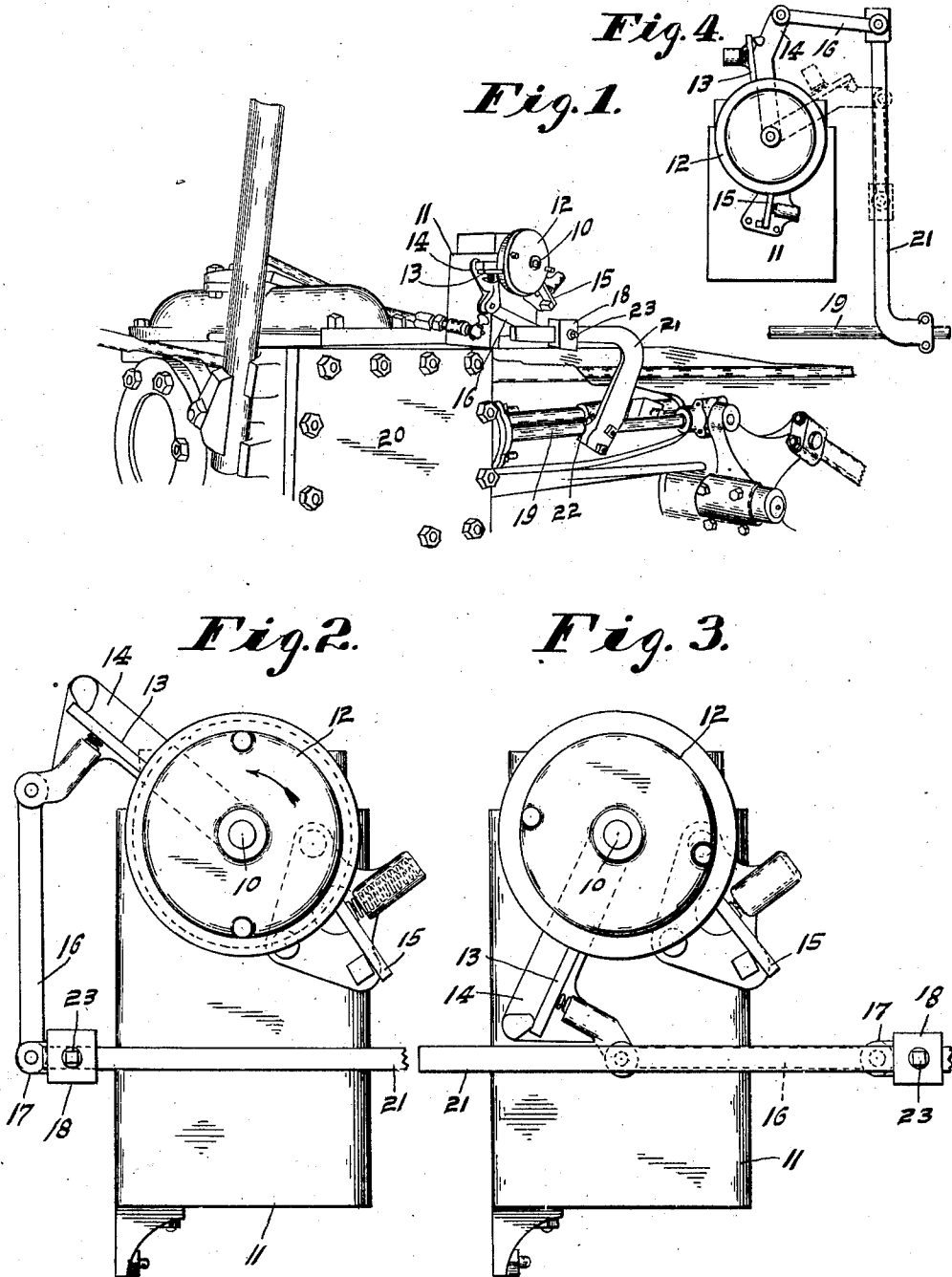


H. C. CLAY.
MECHANICAL MOVEMENT.
APPLICATION FILED MAR. 21, 1908.

972,162.

Patented Oct. 11, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

HARRY C. CLAY, OF COLUMBUS, INDIANA, ASSIGNOR TO REEVES & COMPANY, OF COLUMBUS, INDIANA, A CORPORATION OF INDIANA.

MECHANICAL MOVEMENT.

972,162.

Specification of Letters Patent.

Patented Oct. 11, 1910.

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To all whom it may concern:

Be it known that I, HARRY C. CLAY, a citizen of the United States, residing at Columbus, in the county of Bartholomew and State of Indiana, have invented certain new and useful Improvements in Mechanical Movements, of which the following is a specification.

