(Model.)

J. P. SCHMUCKER.

MOTIVE POWER.

No. 411,065. Patented Sept. 17, 1889.

Fig. 1.

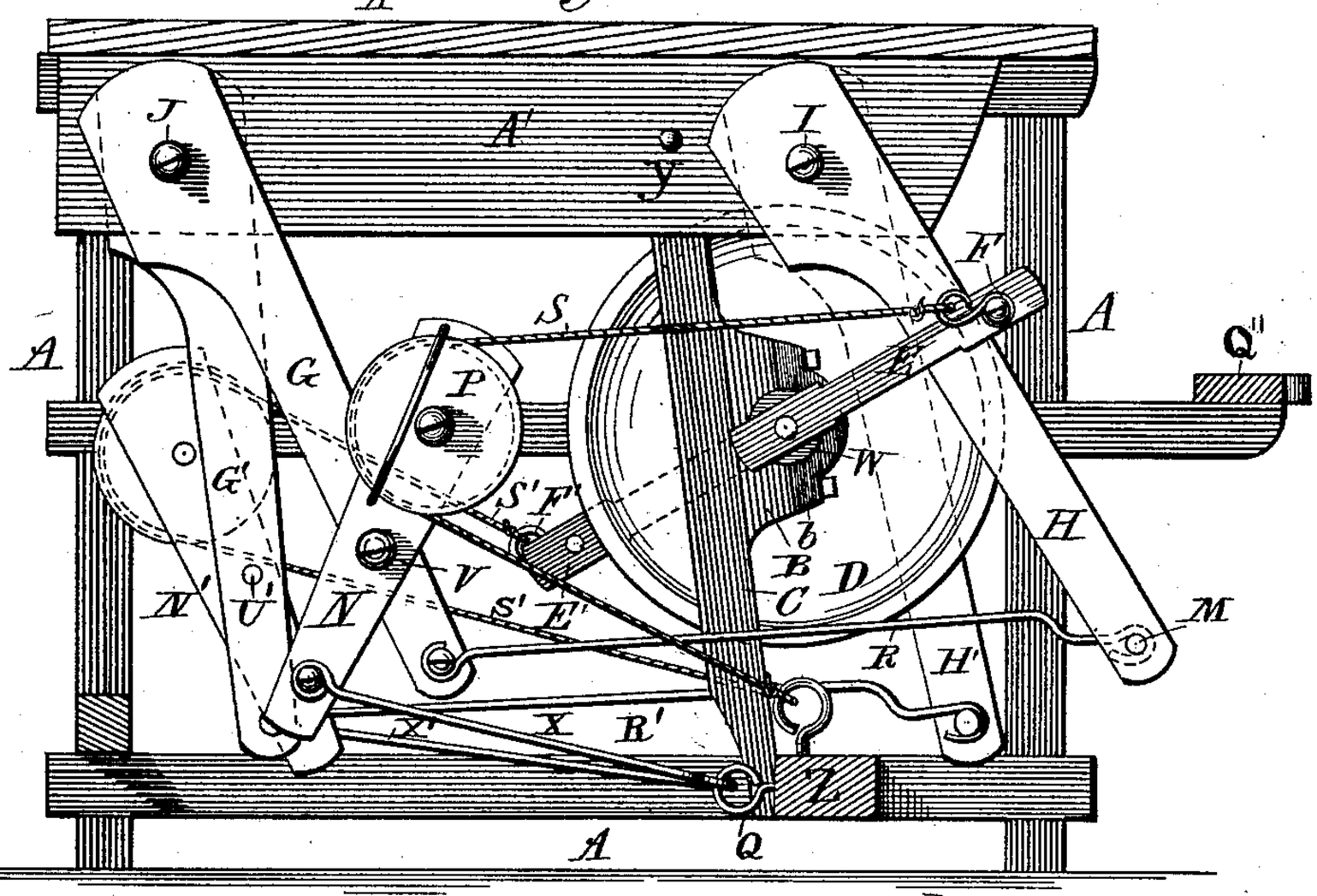


Fig. 2.

