



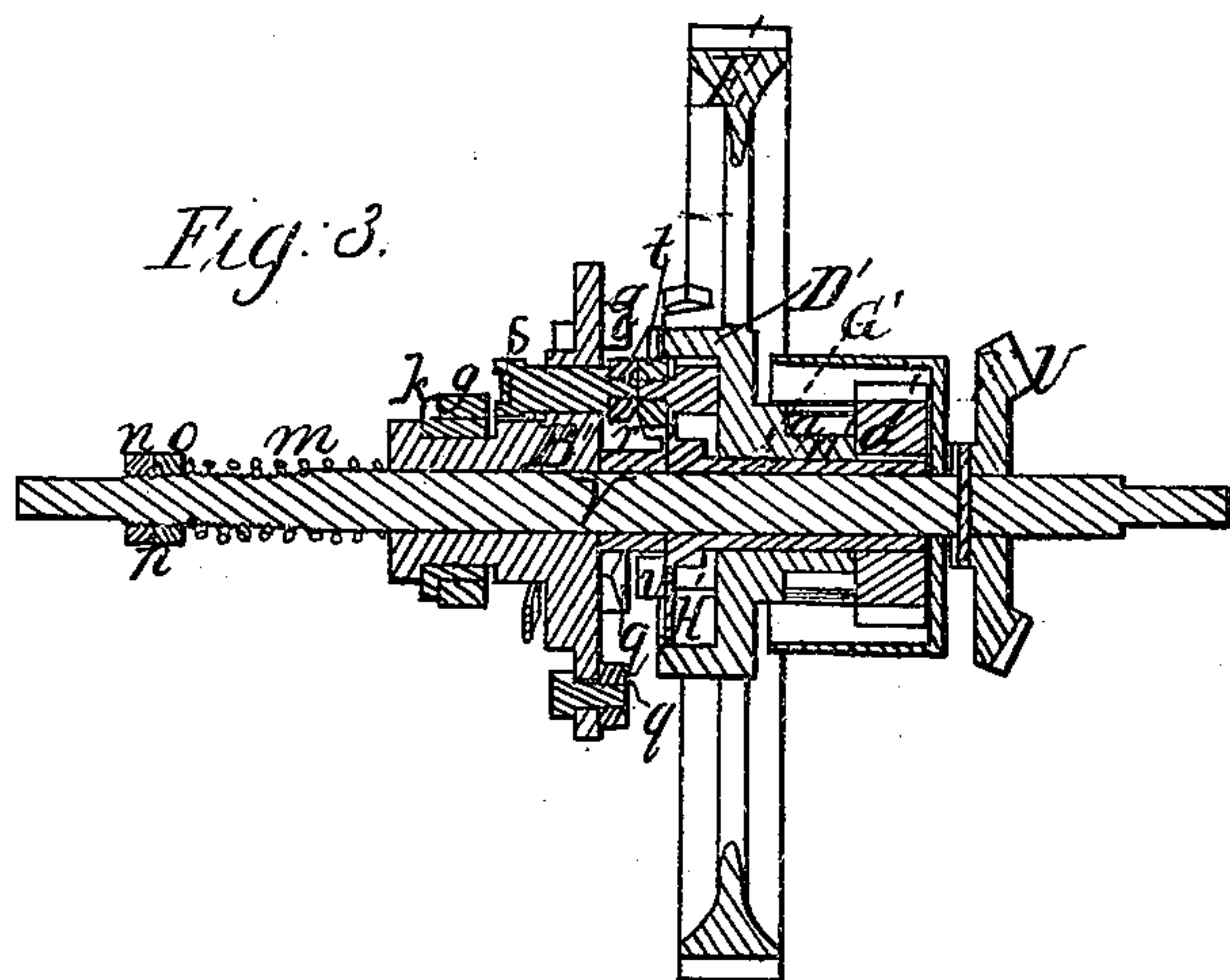
