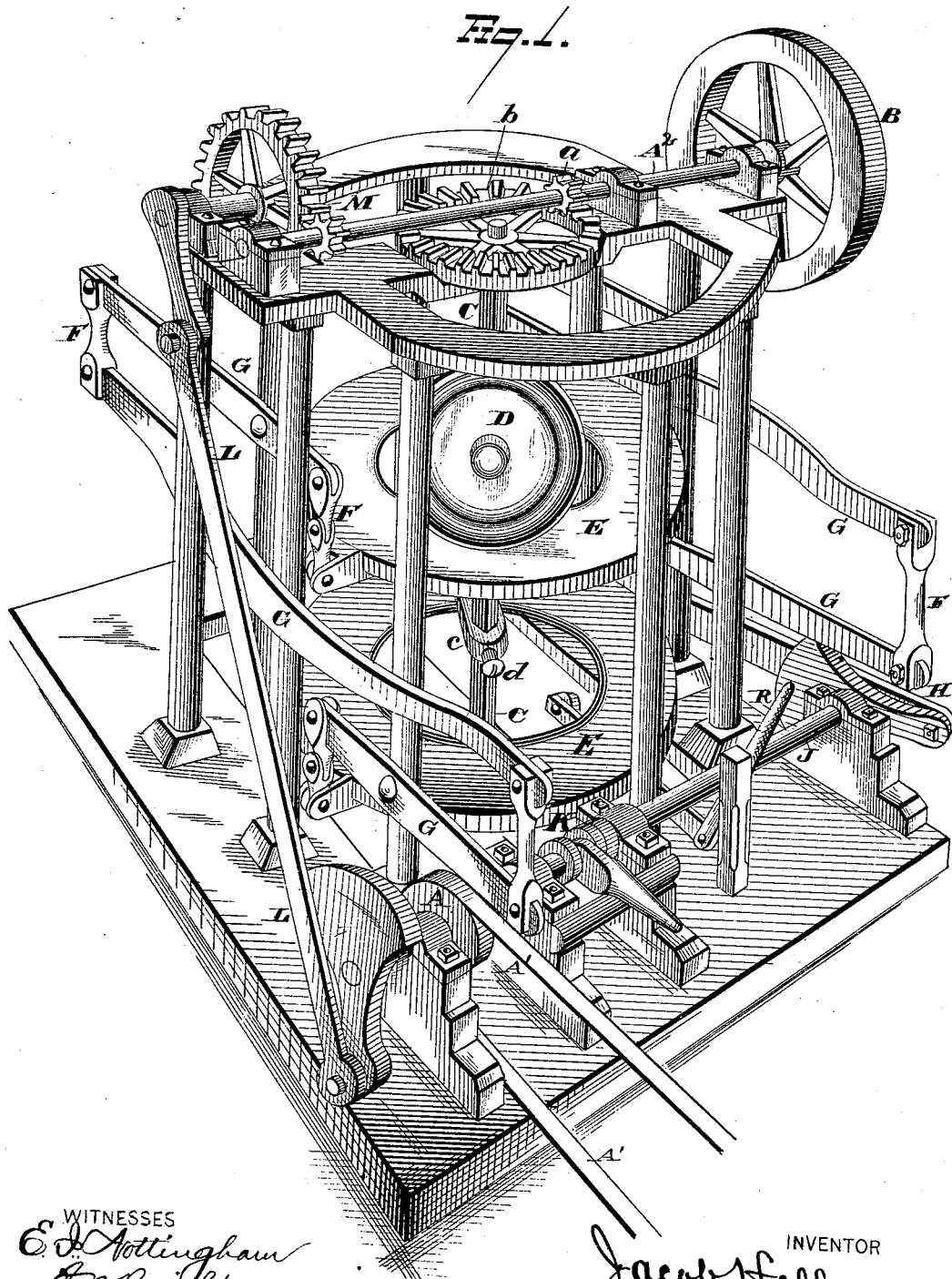


J. HELLMAN.
Mechanical Power.

No. 217,871.

Patented July 29, 1879.



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A. N. Bright

INVENTOR
Jacob Hellman.
By Dequette & Serrett.
ATTORNEYS

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Fig. 2.

