(No Model.)

T. MOORE.

REVERSING GEAR FOR ENGINES.

No. 262,815. Patented Aug. 15, 1882.

Fig. 1

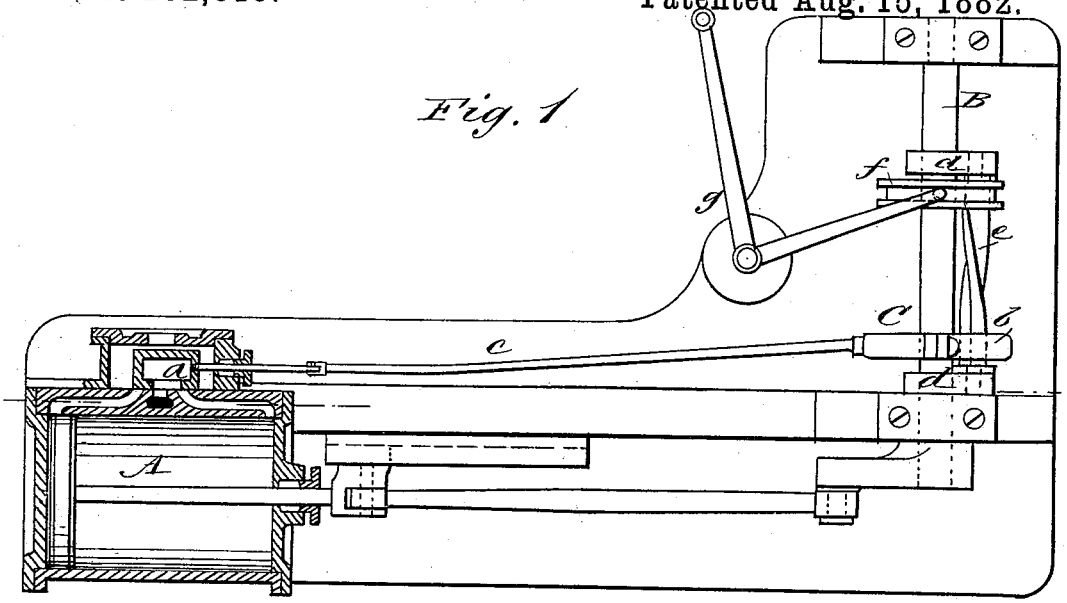


Fig. 2

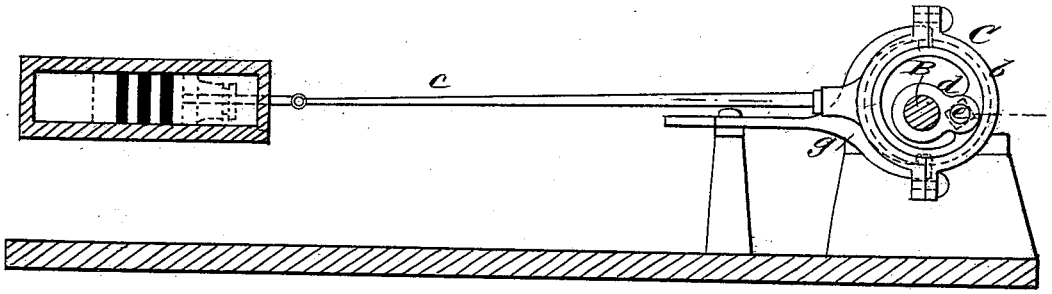
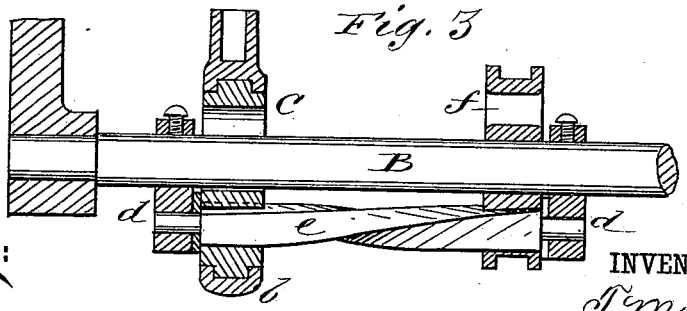


Fig. 3



WITNESSES:

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C. Sedgwick

INVENTOR:

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS MOORE, OF O'FALLON, ILLINOIS, ASSIGNOR TO HIMSELF AND JAMES MOORE AND ROBERT RUTHERFORD, OF SAME PLACE.

REVERSING-GEAR FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 262,815, dated August 15, 1882.

Application filed January 17, 1882. (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 for reversing the valves of engines with one eccentric, and to furnish a simple substitute for the usual link-motion.

To that end my invention consists in a spiral shaft combined with the main shaft and eccentric, as hereinafter described and claimed.

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 the improved reversing-gear. Fig. 2 is a sectional side view of the same; and Fig. 3 is a sectional view in line with the shaft, showing the reversing-gear in larger size.

The cylinder A, valve *a*, crank-shaft B, and other usual parts are of ordinary character.

C is the eccentric, with strap *b*, that connects to the valve by rod *c*.

d d are arms fixed on shaft B and supporting the ends of a spiral shaft, *e*, by which the eccentric C is carried. The eccentric is a ring fixed on one end of shaft *e* and held thereby eccentric to the main shaft B, which passes through the ring. On shaft B is a sliding circular disk, *f*, that has a threaded aperture for the spiral shaft, and *g* is a crank-lever formed with a forked end engaging a groove in the edge of disk *f*. The reversing-lever will connect to lever *g*. The spiral shaft *e* being connected to the shaft B moves with it, and the eccentric is thus carried around with the shaft B. To shift or change the valves the lever *g* is moved to slide the disk *f*, and this movement of the disk turns the spiral shaft *e* on its own axis, so that the eccentric is swung from one side of shaft B to the other, more or less, according to the distance the disk *f* is moved and the valves thus shifted.

It is to be observed that at the middle position of the eccentric, between the two extremes of movement, the main shaft is at the center of the eccentric ring, so that all movement of the valve is stopped, thus obtaining the same effect as the link-motion by much simpler, less expensive, and more easily operated mechanism. The mechanism is also more durable than the ordinary link-motion, for the reason that there are not so many bearings. A governor may be connected to the lever *g* and the mechanism utilized for regulating the speed of the engine.

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

1. The spiral shaft *e*, carried by arms *d*, and the eccentric ring C on the spiral shaft, in combination with the main shaft, substantially as shown and described, for operation as set forth.

2. The apertured disk *f*, lever *g*, spiral shaft *e*, eccentric C, and shaft B, substantially as described, combined for operation as set forth.

THOMAS MOORE.

Witnesses:

BRICE MCGEEHON,

GEORGE W. DAVENPORT.