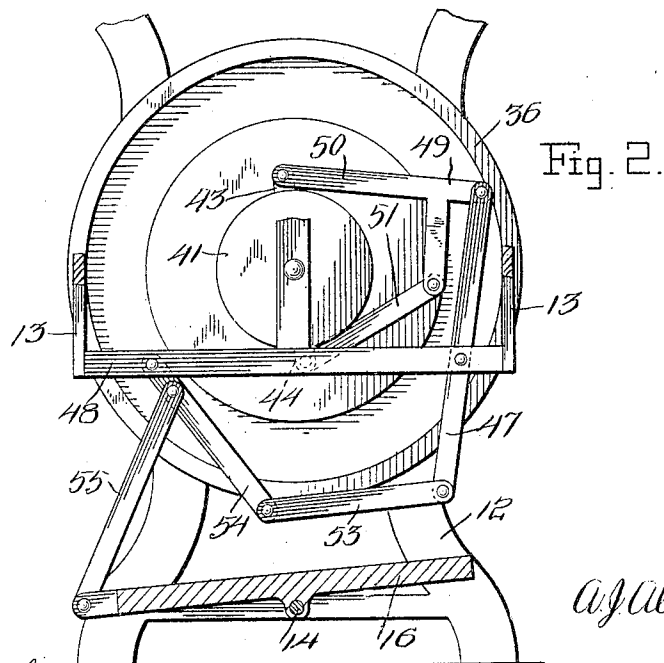
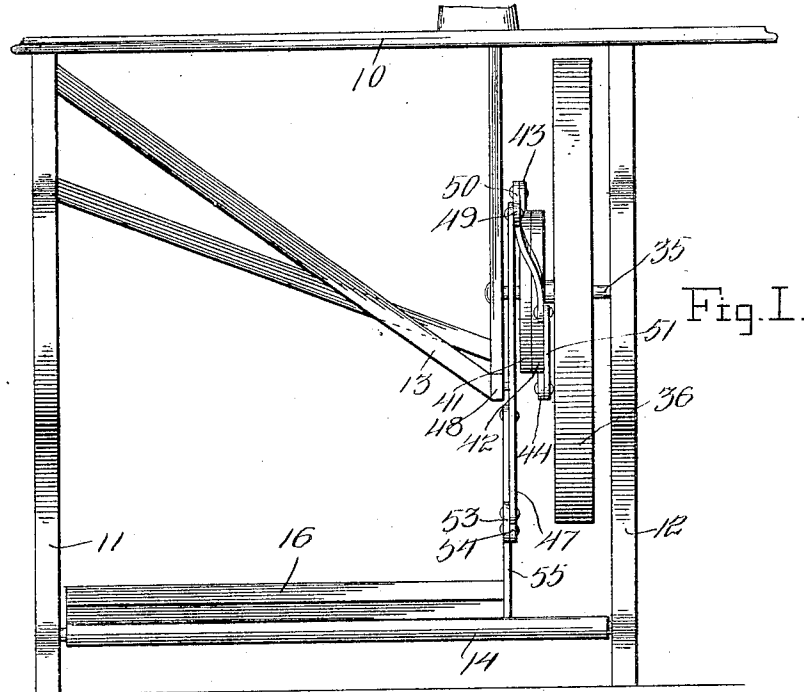


No. 810,317.

PATENTED JAN. 16, 1906.

A. J. ALLISON.
DRIVING MECHANISM.
APPLICATION FILED DEC. 1, 1904.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

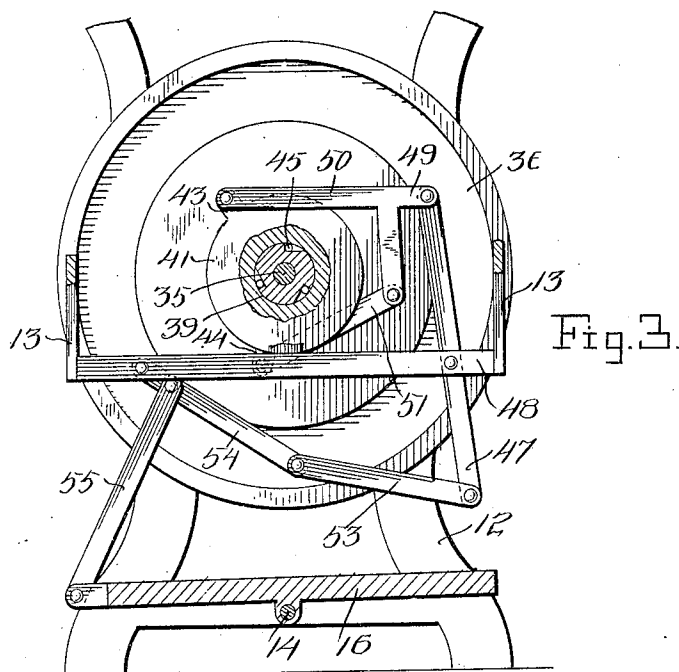


Fig. 3.

