

UNITED STATES PATENT OFFICE.

IRA LEONARD OWENS, OF EFFINGHAM, KANSAS.

MEANS FOR CONVERTING POWER.

SPECIFICATION forming part of Letters Patent No. 686,121, dated November 5, 1901.

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To all whom it may concern:

Be it known that I, IRA LEONARD OWENS, of Effingham, in the county of Atchison, State of Kansas, have invented certain new and useful Improvements in Means for Converting Power, of which the following is a complete specification, reference being had to the accompanying drawings.

The object of my invention is to produce improved means for converting rotary into reciprocatory motion.

In the accompanying drawings, Figure I is a side elevation of a washing-machine with a preferred form of embodiment of my device attached. Fig. II is a section on the line II-II of Fig. I looking to the left. Fig. III is a bottom plan view of the reciprocating head of the washing-machine.

Referring to the numerals on the drawings, 1 indicates the body or receptacle of a washing-machine provided with a lid 2, having an aperture through which works a reciprocatory rod 3, that is provided near its extremity within the body 1 with a head 4.

5 indicates a usual device for limiting the movement of the lid 2 upon the hinges 6, by which the lid and body are secured together.

The elements above specified constitute any ordinary form of covered receptacle for a washing-machine, which is selected, by way of example, to illustrate one application of my invention.

Upon the lid 2 is provided a fixed upright 7 within a box 8, upon which is loosely supported a shaft 9, having secured to its end adjacent to the box 8 a crank-wheel 10, provided, as usual, with a handle 11. Near the extremity of the shaft 9, opposite to that adjacent to the box 8, the shaft passes through an oblong slot 14, formed in a cross-piece 15, fixed to an oblong rectangular frame 16, having feet 17, by which it is firmly secured to the lid 2, as by means of screws 18. Between the upright sides of the frame 16 is secured, as in grooves in the opposite edges thereof, a sliding frame 20, provided with a continuous rack 21, preferably elliptical in shape. With this rack meshes a pinion 22, fixed to the end of the shaft 9. The pinion 22 is held in engagement with the rack 21 through the engagement of the end of the shaft 9 with the walls of a guideway 24. The guideway is of the same shape as the rack 21 and is parallel

to it. The guideway may be formed by making the frame 20 hollow and partially filling in the space with a guide-piece 25, corresponding in periphery to the shape of the guideway defined by it. The guide-piece 25 is supported as by cross-pieces 26, spanning the open space in the frame 20 and secured to it and to the guide-piece 25. The cross-pieces 26, being located beyond the extremity of the shaft 9, leave room for its free play within the guideway.

In operation the shaft 9 is rotated—as, for example, by manipulation of the handle 11—and it in turn imparts rotation to the pinion 22, which, engaging the teeth of the rack 21, causes the frame 20 to reciprocate within the frame 16. The shaft 9, following the guideway 24 and working back and forth in the slot 14, affords means, in connection with the other mechanism specified, for converting the rotary motion of the wheel 10 into constant reciprocatory motion in the frame 20, which is secured to the rod 3.

What I claim is—

1. The combination with a rotary shaft and means for loosely supporting it at one end, of a frame provided with a slotted cross-piece supporting the other end of the shaft, a sliding frame working in the first-named frame, a continuous elliptical guideway for the end of the shaft in the sliding frame, a rack upon the sliding frame parallel to the guideway, and a pinion secured to the shaft and meshing with the teeth of the rack.

2. The combination with a rotatory shaft, means for loosely supporting it near one end, a transversely-slotted cross-piece, and an oblong frame supporting said cross-piece, the shaft extending through the slot in the cross-piece, of a sliding frame working longitudinally in the first-named frame, an elliptical guideway in the sliding frame, in which the end of the shaft works, a rack on the sliding frame parallel to the guideway, and a pinion secured to the shaft, meshing with the rack, and working between the frame and the slotted cross-piece.

In testimony of all which I have hereunto subscribed my name.

IRA LEONARD OWENS.

Witnesses:

W. S. DAVIS,
G. R. DAVIS.