

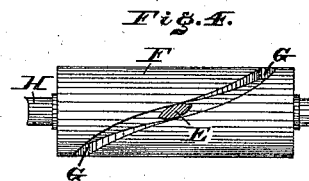
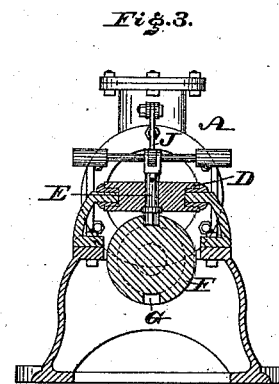
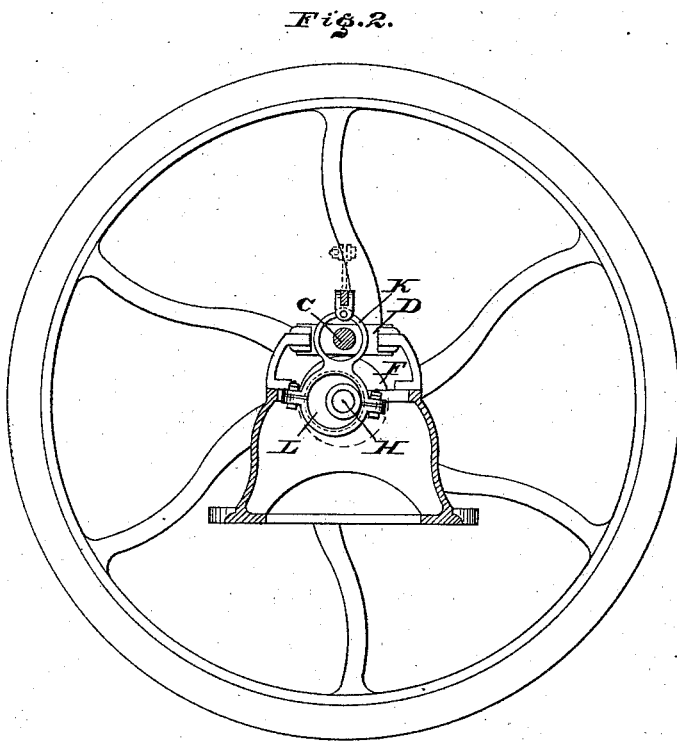
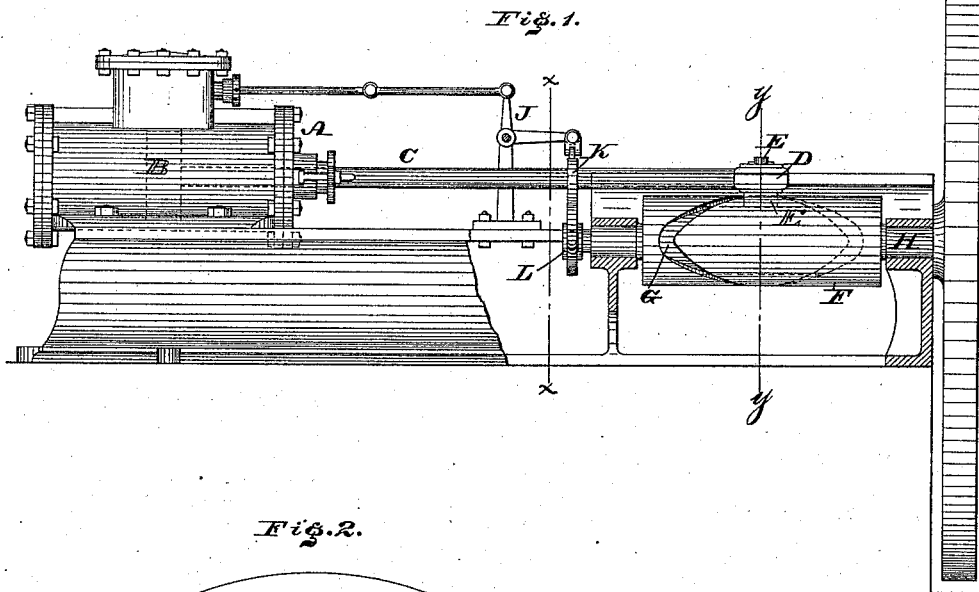
(No Model.)

J. B. EADS.

DEVICE FOR CONVERTING MOTION.

No. 305,440.

Patented Sept. 23, 1884.



WITNESSES:

A. P. Grant,
W. F. Kircher

INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN B. EADS, OF MATTOON, ILLINOIS, ASSIGNOR OF ONE-HALF TO W. B. LEITCH, OF SAME PLACE.

DEVICE FOR CONVERTING MOTION.

SPECIFICATION forming part of Letters Patent No. 305,440, dated September 23, 1884.

Application filed February 8, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. EADS, a citizen of the United States, residing at Mattoon, in the county of Coles, State of Illinois, have invented a new and useful Improvement in Devices for Converting Motion, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a longitudinal section of the portion of a device for converting motion, embodying my invention. Fig. 2 is a transverse section in line *x x*, Fig. 1. Fig. 3 is a transverse section in line *y y*, Fig. 1. Fig. 4 is a top view of a detached portion, part thereof being in horizontal section.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of a device for converting motion, the construction and operation of the same being hereinafter fully set forth.

Referring to the drawings, A represents a steam-cylinder, and B a piston thereof, both of usual construction.

C represents a piston-rod, the outer end of which is attached to a sliding head, D, which latter is properly mounted and guided and has connected with it an oscillating piece, E, the latter being of elliptical form with pointed ends.

F represents a cylinder, formed with a continuous groove, G, which extends spirally around the face of the cylinder from one end to the other, returning to the first-named end and joining the same, and into the groove projects the piece E. The cylinder F is formed with or secured to the main shaft H, to which latter the power of the engine is to be communicated.

It will be seen that when steam is admitted to the cylinder A, the piston receives reciprocating motion as usual. The oscillating roller-piece E, carried by the piston-rod in opposite directions, moving in the spiral groove G of the cylinder F, causes the continuous rotation of said cylinder and consequently of the shaft H, the power of the engine thus being transmitted to the latter.

It will be seen that a crank is avoided and there is a vast increase of power.

In order to operate the valve, I connect with the valve-stem an elbow or other suitable lever, J, which is properly mounted and receives reciprocating motions from a yoke, K, and eccentric L, the latter being connected with the main shaft, and by its rotations oscillates the yoke, and consequently moves the lever J, whereby the valve is shifted, said yoke encircling or straddling the piston-rod, whereby the parts are few, simple, and compact. The piece E, owing to its oscillations, changes position as it runs through the groove G, due to the spiral form thereof, and so operates thereon without binding or strain, and when the piston is at the end of its stroke, the fly-wheel of the engine causes the piece E to pass the center of the cylinder F, so that it readily re-enters the proper part of the groove for the advance or return motion, it being seen that the piece always conforms to the direction of curvature of the groove, and readily seeks its passage in the groove G without liability to jam at the turn of the groove owing to its pointed end.

It is evident that while I have described the cylinder F on the main shaft H, the latter, if of the proper diameter, may have the groove G formed directly on its face.

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

A device for converting motion, consisting of a rotary shaft formed with a spirally-extending groove, an oscillating piece attached to the piston-rod, an eccentric on the rotary shaft, a yoke on said eccentric, and an elbow-lever connected with the yoke and valve-stem, said yoke encircling the piston-rod, substantially as and for the purpose set forth.

JOHN B. EADS.

Witnesses:

W. B. LEITCH,
SUMNER ANDERSON.