No. 885,834. PATENTED APR. 28, 1908.

L. R. BRIGGS.

MECHANISM FOR CONVERTING MOTION.

APPLICATION FILED DEC. 16, 1907.

2 SHEETS—SHEET 1.

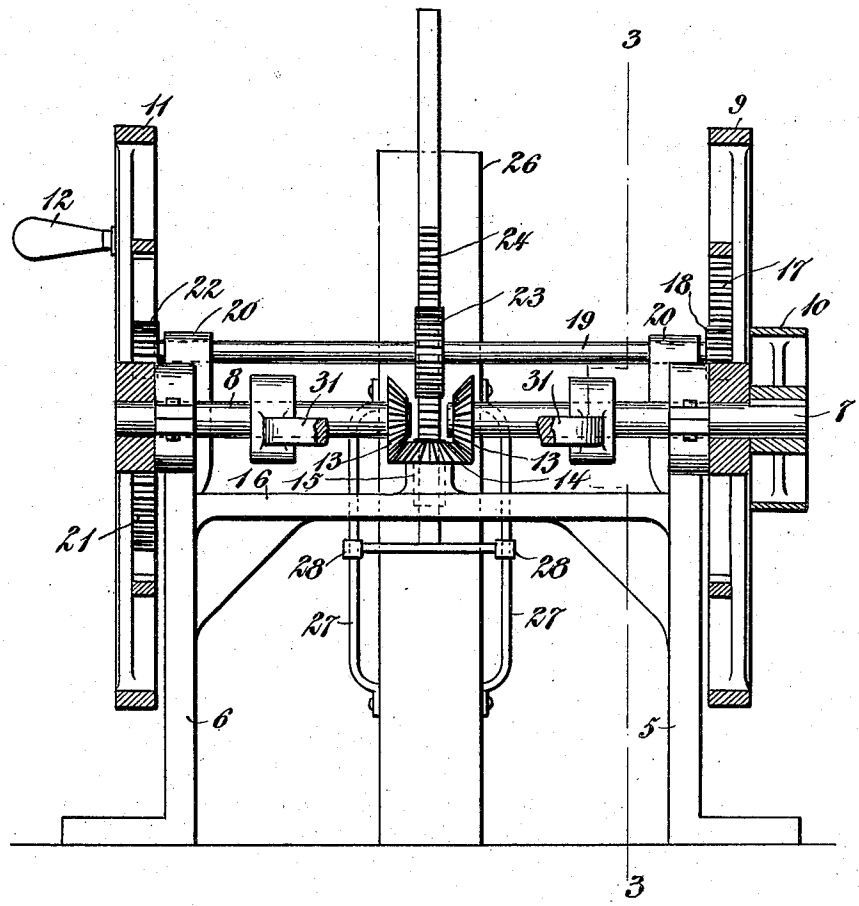


Fig. 1.

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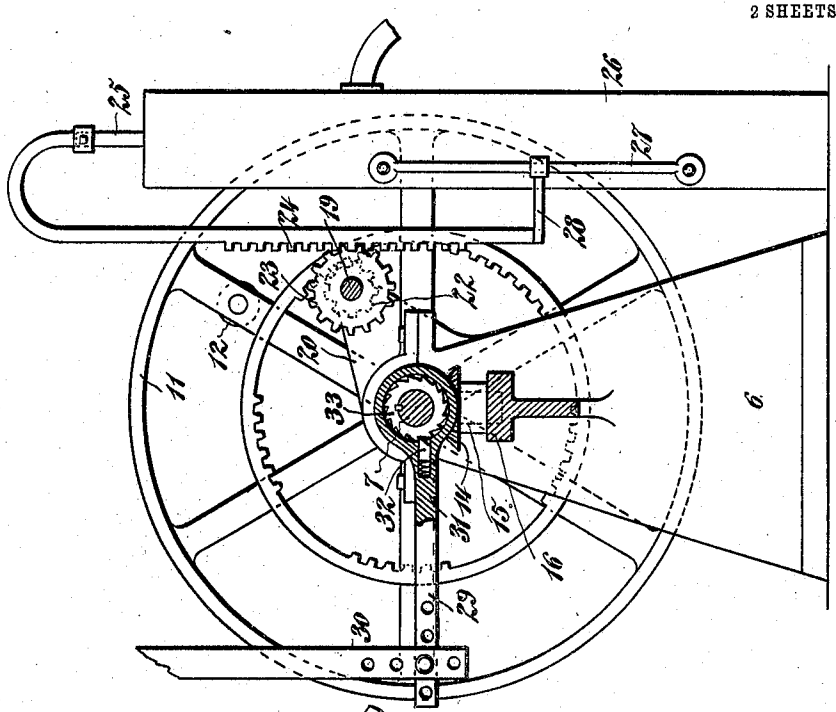


Fig. 3.

