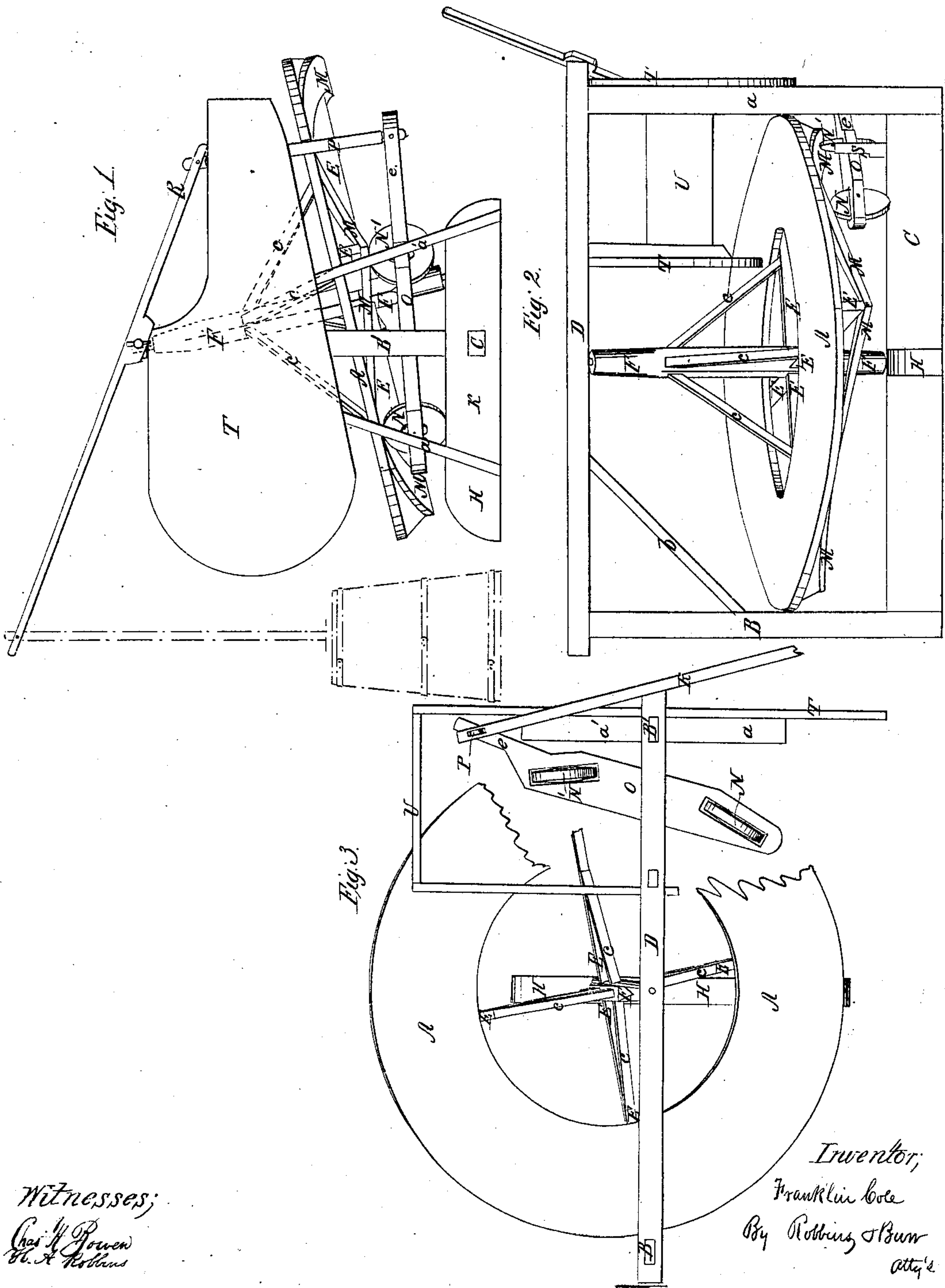


*F. Cole*  
*Horse Power.*

N<sup>o</sup> 39,263.

*Patented July 14, 1863.*



Witnesses;  
Chas. H. Bowen  
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attys.



# UNITED STATES PATENT OFFICE.

FRANKLIN COLE, OF CONESUS, ASSIGNOR TO WM. P. HENDERSHOTT, OF GROVELAND, NEW YORK.

## IMPROVEMENT IN DOG-POWERS.

Specification forming part of Letters Patent No. 39,263, dated July 14, 1863.

*To all whom it may concern:*

Be it known that I, FRANKLIN COLE, of the town of Conesus, in the county of Livingston and State of New York, have invented a new and useful Improvement in Animal Tread-Powers, (in the which I have assigned all my right, title, and interest to WILLIAM P. HENDERSHOTT, of Groveland, in the county and State aforesaid;) and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of my improved power-machine; Fig. 2, a front view of the same; and Fig. 3, a top view thereof, with a portion of the revolving track cut away to show more clearly the position and arrangement of the friction-wheels N and N' and oscillating lever O.

