(No Model.)

T. MOORE.

REVERSING GEAR FOR ENGINES.

No. 305,215. Patented Sept. 16, 1884.

Fig. 1.

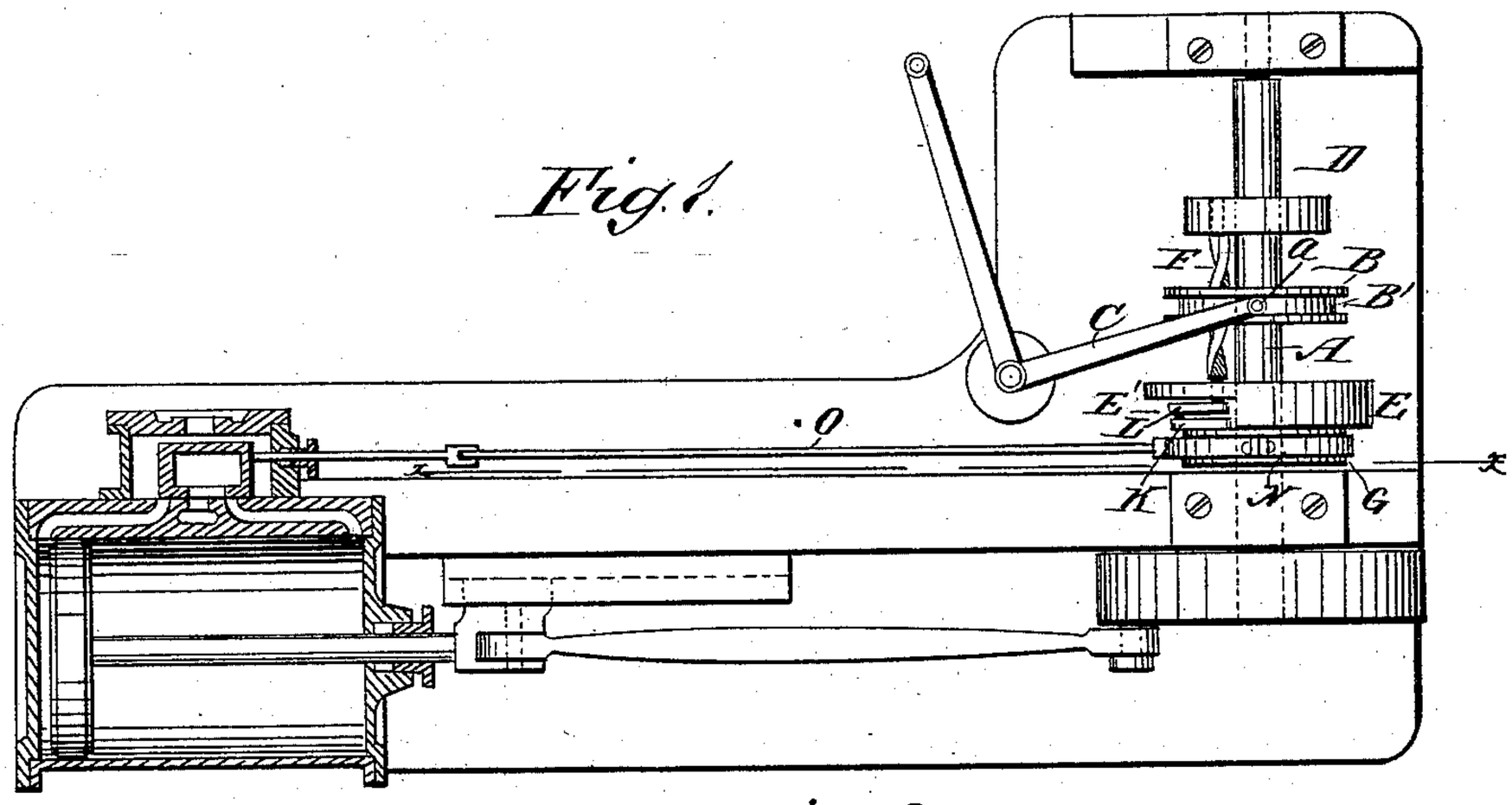


Fig. 2.

