No. 637,020. Patented Nov. 14, 1899.

O. L. OWEN.

ROVING TRAVERSE MECHANISM.

(Application filed June 22, 1899.)

(No Model.) 2 Sheets—Sheet 1.

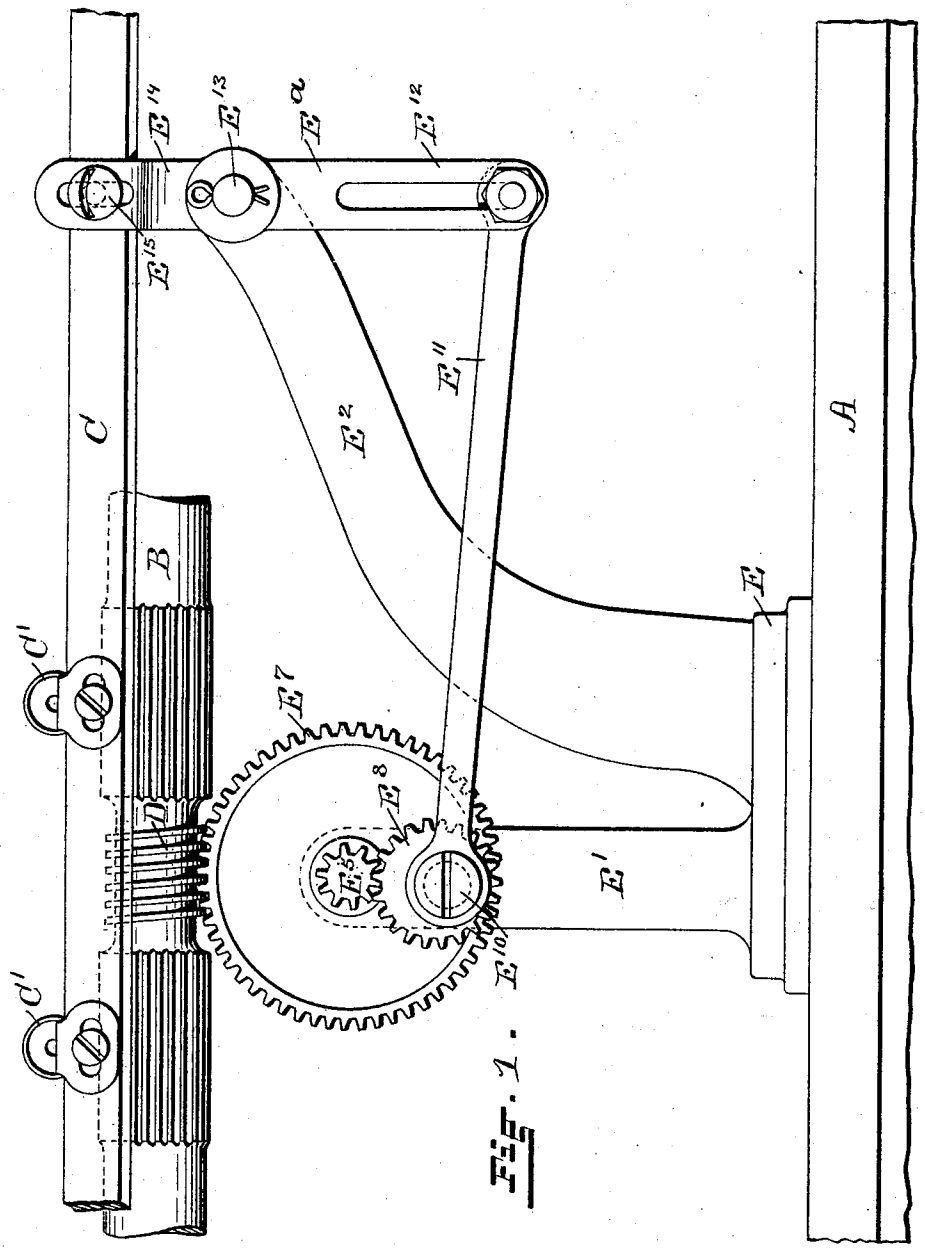


Fig. 1.

WITNESSES:

B. N. Simms

Chas. H. Luther Jr

INVENTOR:

Oscar L. Owen

by Joseph A. Miller & Co.

Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 637,020. Patented Nov. 14, 1899.

O. L. OWEN.

ROVING TRAVERSE MECHANISM.

(Application filed June 22, 1899.)

(No Model.) 2 Sheets—Sheet 2.

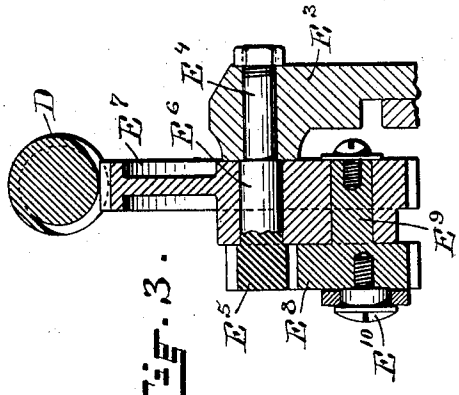


Fig. 3.

