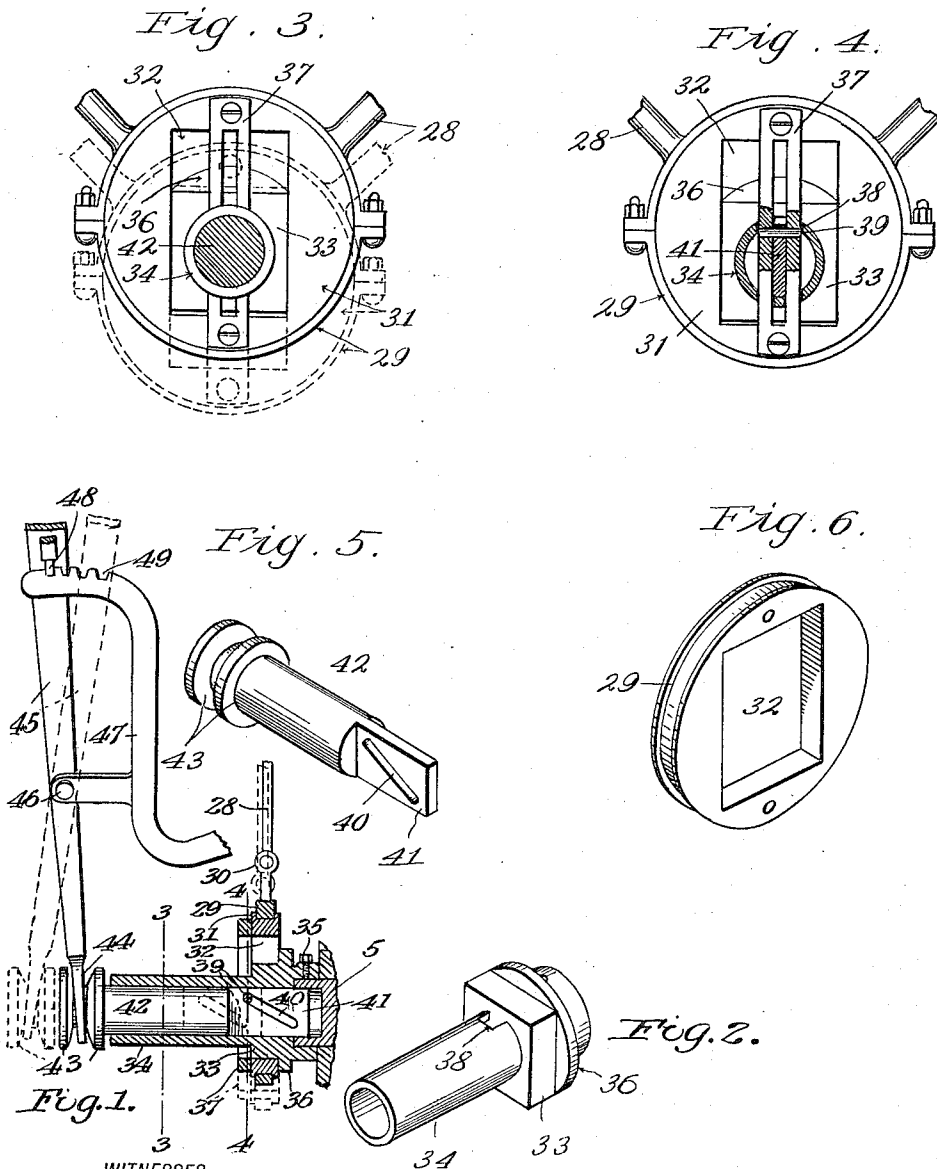


T. E. LANDER,
ADJUSTABLE ECCENTRIC.

APPLICATION FILED MAY 9, 1914. RENEWED DEC. 13, 1915.

1,189,588.

Patented July 4, 1916.



WITNESSES:

R. Hamilton
L. J. Fischer

INVENTOR:
Thomas E. Lander,

BY
F. J. Fischer,
ATTORNEY.

UNITED STATES PATENT OFFICE.

