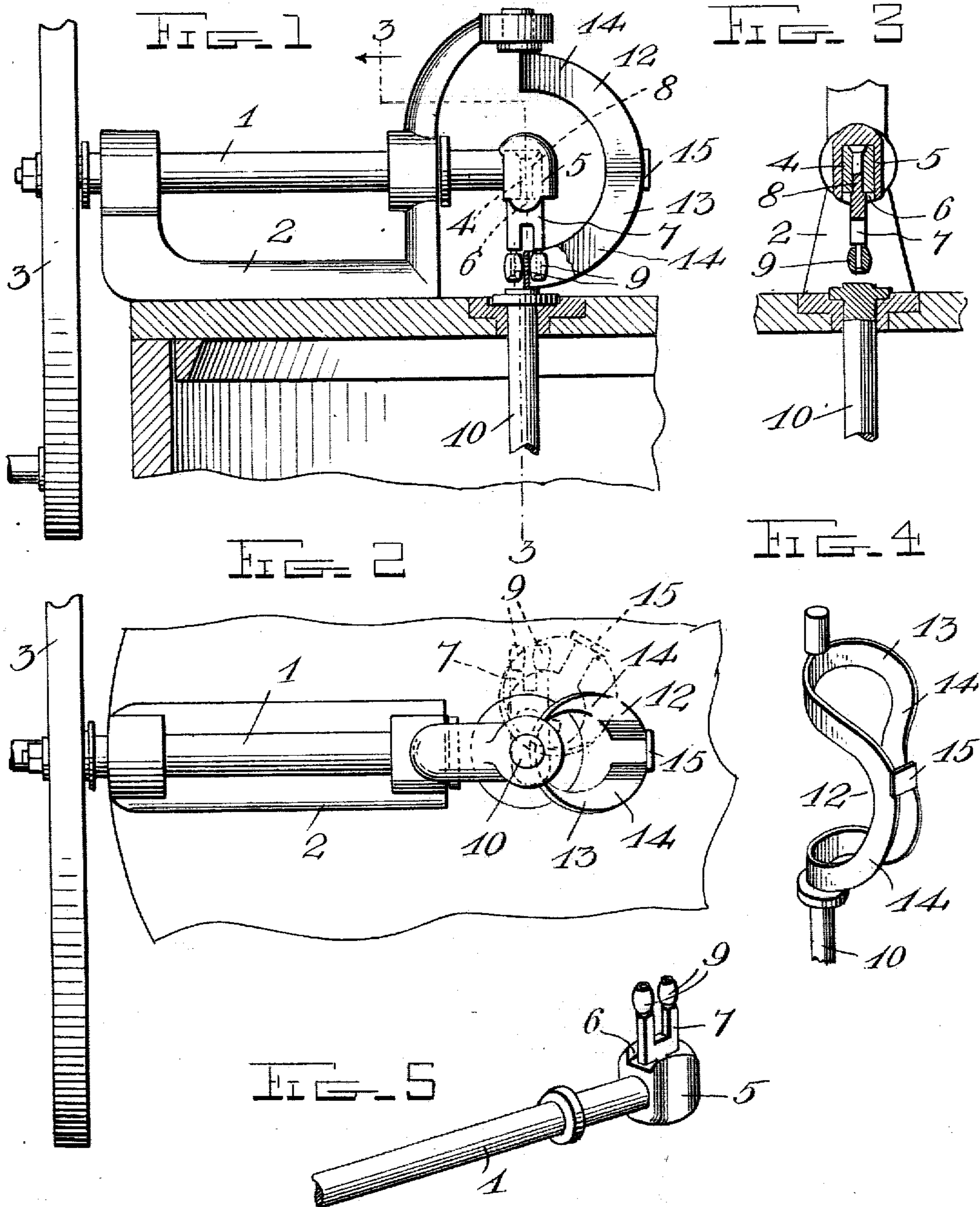


No. 825,482.

PATENTED JULY 10, 1906.

J. & C. QUIST.  
MECHANICAL MOVEMENT.  
APPLICATION FILED DEC. 18, 1906.



Witnesses  
C. Allen  
C. N. Giesbauer.

Inventors  
John Quist  
& Charles Quist  
By *A. B. Wilson*  
Attorney

# UNITED STATES PATENT OFFICE.

JOHN QUIST AND CHARLES QUIST, OF MYSTIC, IOWA, ASSIGNORS OF  
ONE-HALF TO O. P. PEARSON AND C. L. BERRY, OF MYSTIC, IOWA.

