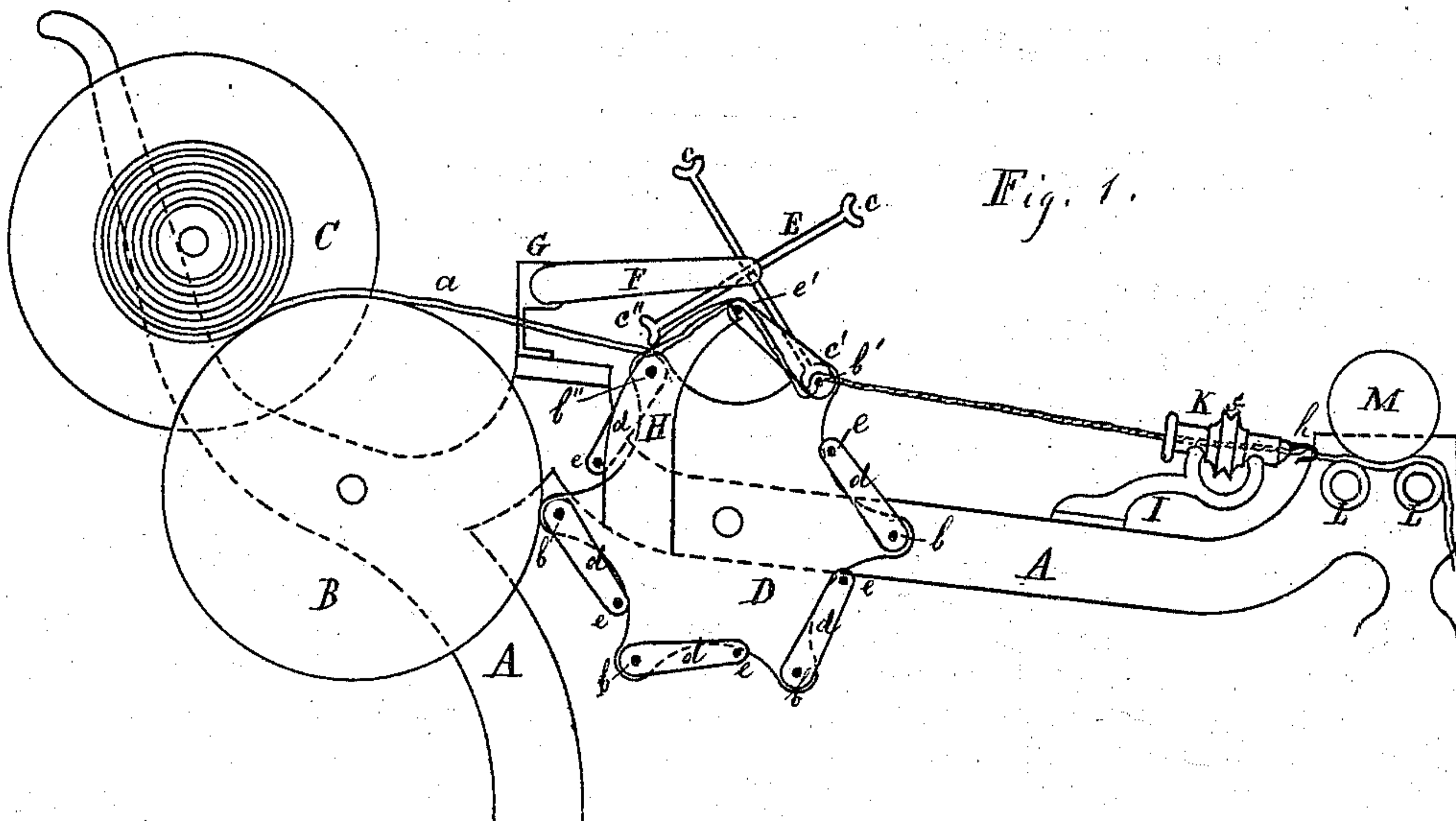


LUTHER W. FELT.

Improvement in Mechanism for Delivering Roving in Spinning Machines.

No. 120,256.

Patented Oct. 24, 1871.



Witnesses  
S. H. Brackett  
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# UNITED STATES PATENT OFFICE.

LUTHER W. FELT, OF KEENE, NEW HAMPSHIRE.

## IMPROVEMENT IN MECHANISMS FOR DELIVERING ROVING IN SPINNING-MACHINES.

Specification forming part of Letters Patent No. 120,256, dated October 24, 1871.

