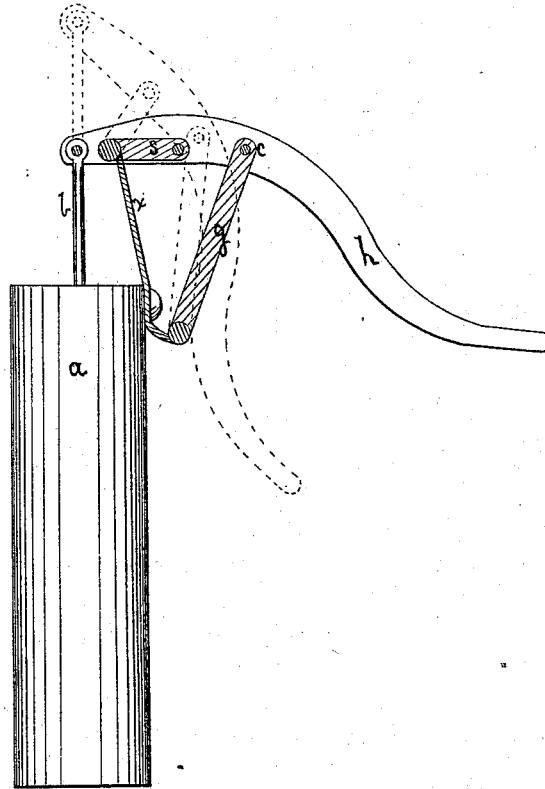


G. W. LOW.  
MECHANICAL MOVEMENT.

No. 187,473.

Patented Feb. 20, 1877.



Witnesses  
*George F. Robinson*  
*John Nichols*

Inventor  
Garrett W. Low  
by Bradford Howland  
his Attorney.

# UNITED STATES PATENT OFFICE.

GARRETT W. LOW, OF ERIE, PENNSYLVANIA.

## IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **187,473**, dated February 20, 1877; application filed January 8, 1877.

*To all whom it may concern:*

Be it known that I, GARRETT W. LOW, of Erie, Pennsylvania, have invented a new and useful Improvement in Mechanical Movements, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing.

The object of my invention is to impart a direct reciprocating motion to a piston-rod by means of a lever, whose fulcrum has a reciprocating movement given to it by an oscillating arm connecting with the lever between its fulcrum and the piston-rod.

Figure 1 is an elevation illustrating the invention.

Motion is given to the piston-rod *b* in the hollow cylinder *a* by means of the handle of the lever *h*. The fulcrum *c* of the lever *h* is in the oscillating arm *g*, which turns on a pin in the standard *x*, attached to the cylinder *a*. Between the fulcrum *c* and the piston-rod *b*, the lever *h* is connected with the oscillating arm *s*, which turns on a pin in the standard *a*. The relative positions of the two

oscillating arms *s* and *g* are such that when the lever *h* is at right angles to the piston-rod *b*, the arm *s* is parallel with the lever, and nearly at right angles to the arm *g*, as shown in the drawing, and by turning the lever on its fulcrum the arm *s* moves the fulcrum *c* toward the piston-rod, so that the end of the lever *h*, which is connected with the piston-rod *b*, moves the piston-rod in a direct or approximately direct line, as shown by the dotted lines in Fig. 1.

I claim as my invention—

1. The oscillating arm *s*, in combination with the lever *h*, having a movable fulcrum, *c*, substantially as and for the purpose herein set forth.

2. The combination of the lever *h*, the oscillating arms *s* and *g*, and the piston-rod *b*, substantially as and for the purpose herein set forth.

GARRETT W. LOW.

Witnesses:

A. B. GUNNISON,  
FRANK GUNNISON.