

P. J. DOCKRAY.  
TRAVERSE BAR MOVEMENT FOR TEXTILE MACHINES.  
APPLICATION FILED MAR. 4, 1907.

917,719.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.

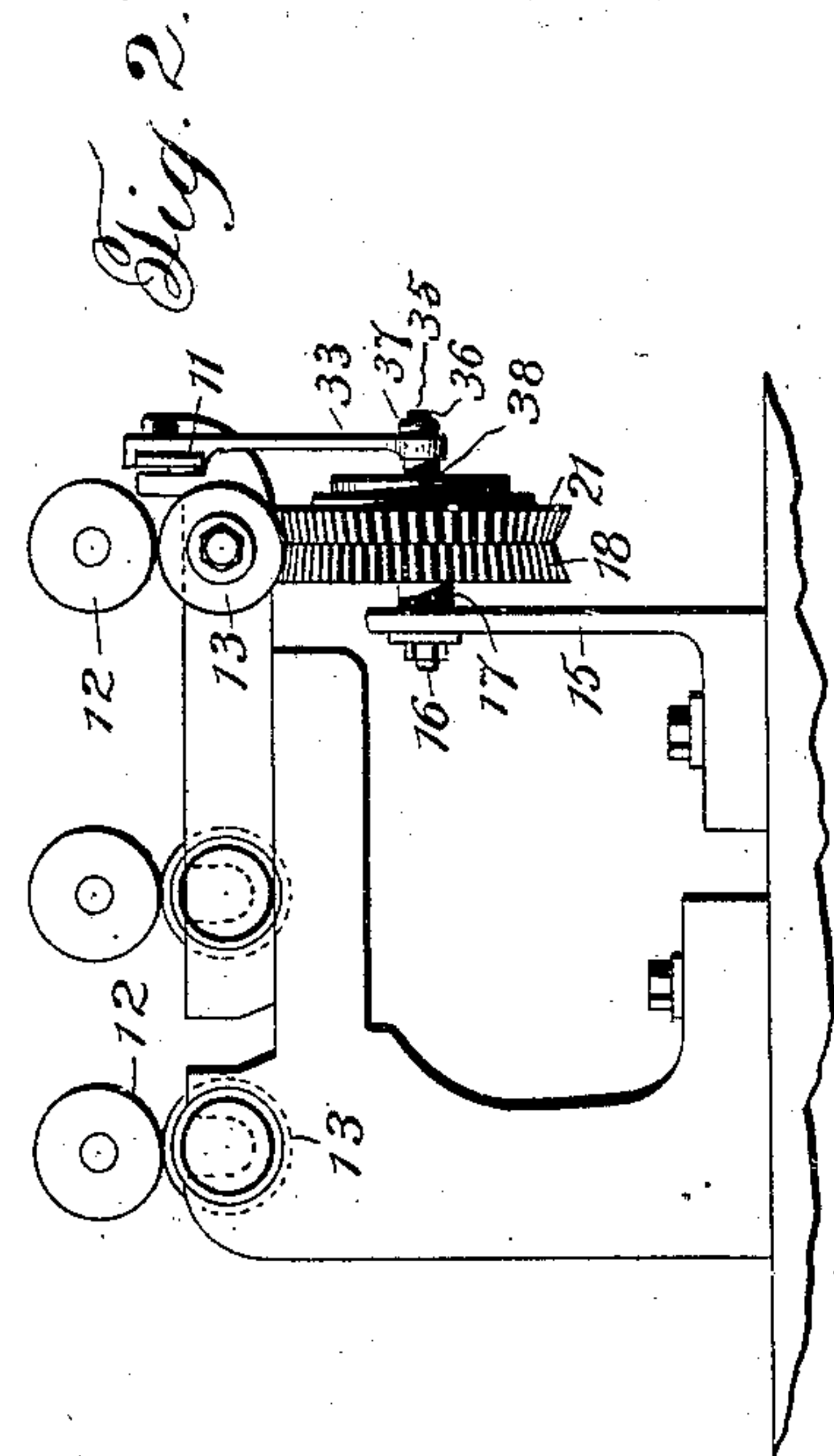


Fig. 2.