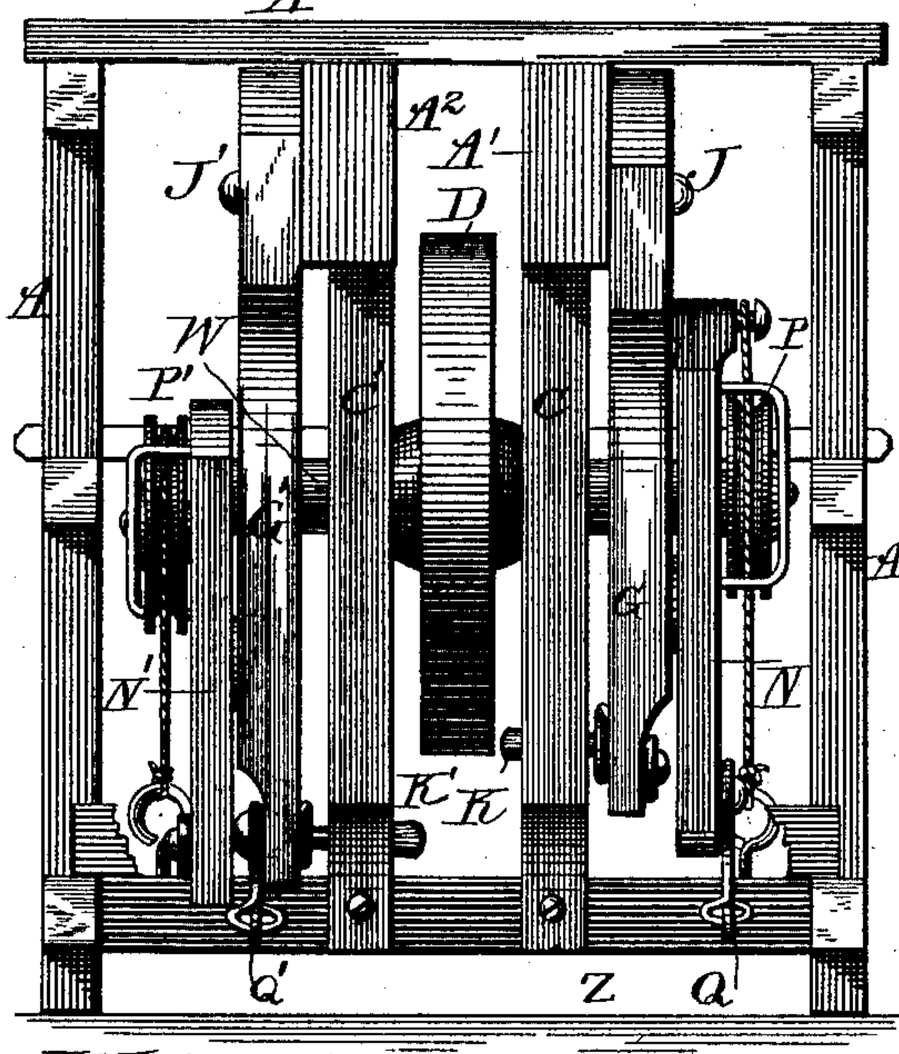
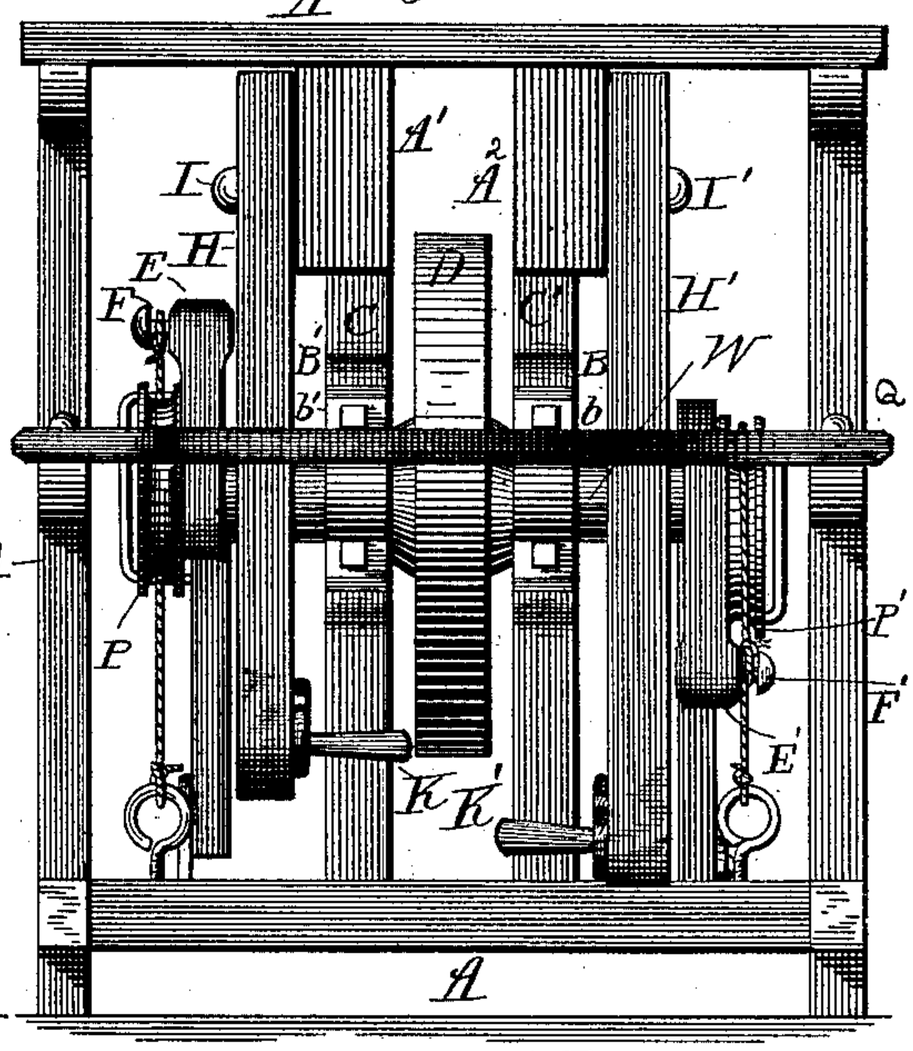