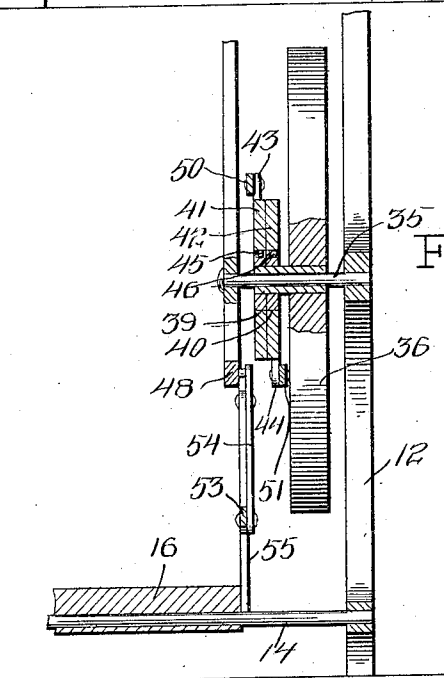


Fig. 4.

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UNITED STATES PATENT OFFICE.

ANDREW J. ALLISON, OF MOUNT SYLVAN, TEXAS.

DRIVING MECHANISM.

No. 810,317.

Specification of Letters Patent.

Patented Jan. 16, 1906.

Application filed December 1, 1904. Serial No. 235,071.

To all whom it may concern:

Be it known that I, ANDREW J. ALLISON, a citizen of the United States, residing at Mount Sylvan, in the county of Smith, State of Texas, have invented certain new and useful Improvements in Driving Mechanisms; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to driving mechanism, the object of the invention being to provide a cheap, simple, and efficient mechanism for transforming reciprocatory motion into rotary motion.

A further object of the invention is to provide a driving mechanism which may be employed in connection with various mechanisms, there being illustrated and described in the present instance a single application or adaptation of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is an elevation showing a sewing-machine stand or table equipped with the present invention. Fig. 2 is a vertical section taken transversely through the lower portion of the sewing-machine table and illustrating the driving mechanism in elevation. Fig. 3 is a section similar to Fig. 2 through one of the pawls of the ratchet mechanism and showing the fly-wheel and the other pawl with the connected levers in elevation and in a different position from that shown in Fig. 2. Fig. 4 is a vertical section at right angles to Fig. 2 and including the fly-wheel shaft and the shaft in the arm of the machine or needle-bar.

Referring now to the drawings, there is shown a part of the usual table 10, having the supporting legs or uprights 11 and 12 and suitable braces 13, there being a rock-shaft 14 journaled in the lower portions of the legs and to which is attached the treadle 16. Mounted below the table 10 is a shaft 35, on which is rotatably mounted a fly-wheel 36. The hub of the fly-wheel at one side is used to form one member of each of two roller-ratchets, and for this purpose said hub is provided with two sets of cam-faces 39 and 40, which are encircled by collars 41 and 42, respectively, having arms 43 and 44, respectively, which project at opposite sides of the

hub. Between the collars 41 and 42 and the said cam-faces are disposed balls 45 and 46, respectively, so that when the collars are rotated in one direction the balls wedge between the cam-faces and the collar, and when they are rotated in the opposite direction the balls roll out of wedging positions and permit of movement of the collars without moving the hub and therewith the fly-wheel. It will be understood that if the arms 33 and 34 are drawn forwardly of the machine, so that they approach each other, one collar will be connected with the hub and fly-wheel, and when the arms are moved in the opposite directions, the other collar will be connected with the hub, so that the fly-wheel will be rotated continuously. To thus oscillate the collars, a lever 47 is pivoted to a hanger 48, that depends from the table 10, and to the upper end of this lever is pivoted the stem 49 of a yoke comprising a rigid arm 50, pivoted to the outer end of the arm 43 and a pivoted arm 51, which is pivoted to the outer end of the arm 44, so that by reciprocating the yoke the collars 41 and 42 will be oscillated oppositely. Pivoted to the lower end of the lever 47 is one link 53 of a toggle-lever comprising also a link 54, which is pivoted to the hanger 48. A pitman 55 is pivoted to the link 54 and to the treadle 16, so that as the treadle is rocked the connected ends of the toggle-links are raised and lowered. As the treadle is moved in one direction the pivoted ends of the toggle-links are raised until the links aline, during which movement the lower end of the lever 47 is swung toward the front of the machine, thus serving to rotate the collars 41 and 42 in one direction. Continued movement of the treadle serves to break the toggle-lever upwardly and the lever 47 is rocked in the opposite direction and oppositely moves the collars 41 and 42. In the opposite movement of the treadle the toggle-lever is oppositely operated and one oscillation is correspondingly given to the collars 41 and 42. Thus it will be seen that when the treadle is rocked in one direction the ratchets are operated once, and when the treadle is moved in the opposite direction the ratchets are operated again, and consequently there are two pulls of the ratchets for each complete oscillation or rock of the treadle.

It will be understood that in practice modifications of the specific construction shown may be made and any suitable materials and

proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

- 5 1. The combination with a driven member, of a rock-lever, a ratchet mechanism connected with the driven member for rotating it, connections between the rock-lever and ratchet mechanism for operating the latter, a toggle-lever connected at one end to
10 the rock-lever and at its opposite end to a fixed support, a treadle and connections between the treadle and a link of the toggle-lever for shifting the links of the lever alternately from one side to the other of their
15 alining positions when the treadle is oscillated.
2. The combination with a rotatable

driven member, of a rock-lever, a pair of ratchet mechanisms connected between the rock-lever and the driven member and adapted to alternately impart motion to the driven member as the lever is rocked, a toggle-lever connected at one end of the rock-lever and pivoted at its opposite end to a fixed support, a treadle and a connection between the treadle and one of the toggle-links for shifting said
20 links from one side to the other of their alining positions.
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In testimony whereof I affix my signature in presence of two witnesses.

ANDREW J. ALLISON.

Witnesses:

CONE JOHNSON,
B. C. JOHNSON.