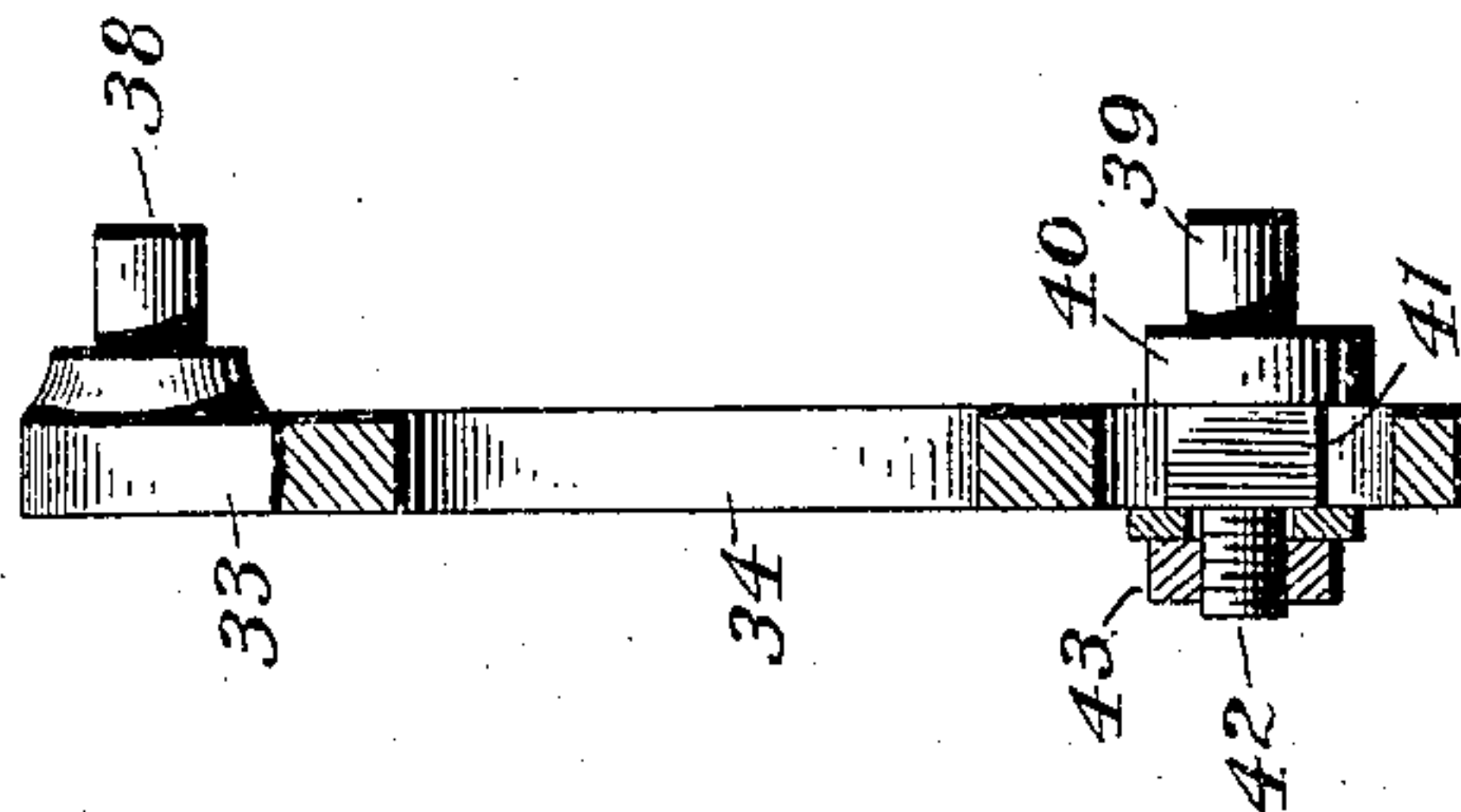


Fig. 5.