The object of my invention is to produce a simple mechanism by means of which a reciprocating movement of uniform amplitude may be converted into an oscillatory or step-by-step rotary movement of various amplitudes depending upon the simple adjustment of a single member.

The specific object of my invention is to produce a mechanism for attachment to the valve stem of an engine by means of which its reciprocation of fixed amplitude may be utilized to obtain any desired amplitude of movement of the driving member of a pump for supplying lubricant to the various parts of the engine.

The accompanying drawings illustrate my invention as embodied in an apparatus to accomplish the specific object above mentioned.

Figure 1 is a perspective view of my apparatus applied to an engine; Fig. 2 a side elevation with the parts adjusted for minimum driving effect; Fig. 3 a similar view with the parts adjusted for nearly maximum driving effect; and Fig. 4 a modification.

In the drawings 10 indicates the rotary shaft of an oil pump 11, which may conveniently be of the type shown in my Patent No. 849,530. Secured to shaft 10 is a ratchet wheel 12 adapted to be engaged and moved step-by-step by a pawl 13 carrying a lever 14 pivoted on shaft 10. Any form of pawl-and-ratchet mechanism may be used but I prefer the friction form shown because it has less lost motion than most of the other forms. Reverse movement of wheel 12 is prevented by a clutch or pawl 15.

Pivoted to lever 14 is one end of a link 16, the opposite end of which is pivoted to the ear 17 of a block 18, connected in any suitable manner with the valve-stem 19, or other driving part.

For convenience in attaching the apparatus to the engine 20 I provide a finger 21 which, at its lower end is provided with a clamp 22 by means of which it may be readily attached. The main portion of finger 21

may be arranged (as shown in Figs. 1 to 3) substantially parallel with the valve-stem and at a distance from shaft 10 substantially equal to the length of lever 14, and may also be arranged at an angle to the line of movement of the valve-stem (as shown in Fig. 4). Maximum movement will be produced when the link 16 is substantially parallel with the line of movement of the reciprocating member, as shown in Fig. 3, and minimum movement will be had when the link 16 is in substantial normalism to the reciprocating member as shown in Fig. 2.

In the construction shown in Fig. 4 maximum movement will be had when the parts are adjusted as indicated in full lines, and minimum movement will be had when the parts are adjusted in substantial normalism to the line of movement of the reciprocating member 21 as indicated in dotted lines, the link 16 swinging about its point of connection with lever 14. Block 18 fits finger 21 and may be adjusted along its length and held in any desired position by means of a set screw 23.

When the parts are adjusted as shown in Fig. 3 the reciprocation of arm 21 horizontally will produce its maximum effect on lever 14 but, by shifting block 18 toward the position shown in Fig. 2 link 16 may be caused to assume a position more nearly at right angles to the line of movement of finger 21 so that the effect of reciprocation of said arm is diminished.

I claim as my invention:—

1. The combination, of a pivoted arm, a link connected thereto, a reciprocating operating member, and a connection between said link and operating member adjustable relative thereto, the operating member being so located relative to the pivoted arm that adjustment of the adjustable connection operates to shift the link into various positions from substantial parallelism with the line of movement of the reciprocating member to substantial normalism thereto, the link being substantially normal to the line of movement of the operating member when the minimum effect is produced upon the arm.

2. The combination, of a swinging arm, a reciprocating member movable transversely of the axis of the arm, a link connected at one end to said arm, a block connected to said link, and means for adjusting said block on the reciprocating member, the

operating member being located relative to the swinging arm in such position that adjustment of said block operates to cause the link to occupy various angular positions relative to the reciprocating member from substantial parallelism to substantial normalism to the line of movement of the reciprocating member, the link being substantially normal to the line of movement of the operating member when the minimum effect is produced upon the arm.

3. The combination, of a swinging arm, a reciprocating member movable transversely of the axis of the arm, a link connected at one end to said arm, a block connected to said link, means for adjusting said block on the reciprocating member, the operating member being located relative to the swinging arm in such position that adjustment of

said block operates to cause the link to occupy various angular positions relative to the reciprocating member from substantial parallelism to substantial normalism to the line of movement of the reciprocating member, a rotary shaft, and a ratchet connection between the swinging arm and shaft, the link being substantially normal to the line of movement of the operating member when the minimum effect is produced upon the arm.

In witness whereof, I, have hereunto set my hand and seal at Columbus, Indiana, this 9th day of March, A. D. one thousand nine hundred and eight.

HARRY C. CLAY. [L. s.]

Witnesses:

JOHN H. BACHTEL,
LA FAYETTE BRUCE.