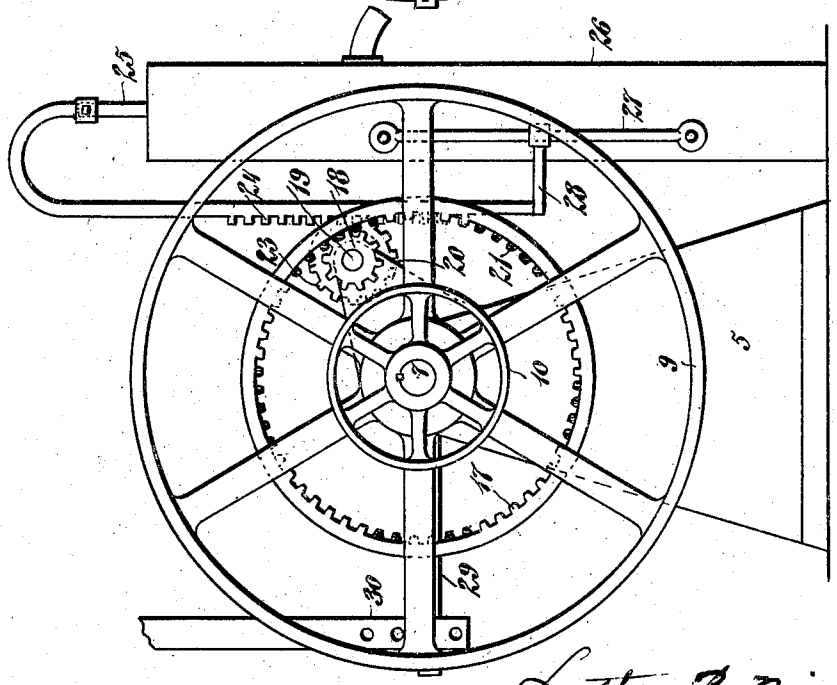


Fig. 2.

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LUTHER R. BRIGGS, OF CHAMBERSBURG, ILLINOIS.

MECHANISM FOR CONVERTING MOTION.

No. 885,834. Specification of Letters Patent. Patented April 28, 1908.

Application filed December 16, 1907. Serial No. 406,764.

To all whom it may concern:

Be it known that I, LUTHER R. BRIGGS, a citizen of the United States, residing at Chambersburg, in the county of Pike and State of Illinois, have invented certain new and useful Improvements in Mechanism for Converting Motion, of which the following is a specification.

This invention relates to mechanism for converting motion, and more particularly one for converting a rotary into a reciprocating rectilinear motion.

The mechanism consists in a novel arrangement of elements to be hereinafter described and claimed, and it is illustrated in the accompanying drawings in which like reference characters indicate like parts in all the views.

In the drawings, Figure 1 is an end view of the invention, partly in section. Fig. 2 is a side elevation. Fig. 3 is a section on the line 3—3 of Fig. 1.

Referring specifically to the drawings, 5 and 6, respectively, denote two standards having bearing-boxes for horizontally disposed shafts 7 and 8, respectively. On the shaft 7 is a fly-wheel 9 and a belt-pulley 10. On the shaft 8 is a fly-wheel 11 fitted with a handle 12. The two shafts are geared so that they will turn together but in opposite directions by means of miter-gears 13 thereon and an intermediate miter-gear 14. The last mentioned gear turns on a vertical pivot 15 mounted on a cross piece 16 extending between the standards.

The fly-wheel 9 carries a mutilated internal gear 17 which meshes with a pinion 18 on a shaft 19 mounted in bearings 20 on the standards 5 and 6. The fly-wheel 11 carries a similar gear 21 which meshes with a pinion 22 on the shaft 19. The teeth of the mutilated gears are in alinement with the blank spaces of the opposite mutilated gears, so that when the pinion 18 is in gear, the pinion 22 will be out of gear, and vice versa; and as the fly-wheels turn in opposite directions, an alternating rotary movement will be imparted to the shaft 19 when the fly-wheels are in motion.

On the shaft 19 is also a pinion 23 which meshes with a rack 24 connected to the part to be operated which in the present instance is a pump, the rack being connected to the plunger-rod 25 thereof. On the pump-barrel 26 are mounted guide-rods 27 for the rack 24, the latter having laterally presented arms 28 which are engageable at their outer ends with the guide-rods. The alternating rotary movement of the shaft 19, through the pinion 23 causes reciprocation of the rack 24 whereby the plunger-rod 25 is operated.

The fly-wheels 9 and 11 may be driven from a suitable source of power by a belt passing over the pulley 10; or they can be turned manually by the handle 12. The mechanism may also be operated by a windmill through the following instrumentalities; 29 indicates a lever which is connected at one end to the windmill rod 50, and has at the opposite end two branches 31 each of which carries a spring-pawl 32. On each of the shafts 7 and 8 is a ratchet 33. The teeth of the respective ratchets are oppositely presented so that when one of the pawls is taking hold of its ratchet, the other one is slipping, by reason of which the shafts will be continuously rotated but in opposite directions when the lever 29 is vibrated by the windmill.

In the drawings, I have shown the mechanism applied to a pump, but it is to be understood that its application is not limited thereto, as it is apparent that it may be employed in connection with other apparatus the operation of which is dependent on a reciprocating rectilinear motion.

I claim:—

1. A mechanism for converting motion comprising mutilated gear-wheels the teeth of one wheel being in alinement with the blank spaces of the opposite wheel, a rack, a shaft, a pinion on said shaft meshing with the rack, pinions on the shaft meshing with the aforesaid gears, and means for rotating the gears in opposite directions.

2. A mechanism for converting motion comprising a pair of shafts, mutilated gear-wheels thereon the teeth of one wheel being in alinement with the blank spaces of the opposite wheel, a gearing between the gear-wheel shafts whereby they turn in opposite directions, a rack, a shaft, a pinion on said shaft meshing with the rack, pinions on the shaft meshing with the aforesaid gears, oppositely presented ratchets on the first mentioned shafts, a lever carrying pawls engageable with the ratchets, and means for operating the lever.

3. A mechanism for converting motion comprising a pair of shafts, miter-gears on said shafts, an intermediate miter-gear mesh-

ing therewith, mutilated gear-wheels on the shafts the teeth of one wheel being in alinement with the blank spaces of the opposite wheel, a rack, a shaft, a pinion on said shaft meshing with the rack, pinions on the shaft meshing with the aforesaid gears, and means for driving the first mentioned shafts.

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

LUTHER R. BRIGGS.

Witnesses:
MAUDE WHEELER,
FRANK BRIGGS.