

UNITED STATES PATENT OFFICE.

JOHN F. VAN TUYL, OF SAWPIT, COLORADO.

CUT-OFF-VALVE GEAR.

SPECIFICATION forming part of Letters Patent No. 729,244, dated May 26, 1903.

Application filed March 4, 1902. Serial No. 96,612. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. VAN TUYL, a citizen of the United States, residing at Sawpit, in the county of San Miguel and State of Colorado, have invented a new and useful Cut-Off-Valve Gear, of which the following is a specification.

My invention relates to improvements in valve-gear for a cut-off valve controlling ports in a main valve; and the objects of my improvement are, first, to give the cut-off valve a motion similar to the motion of the main valve, together with an independently-controlled motion relating it to the ports in the main valve, and, second, to equalize the independent stroke of the cut-off valve. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the valve-gear with a valve in section, and Fig. 2 the parts in which invention is claimed.

Similar numerals refer to similar parts throughout both views.

The main rocker 1 is a customary part of main-valve gear. The rocker or angular lever 2, with stationary fulcrum, converts the longitudinal motion received from the link through the link-rod 7 or from other driving device into vertical motion. The bell-crank or angular lever 4, with its fulcrum attached to the main-valve gear, receives through the link-rod 3 the vertical motion from the rocker 2 and through the fulcrum of the bell-crank the motion of the main valve, and imparts both motions or the resulting combined motion in longitudinal direction to the cut-off valve. The fulcrum of the rocker 2, the bearings of the link-rod 3, and the fulcrum of the bell-crank 4 should be at the angles of a parallelogram and the fulcrum of the bell-crank attached to some part having the motion of the main valve.

The independent stroke of the cut-off valve

is equalized by the slider 8, carrying the bearing of the cut-off-valve rod 5 in the valve-arm of the bell-crank 4, the link-rod 9, the pinion and crank 10, and the rack 11, attached at 12 to the cut-off adjusting-gear. If the cut-off reach-rod 14 be moved forward from the extreme back position shown, the rack 11 turns the pinion and crank 10 and drops the slider 8 toward the bottom of its slot as the link-rod 7 approaches the middle of the link and returns the slider toward the top of its slot as the link-rod 7 approaches the opposite end of the link, the varying length of the valve-arm of the bell-crank compensating for the varying oscillation thereof and giving equally-quick closing of the ports at all points of cut off.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a valve-gear for a cut-off valve controlling ports in a main valve, the combination of an angular rocker or lever with its fulcrum stationary, a bell-crank with its fulcrum attached to some part having the motion of the main valve, and a link-rod connecting the second with the first; substantially as described, and for the purpose set forth.

2. In a cut-off-valve gear, the combination of a slider carrying the bearing of the cut-off-valve rod in the arm of the lever driving the same, a pinion and crank, a link-rod connecting the slider with the crank, and a rack engaging the pinion and attached to the cut-off adjusting-gear; substantially as described, and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN F. VAN TUYL.

Witnesses:

J. T. FACKLER,
S. S. McDANIEL.