Fig. 5.

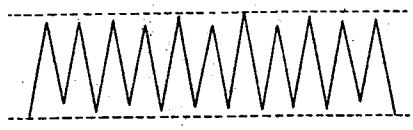


Fig. 4.

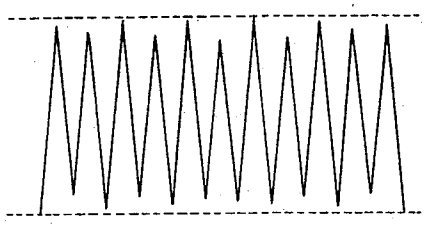
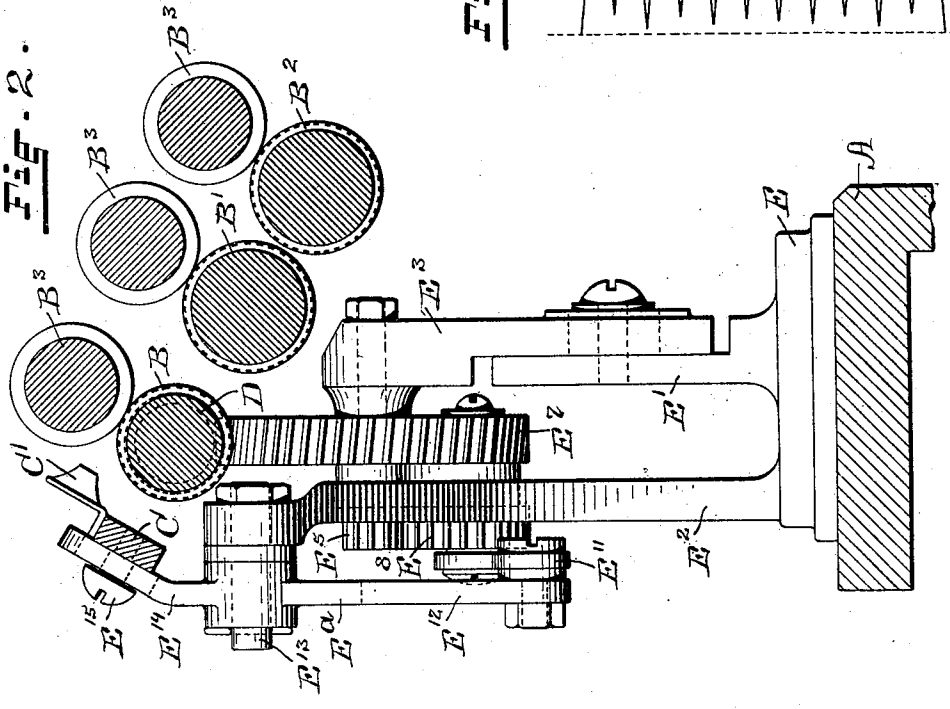


Fig. 2.



WITNESSES:

D. M. Simms

Chas. H. Luther Jr

INVENTOR:

Oscar L. Owen

by Joseph A. Miller & Co.

Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

OSCAR L. OWEN, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO THE WHITIN MACHINE WORKS, INCORPORATED, OF SAME PLACE.

ROVING-TRAVERSE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 637,020, dated November 14, 1899.

Application filed June 22, 1899. Serial No. 721,422. (No model.)

To all whom it may concern:

Be it known that I, OSCAR L. OWEN, of Whitinsville, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Roving-Traverse Mechanism; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improvement in mechanism for controlling the passage of the roving through the drawing-rolls of a spinning-machine; and it consists in the peculiar and novel construction and the combination of the coöperating elements whereby the path of the roving through the drawing-rolls is constantly changing and the extent of traverse may be regulated, as will be more fully set forth hereinafter.

Figure 1 is a rear view of my improved traverse mechanism. Fig. 2 is an end view of the same. Fig. 3 is a sectional view of the gears on a vertical line through the center of the same. Fig. 4 is a diagram showing the traverse of the lowest point of the roving-rod-operating lever at which the connecting-rod is secured, and Fig. 5 is a diagram showing the traverse of the roving-rod when connected as shown in the drawings.

Similar marks of reference indicate corresponding parts in all the figures.

In the drawings, A indicates the front beam, forming part of the frame of a spinning-machine; B, the rear drawing-roll; B′ the intermediate and B^2 the front drawing-roll; B^3 B^3 B^3, the top rolls; C, the roving-rod; C′ C′, the trumpets on the roving-rod, and D a worm on the rear drawing-roll B.

