2 Sheets—Sheet 1.

W. C. BAKER.

Device for Transmitting Power.

No. 208,055. Patented Sept. 17, 1878.

FIG. II.

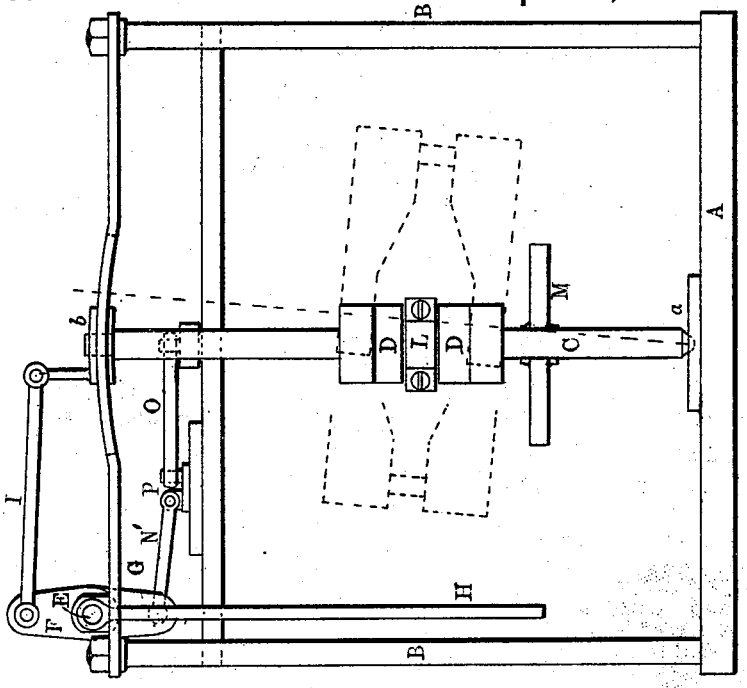
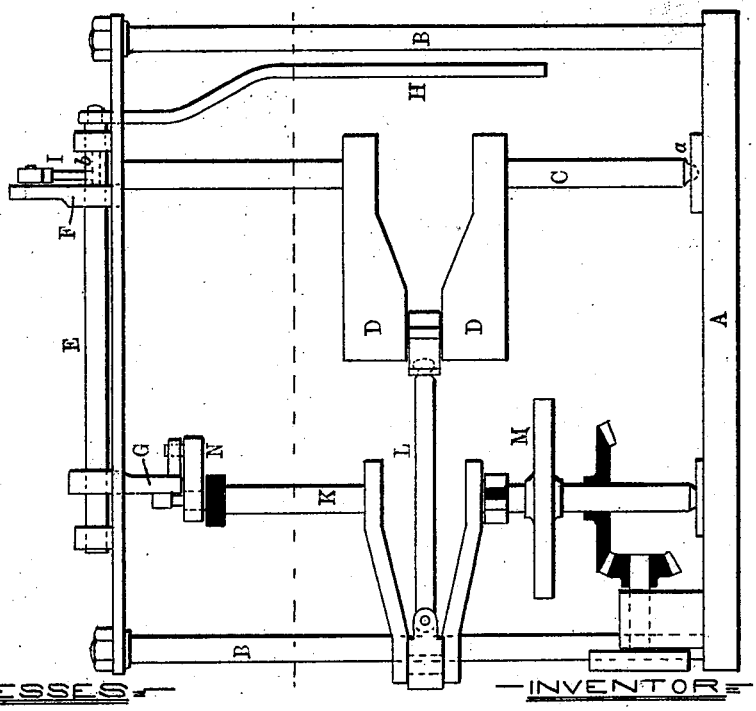


FIG. I.



WITNESSES:

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Wm. B. Ackerly

INVENTOR:

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by Munn & Co.

attys.

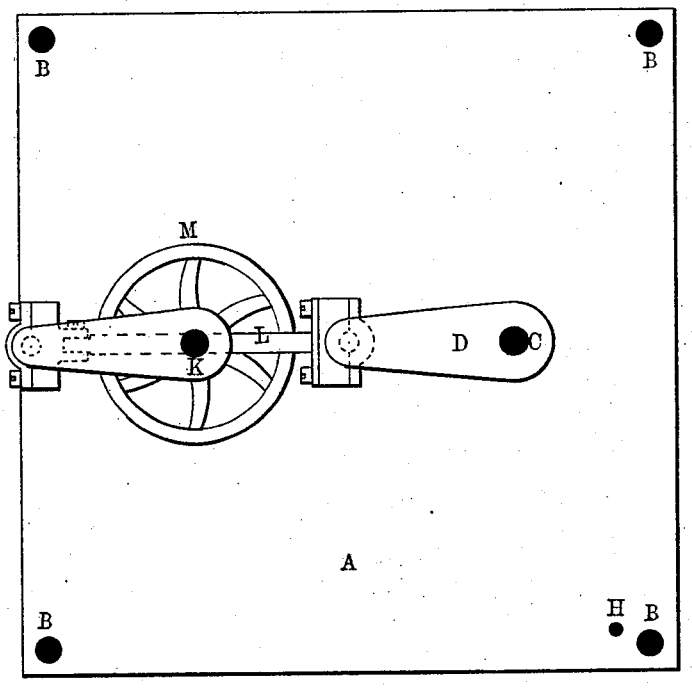
2 Sheets—Sheet 2.

