L. Koch,

Motor.

No. 25,903 Patented Oct. 25, 1859.

Fig. 2.

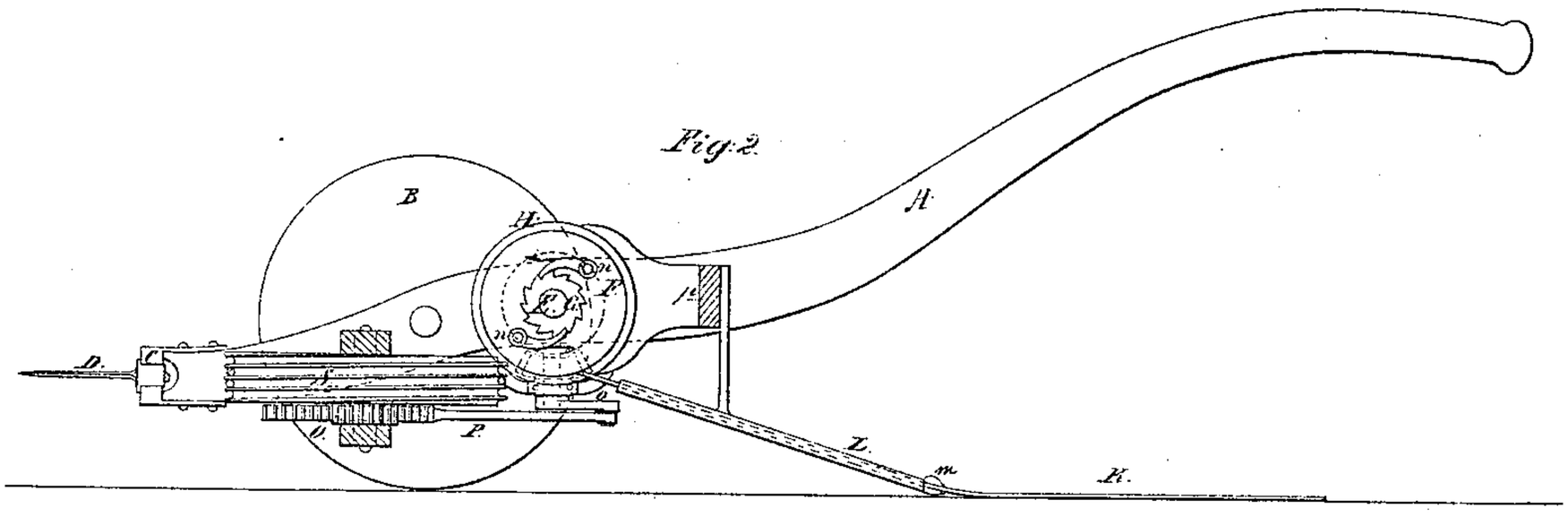
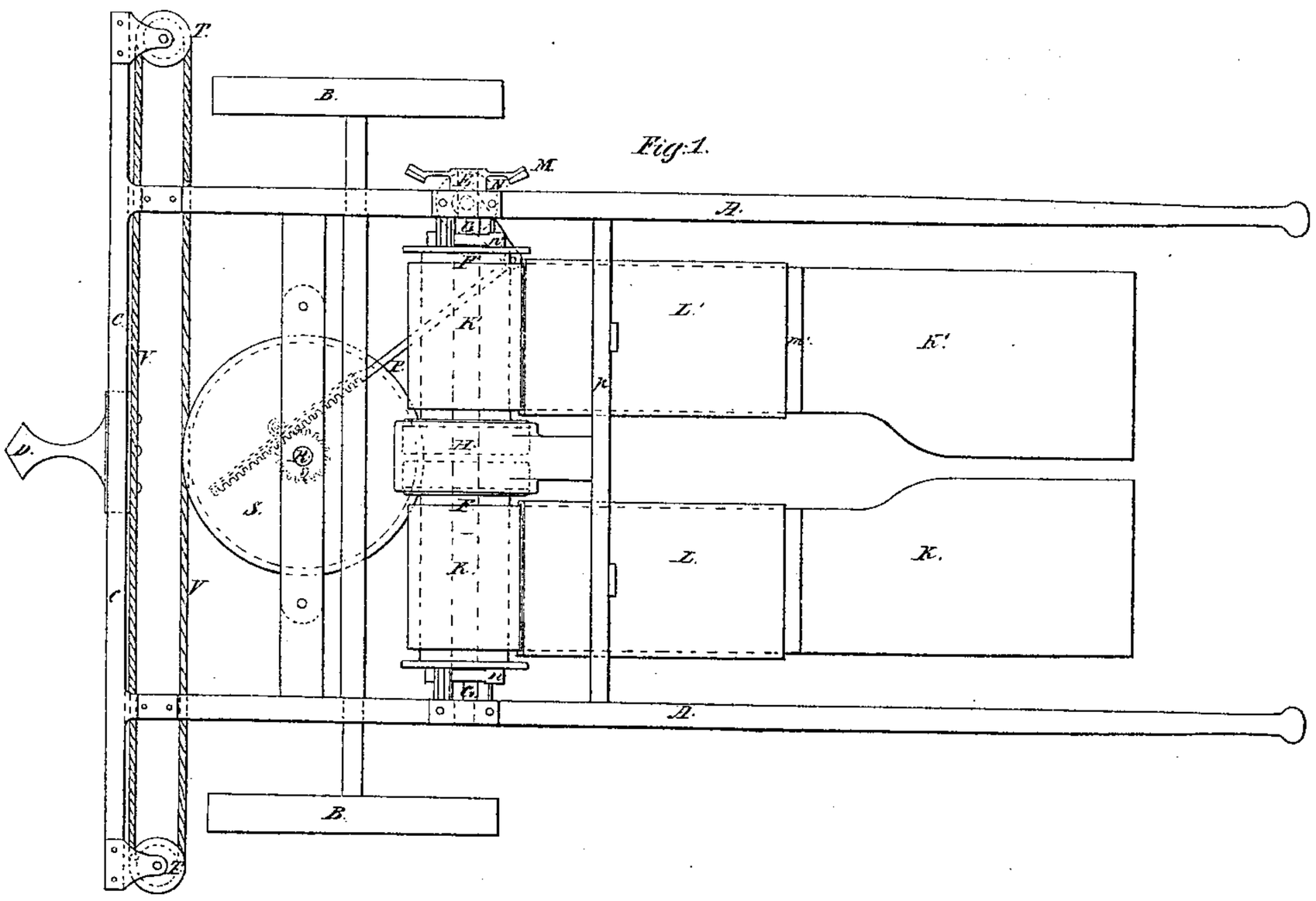