*To all whom it may concern:*

Be it known that I, LUTHER W. FELT, of Keene, in the county of Cheshire and State of New Hampshire, have invented certain Improvements in Machines for Spinning Wool, of which the following is a specification:

In machines for the continuous spinning of wool it is necessary to twist the roving slightly or partially before it is drawn or extended in length. This gives strength to the weaker portions and prevents the same from being torn apart while the larger or heavier portions are being drawn, thereby producing more even yarn than it is possible to do if the roving is extended in length before or at the same time that it begins to be twisted. To accomplish this it is necessary to have the new or untwisted portion of roving measured off and delivered in such length that it will hang loosely until sufficiently twisted to begin the drawing or lengthwise extension. This extension is to be continued with gradual increase while the roving is receiving additional twist per inch until sufficiently drawn and twisted for the purpose intended. To effect the above-mentioned results in a machine for continuous spinning is the object of my invention.

The following is a description of those parts of a spinning-machine which embody my invention, reference being had to the accompanying drawing.

Figure 1 is a transverse section of such a machine. Fig. 2 is a similar view, showing parts in different position.

A is the upper part of the frame of the machine. B is a drum, by the revolution of which the roving is delivered from the spool C, resting upon it. D is the flange or end of a wheel whose periphery revolves at about the same speed as that of the drum B. Between the flanges of the wheel D extend lengthwise, or in the direction of its axis, a series of rods, whose ends are shown at *b*. These rods *b* engage with and give motion to a skeleton-wheel, E, which rests on the wheel D and is provided with arms *c*, in the end of which are semi-cylindrical depressions. As the wheel E rises and falls in its revolution it is guided and held by the arm F, which is hinged to the support G. The wheels D and E, constructed and operating substantially as described, are already patented to me by Letters Patent No. 103,858, dated June 7, 1870. A series of movable arms, *d*, is attached to the wheel D by one ex-

tremity, and carry, at the other extremity, each a rod, *e*, which rods extend lengthwise over the wheel D and pass under the wheel E. By the cam H the projecting ends of the rods *e* are engaged and successively lifted, as the wheels revolve, into the position shown in Fig. 1, and immediately afterward dropped, as shown in Fig. 2. On the frame A, in front of the wheels D and E, and between the latter and the draw-rolls L L and M, is secured an arm, I, on which is mounted in suitable bearings a twisting-tube, K. This tube K is driven by a belt passing over the whorl or pulley *f*, and has its delivery end arranged in close proximity to the point of contact between the first lower draw-roll L and upper draw-roll M.

By the revolution of the drum B the roving is delivered to the wheels D and E. By the rods *b* and the arms *c* the roving is gripped at intervals and new portions of roving are successively delivered into the draft space, to be twisted by the tube K and drawn by the rolls L L and M. As the cam H lifts a rod, *e'*, as in Fig. 1, the roving must pass over the rod *e'* and under the next arm *c''*, so that the new supply of roving to be delivered is longer than the direct distance from one rod, *b'*, to the next one *b''*. When the arm *c'* begins to rise and the next arm *c''* rests on the rod *b''* below it, the rod *e'* drops, leaving the new supply of roving hanging loosely until enough twist has entered this portion—and that before the drawing or lengthwise extension begins in it—to give the weaker portions strength and prevent their breaking while the entire portion of new roving is being drawn to the required fineness.

I do not confine myself to the use of oscillating-rods for extending the length of the roving between the gripping points of the wheels D and E so that it may hang loosely when delivered, as other means may be employed for the same purpose.

Having thus described my improvement in spinning-machines, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the wheels D and E with mechanism, substantially as described, for delivering a quantity of roving between the gripping points of said wheels, greater in length than the direct distance between the adjoining rods *b*, as set forth.

2. The combination of the wheels D and E, and

mechanism substantially as described, for furnishing an increased length of roving between their griping points, as set forth, with a twisting-tube, K, whereby the necessary amount of twist is imparted to the roving to give it the requisite strength in its weaker portions to withstand the strain before being drawn to the required degree of fineness.

3. The combination of the wheels D and E,

mechanism substantially as described for furnishing an increased length of roving between their griping points, and twisting-tube K, with the draw-rolls L L and M, for the purpose set forth.

LUTHER W. FELT.

Witnesses:

S. H. BRACKETT,  
I. FOSTER.

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