## MECHANICAL MOVEMENT.

No. 825,482.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed December 18, 1905. Serial No. 292,310.

*To all whom it may concern:*

Be it known that we, JOHN QUIST and CHARLES QUIST, citizens of the United States, residing at Mystic, in the county of Appanoose and State of Iowa, have invented certain new and useful Improvements in Mechanical Movements; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in mechanical movements.

The object of the invention is to provide a mechanical movement whereby a rotary motion may be transformed to an oscillatory motion.

A further object is to provide means whereby all dead-centers will be overcome.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the invention. Fig. 2 is a top plan view showing in full lines one position of the parts and in dotted lines another position of the same. Fig. 3 is a sectional view on the line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of the oscillatory shaft and cam; and Fig. 5 is a similar view of the operating-fork and the end of the drive-shaft to which the same is attached.

Referring to the drawings more particularly, 1 denotes a main drive-shaft, which is journaled in a suitable bearing-bracket 2 and is here shown as being provided on one end with an operating fly-wheel 3. On the opposite end of the shaft 1 is formed a head 4, having a transversely-disposed socket 5. On one side of the head 4 is formed a recess 6. Pivotaly mounted on the head 4 is an operating-fork 7, said fork being adapted to turn in the recess 6 and has formed on one end a reduced shank 8, seated or journaled in the socket 5. On the outer end of the bars or fingers of the fork 7 are journaled antifriction-rollers 9.

Mounted in suitable bearings on the bracket 2 at right angles to the drive-shaft 1 is a driven shaft 10, which has a double cam 12, said cam being secured eccentrically to the shaft 10, as shown. The cam 12 may be

formed in any suitable manner, but is here shown and is preferably constructed from an endless metallic strip 13, bent upon itself midway its ends to form upper and lower loop-shaped members 14, the strip being then bent to bring the loop-shaped members 14 into alinement one above the other, as shown, thus forming a double-cam construction. If desired, the outer edges of the bent strip 13 may be secured together by a centrally-disposed plate 15.

In operation the fork 7 is arranged so that the bars or fingers of the same will engage each side of the strip, whereby when said drive-shaft is revolved the fork will be turned, which will cause the cam 12 to swing first in one direction, then in the other, thereby producing an oscillatory movement with the driven shaft 10. By connecting the cam 12 eccentrically to the shaft 10 and by mounting the fork 7 in the recess 6 in the head 4 of the drive-shaft said parts will be prevented from hanging on a dead-center.

While we have shown and described the shaft 10 as driven by a crank-handle on the fly-wheel 3, it is obvious that a pulley or other suitable driving mechanism may be arranged on said shaft.

A mechanical movement such as herein shown and described will be found to be of great service in connection with certain classes of machinery—such as churns, washing-machines, &c.—in which a rotary movement is to be transformed to an oscillatory movement.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined by the appended claims.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a mechanical movement, the combination with a drive-shaft, of an operating-fork pivotaly mounted on one end thereof, a driven shaft, a double cam arranged in said shaft and adapted to be engaged by the piv-

oted fork on said drive-shaft, whereby when the latter is revolved said driven shaft will be oscillated, substantially as described.

2. In a mechanical movement, the combination with a drive-shaft, of an operating-fork pivotally mounted on one end thereof, and having antifriction-rollers journaled on its bars, a driven shaft, a double cam eccentrically mounted in said driven shaft in position to be engaged by the antifriction-rollers on said fork whereby when said drive-shaft is revolved said driven shaft will be oscillated, substantially as described.

3. In a mechanical movement, the combination with a suitably-mounted drive-shaft having on one end a drive-wheel and on its opposite end an enlarged recessed head, of a driven shaft, a double-loop cam arranged eccentrically in said shaft, said cam being

formed of an endless flat metallic strip bent to form upper and lower inwardly-projecting loops disposed one above the other, an operating-fork pivotally mounted on said head to turn in said recess, antifriction-rollers arranged on said fork to engage the opposite sides of the strip forming said double-loop cam whereby when said drive-shaft is revolved said driven shaft will be oscillated, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

JOHN QUIST.  
CHARLES QUIST.

Witnesses:

F. DELAY,  
R. J. OUGHTON.