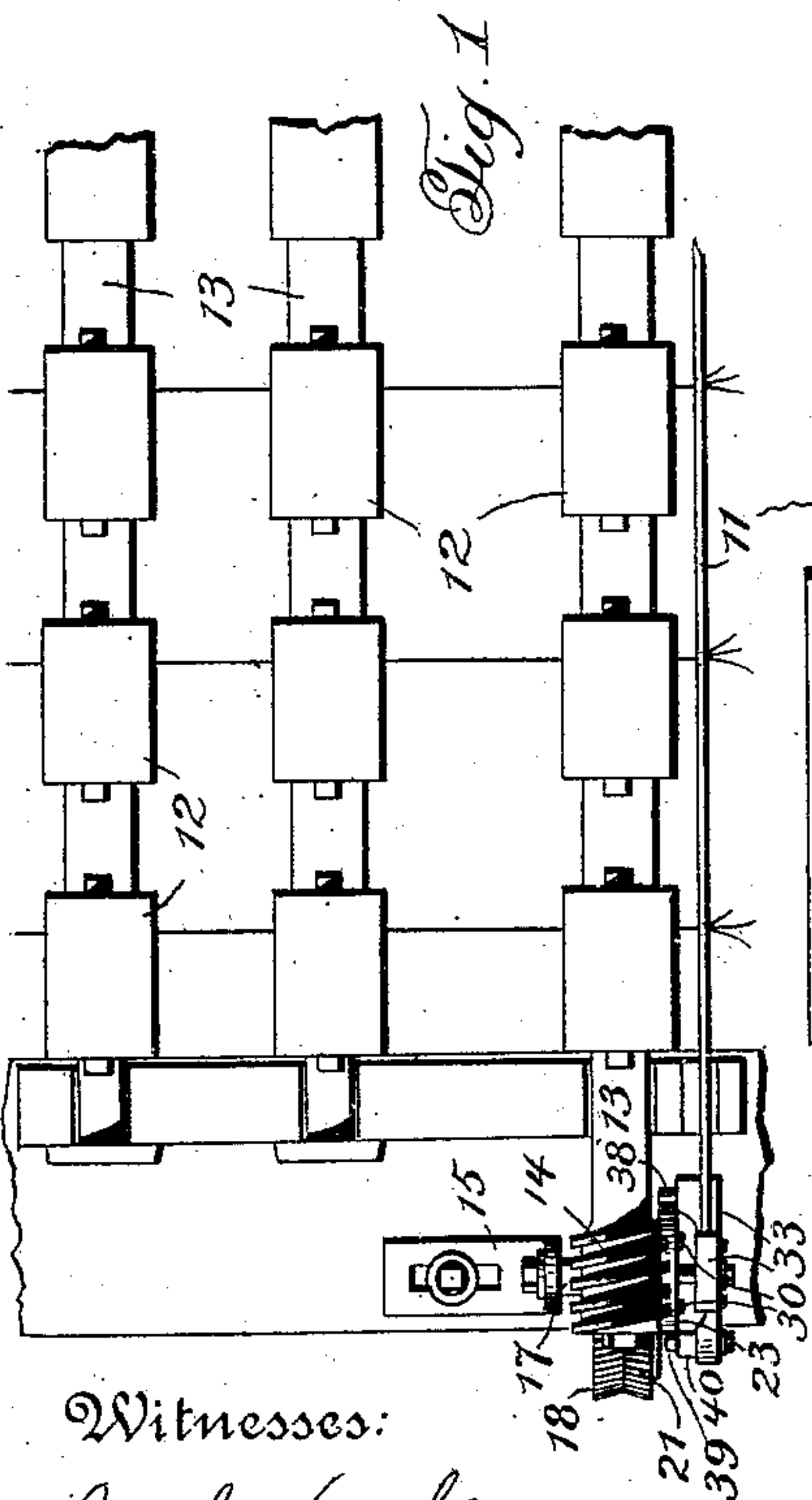


Fig. 1.

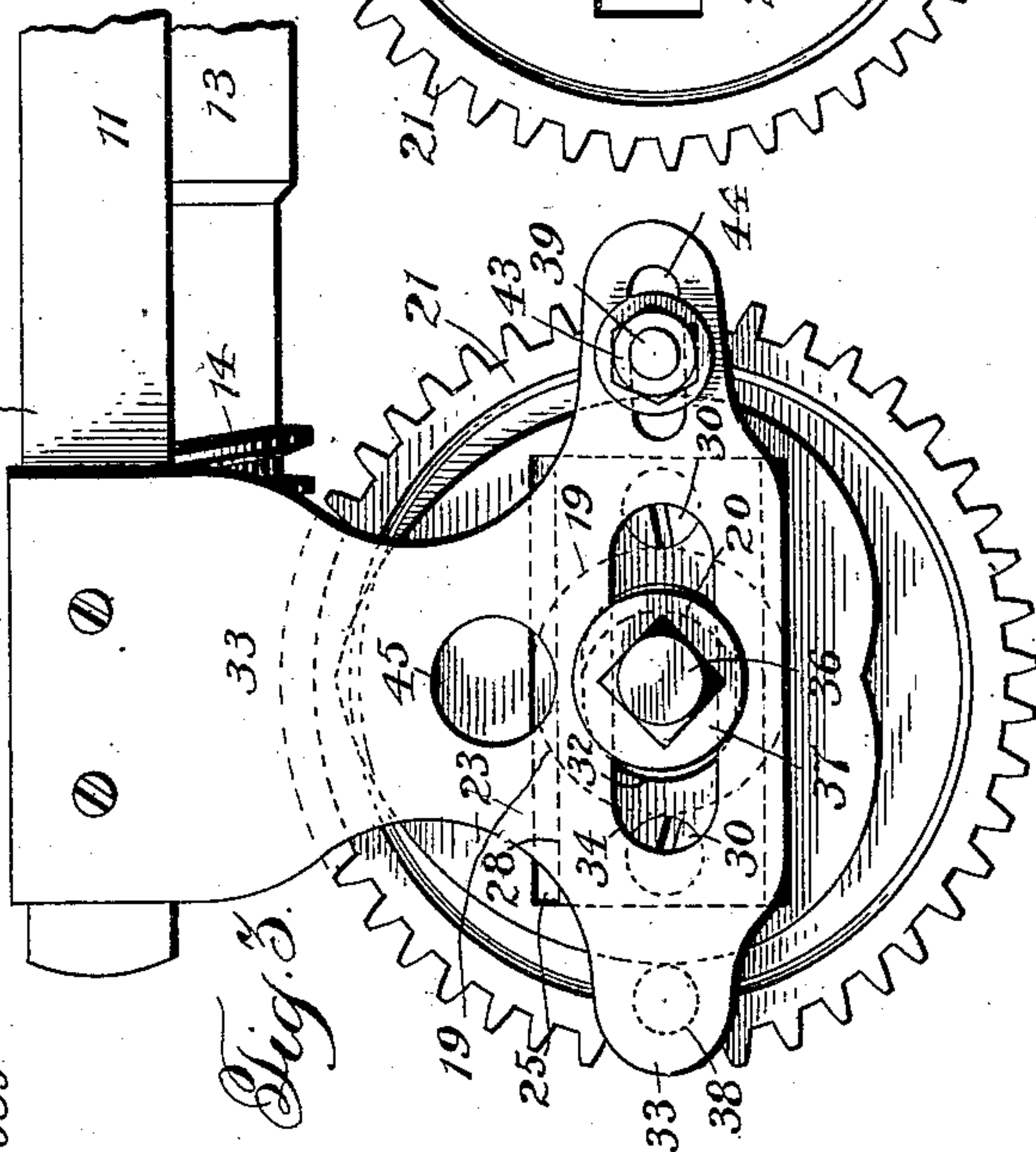


Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 11.

