

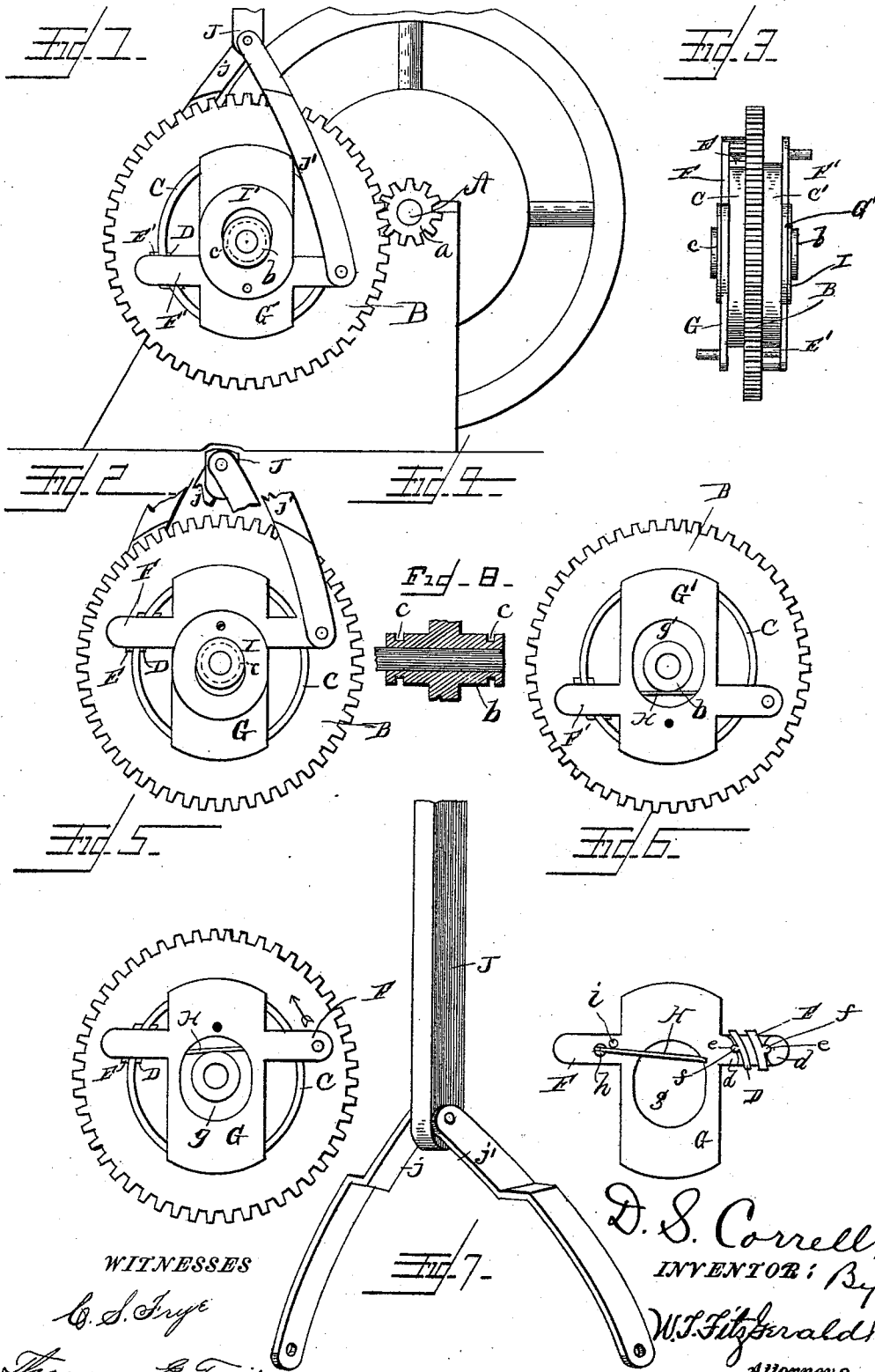
(No Model.)

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MECHANISM FOR CONVERTING RECIPROCATING INTO ROTARY MOTION.

No. 486,369.

Patented Nov. 15, 1892.



WITNESSES

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MECHANISM FOR CONVERTING RECIPROCATING INTO ROTARY MOTION.

SPECIFICATION forming part of Letters Patent No. 486,369, dated November 15, 1892.

Application filed May 3, 1892. Serial No. 431,638. (No model.)

To all whom it may concern:

Be it known that I, DENNIS S. CORRELL, a citizen of the United States, residing at Welton, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Mechanism for Converting Reciprocatory into Rotary Motion; 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.

My invention has relation to improvements in mechanism for converting reciprocatory into rotary motion; and it has for its object to utilize the strokes of a pitman in both directions, so as to gain a positive and continuous rotary motion.

To the attainment of the foregoing and other objects the invention consists in the peculiar construction, certain novel combinations, and the adaptation of parts hereinafter described, and particularly pointed out in the claims appended.

In the accompanying drawings, Figure 1 is a side elevation of my improved converting mechanism, together with a reciprocatory pitman and a rotary drive-shaft. Fig. 2 is an elevation of the inner side of the converting mechanism. Fig. 3 is a top plan view of the converting mechanism with the clutch-levers in their proper relative positions. Fig. 4 is an elevation of the outer side of the same with the securing-washer removed, so as to illustrate the spring of one clutch-lever bearing against the hub of the wheel or disk. Fig. 5 is an elevation of the inner side of the converting mechanism with the securing-washer removed. Fig. 6 is an elevation of the inner side of one of the clutch-levers removed, and Fig. 7 is a perspective view of the pitman employed in conjunction with the converting mechanism. Fig. 8 represents a sectional view of the hub of the driving-wheel.