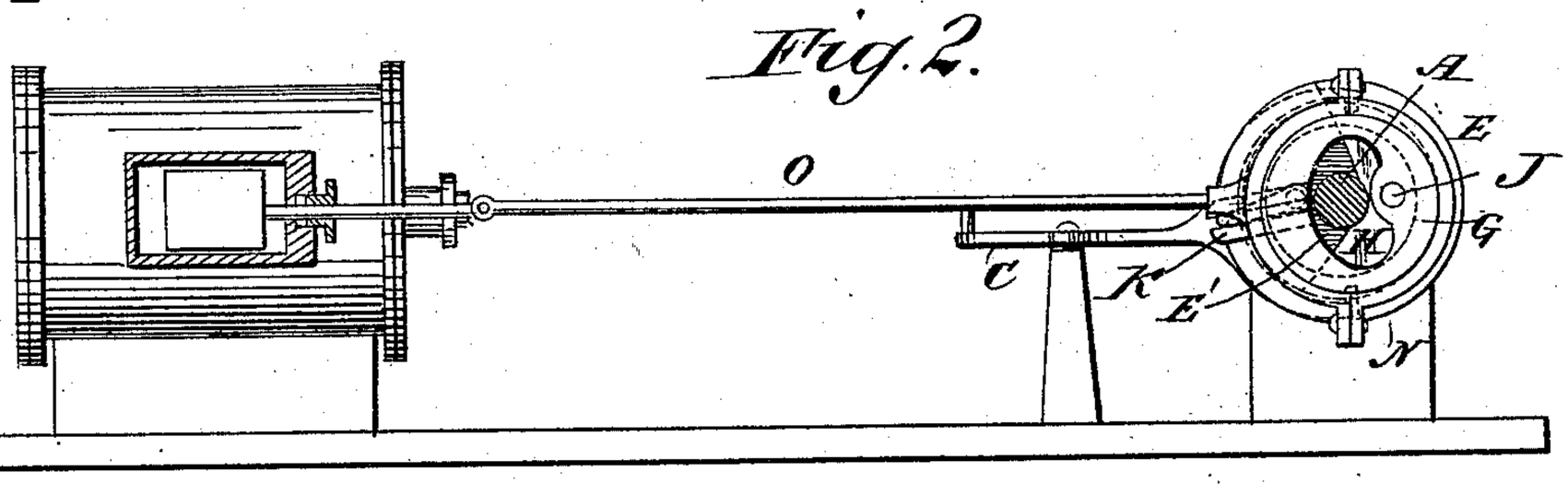


Fig. 3

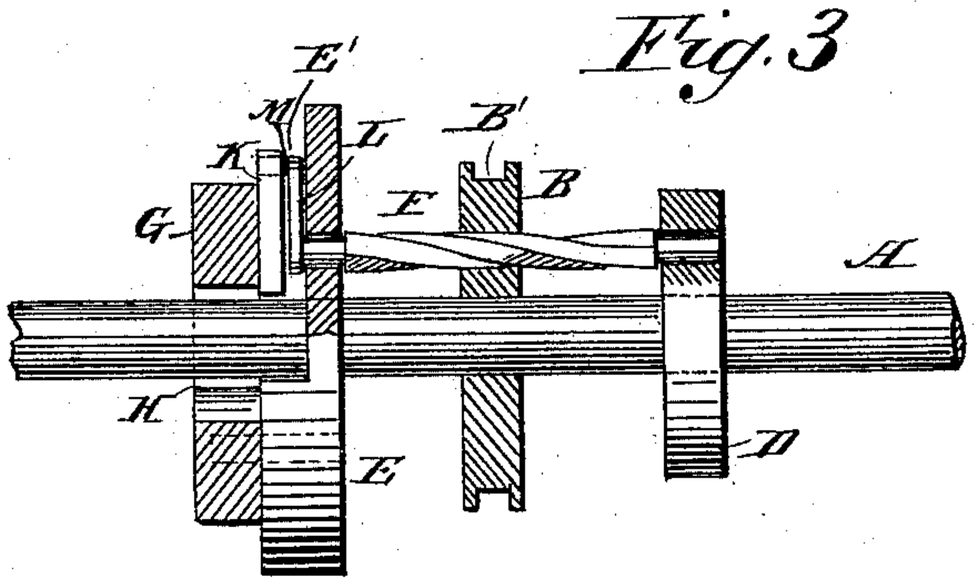
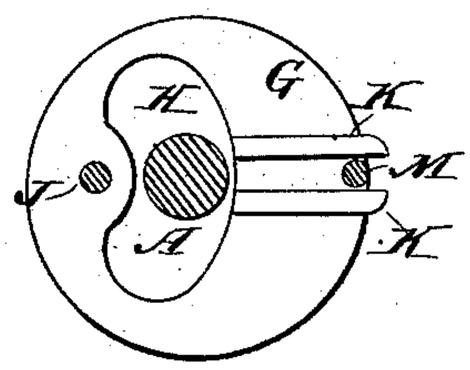


Fig. 4.



WITNESSES:

Francis McArdle.