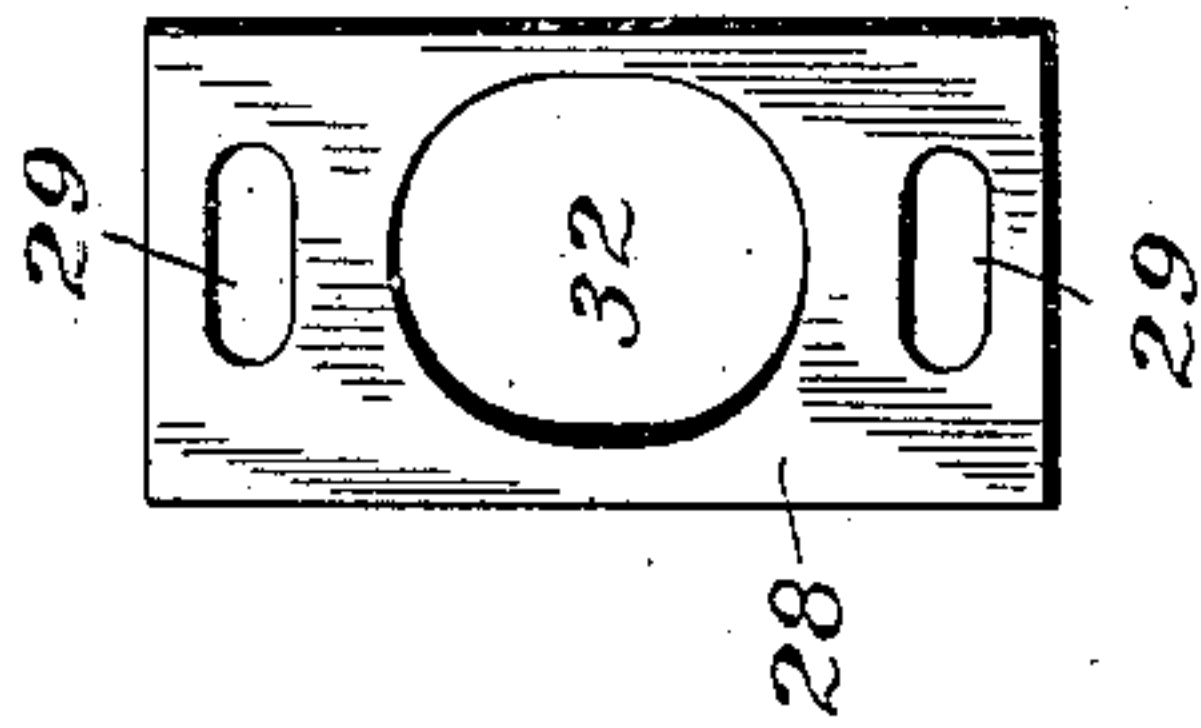


Fig. 10.