Similar letters indicate like parts in each of the drawings.

My invention is designed to furnish a cheap and effective motive power for household purposes. To obtain such a power I construct a revolving platform or trackway by laying a circular track, A, upon the radial arms E E E E, Figs. 2 and 3, of a central shaft, F, Fig. 1, which are strengthened and supported by suitable braces, C C C C, Fig. 2. I then hang this platform at an inclination of about twenty degrees to the horizon in a frame-work, substantially as illustrated in the accompanying drawings. This frame-work may properly consist of stout ground beams C and H, Fig. 2, intersecting each other centrally at right angles, having uprights B and B' mortised into the beam C at such equal distances from the beam H as to exceed the radius of the revolving platform, which are united at the top by a cross-tie, D.

In order to strengthen the frame and support firmly the uprights, I place an additional foot-piece, K, Fig. 1, under the end of the upright B', at right angles to the beam C, as a support for the braces a a'. Journal-boxes or other bearings are formed to receive the journal ends of the shaft F of the revolving platform, in the center of the cross-tie D above and in the transverse beam H below. The shaft is thus placed in a vertical plane at right angles with that passing through the uprights

B and B', and the degree of its inclination is determined by the distance at which the lower bearing in the beam H is removed from the intersection of these planes corresponding with the central intersection point of the beams C and H.

In order to direct the power derived from the revolution of the inclined circular platform A under the combined influences of the weight and motion of an animal walking thereon to useful purposes, I form a continuous regularly undulating way or surface upon the under side of the platform, near its outer circumference, by arranging thereon a series of swelling curvilinear cams, M M M, Figs. 1 and 2, which project from this lower side at regular intervals to a uniform depth. These cams form a bearing-surface for two friction-wheels, N and N', pivoted in slots cut in a rocking lever, O, at equal distances on either side of its fulcrum. This rocking or oscillating lever O, Figs. 1, 2, and 3, is supported and pivoted between two small standards, S, Fig. 2, fixed in the central beam, C, of the frame-work, and, consequently, in a plane coincident with that of the upper bearing of the platform-shaft F, but the slots in which the friction wheels or rollers N N' are pivoted are placed in such a position upon the lever O as that the wheels revolve in planes at right angles to the diameter of the circular platform A. The distance between these friction-wheels N N' bears such a proportion to the intervals between the maximum height of the several projections or cams M M, which form the undulating surface of the lower side of the platform A, as that when the wheel N' is just passing one of the series of projections the remaining wheel N has nearly attained the following point of greatest depression, as clearly appears in Fig. 1 of the accompanying drawings. Hence, the revolution of the platform carrying the cams M M successively over the friction-wheels N N' alternately depresses the one and the other, and thereby gives a constant oscillating movement to the lever O. The free motion of the wheels N N' and the uniformity of the curves against which they play renders this movement of the lever perfectly easy, and but little power is absorbed in its working. By uniting the prolonged end e of the main lever O with a second lever, R, through the bridle-piece P, as



illustrated in Fig. 1, its reciprocal motion can be used directly in churning, &c., or it may be converted into a rotary movement by a suitable crank for other applications thereof.

A pen or stall in which to secure the animal when at work upon the machine is formed by adding the side boards, T T, and an end piece, U, Figs. 1 and 3.

I contemplate more particularly in this, my invention, machines to be worked by dogs for household purposes; but am aware that they may, with but slight modifications, be constructed as horse-powers, and consequently do not limit myself to any kind of motive power.

As a reciprocating movement has heretofore been obtained from a revolving plane or disk by an arrangement of cams upon its surface operating against friction-rollers, I do not claim this feature of my invention as new in itself; but I do believe that my machine is the first in which this principle has been applied to render available the power created by the gravity of a body moving upon a revolving plane; hence,

What I claim as novel in my improvement in tread-power machines, hereinbefore fully described, is—

1. The combination of an inclined revolving platform, A, with an oscillating lever, O, by means of a regular series of projections, M M, upon said platform and one or more friction-wheels, N N', upon said lever O, or their equivalents, substantially in the manner and for the purpose herein set forth.

2. The peculiar arrangement of the friction-wheels N N', in combination with an oscillating lever, O, and a regular series of projections, M M, upon an inclined revolving platform, A, substantially in the manner and for the purpose herein set forth.

The above specification of my improvement in dog-powers subscribed by me this 26th day of May, A D. 1863.

FRANKLIN COLE.

In presence of—

C. A. RICHARDSON,  
L. B. RICHARDSON.