The bracket E, supported on the front beam A, consists of the vertically-extending arm E′ and the obliquely-extending arm E^2. To the arm E′ is adjustably secured the standard E^3, to the upper end of which is secured the stud E^4, having formed integral therewith or secured thereto at one end the pinion E^5. The part E^6 of the stud E^4 forms the journal-bearing for the worm-wheel E^7, which engages with and is driven by the worm D. The gear E^8 is journaled in the worm-wheel E^7 and engages with the pinion E^5, which is stationary. Part of the worm-wheel E^7 is made thicker than the rest of the wheel, so as to secure a long bearing on the part E^6 of the stud E^4 and a long bearing for the shaft E^9 of the gear E^8, as is shown in Fig. 3 and indicated in broken lines in Fig. 1. The stud E^{10} is secured to the side of the gear E^8 out of the center of rotation, so that in rotating the gear E^8 carries the stud E^{10} around its axial center. The pinion E^5 is provided with ten teeth and the gear E^8 with twenty-one teeth. This proportion may be varied, but the proportion should be uneven, so that the position of the stud E^{10} will be constantly changed by the rotation of the gear E^8 on the stationary pinion E^5 as the gear is carried around by the worm-wheel E^7. With proportions of ten to twenty-one the stud E^{10} is losing half a tooth for each revolution of the worm-wheel, while with a proportion of ten to nineteen it would gain half a tooth. The rod E^{11} embraces the stud E^{10} on one end and is adjustably secured by a screw-stud to the slotted arm E^{12} of the lever E *a*, pivotally supported on the stud E^{13}, secured to the end of the arm E^2. The upper arm E^{14} of the lever is also slotted and is connected with the roving-rod C by the screw E^{15}, extending through the slot in the arm E^{14} into the roving-rod.

The operation of my improved roving-traverse mechanism is such that the worm D actuates the worm-wheel E^7 and turns it once on any predetermined number of revolutions of the rear drawing-roll B and practically at each revolution of the worm-wheel imparts through the pivoted lever connected with the roving-rod C one complete reciprocation to the roving-rod. When the rod E^{11} is connected with the arm E^{12} of the lever, as is shown in the drawings, twice the distance from the fulcrum than is the distance from the fulcrum to the connection with the roving-rod, the traverse of the roving-rod is equal to half the diameter of the path of the stud E^{10}; but when the rod E^{11} is connected with the slotted arm E^{12} at a higher point the length of reciprocation of the roving-rod is increased, as well as the speed. When the rod E^{11} is connected with the arm E^{12} of the lever at the upper end of the slot, the extent of the reciprocation of the roving-rod is equal to the di-

ameter of the path of the stud E^{10}, so that by changing the adjustment the extent of reciprocation may be varied, while by means of the eccentric position of the stud E^{10} and the difference in the proportions in the number of the teeth in the gear E^8 to the pinion E^5 the terminal points in the reciprocation of the roving-rod constantly change.

By the use of my improved roving-traverse mechanism the wear of the roving on the drawing-rolls and the top rolls is distributed over the surface of the rolls and local wearing prevented, thereby materially increasing the durability of the top-roll covers.

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

1. In a roving-traverse mechanism, the combination with the rear drawing-roll and the roving-rod, of a wheel loose on its supporting-shaft, the supporting-shaft, a stationary pinion on the end of the supporting-shaft, a gear journaled in the wheel and engaging with the pinion on the supporting-shaft, a stud on the gear, the center of the stud being on one side of the center of the gear, connections between the stud and the roving-rod, and means for actuating the wheel; whereby reciprocating motion is imparted to the roving-rod, as described.

2. In a roving-traverse mechanism, a driven wheel, a fixed shaft forming the support of the wheel, a gear journaled in and carried by the wheel, a pinion on the fixed shaft engaging with the gear, teeth on the pinion and teeth on the gear, the number of the teeth on the gear being more or less than a multiple of the number of teeth on the pinion, and a stud on the gear, the axial center of the stud being on one side of the center of the gear; whereby the position of the stud at each revolution of the driven wheel is changed, as described.

3. In a roving-traverse mechanism, the combination with the worm D on the rear drawing-roll and the roving-rod C, of the bracket E, the worm-wheel E^7, the pinion E^5 fast on the stud supporting the worm-wheel, the gear E^8 journaled in the worm-wheel, the stud E^{10} secured to the gear on one side of its center, the relative number of teeth on the pinion and on the gear differing to cause a gain or a loss at each revolution of the worm-wheel, a lever, pivoted on the stud E^{13}, provided with the arm E^{14}, connected with the roving-rod, and the slotted arm E^{12}, and the rod E^{11} connected with the stud E^{10} and adjustably secured to the slotted arm E^{12}; whereby the length of reciprocation is automatically varied and may be adjusted to guide the roving over a longer or shorter portion of the rolls, as described.

In witness whereof I have hereunto set my hand.

OSCAR L. OWEN.

Witnesses:
B. M. SIMMS,
J. A. MILLER, Jr.