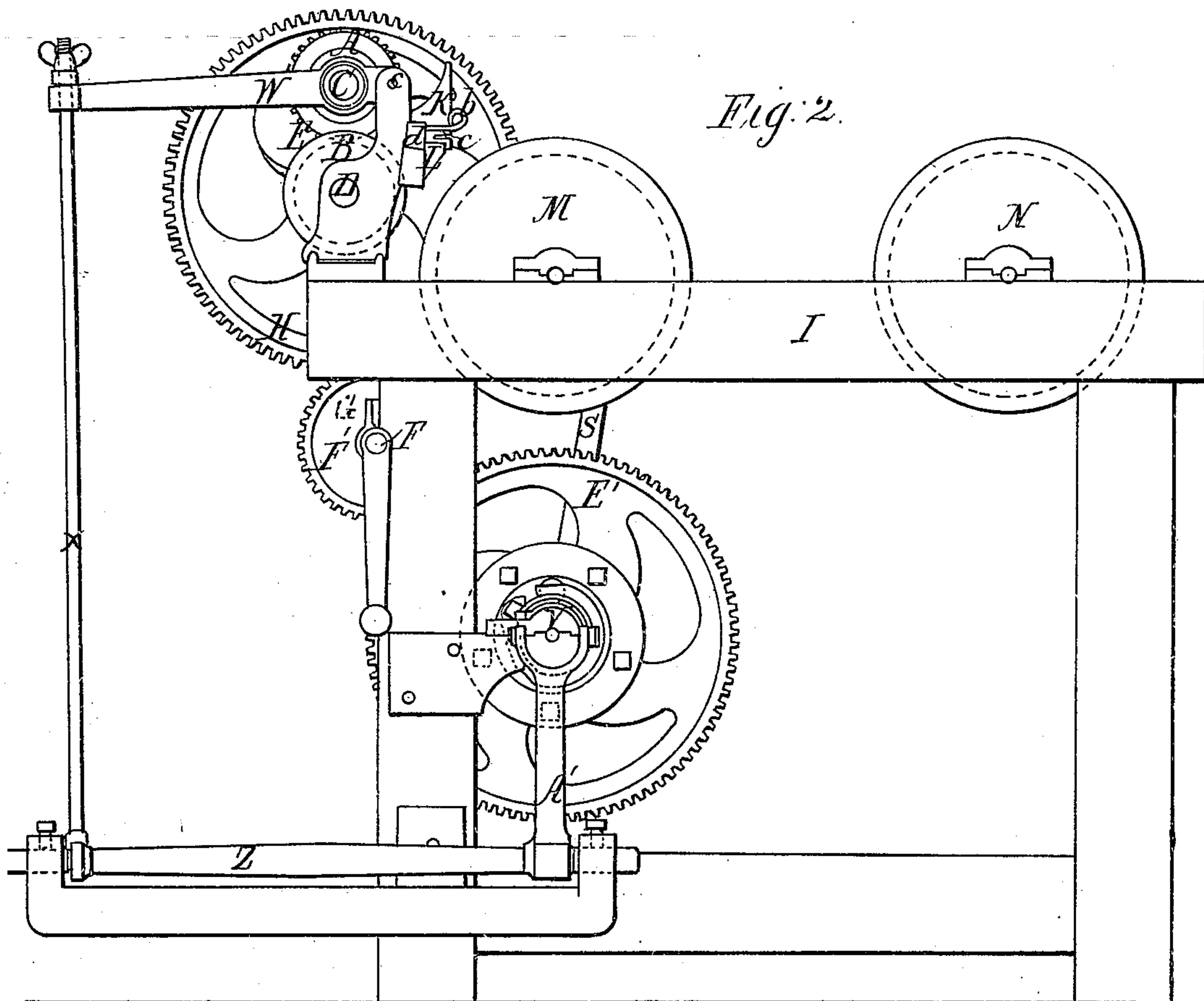
Sheet 2-2, Sheets.