W. C. BAKER.

Device for Transmitting Power.

No. 208,055. Patented Sept. 17, 1878.

FIG. III.



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UNITED STATES PATENT OFFICE.

WILLIAM C. BAKER, OF BALTIMORE, MD., ASSIGNOR OF A PART OF HIS RIGHT TO WILLIAM B. DUVALL AND CHARLES B. CULVER, OF SAME PLACE.

IMPROVEMENT IN DEVICES FOR TRANSMITTING POWER.

Specification forming part of Letters Patent No. **208,055**, dated September 17, 1878; application filed September 2, 1878.

To all whom it may concern:

Be it known that I, WILLIAM C. BAKER, of the city of Baltimore and State of Maryland, have invented certain Improvements in Devices for Transmitting Power, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being made to the accompanying drawing, and to the letters of reference marked thereon.

This invention relates to a novel combination of devices for changing a reciprocating motion, instituted by the hand or the piston of an engine or other motor, to a rotary one; and it consists, broadly, in adapting a revoluble shaft, having a weighted double crank secured thereto or forming a part thereof, to have an oscillating or vibrating movement, whereby the said weighted cranks have practically a continuous fall or descending motion, which affects their revolution.

The said invention consists, further, in combining with the said revoluble weighted crank-shaft devices for transmitting its movement to a secondary shaft revolving upon an immovable axis, adapted as the main driving-shaft of a factory, locomotive, or steam vessel, as will hereinafter fully appear.

In the further description of the invention which follows reference is made to the accompanying drawings, forming a part of this specification, and in which—

Figures 1 and 2 are elevations of the invention as seen from different points of view, Fig. 3 being a sectional plan of the same on the dotted line *x y*.

Similar letters of reference indicate similar parts in all the views.

A is the bed-plate of the machine, and B the frame of the same, which may be of any suitable description. C is the main crank-shaft, having the weighted cranks D resting in a step, *a*, which is of such character as to admit of the vibration of the said shaft, as hereinafter described.

The upper end of the shaft C is confined in a block, *b*, adapted to slide, in the vibration of the shaft, in a slot in the upper part of the frame B.

E is a horizontal shaft resting within bearings on the frame B, to which shaft are secured the arms F and G.

The horizontal shaft E is oscillated by means of the bar H, to which power of any kind is applied, and its movement is communicated to the block *b* through the medium of the arm F and the link I.

To effect the rotation of the weighted crank-shaft C the bar H is thrown over so as to move the said crank-shaft from its vertical position, and at the same time elevate the outer ends of the cranks D. This position of the cranks is shown by the detached dotted representation of their outer ends in Fig. 2 of the drawing. The cranks, when placed as described, fall, by reason of gravity, to their lowest position, as indicated by their complete dotted delineation, same figure; and it will be understood that in the fall they must necessarily revolve. As the cranks approach their lowest position, or complete a half-revolution, they are again elevated by reversing the bar H, and again fall, as before explained.

From the foregoing description it will be seen that a rapid and continued rotation of the crank-shaft C is effected by merely vibrating the same through the medium of the devices described.

The means for changing the complex movement of the cranks D to a simple rotary one consist of a secondary crank-shaft, K, the cranks of which are united to those of the shaft C by a connecting-rod, L, jointed in such manner as to allow for the various relative positions which the two sets of cranks assume during a revolution. The secondary crank-shaft K is provided with a balance or fly wheel, M, and may be connected to a counter-shaft by means of gearing, as shown, if desired.

In order to facilitate the starting of the machine, the secondary crank-shaft is provided with a small crank, N, at its upper end, which is attached to the arm G by means of rods N′ and O and a suitably-arranged cross-head, P, adapted to slide in a guide on the frame B. By means of this mechanism the movement of the bar G is transmitted directly to the secondary crank-shaft independently of the devices before described, and the movement of the cranks started from any position. The

length of the crank N governs the degree of vibration of the main shaft, and consequently the height of fall of the cranks D.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. A revoluble shaft provided with weighted cranks and adapted to be oscillated in its bearings, as specified, combined with mechanism attached to one of said bearings, for the purpose of giving to the said shaft the said oscillating movement, substantially as and for the purposes set forth.

2. A revoluble shaft provided with weighted cranks and adapted to be oscillated, as specified, combined with a secondary shaft and cranks in fixed bearings and a universally-jointed connecting-rod, substantially as set forth.

3. The oscillative and revoluble shaft C, having the weighted cranks D, combined with the shaft K and cranks, universally-jointed connecting-rod L, and mechanism for imparting simultaneously an oscillating motion to the shaft C and a rotary movement to the shaft K through the medium of the crank N thereon, substantially as and for the purposes specified.

WILLIAM C. BAKER.

Witnesses:
WM. T. HOWARD,
JNO. T. MADDOX.