Fig. 3.



Witnesses
W. H. H. Miller
Chas. L. Shrader

Inventor
John P. Schmucker
by
Samuel O. Dodds.
his attorney in fact

UNITED STATES PATENT OFFICE.

JOHN P. SCHMUCKER, OF FRANKLIN GROVE, ILLINOIS.

MOTIVE POWER.

SPECIFICATION forming part of Letters Patent No. 411,065, dated September 17, 1889.

Application filed August 20, 1888. Serial No. 283,295. (Model.)

To all whom it may concern:

Be it known that I, JOHN P. SCHMUCKER, a citizen of the United States, residing at Franklin Grove, in the county of Lee and State of Illinois, have invented a new and useful Improvement in Motive Power, of which the following is a specification.

My invention relates more particularly to pedal motive power, which is applied to the running of all kinds of smaller machinery where rapidity and ease as well as power are required, and the object is to secure these ends with small expense and an economy of space.

My invention is easily constructed and at the same time cheap, durable, and simple, and the operation easy and rapid. I attain these results by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an upright side view of my machine, the left side of the frame being cut away, so as to show the several parts of the mechanism. Fig. 2 is an upright view of the rear end of the machine. Fig. 3 is an upright view of the front end of the machine.

Similar letters refer to similar parts throughout the several views.

To enable others skilled in the art to construct and operate my invention, I will proceed to describe its construction and operation.

The frame A A A A, &c., which supports the machinery, is made of any desirable material. I preferably use wood of sufficient dimensions and strength to afford the requisite stability.

To the under side of the top of the frame A A are securely fastened by bolts or their equivalents two beams or bars of wood A′ A^2, with a sufficient space between them to allow the free working of the balance-wheel D.

To the beams A′ A^2 at Y, being about one-third the distance from the front to the rear of the frame, and firmly bolted to the inner side of the beams, are two upright posts C C′, extending down to the lower part of the frame, where they are firmly bolted to a traverse bar or beam Z. To each of these posts C C′, and a little above the center of the posts, two blocks B *b* B′ *b*′ are bolted. Through these blocks a driving-shaft W passes. This shaft extends some distance beyond the blocks B B′ on each side.

On the driving-shaft between the upright posts a large balance-wheel D is securely keyed. The balance-wheel is made of sufficient weight to convey a uniform and steady motion to the machinery it is intended to operate.

The shaft W is provided with cranks E E, one on each end of the shaft, and which extend in directions opposite to each other.

To the outer side of and near the rear end of the beams A′ A^2, respectively, the levers G G′ are secured by the bolts J J′ in such manner as to permit the lower ends of said levers to swing freely with a pendulum-like movement.

To the outer side of and near the front end of the beams A′ A^2 two similar levers H H′ are secured by the bolts I I′ in such manner as to allow the levers H H′ a pendulum-like motion. The lower ends of the levers H H′ are provided with foot-rests K K′.