Fig. 1.



Witnesses:
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UNITED STATES PATENT OFFICE.

LOUIS KOCH, OF NEW YORK, N. Y.

MOVING TREAD-POWER.

Specification of Letters Patent No. 25,903, dated October 25, 1859.

To all whom it may concern:

Be it known that I, LOUIS KOCH, of New York, in the county and State of New York, have invented a new and useful Moving Tread-Power; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure I represents a top view of the machine and Fig. II shows a longitudinal section of the same.

The nature of my invention consists in the application of the motion of the feet in the act of walking by man or animal, to bands or their equivalent, acting on drums, levers or inclined planes, connected with a shaft, lever or pulley; and so arranged that the unrolling or pulling of said bands will turn the shaft, move the levers, or raise the pulley, producing thereby motion which may be applied to any desired purpose, said unrolling or pulling of the bands being caused by the resistance offered, by the pressure of the foot and the weight of man or animal acting upon the ends of said bands or their equivalent, while the machine is propelled forward by the hands or upper part of the body.

In the accompanying drawings this moving tread power is applied to a mowing machine, in which A, A, represent the frame of the machine resting on wheels, B. On the forward end of the frame guides, C, are attached to guide the mowing knife D. The back end of the frames are bent so as to be convenient to be taken hold of by the hands to propel the machine forward, or the same may be so arranged as to be attached to the upper part of the body, by which means the hands of the man are at perfect liberty.

E, is a shaft, turning in suitable bearings in the frames A, on which said shaft drums F, F′, are placed, capable of turning freely on the same. On the side of the drums ratchet wheels G, G′, are firmly attached to the shaft E acted upon by pawls *n*, *n′*, fast to the drums, and so arranged, that the turning of said drums in one direction, will by means of said pawls and ratchet wheels produce a revolving motion to the shaft E.

