(No Model.) 2 Sheets—Sheet 1.

L. TIGHE.

DEVICE FOR THE TRANSMISSION OF POWER.

No. 487,303. Patented Dec. 6, 1892.

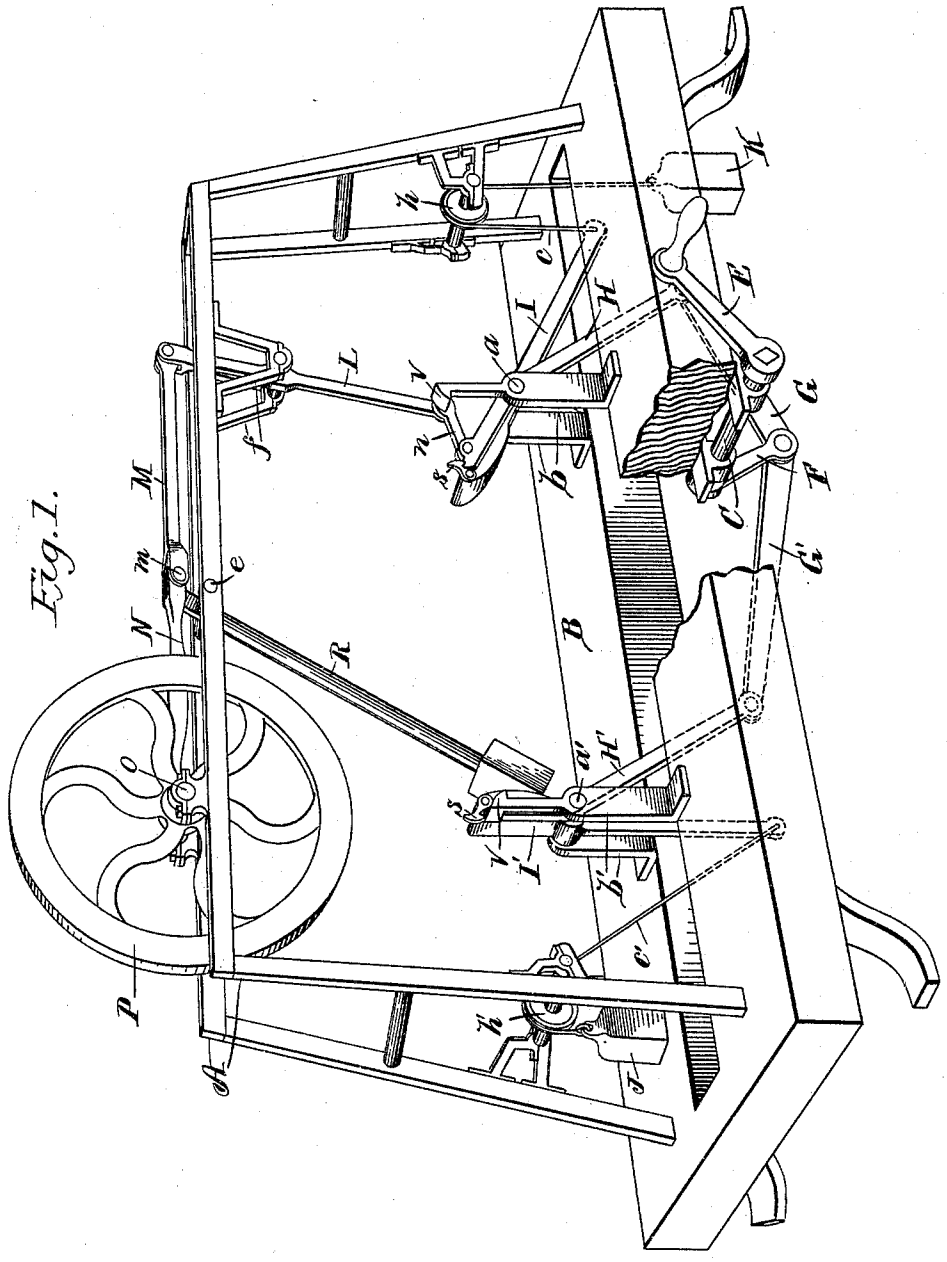

Fig. 1.