J. B. Winslow.

Spinning Mach.

N<sup>o</sup> 19,531.

Patented Mar. 2, 1858





# UNITED STATES PATENT OFFICE.

JOHN B. WINSLOW, OF NEW BEDFORD, MASSACHUSETTS.

MACHINERY FOR REGULATING THE SUPPLY OF REEVING TO SPINNING-MACHINES.

Specification of Letters Patent No. 19,531, dated March 2, 1858.

*To all whom it may concern:*

Be it known that I, JOHN B. WINSLOW, of New Bedford, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Machinery for Regulating the Supply of Fibrous Material, such as Hemp or Manila, to a Rope-Yarn-Spinning Machine; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1, represents a top view of my invention. Fig. 2, is a side elevation of it. Fig. 3, is a transverse and vertical section taken through the clutch shaft to be hereinafter described. Fig. 4, is a horizontal section taken through the said clutch shaft. Fig. 5, is a longitudinal and vertical section of the mouthpiece and draft rollers.

In the said drawings, A, and, B, denote two draft rollers which are placed respectively on two horizontal shafts, C, D, which are geared together by gears as seen at, E, and receive motion from a driving shaft, F, by means of gears as seen at, G, and, H, the same being arranged and applied to the frame work, I, as seen in the drawings. In rear of the bite of these two draft rollers is a mouthpiece, K. The said mouthpiece is made like an arch or open at its lower part where it rests upon a permanent shelf, L, and it is hinged to said shelf as seen at, a, in order that it may be turned upward therefrom. When in use it is confined down upon a shelf by means of a pin, b, that extends over a projection, c, from the mouthpiece and passes into a post, d, elevated on the shelf as seen in Fig. 2. This hinged mouthpiece enables a person to thread the machine to great advantage when a breakage of the yarn takes place or a knot of fibrous material becomes clogged in the mouthpiece. The advantage therefore of this movable or hinged mouthpiece as used in connection with the stationary shelf will be apparent therefore to persons skilled in the art of spinning. In rear of this mouthpiece are two guide drums or pulleys, M, N, around which when the machine is in use an endless apron or belt is made to travel and to carry the hemp or fibrous material to the mouthpiece; this done, the pulleys are respectively placed and fixed on two horizontal shafts, O, and, P. One of these

shafts viz. that of the drum, M, carries a worm gear, Q, which is made to engage with an endless screw or worm, R, fixed upon an inclined shaft, S. On the lower end of the shaft, S, a bevel pinion, T, that is made to engage with a bevel gear, V, fixed upon a horizontal shaft, V. When the said shaft, V, is put in rotation it will therefore put in rotation, the gears that connect it with the gill pulley, M, and thereby said gill pulley and its endless belt is put in rotation so as to deliver the fibrous material to the mouthpiece and draft rollers. It should be understood that the said draft rollers are those of a spinning machine, the flier of which is not represented in the drawings as it forms no part of my invention.

The purpose of the machinery now next to be described is to produce different rates of speed of rotation of the shaft, V, or to change the same from a higher to a lower rate of speed, or vice versa, as occasion may require in order to enable a draft of the fibrous material through the mouthpiece to be uniform. One of the journals of the shaft of the upper draw rollers is supported in a lever, W, whose fulcrum is seen at, e, in Fig. 2. This lever by means of a vertical rod, X, is connected with an arm, V, projecting from a horizontal rocker shaft, Z. From this shaft a forked arm, A', extends upward and is connected by means of jointed rods, f, f, with the ring or yoke, g, of a sliding clutch, B', that is placed upon the shaft, V, and connected to it by means of a feather or spline connection or such a one as will permit the clutch to move longitudinally on the shaft but not to rotate without carrying the shaft around with it. The ring, g, is placed upon a collar or cylindrical ring that extends around the hub, i, of the clutch and is rabbeted so as to allow the ring, g, to be slipped over it and to rest against a shoulder or flanch, k. The part, k, also bears against a shoulder or flanch, l, formed upon the neck of the hub. A helical spring, m, incloses the shaft, V, and is forced against the hub, i, by means of two screw nuts, n, o, that wind upon a screw, p, cut upon the shaft, V, as seen in the drawings. The object of this spring is to move the clutched plate in a contrary direction to what it will be moved by the action of the feed rollers as will be hereinafter described.