C. Sedgwick

INVENTOR:

T. Moore

BY Munn & Co

ATTORNEYS.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

THOMAS MOORE, OF O'FALLON, ILLINOIS.

REVERSING-GEAR FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 305,215, dated September 16, 1884.

Application filed February 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MOORE, of O'Fallon, in the county of St. Clair and State of Illinois, have invented a new and Improved Reversing-Gear for Engines, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved device for reversing the valves of engines with one eccentric disk, and to furnish a simple substitute for the usual link-motion.

The invention consists in the combination, with the shaft, of a spiral shaft journaled in disks on the shaft, and provided on one end with a crank engaging with an eccentric disk, and which spiral shaft passes through a sliding disk on the shaft, whereby by sliding the disk the spiral shaft is turned and its crank moves the eccentric disk and adjusts it as may be desired.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional plan view of an engine provided with my improved reversing-gear. Fig. 2 is a longitudinal sectional elevation of the same on the line *x x*, Fig. 1. Fig. 3 is a view of the shaft and reversing-gear on an enlarged scale, parts being shown in section. Fig. 4 is a cross-sectional view of the shaft and a face view of the eccentric disk.

On the shaft A is mounted a wheel or disk, B, having an annular groove, B′, in its rim, into which groove a pin, *a*, passes, which is formed on the end of an angular lever, C, pivoted on a standard on the base of the engine. Two disks or arms, D and E, are rigidly mounted on the shaft A—one on each side of the wheel B—in which disks a spiral rod or shaft, F, or a screw is held to turn on its longitudinal axis, the said spiral shaft passing through a threaded aperture in the wheel or disk B, so that if the disk or wheel B is moved in the direction of the length of the shaft B the spiral shaft will be turned on its longitudinal axis. Adjoining the outer surface of the disk E a disk, G, is held loosely and eccentrically on the shaft A, which disk G is provided with a segmental slot, H, through which the shaft B passes. The disk G is pivoted opposite the middle of the slot H by a pivot, J, to the outer surface of the disk E, and opposite the pin two ridges, K, are formed on that surface of the disk G adjoining the outer surface of the disk E, between which ridges K a radial groove is formed; or the radial groove can be formed in any other suitable manner. The disk E is provided on its outer surface with a recess, E′, in which a crank, L, is located, which is formed on the end of the spiral shaft F, and which crank has a pin, M, on its end, the said pin passing into the groove formed between the ridges K. The rim of the disk G is surrounded by a band, N, connected with the valve-rod O.

The operation is as follows: If the disk B is moved in the direction of the length of the shaft A by means of the lever C, the spiral shaft is turned, and thereby the crank L is turned, and as the pin M on the end of the crank passes into the groove in the eccentric disk G the said disk will be swung upon the pivot J, and will be reversed in position, thereby changing the action of the valve in relation to the ports. The slide-valve will be moved more or less, according to the distance the lever C is thrown, to give more or less eccentricity to the disk G.

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

1. The combination, with the shaft A, of the eccentric disk G, the disks D and E, the spiral shaft F, journaled in the same, and provided with a crank engaging with the eccentric disk G, of the sliding disk B, through which the spiral shaft passes, and means for moving the disk B in the direction of the length of the shaft, substantially as herein shown and described.

2. The combination, with the shaft A, of the eccentric disk G, provided with a segmental slot, H, the disks D E, the spiral shaft F, journaled on the same, the crank L, formed on one end of the spiral shaft F, and engaging with the eccentric disk G, the disk B, through which the spiral shaft F passes, and of means for moving the disk B in the direction of the length of the shaft A, substantially as herein shown and described.

3. The combination, with the shaft A, of the disks D and E, the spiral shaft F, journaled in the same, the eccentric disk G, provided

with a segmental groove, H, and being pivoted to the disk E, the crank L, formed on the end of the spiral shaft F, and engaging with the eccentric disk G, the sliding disk B, through which the spiral shaft passes, and of means for moving the disk B in the direction of the length of the shaft A, substantially as herein shown and described.

4. The combination, with the shaft A, of the disk D, the disk E, having a recess, E′, the eccentric disk G, pivoted to the disk E and having a segmental slot, H, through which the shaft A passes, and also having a groove, the spiral shaft F, journaled in the disks D and E, the sliding disk B, through which the spiral shaft F passes, the crank L on the end of the spiral shaft F, and the pin M, passing from the end of the crank L into the groove in the disk G, substantially as herein shown and described.

THOMAS MOORE.

Witnesses:
ANTHONY SANSPEUR,
WILLIAM B. WILLIAMS.