H is a hollow box, divided in the center, situated loosely on the shaft E, and firmly attached to the distance piece, *p*, fast to the frames A. This box H contains two spiral springs one for each drum, one end of said springs being fastened to the inner circumference of the box H, and the other end to the drums.

Instead of placing the springs and pawls and ratchet wheels on the outside of the drums, as above described, the same may be arranged so as to be placed in the inside of said drums.

Around the drums F, F′, bands K, K′, are wound, one end of which is fastened to said drums, and the other ends, after passing through guides L, L′, fastened to the distance piece, *p*, project some distance, on the ground, where the same may be fastened to pieces of wood or metal to give them more stiffness. Projections, *m*, *m′*, are attached to the bands to prevent the same being drawn through the guides, L, L′, and to give the springs fast to the drums their proper tension.

The operation of the machine is as follows: The man or animal having hold of the back part of the machine, and in the act of propelling or pushing the same forward places one foot on either of the bands (say K,), on which consequently the weight of his body will be thrown, holding thereby said band, K, fast, between his foot and the earth or ground, and unwinding thereby said band by the forward motion of the machine from the drum, F, at the same time turning said drum, which through the connection of the pawl, *n*, with the ratchet wheel, G, acts upon the shaft, E, so as to turn the same. The other foot comes then upon the second band, K′, turning in the same manner the drum F′ which likewise communicates its motion to the shaft E so as to assist in turning the same. During this time the foot has been lifted off the band, K, when the spiral spring in the box H, and which is attached to said drum F as before mentioned, acts upon this drum, so as to turn the same in the opposite direction, winding thereby the band, K, again around said drum F, and bringing the outer end of said band again near the end of the guide L, until stopped by the projection (*m*), and ready for the next forward step of that foot, when the same operation will be repeated by one or the other foot producing thereby a continued rotary motion on the shaft, E, to be used for any desired purpose.

In the machine represented in the drawing a wheel M is fastened to the end of the shaft E outside the frame A, which gears

into a pinion, N, fast to an upright shaft, having a crank, O, on its end, to which a rod P is fastened. This rod P is provided with a rack on its outer end, which works into a pinion, Q, fast to an upright shaft, R, to which a drum or pulley S is firmly attached. Around this drum S, a cord or band, V, is passed, passing over fixed pulleys T attached to the guide piece, C, and fastened to the mowing knife D, producing thereby a backward and forward motion on said mowing knife.

Instead of using bands as before described, cords or chains may be used, provided with proper pieces of wood or metal outside of the guide pieces for the foot to step on, or the ends of the bands or cords outside the guides, L, L′, may be so constructed as to be fastened to the feet, moving in this case back and forth with the same.

Instead of passing bands or cords over drums or pulleys as above described, the same may be fastened to one end of a lever, acted on by a spring, so as to move the same back again after the pressure of the foot and the weight of the body upon the end of the band, have caused the same to be moved in one direction while the machine is propelled forward, said levers being either attached to a shaft so as to communicate a rotary motion to the same, or arranged so as to turn on a fulcrum to produce a longitudinal motion.

Instead of attaching the bands or cords to a pulley placed on a shaft, for the purpose of producing a rotary motion to said shaft, or instead of fastening the bands or cords to the ends of levers to produce a horizontal or longitudinal motion as above described the same may be attached to an inclined plane or wedge upon which a roller or rollers are placed, which said rollers will, by the pulling of said band and wedge, together with any weight which may be attached to said rollers, be raised upward, producing thereby a power to be used to any desired purpose.

By the above it will be readily seen that this described moving tread power can be applied to any known mechanism, by using the weight of man or animal on said bands or their equivalent, as a cause of resistance against the propelling of the machine and giving motion by the act of walking of the man or animal to said mechanism or its equivalent, to produce a power applicable to any desired purpose.

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

1. The described mechanism or its equivalent, when operated by the feet of man or animal in stepping on the ends of bands or cords during the act of walking.

2. I claim using the weight of man or animal in stepping on bands or their equivalent, as a cause of resistance against the propelling of the machine, and giving motion by the walking of said man or animal to said mechanism or its equivalent independently of the motion of the wheels on which the whole mechanism is supported, substantially as described.

LOUIS KOCH.

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