THOMAS E. LANDER, OF KANSAS CITY, MISSOURI, ASSIGNOR OF ONE-HALF TO J. ROY SMITH, OF KANSAS CITY, MISSOURI.

ADJUSTABLE ECCENTRIC.

1,189,588.

Specification of Letters Patent.

Patented July 4, 1916.

Application filed May 9, 1914, Serial No. 837,402. Renewed December 13, 1915. Serial No. 66,657.

To all whom it may concern:

Be it known that I, THOMAS E. LANDER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Adjustable Eccentrics, of which the following is a specification.

My invention relates to improvements in adjustable eccentrics for engines, and pertains more particularly to the construction and arrangement of a simple and inexpensive valve gear, whereby the starting, stopping, and reversing of a multi-cylinder engine is accomplished through the intermediacy of one eccentric and one controlling lever.

The invention is particularly adapted for use in the propulsion of automobiles, boats, etc., owing to its simplicity and ease of control.

In order that the invention may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 is a partial longitudinal section through an eccentric mechanism embodying my invention; Fig. 2 is a perspective view of a tube forming a part of the mechanism; Figs. 3 and 4 are transverse sections on lines 3—3 and 4—4 of Fig. 1; Fig. 5 is a perspective view of a rod employed in the construction; and Fig. 6 is a similar view of the eccentric.

My invention is especially adapted for controlling the valve mechanism of internal combustion engines, the valves (not shown) being connected with the eccentric-rods 28. These rods are depicted as converging at their lower ends and connected to the eccentric-strap 29 by pivotal joints 30 to permit their upper ends to oscillate with valve connections not shown without causing the strap 29 to bind on an eccentric 31, upon which it is mounted.

The eccentric 31 has a rectangular slot 32 whereby it is slidably mounted upon a rectangular block 33, formed integral with a tube 34 rigidly secured upon the engine projecting end of the crank-shaft 5 by a set-screw 35. The eccentric is retained upon the block 32, by a circular flange 36, formed

integral with one side of said block, and a slotted bar 37, secured to said eccentric on the side opposite the circular flange 36.

Bar 37 extends through slot 38 in the tube 34, and is provided with a transverse pin 39, which extends through an oblique slot 40, in the inner rectangular portion 41, of a rod 42 slidably arranged in the tube 34. The outer end of the rod 42 is provided with a pair of shoulders 43, spaced apart to receive the bifurcated end 44, of a hand lever 45 fulcrumed at 46, to a notched sector 47, secured to any suitable part of the engine. Lever 45 is provided with a latch 48, adapted to engage any of the notches 49, in the sector 47.

The motion of the crank-shaft 5 may be reversed by throwing the lever 45, over to the position indicated by dotted lines in Fig. 1. This movement of the lever partly withdraws the rod 42 from the tube 34, and causes the upper side of the slot 40 to depress the pin 39 and reverse the eccentric. Thus, the eccentric may be adjusted outwardly from opposite sides of the shaft or be disposed concentric with shaft 5, so that the throw may be varied or entirely eliminated.

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

1. In a mechanism of the character described, a shaft counterbored at one end, a rectangular portion formed on the shaft, an eccentric slidably mounted upon the rectangular portion of the shaft, a slotted bar extending through the counterbored portion of the shaft and secured to the eccentric, a rod slidably arranged in the counterbore of the shaft and provided at its inner end with an oblique slot, and a transverse pin extending through said slot and secured in the slotted bar to reverse the eccentric when said rod is actuated.

2. In a mechanism of the character described, a rotary shaft, a tubular member fixed to one end of the shaft and rotatable therewith and having a rectangular block formed integral therewith, an eccentric having a rectangular opening therein for slidably engaging the block, a rod slidably

mounted in the tubular member and having a web, said web having an oblique slot formed therein, a slotted bar disposed across the opening and having its ends fixed to the eccentric, a pin bridging the slot of the bar and slidably engaged in said oblique slot of the web, said tubular member having registering slots formed therein and slidably engaged with said bar, and means for sliding the rod longitudinally in the tubular member, to reverse the eccentric.

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

THOMAS E. LANDER.

Witnesses:

J. C. DUFFY,
F. G. FISCHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."