C. VAN DE MARK.

Combined Body-Weight and Hand-Power.

No. 166,827. Patented Aug. 17, 1875.

FIG. I.

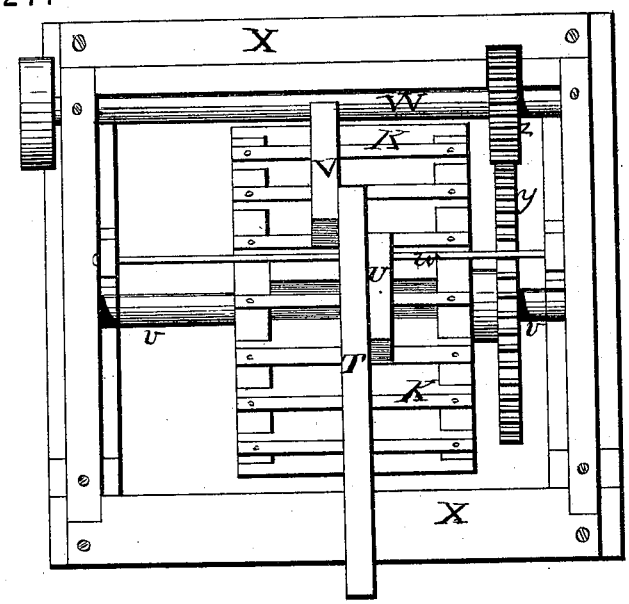
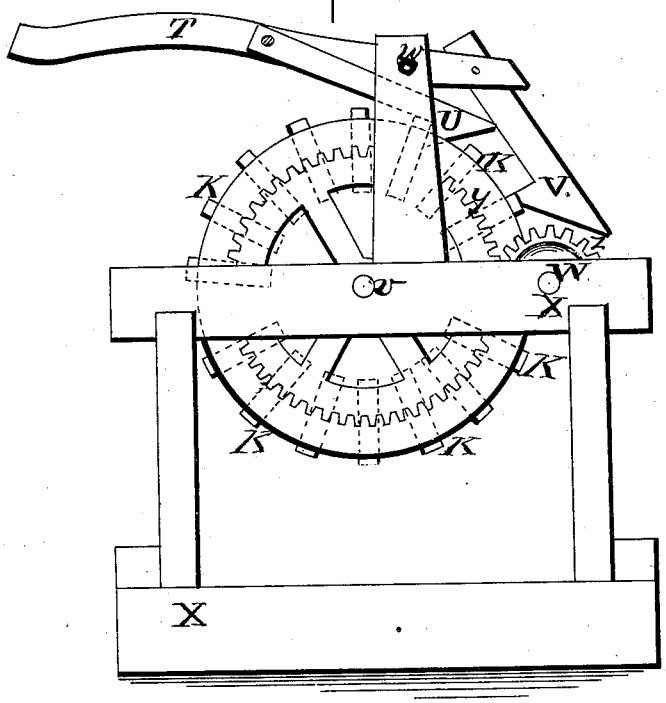


FIG. II.



WITNESSES

E. McCallaher.

F. B. Townsend

INVENTOR

Charles Van DeMark

UNITED STATES PATENT OFFICE.

CHARLES VAN DE MARK, OF HILLSDALE, MICHIGAN.

IMPROVEMENT IN COMBINED BODY-WEIGHTS AND HAND-POWERS.

Specification forming part of Letters Patent No. **166,827**, dated August 17, 1875; application filed June 21, 1875.

To all whom it may concern:

Be it known that I, CHARLES VAN DE MARK, of Hillsdale, in the county of Hillsdale and State of Michigan, have invented a Combined Body-Weight and Hand-Power; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being a top view of a simple form of my invention, for applying both the weight of the human body and the force of the arms to drive machinery, and do other mechanical work; Fig. 2, a side view of the same.

Like letters designate corresponding parts in both figures.

The nature of my invention consists in the combination of a movable foot-platform, or equivalent means of receiving and applying the weight of the human body, or a series of such platforms, with one or more levers, cranks, or equivalent means of applying the force of the hands or arms in the same machine, whereby both the weight of the body and the muscular power of the hands or arms of the same person or persons may be at the same time utilized to do mechanical work, or produce mechanical effects.

In the drawings, X represents a frame or support of any suitable kind, on which to mount the working parts of the power; K K, a series of steps or foot-platforms, arranged in the periphery of a cylinder, so as to form a revolving wheel or cylinder, secured upon a shaft, *v*, which has its bearings in the frame X; T, a lever, or one of a series of levers, mounted on a fulcrum rod or shaft, *w*, having its bearings in the frame, and suitably situated in relation to the platform-wheel; and U V, two lifting-pawls on the lever, one pivoted to it at one side of the fulcrum, and the other at or about an equal distance from the other side of the fulcrum, as shown, so that as the lever is vibrated up and down, the pawls will lift alternately and equally. These pawls take against the outer edges of the platforms K K, and thus both act to turn the platform-wheel in the same direction, and with nearly a continuous movement, thereby causing the wheel to revolve. This taking of the pawls against the edges of the platforms is for the purpose of simplicity and cheapness, but is not necessary, since there may be a distinct ratchet-wheel for the pawls to act on. Each lever T is so arranged that a person or persons can operate it while standing on the platforms of the wheel, so that both the weight of the body and power of the arms may operate at the same time to greatly increase the effect, since the whole effect of the weight of the person is added to the muscular force of the arms with little additional exertion of strength. The motion of the platform-wheel is communicated, as shown, by a cog-wheel, *y*, and pinion *z*, to a transmitting-shaft, W, and multiplied or reduced, as desired, and extended in distance to any place in any of the usual ways of transmitting motion and power.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of body-weight platforms K K and one or more hand-actuating devices, T U V, operating together, for applying both the weight of the body and power of the arms of the same person or persons simultaneously, to drive machinery or produce mechanical effects, substantially as herein specified.

CHARLES VAN DE MARK.

Witnesses:
J. S. BROWN,
E. M. GALLAHER.