In the said drawings similar letters designate corresponding parts throughout the several views, referring to which—

A indicates a rotary drive-shaft, and *a* indicates a pinion fixed thereon, with which mesh the peripheral teeth of the wheel or disk B. This wheel or disk B, which is fixed upon a shaft extending laterally from the main frame, is provided with the central hub

b, in which is formed the peripheral grooves *c*, designed and adapted to prevent lateral play and displacement of the securing-washers presently to be described.

Formed integral with or fixedly connected to the sides of the wheel or disk B are the circular flanges C C', which are designed and adapted to be engaged by the inner convex shoes D D' and the outer concave shoes E E' of the clutch-levers F F'. These clutch-levers F F', which are disposed tangentially with respect to the hub *b*, as illustrated, are provided adjacent to one of their ends with the inwardly-directed lateral arms *d*, which straddle the flanges C and are provided with bearing-seats *e* of semicircular form in cross-section to seat the ribs *f* of the friction-shoes D E, which are designed to rock for a purpose presently set forth.

Extending laterally from the levers F F' are angular plates G G', in which are formed the apertures *g g'*, which are designed and adapted to loosely receive the hub *b*, upon which the clutch-levers are mounted.

Connected to lugs, as *h*, extending inwardly from the clutch-levers adjacent to the free ends thereof, are flat springs H, which bear against the lugs *i* and impinge upon the hub *b*, so as to hold the clutch-levers in such position as to bind upon one of the flanges C when said lever is moved in one direction and permit them to slide freely upon the flange when the lever is moved in the opposite direction.

Connected to the outer sides of the levers F F' are the washers I I', which are provided with apertures of eccentric form to receive the hub *b* and are designed to engage the peripheral grooves *c* of said hub, and thereby prevent lateral play of the disk or wheel B.

As better illustrated in Fig. 3 of the drawings, the free ends of the levers F F' extend in opposite directions and by reason of the position of the springs of said levers with respect to the hub *b* it will be perceived that in order for the shoes D E of the inner lever F to assume the proper position to bind upon the inner flange C the free end of the said lever F must be moved upwardly or in the direction of the arrow, while in order for the shoes D' E' of the outer lever F' to bind upon the outer flange C the free end of said lever

F' must be moved downwardly, whereby it will be perceived that when a pitman is properly connected to the levers F F' the wheel or disk B will be rotated through the medium of the lever F upon the upstroke and through the medium of the lever F' upon the downstroke, by reason of which it will be seen that a continuous rotation of the wheel or disk B is accomplished.

- 10 J indicates the pitman-rod, which I prefer to employ in conjunction with the converting mechanism. This pitman-rod J, as better shown in Fig. 7 of the drawings, has two links j pivotally connected to its lower end, 15 which links extend in opposite directions and are pivotally connected at or adjacent to their free ends to the levers F F', respectively, to which they serve to transmit motion.

Although I have specifically described the 20 wheel or disk B, as provided with peripheral cog-teeth and meshing with a pinion upon a drive-shaft, yet I do not desire to be confined to the same, as it is obvious that the said wheel or disk B might be fixed upon a drive-shaft to rotate the same without the employ- 25 ment of intermediate gearing.

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

- 30 1. In a mechanism for converting recipro- catory into rotary motion, the combination, with a wheel or disk having a circular flange and a central hub, of a clutch-lever loosely mounted on the hub of said wheel or disk, a 35 spring connected to the lever and impinging against the said central hub, and friction-shoes mounted in bearings in the clutch-lever and engaging the inner and outer sides of the circular flange of the wheel or disk, substan- 40 tially as and for the purpose described.

2. In a mechanism for converting recipro- catory into rotary motion, the combination, with a wheel or disk having a circular flange and a central hub, a clutch-lever loosely 45 mounted on the hub of said wheel or disk and having the inwardly-directed lateral arms adjacent to one end straddling the circular flange and provided in their innersides with bearing-seats, the concave friction-shoe

engaging the outer side of the circular flange 50 and having a rib seated in the bearing-seat of the outer lateral arm, and the convex friction-shoe engaging the inner side of the circular flange and having a rib seated in the bearing-seat of the inner lateral arm, of the 55 spring connected to the lever and impinging against the central hub of the wheel or disk, substantially as specified.

3. In a mechanism for converting recipro- catory into rotary motion, the combination, 60 with a wheel or disk having circular flanges upon its sides and a central hub, of the clutch-lever F, loosely mounted upon the hub on one side of the wheel or disk, the clutch-lever F', loosely mounted upon the hub on the other 65 side of the wheel or disk and extending in an opposite direction to the lever F', springs connected to the levers F F' and impinging against the central hub, friction-shoes mount- ed in bearings in the clutch-levers and engag- 70 ing the inner and outer sides of the circular flanges of the wheel or disk, and a suitable means for reciprocating the said clutch-levers, substantially as specified.

4. In a mechanism for converting recipro- 75 catory into rotary motion, the combination, with a wheel or disk having circular flanges upon its sides and a central hub, the clutch-lever F, loosely mounted upon the hub on one side of the wheel or disk, the clutch-lever 80 F', loosely mounted upon the hub of the wheel or disk and extending in an opposite direction to the lever F, springs connected to the levers F F' and impinging against the central hub, friction-shoes mounted in bear- 85 ings in the clutch-levers and engaging the inner and outer sides of the circular flanges of the wheel or disk, of the pitman and links pivotally connected at one end to the pitman, and at their opposite ends to the levers F F', re- 90 spectively, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

DENNIS S. CORRELL.

Witnesses:

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