The collar, k, is made of composition



metal, and is formed as above specified so as to enable its yoke, *g*, to become detached from it whenever necessary. Besides the regular teeth, *q*, *q*, *q*, of the clutch, *B'*, it carries a movable tooth, *r*, which slides through it in a direction parallel to the axis of the shaft, *V*, and rests against a spring, *s*. The said movable tooth makes part of what I term the secondary clutch the remainder of which will be hereinafter described. The other part of the main clutch is seen at, *D'*, its teeth being shown at, *t*, *t*. This part, *D'*, is attached to or constitutes the hub of a large gear, *E'*, that receives its motion from a pinion gear *F'* fixed upon the driving shaft. The shaft, *V*, is made to carry a tubular shaft, *G'*, which rotates freely upon it and has affixed to it a clutch plate or circular disk, *H'*, from whose external surface a series of teeth, *v*, *v*, *v*, are made to extend. This plate, *H'*, with its teeth may be said to be the remainder of the secondary clutch. The wheel, *E'*, carries a spur gear, *a'*, which is affixed to its side and rotates freely with the said gear, *F'*, upon the tubular shaft, *G'*. This spur gear, *a'*, engages with another spur gear, *b'*, fastened to the side of a smaller gear, *c'*, that is made to engage with a larger gear, *d'*, fixed upon the tubular shaft, *G'*. From this it will be seen that the tubular shaft, *G'*, and its clutch disk, *H'*, receive rotary motion by means of the gears, *a'*, *b'*, *c'*, *d'*, and this whenever the gear is *E'*, is put in revolution. The rate of rotary movement of the disk *H'*, being considerably slower than those of the gear, *E'*. In consequence of this slower rotary motion of the secondary clutch *H'*, it becomes necessary that each of its teeth as well as the movable spring tooth of the plate, *B'*, should be chamfered off so as to enable the clutch plate when traveling at a greater speed than the plate *H'*, to have its movable, sliding, or spring tooth slip by each tooth of the wheel *H'*, whenever it comes in contact with the same.

In case a small bunch of the fibrous ma-

terial gets between the draft rollers, it will raise them slightly so as to cause the main clutch teeth to be thrown out of engagement and the secondary clutch teeth to be brought into engagement with one another; this will of course produce a slower motion of the shaft, *V*, and thereby reduce the amount of delivery of the fibrous material until it has been drawn down between the rollers. As this reduction takes place, the upper draft roller drops toward the lower and by its action on the machinery connecting it with the main clutch, throws the teeth of said main clutch into engagement and produces the regular or faster rotation of the shaft, *V*, thereby accelerating the delivery of the fibrous material to the draft or delivery rollers. In case the bunch or knot that may be formed between the rollers becomes too large for a further delivery from the endless belt to take place, both the main and secondary clutches will be entirely thrown out of gear and the delivery stopped until the bunch is drawn down to such an extent as will cause the teeth of the secondary clutch to be thrown into action.

My mechanism above described operates to great advantage on a spinning machine such as is used in the production of rope yarns.

I claim—

The combination of the secondary clutch and the main clutch made to operate together upon one shaft, *V*, and to be operated by the fibrous material acting in the draw rollers substantially as specified, the same causing the shaft, *V*, and the bevel gear, *U*, and of course the delivering belt to have their speed varied as circumstances may require as herein before specified.

In testimony whereof, I have hereunto set my signature this twelfth day of August A. D. 1854.

JOHN B. WINSLOW.

Witnesses:

R. H. EDDY,  
F. P. HALE.