J. W. MAUGHMER.

MECHANICAL MOVEMENT.

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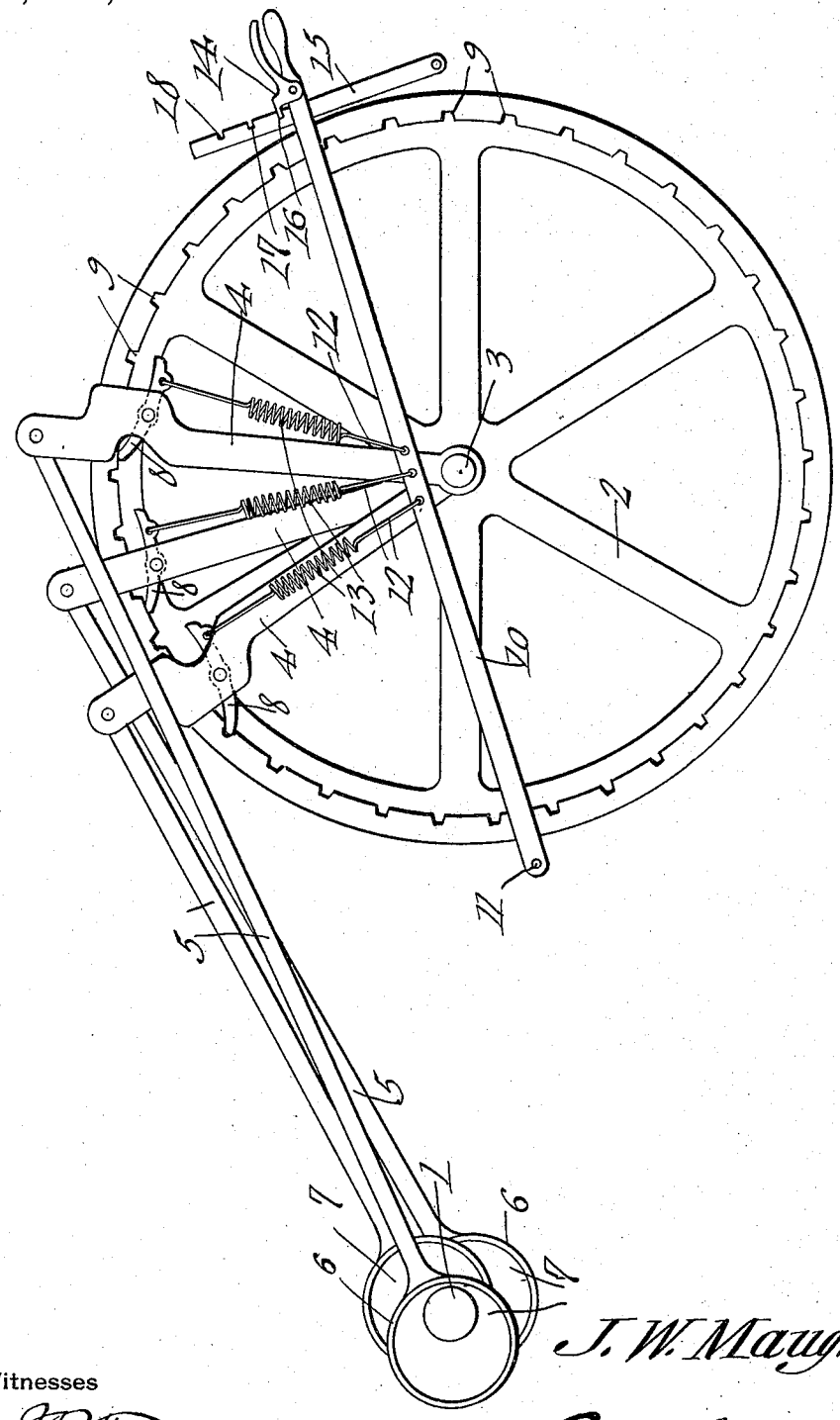
1,168,091. Patented Jan. 11, 1916.



Witnesses

J. R. Tomlin

R. K. Parker

J. W. Maughmer

Inventor

by C. A. Snow & Co.

Attorneys

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN W. MAUGHMER, OF HUME, ILLINOIS.

MECHANICAL MOVEMENT.

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To all whom it may concern:

Be it known that I, JOHN W. MAUGHMER, a citizen of the United States, residing at Hume, in the county of Edgar and State of Illinois, have invented a new and useful Mechanical Movement, of which the following is a specification.

The present invention appertains to mechanical movements, and aims to provide a novel and improved device of that character whereby a rotary driving element can rotate a rotatory driven element at a lower speed and in either direction, the device being operable for quickly and conveniently reversing the direction in which the driven element is rotated or for permitting the driven element to remain idle while the driving element operates.

Another object of the invention is the provision of a mechanical movement having the features above noted, and which is also comparatively simple and inexpensive in construction, as well as being convenient, practical and efficient in operation.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein the figure is an elevation of the mechanism.

As illustrated, the driving element is in the form of a rotary shaft 1, and the driven element is in the form of a rotary wheel 2 mounted upon a shaft 3 parallel with the shaft 1.