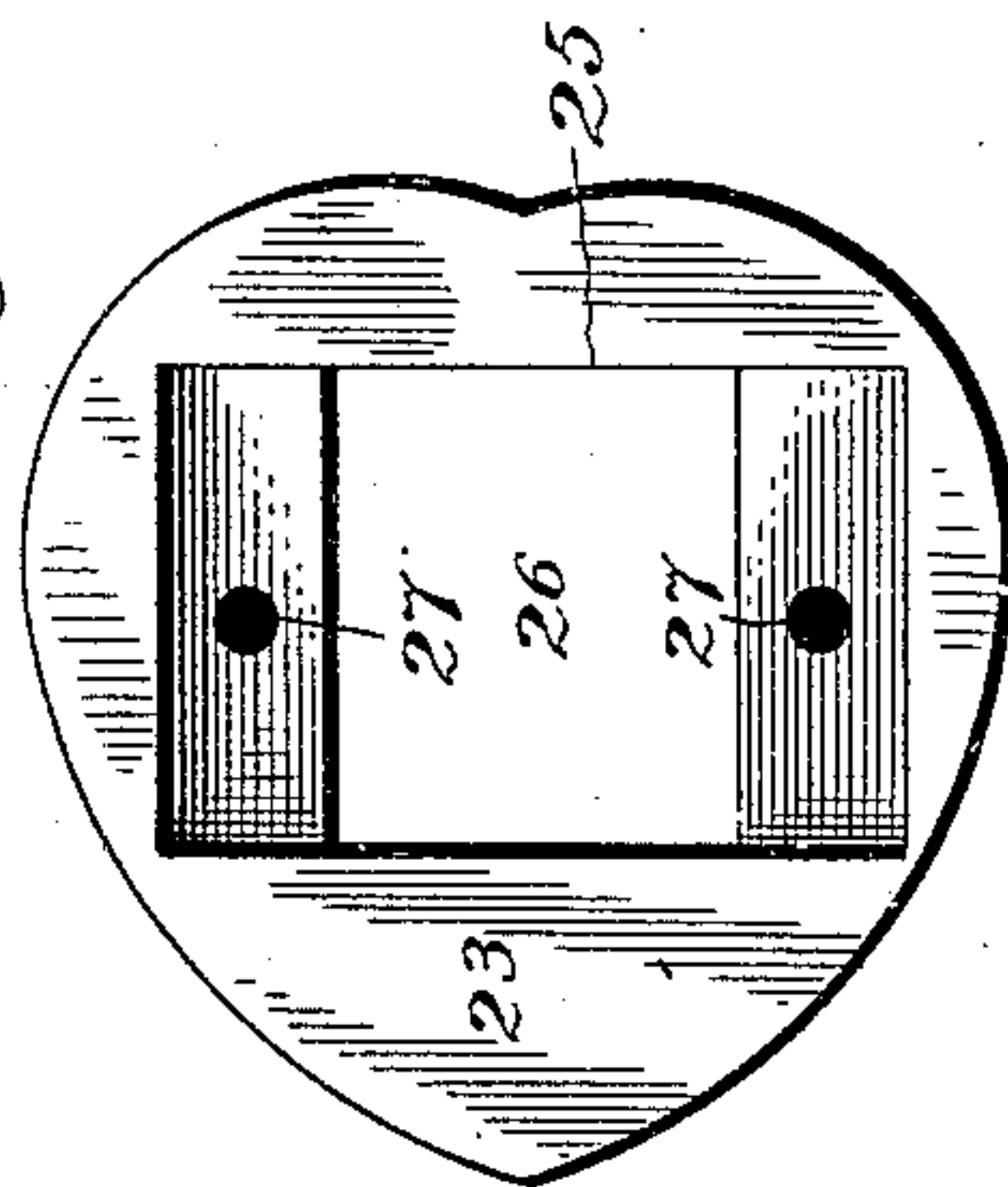


Fig. 9.

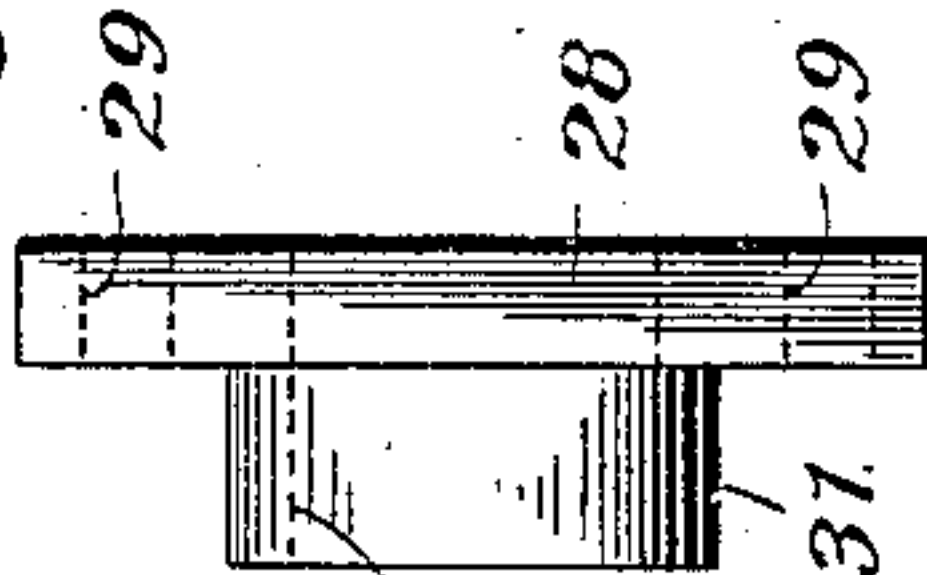


Fig. 8.