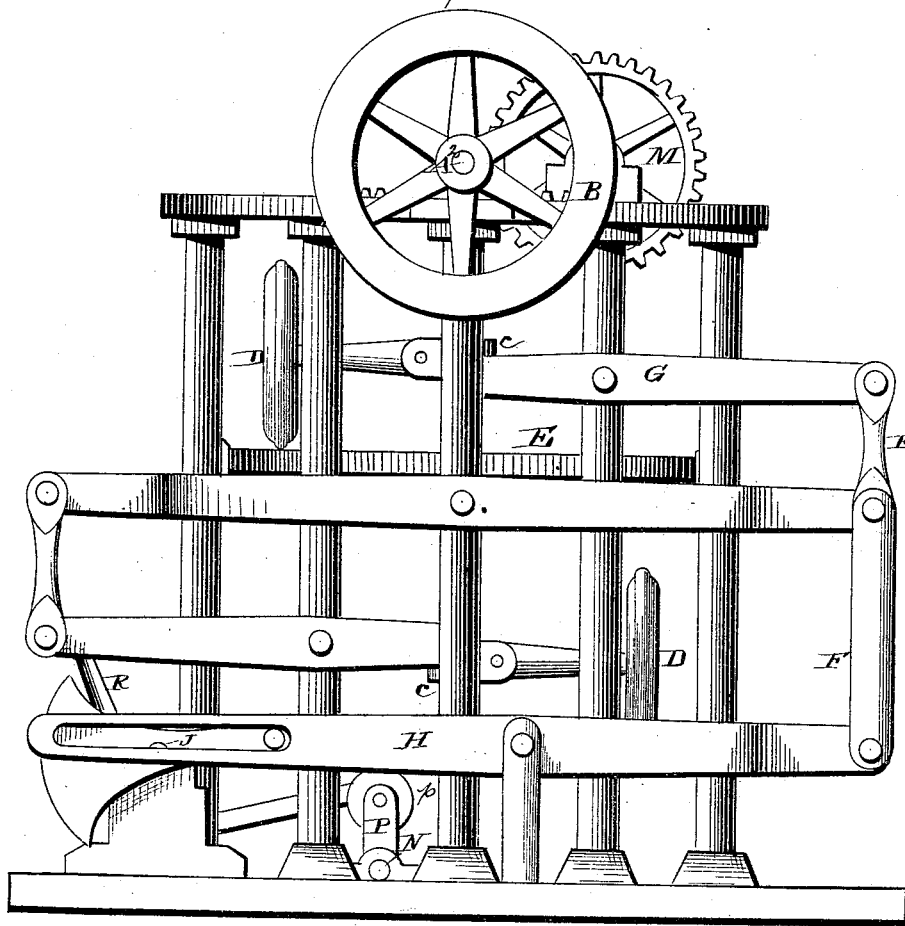
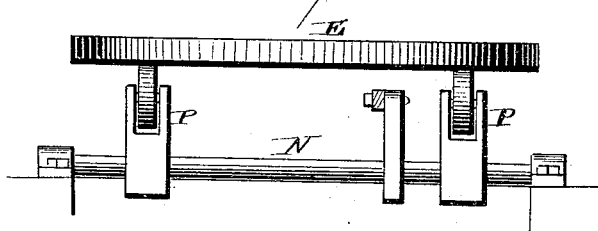


Fig. 3.



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UNITED STATES PATENT OFFICE.

JACOB HELLMAN, OF QUINCY, ILLINOIS.

IMPROVEMENT IN MECHANICAL POWERS.

Specification forming part of Letters Patent No. **217,871**, dated July 29, 1879; application filed March 21, 1879.

To all whom it may concern:

Be it known that I, JACOB HELLMAN, of Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Mechanical Powers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to certain improvements in mechanical powers for converting motion; and consists of the parts and combination of parts hereinafter described and claimed.

Referring to the drawings, Figure 1 is a view, in perspective, of the front side and one end of a device made in my preferred form of construction. Fig. 2 is a view, in elevation, of the side not well shown in the preceding figure. Fig. 3 is a detail view of the lower treadway and the shaft for supporting the same against an oscillating movement.