Witnesses.
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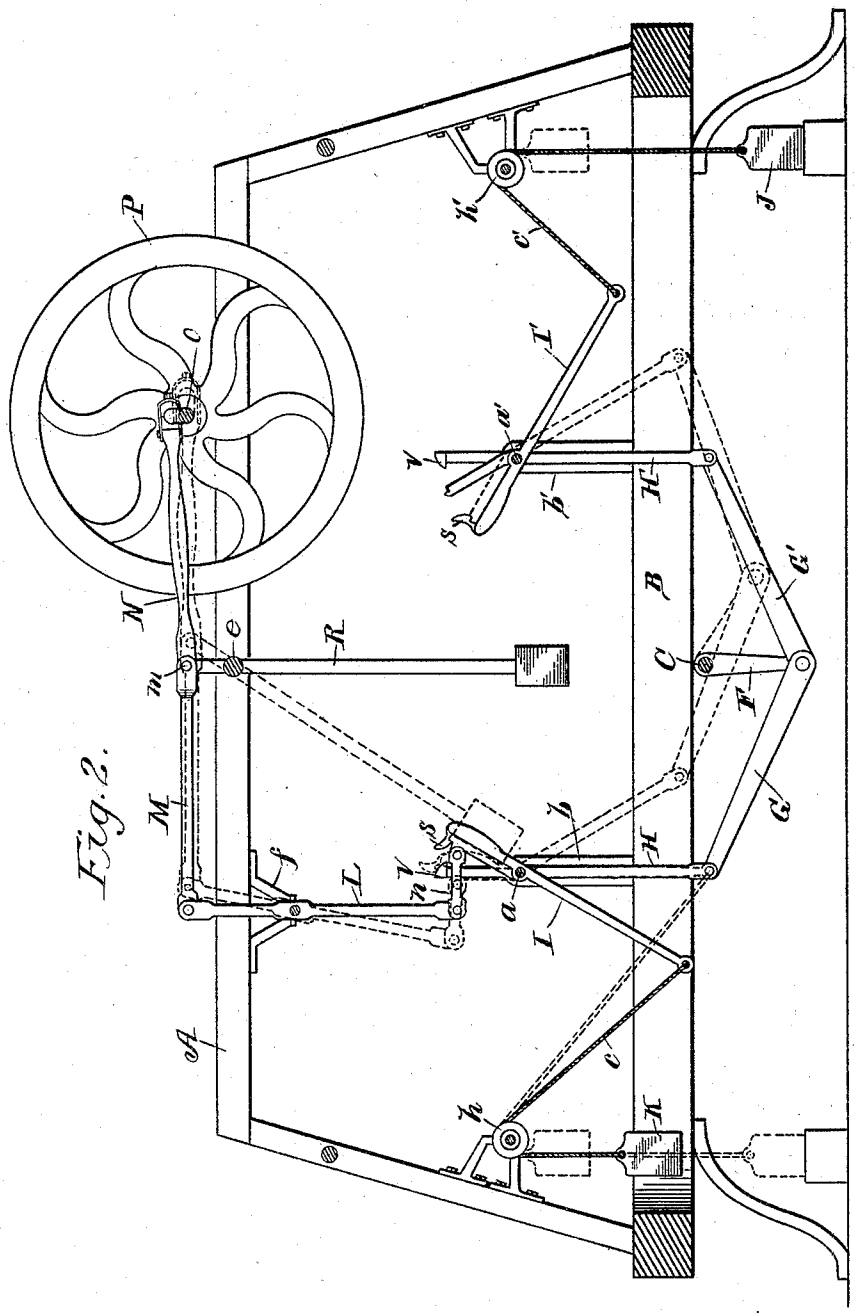

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UNITED STATES PATENT OFFICE.

LEWIS TIGHE, OF DETROIT, MICHIGAN.

DEVICE FOR THE TRANSMISSION OF POWER.

SPECIFICATION forming part of Letters Patent No. 487,303, dated December 6, 1892.

Application filed September 26, 1891. Serial No. 406,919. (No model.)

To all whom it may concern:

Be it known that I, LEWIS TIGHE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Devices for the Transmission of Power; and I 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a device for the transmission of power; and it consists in a certain construction and arrangement of parts, as hereinafter fully set forth, the essential features of which being pointed out particularly in the claims.

The object of the invention is to provide means for transmitting power and maintaining momentum or motive force. This object is attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the device, a portion of the base being broken away to show the location of parts. Fig. 2 is a longitudinal section through the supporting-frame, the mechanism appearing in elevation.

Referring to the letters of reference, A designates the supporting-frame, which is mounted on a suitable base B, having a central opening therethrough. Journaled on said base is a shaft C, having on its outer end a crank E or other suitable means for applying power thereto, the inner end of said shaft carrying a crank-arm F, the free end of which is coupled to the adjacent ends of the connecting-bars G G′, the opposite end of the bar G′ being pivotally coupled to the lower end of the lever H′, that is fulcrumed on the pin a', mounted in the supports b'. Also fulcrumed on said pin a' is an auxiliary lever I′, to which is attached one end of a cord c', that passes over a pulley h' and is attached at the outer end to a weight J. The outer end of the bar G is pivotally coupled to the lower end of the lever H, fulcrumed on the pin a, mounted in the supports b.