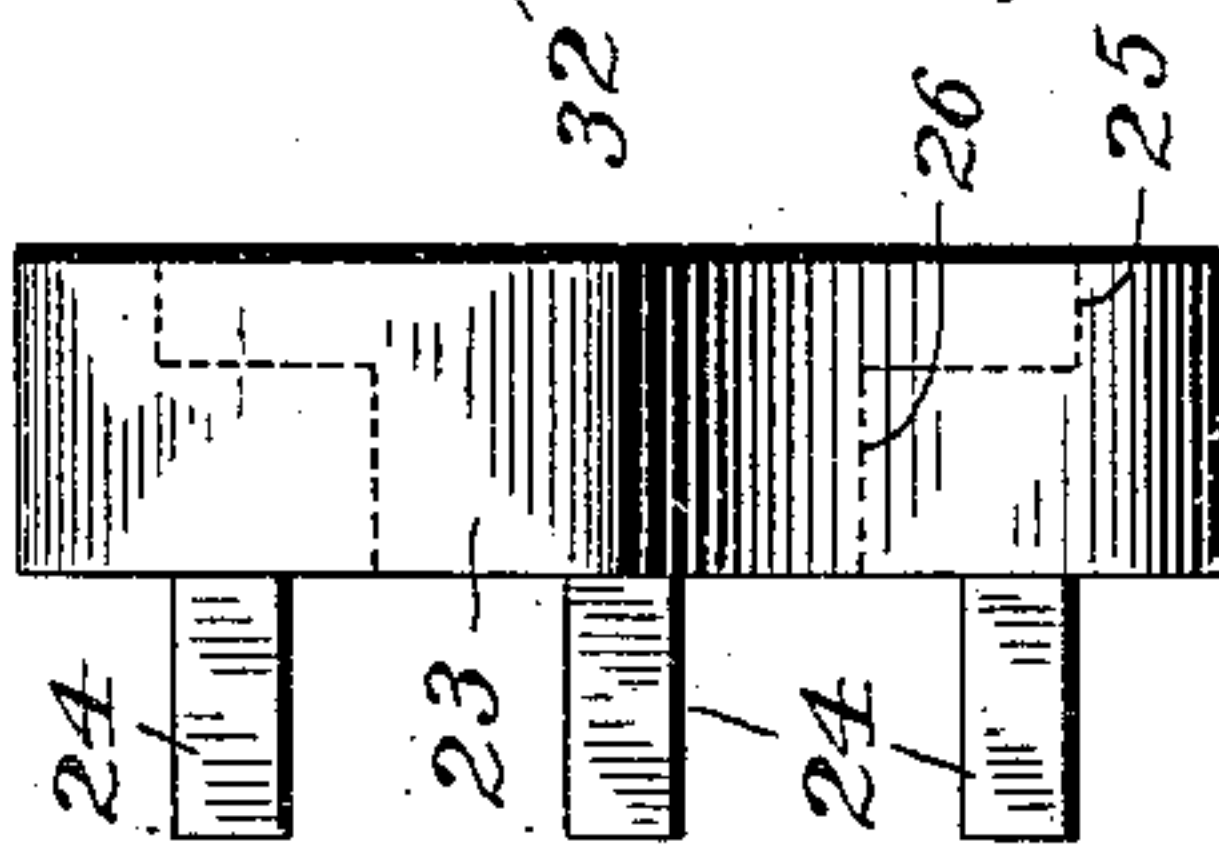
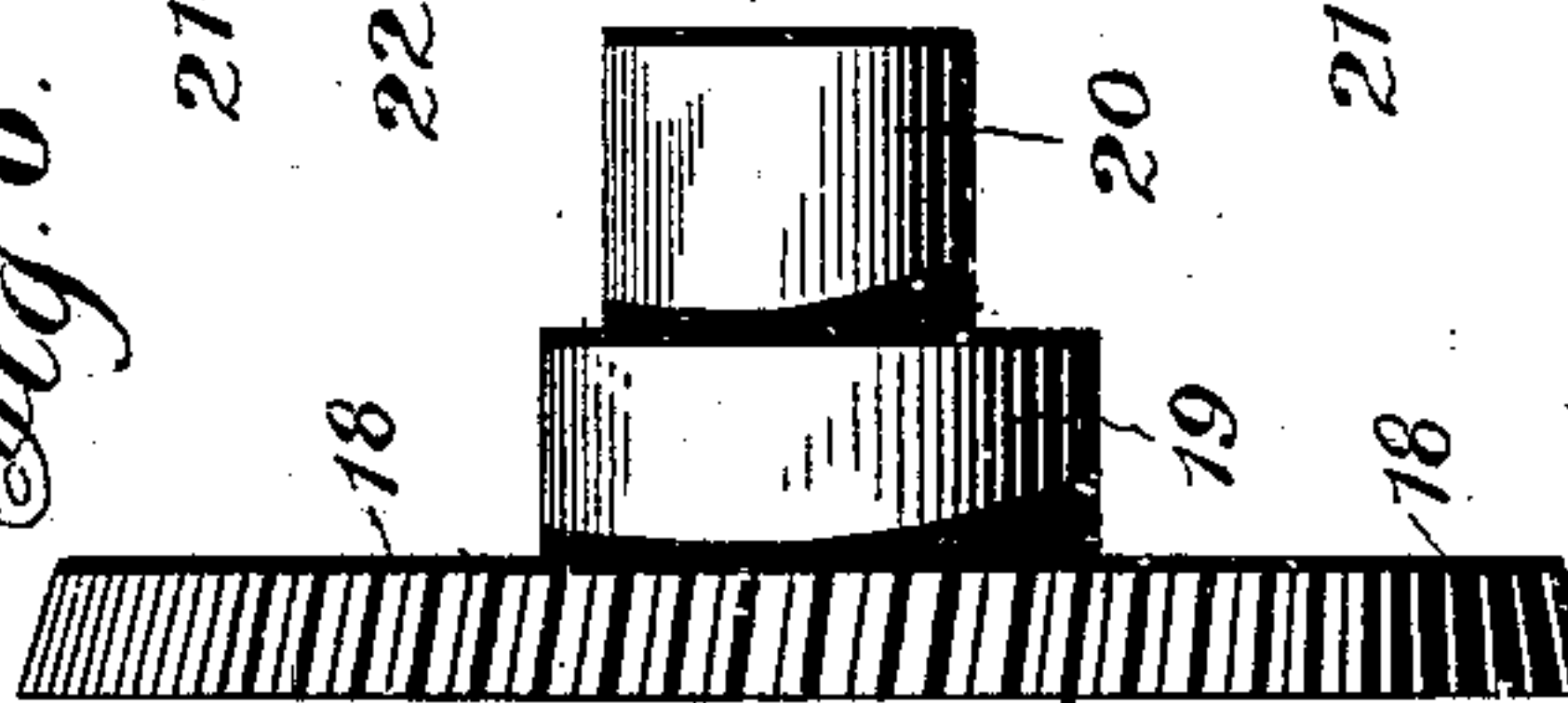


Fig. 7.