In carrying out the invention, a plurality, in this case three, arms 4 are pivotally mounted upon the shaft 3 of the wheel 2 and project radially adjacent one another. The free ends of the arms 4 are connected by pitmans 5 with eccentric bands or straps 6 embracing eccentrics 7 secured upon the driving shaft 1, there being three eccentrics 7 for the three arms 4. These eccentrics are arranged at an angle of 120 degrees relative to one another so that the arms 4 are oscillated timely.

A doubled pawl 8 is pivoted between its ends to each arm 4 and is located within the rim of the wheel 2, said rim being provided with annular series of internal notches 9 with which the pawls or dogs 8 are coöperable.

A hand lever 10 is fulcrumed or pivoted at one end, as at 11, and links 12 are terminally pivoted to the lever 10 and certain arms of the pawls 8, each of said links being provided intermediate its ends with a spring or resilient portion 13, preferably in the form of a coil.

The free end or handle of the lever 10 carries a pawl or dog 14 engageable with a rack or sector 15, which is provided with three notches 16, 17 and 18 for the engagement of the pawl 14.

When the lever 10 is swung downwardly to engage the pawl 14 in the lower notch 16, the links 12 are pulled downwardly or toward the center of the wheel 2 to swing the respective arms of the pawls 8 likewise, whereby the other arms or ends of the pawls are coöperable with the notches 9. Now, when the shaft 1 is rotated, the eccentrics 7 will reciprocate the pitmans 5, and this will oscillate the arms 4, whereby the pawls 8 in engaging the successive notches 9 will rotate the wheel 2 forcibly, and at a slower velocity than the shaft 1. Due to the fact that the eccentrics 7 are arranged at an angle with one another, the wheel 2 will be rotated continuously or without interruption so long as the shaft 1 rotates.

When the lever 10 is raised one step to bring the pawl 14 into the notch 17, the pawls 8 are swung to neutral or intermediate positions, so that both ends thereof are disengaged from the notched rim of the wheel 2, and consequently, the arms 4 will oscillate idly without rotating the wheel 2 in one direction or the other.

When the lever 10 is raised to bring the pawl 14 into the notch 18, the links 12 will push the respective ends of the pawls into engagement with the notches 9, and the wheel 2 will then be rotated in the opposite direction.

It will be noted that in either position of the pawls, the pawls can swing against the tension of the springs 13, to allow the pawls to snap into the notches 9 properly.

The present mechanical movement provides an admirable means whereby a rotatory driving element may impart a continuous rotatory movement in either direction to a driven element, the driven element ro-

tating at a slower velocity, and the rotation of the driven element being readily controlled. The device may be used for divers purposes for which it is suited.

It will be noted that the lever 10 extends across one side of the wheel 2 adjacent the shaft 3, and that the inner ends of the links 12 are connected to the lever 10 adjacent the shaft 3, whereby the oscillation of the arms 4 will not be liable to disengage the pawls 8 from the wheel 2.

Having thus described the invention, what is claimed as new is:—

1. In a mechanical movement, a rotary driven element, oscillatory arms for actuating it, pawls carried by the arms and cooperable with the driven element to rotate it in either direction, and means for setting all of the pawls simultaneously for rotating the driven element in one direction or the other.

2. In a mechanical movement, a rotary driven element, oscillatory arms for actuating it, double pawls pivoted between their ends to the arms, the ends of the pawls being coöperable with the driven element, and means for swinging all of the pawls simultaneously for bringing one end or the other of each pawl into coöperation with the driven element.

3. In a mechanical movement, a rotary wheel having notches, oscillatory arms for rotating the wheel, double pawls pivoted between their ends to said arms, the ends of the pawls being coöperable with the notches, and means for setting all of said pawls simultaneously whereby one end or the other of each pawl is brought into coöperation with the notches, said means having resilient portions to allow the pawls to swing against the tension thereof.

4. In a mechanical movement, a rotary wheel having notches, oscillatory arms for actuating said wheels, double pawls pivoted between their ends to the arms, the ends of the pawls being coöperable with said notches, a lever, and links connecting said lever and pawls whereby the pawls can be set simultaneously to bring one end or the other of each pawl into coöperation with the notches.

5. In a mechanical movement, a rotary wheel having notches, oscillatory arms for actuating said wheel, double pawls pivoted between their ends to the arms, the ends of the pawls being coöperable with said notches, a lever, links connecting said lever and pawls whereby the pawls can be set simultaneously to bring one end or the other of each pawl into coöperation with the notches, said links having resilient portions, and means for holding the lever at various adjusted positions.

6. A mechanical movement embodying a rotary driving shaft having eccentrics arranged at an angle relative to one another, a driven wheel having a notched rim, a shaft upon which said wheel is mounted, oscillatory arms mounted upon the second mentioned shaft, pitmans connecting said arms and eccentrics, double pawls pivoted between their ends to said arms and having their ends coöperable with the notched rim of said wheel, a lever extending across one side of said wheel and adjacent the second mentioned shaft, means for holding said lever at various positions, and links connecting said lever adjacent the second mentioned shaft and the pawls and having resilient portions.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN W. MAUGHMER.

Witnesses:
J. B. LINDLEY,
FRANK MCCUDDY.

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