The band-wheel A, over which a band, A¹, passes and communicates power from any suitable actuating source, serves to put the device in motion. This driving-power is transmitted to the horizontal shaft A², which latter is provided with the wheel B, or any equivalent device, by which the driving-power is carried to the machine which is designed to be put in operation. A pinion, *a*, secured to this shaft meshes with a crown-gear, *b*, secured to the upper extremity of the vertical rotary shaft C. Collars *c* are sleeved upon this latter shaft, and secured in vertical adjustment thereon by set-screws *d*. To these collars the rollers D are loosely connected, and adapted to have free swinging movement, each in its own vertical plane. Said rollers may be of any desired form and weight, and work upon their respective treadways E. These latter are, respectively, adapted to have oscillating or laterally-tilting movement, and are horizontally pivoted to suitable standards for this purpose. They are made in ring form, and are relatively connected with each other by a system of links, F, and levers G, which may be changed or modified in any desired manner, provided only the same result still obtains.

A lever, H, connects with one extremity of a lower horizontal rotary shaft, J, which latter is made in two transverse sections, adapted to be connected and disconnected by any suitable clutch mechanism, K. To the outer extremity of the other section of this shaft lever L connects, by intermediate gearing, M, with the driving-shaft at the extremity of the latter, opposite to its extremity, which is provided with band-wheel or other driving device. This intermediate gearing, M, is adapted to impart to said driving-shaft a speed of movement greater than that of the shaft J, as the latter is actuated by the connecting mechanism of the oscillating treadways. The pinion and crown-gear engagement of the driving-shaft with the vertical rotary shaft is such as to correspond with said movement of the driving-shaft, and thereby the vertical shaft is rotated with a corresponding speed in carrying the rollers in circular movement about the latter.

When it is desired to maintain the treadways in horizontal position and prevent them from oscillating upon their pivotal bearing, the horizontal shaft N is journaled beneath the lower treadway. Right-angular arms P are formed near the opposite extremities of this latter shaft, and provided with anti-friction rollers *p*. By operating the hand-lever R, suitably connected with said shaft, the latter is rotated, so as to throw said anti-friction rollers in vertical bearing position against the under side of said lower treadway, thereby locking the same against all tendency to vibrate or tilt.

If so desired, the device may be made with but one oscillating treadway and one roller to travel thereon; or more than two treadways, with their corresponding rollers, may be made; but, preferably, I employ the two treadways and the two rollers, as herein shown.

All the several parts of the invention can be made of any suitable material, size, weight, or form, and hence no specific reference to said parts is necessary as regards such features of their construction.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with shaft A², a vertical

rotary shaft gearing therewith, and rollers loosely connected with the latter, so as to have swinging movement in a vertical plane, of one or more treadways, which are horizontally pivoted, and mechanism connecting the latter with a horizontal rotary shaft having intermediate connection with said shaft A², substantially as set forth.

2. The combination, with shaft A², a vertical rotary shaft gearing therewith, and rollers connected with the latter so as to have swinging movement in a vertical plane, of two or more treadways made in ring form and oscillating on horizontal pivots, together with link-and-lever mechanism connecting said treadways with each other, respectively, on opposite sides of the pivotal line of the same, substantially as set forth.

3. The combination, with shaft A², provided with a pinion, a vertical rotating shaft, having a crown-gear secured to its upper extremity and meshing with the latter, rollers loosely connected with said vertical shaft, so as to have swinging movement in a vertical plane, and horizontally-pivoted treadways, of a lower horizontal rotary shaft, connecting by intermediate mechanism with said treadways, and also with said shaft A² at the extremity of the latter opposite to that which is provided with a band-wheel or other suitable driving device, substantially as set forth.

4. The combination, with a driving-shaft gearing with a vertical rotary shaft, rollers connected with the latter so as to have swinging movement in vertical plane, and horizontal oscillating treadways, of a horizontal rotary shaft made in two transverse sections, connected, as desired, by a clutch device, one of said sections having intermediate connection with the shaft A², while the other section has intermediate connection with the oscillating treadways, substantially as set forth.

5. The combination, with a vertical rotary shaft having a roller loosely connected therewith, so as to swing in vertical plane, and a horizontal oscillating treadway, of a shaft journaled below the latter and provided with right-angular arms, which carry anti-friction rollers, together with a lever adapted to operate said latter shaft so as to place its rollers in vertical bearing position beneath the treadway, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of March, 1879.

JACOB HELLMAN.

Witnesses:

CHARLES PFEIFFER,
JOHN NESSLER.