Fig. 6.



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# UNITED STATES PATENT OFFICE.

PETER J. DOCKRAY, OF WOONSOCKET, RHODE ISLAND.

## TRAVERSE-BAR MOVEMENT FOR TEXTILE-MACHINES.

No. 917,719.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed March 4, 1907. Serial No. 360,629.

*To all whom it may concern:*

Be it known that I, PETER J. DOCKRAY, a citizen of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Traverse-Bar Movements for Textile-Machines, of which the following is a specification.

10 This invention relates to the mechanism whereby movement is imparted to yarn or thread in order to distribute wear on the rolls in spinning, roving, slubbing, mule, intermediate, jack, and other textile machines in which the material is drawn between rolls. In such machines, where the reciprocatory movement of the traverse-bar and thereby of the material operated upon is regular and the motion successively ceases and commences at the same places, the rolls become channeled and unduly worn at the places of dwell in changing direction of movement. This channeling and wear under such conditions particularly occurs on the leather covering of the top rolls and necessitates the frequent and expensive renewal of such covering.

The invention provides means whereby a positive movement in both directions is imparted to the traverse-bar and whereby the places on the rolls where traverse movement of the material is stopped and commenced is continuously changed. In this way, the points of changing direction of traverse are never successively in the same places on the rolls, and the wear incident to the momentary pause of the material in changing direction is evenly distributed over the working surfaces of the rolls.

40 When read in connection with the description herein, the details of construction and arrangement of parts contemplated by this invention will be apparent from the accompanying drawings, forming part hereof, wherein an embodiment of the invention is disclosed, for purposes of illustration.

Like reference-characters refer to corresponding parts in the several views of the drawings, of which—

50 Figure 1 is a fragmentary plan view of a textile machine having my invention applied thereto; Fig. 2 is an end view thereof; Fig. 3 is a view of the slide and associated parts; Fig. 4 is a plan view of one of the gears; Fig. 5 is a bottom view of the slide and followers; Fig. 6 is a view of the hub-carrying gear;

Fig. 7 is a sectional view of the cam-rotating gear; Fig. 8 is a side view of the cam; Fig. 9 is a side view of the cam center; Fig. 10 is a plan view of the cam; and Fig. 11 is a plan view of the cam center.

Having more particular reference to the drawings, 11 designates the traverse-bar, 12 the top rolls, and 13 the bottom rolls, of a textile machine. The outer bottom roll is formed with a worm 14.

A stand 15 is supported on the machine. It carries a horizontal shaft 16 disposed beneath and at right angles to worm 14. The shaft has thereon against the stand a spacing-boss 17. Journaled on the shaft and against the boss is a gear 18 meshing with and actuated by the worm. Projecting from the side of gear 18 opposite to the boss is a concentric hub 19, and projecting from this hub is an eccentric hub or cam 20. A gear 21 is journaled on hub 19 and meshes with and is actuated by the worm. The latter gear is formed with a plurality of slots 22 disposed at right angles to a diameter of the gear. A member or cam 23 laterally engages gear 21. The cam is formed with a plurality of projections 24 which extend into slots 22, whereby the rotation of the gear is imparted to the cam. These projections fit snugly with the sides of slots 22 and are capable of longitudinal movement therein. Slots 22 are so disposed that reciprocatory movement of cam 23 with respect to gear 21 is permitted only in one straight line. If desired, slots 22 may be formed in cam 23, and projections 24 formed on gear 21. In the outer face of the cam is a depression 25, and an opening 26 is formed centrally through the cam from the depression, the opening being elongated transversely with respect to the depression. In the seat formed by the depression are threaded holes 27 on each side of the opening. An adjustable member or center 28, of substantially the length of, and somewhat more narrow than, depression 25, is arranged to seat in the depression. Transversely-disposed slots 29 are formed in member 28 and register with holes 27. Machine-screws 30 in these holes, and passing through slots 29, adjustably secure member 28 in depression 25. A bushing 31 is integrally formed centrally of member 28, the bushing and member together being of substantially the thickness of cam 23, and the bushing projects into opening 26. Member 28 and its bushing 31 have a bearing 32 formed there-



through. This bearing is arranged to journal on cam or eccentric hub 20; it is sufficiently elongated lengthwise of the member, and in a line parallel or coinciding with the diameter of gear 21 to which slots 22 are longitudinally right angular, to permit the eccentric hub to move longitudinally with respect to the member, and its width is substantially equal to the diameter of the eccentric hub. When cam 23 is turned with its bearing 32 journaling on the cam or eccentric hub 20, the eccentricity of cam 23 is varied by movement thereof with respect to gear 21 in direction only of the length of slots 22. This alterative movement is confined to a straight back and forth reciprocation by engagement of projections 24 in slots 22. A swinging movement of the cam is thereby obviated, and the placing of the cam in a position where there would be a dwell in the part actuated by it, which position would be incident to such swinging movement, is avoided. By loosening screws 30 and laterally moving member 28 the relative position of the bearing or "center" and the operating surface of the cam may be varied and thereby the limits of constant alteration of eccentricity changed. Opening 26, being somewhat elongated, permits the movement of bushing 31 during adjustment of member 28.