I designates an auxiliary lever, also fulcrumed on the pin a, and to the end of which is attached one end of the cord c, that passes over the pulley h, and is attached at its outer end to the weight K.

L designates a vertical lever fulcrumed in the hangers f, depending from the frame. The lower end of said lever L is coupled by means of the link n to the upper end of the lever H, and the upper end of said vertical lever is pivotally attached to the horizontal connecting-rod M, coupled to the pitman N, connected to a crank on the shaft O, that is journaled in the frame A, and on which is mounted the wheel P.

R designates the pendulum or main lever of the mechanism, which is fulcrumed at e in the frame and is pivoted at its upper end on the pin m, that couples the meeting ends of the connecting-rod M and pitman N, the lower end of the pendulum being adapted to vibrate between the free ends of the auxiliary levers I I′. The office of said pendulum or vibrating lever is to receive and transmit the power supplied by the weight-actuated levers I I′ and impart it to the wheel P through the medium of the pitman N and crank-shaft O. The coupling of the pendulum to the lever H by means of the connecting-rod M, lever L, and link n is to insure a concerted and uniform action between said pendulum and the driving-crank E, by the operation of which the weights J K are consecutively raised and lowered, causing a reciprocation of the pendulum R and imparting a rotary motion to the wheel P through the pitman N and crank-shaft O, which operation is as follows: Motion being imparted to the shaft C, the crank-arm F, through the bars G G′, actuates the levers H H′ to cause their free ends to alternately rise and fall. On the upper ends of the auxiliary levers I I′ are catches s, that as the free ends of the levers H H′ dip down engage therewith, whereby as the free ends of said levers again rise the corresponding ends of the auxiliary levers are successively carried upward, thus raising their respective weights J K, as shown by dotted lines in Fig. 2, the arrangement of parts being such that when said levers are in this position the pendulum will have reached the limit of its throw and will bear against the inner face of the auxiliary lever, as shown in Fig. 1, at which time the lever I′ will be unlocked from

the lever H′ by means of the inclined stop *v*, mounted on the support *b*′, that raises said catch and disengages it from the lever H′, when the weight J by force of gravity will fall, actuating the lever I′ to throw the pendulum R. The power exerted by the falling weight is transmitted through the lever I′ and pendulum R and conveyed in momentum to the wheel P through the pitman and crank-shaft. The force applied to the pendulum by the lever I′ will cause it to swing to the same elevation at the opposite side, at which time the lever I, which has been raised by the engagement of the catch *s* with the lever H, will be unlocked by said catch engaging the inclined stop *v*, as before described, and said lever I, actuated by the force of the weight K, will in like manner propel the pendulum in the opposite direction, when the lever I′ will be in position to return it, the vibration of the pendulum being in this manner continued by the force exerted by the alternate falling of the weights J K. The force applied to the crank E is required to be sufficient only to successively raise the weights through the operation of the levers H H′.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a device for the purpose set forth, the combination of the driving-shaft carrying a crank-arm, a pair of levers fulcrumed in suitable supports, the connecting-bars coupling one end of said levers with the crank-arm, the opposite end of said levers being unattached, whereby the rotation of said shaft imparts a simultaneous and alternating reciprocation to said levers, and the pendulum adapted to vibrate between the unattached ends of said levers, substantially as set forth.

2. The combination of the driving-shaft carrying a crank-arm, the levers H H′, connected with said crank-arm, and the levers I I′, each having a weight attached at one end and at the opposite end means for engagement with and disengagement from the levers coupled with the crank-arm, substantially as specified.

3. The combination of the driving-shaft carrying a crank-arm, the levers H H′, connected with said crank-arm, the auxiliary levers having the weights attached thereto, the pendulum adapted to vibrate between the free ends of the auxiliary levers, and the pitman coupling the upper end of the vibrating pendulum with the crank-shaft having a wheel mounted thereon, as specified.

4. The combination of the frame, the driving-shaft carrying a crank-arm journaled in said frame, the lever connected with said crank-arm, the connecting-rod and the pitman coupled to the crank-shaft carrying a wheel, the vertical lever L, and horizontal link coupling the connecting-rod with the upper end of the lever coupled to the crank-arm of the driving-shaft, and the vibrating lever fulcrumed in the frame and coupled at its upper end to the connecting-rod and pitman, substantially as specified.

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

LEWIS TIGHE.

Witnesses:
B. F. WHEELER,
E. S. WHEELER.