To the lower part of the lever H at M is fastened a bar or rod R, which extends back and is fastened to the lower end of the lever G at O. A similar bar R′ in like manner connects the lower end of the levers G′ and H′. These bars are fastened to the levers in such manner as to permit a little play as the levers swing back and forth. A bolt or pin V passes through the lever G a short distance above the lower end of the lever. The lever G′ is provided with a like bolt U′. The outer ends of these bolts extend through the short levers N N′ at their centers and form a fulcrum on which these levers work. The lower ends of the levers N N′ are connected with the traverse bar Z at the lower part of the frame by the rods X X′. These rods are attached to the traverse-bar by hooks and eyes Q Q′, which permit the rods to accommodate themselves to the slight perpendicular motion of the levers as they swing. The levers N N′, being nearly stationary at their lower ends and pinioned at the centers to the swinging levers G G′, have each two fulcrums, and in consequence a double motion or action.

At a point about half the distance from

the bolt V to the upper end of the lever N is a small wheel or pulley P. A similar pulley P′ is affixed to the lever N′.

To the outer end of the crank E at F is fastened in any suitable manner a belt S, which passes from thence back and over the pulley P, which is grooved to receive it, and thence down and forward to the traverse-bar Z, where it is fastened. From the point F′ on the crank E′ a band S′ passes back and over the pulley P′, thence down and forward to the traverse-bar Z, where it is fastened.

Having thus described my invention, I will proceed to describe the manner of its operation.

The operator takes his position on a seat Q^2 in front of the machine, the seat being sufficiently elevated so that his feet may rest in an easy and natural position on the foot-rests K and K′. He then presses with his left foot on the rest K. This moves the lower end of the lever H backward, and at the same time the bar R presses on the lower end of the lever G and causes it to swing a corresponding distance back. The lever N, with the pulley P, moves nearly double the distance that the end of the lever G moves. The pulley P carries with it the band S, which, operating on the crank E, causes the driving-shaft W to make one-half a revolution. The operator then presses with his right foot upon the foot-rest K′ with sufficient force to move the swinging lever H′ back until the several parts on the right side of the machine—to wit, the rod R′, levers G′ and N′, pulley P′, band S′, and crank E′—in like manner cause the driving-shaft W to complete the revolution already commenced, and the several parts occupy the same relative positions they did when the machine was first started. By continuing the pressure on the foot-rests in like manner alternately with the left and then right foot and repeating a continued and unvarying motion may be given to the balance-wheel D. The rotary motion thus obtained may be conveyed by any of the usual methods to such machinery as it may be desired to operate.

The combination of the frame A A A, beams A′ A^2, posts C C′, blocks B *b* B′ *b*′, shaft W, and balance-wheel D with the cranks E E′, bands S S′, traverse-bar Z, pulleys P P′, swinging levers G G′, double-fulcrumed levers N N′, connecting-rods R R′, swinging levers H H′, provided with foot-rests K K′, arranged and operated as above described, materially increases the length of the stroke given to the lower end of the levers H H′ by the pressure on the foot-rests when imparted to the end of the cranks E E′, thus making the diameter of the circles described by the outer end of the cranks E E′ nearly double the length of the stroke made by the lower end of the levers H H′.

The combination of the swinging-lever G, double-fulcrumed lever N, pulley P, band S, crank E, driving-shaft W, and traverse-bar Z, when arranged substantially as hereinbefore described, is such that when operated the length of the stroke given to the lower end of the swinging lever G is nearly doubled when imparted to the crank E′, thereby enabling the operator to use a crank nearly twice the length he otherwise could.

Having thus fully described my invention and its operation, what I claim to be new, and desire to secure by Letters Patent, is—

1. The combination of the driving-shaft W with the swinging lever G, double-fulcrumed lever N, pulley P, band S, and crank E, arranged, substantially as described, in connection with a duplicate set of parts, and for the purposes set forth.

2. The combination, with the frame A A A, beams A′ A^2, posts C C′, and blocks B *b* B′ *b*′, of the swinging lever H, foot-rest K, swinging lever G, connecting-rod R, double-acting lever N, pulley P, band S, and crank E, arranged, substantially as described, in connection with a duplicate set of parts, and for the purposes set forth.

JOHN P. SCHMUCKER.

Witnesses:
W. H. H. MILLER,
H. M. DODDS.