Attached to traverse-bar 11 is a depending slide 33, having a slot 34, through which shaft 16 projects, the slide being disposed adjacent to cam 23. On the reduced screw-threaded end 35 of the shaft are positioned a nut 36 and a washer 37, which serve to retain on the shaft the several parts carried thereby. Oppositely-disposed followers 38 and 39 are carried by slide 33 and are arranged to engage the cam-surface of cam 23, whereby movement is imparted to the slide and traverse-bar. One of the followers, for instance 39, is formed with a head 40 arranged to clamp against one side of the slide, a flattened boss 41, and a reduced screw-threaded portion 42 engageable by a nut 43 arranged to clamp against the other side of the slide. Slide 33 has a slot 44 in which boss 41 is adapted to move, and the follower is adjustably held in place by nut 43, in an obvious manner. By movement of this adjustable follower, compensation may be had for wear of the cam.

An aperture 45 is formed in slide 33 in the line of revolution of screws 30, whereby each of the screws is accessible to a screw-driver when in proper position of revolution.

Gears 18 and 21 are formed with a different number of teeth, so that one is rotated by worm 14 faster than the other. This different speed of rotation causes cam 23, which rotates with gear 21 through engagement of projections 24 in slots 22, to gradually turn on eccentric hub 19, and results in the con-

tinuous variation in the eccentricity of the cam. Action of the cam on the followers 38 and 39, and through them on the slide and traverse-bar, therefore varies with the differential rotation of the gears, and the movement of the traverse-bar and of the material between the rolls stops and starts successively at different places. In practice it is necessary to have but little difference in the number of teeth upon the gears. For instance, if gear 18 has forty-nine teeth and gear 21 fifty-two teeth, during seventeen rotations of gear 18, gear 21 will make a trifle more than sixteen rotations, and the cam will have varied to both its maximum and minimum eccentricity.

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

1. Mechanism for actuating the traverse-bar of a textile machine comprising the gear 18, the gear 21, the heart-cam 23, the movable center 28 on the heart-cam, journals for the said gears and cam, and actuating means for said gears and cam.

2. Mechanism for actuating the traverse-bar of a textile machine including a cam, means whereby the eccentricity of said cam is constantly altered, means whereby the limits of said alteration may be changed, and means for operatively connecting the cam with a traverse-bar.

3. Mechanism for actuating the traverse-bar of a textile machine including a cam, a movable bearing on said cam, and means for operatively connecting the cam with a traverse-bar.

4. Mechanism for actuating the traverse-bar of a textile machine including a cam having a recess therein, a member in said recess constituting a bearing for said cam, means whereby said member is held in said recess in a manner to permit its adjustment therein, and means for operatively connecting the cam with a traverse-bar.

5. Mechanism for actuating the traverse-bar of a textile machine including a cam having a recess therein and an opening there-through, a member in said recess having a bushing extending into said opening and constituting a bearing for said cam, means whereby said member is adjustably held in said recess, and means for operatively connecting the cam with a traverse-bar.

6. Mechanism for actuating the traverse-bar of a textile machine including a rotatable member, a cam adjacent to said member and rotated thereby, means whereby said cam is moved to alter its eccentricity, means whereby said alterative movement is confined to a straight line, and means for operatively connecting said cam with a traverse-bar.

7. Mechanism for actuating the traverse-bar of a textile machine including a concentrically-journalled rotatable member, an ec-



centric bearing, a cam adjacent to said member having an elongated journal rotatable on said eccentric bearing whereby the cam is moved to alter its eccentricity, means whereby said alterative movement is confined to a straight line, and means for operatively connecting said cam with a traverse-bar.

8. Mechanism for actuating the traverse-bar of a textile machine including a rotatable member, a cam member adjacent thereto, one of said members having slots therein and the other projections thereon extending into and movable longitudinally of said slots, the slots and projections being so arranged that the movement of the cam member with respect to the rotatable member is confined to a straight line, means whereby the cam is moved to alter its eccentricity, and means for operatively connecting said cam with a traverse-bar.

9. Mechanism for actuating the traverse-bar of a textile machine including the combination with a concentric bearing and an eccentric bearing adjacent thereto, of a rotatable member on said concentric bearing, a cam member having an elongated journal rotatable on said eccentric bearing, one of said

members having slots therein and the other projections thereon extending into and movable longitudinally of said slots, the slots and projections being so arranged the movement of the cam member with respect to the rotatable member is confined to a straight line, and means for operatively connecting said cam member with a traverse-bar.

10. Mechanism for actuating the traverse-bar of a textile machine including the combination of a gear having a laterally-projecting concentric hub and an eccentric hub projecting from said concentric hub, another gear journaled on said concentric hub, a cam having an elongated bearing journaled on said eccentric hub, means operating between said last-mentioned gear and said cam whereby the eccentric alteration of said cam is confined to a straight line with respect to said gear, means whereby said gears are differentially rotated, and means for operatively connecting said cam with a traverse-bar.

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