(No Model.)

J. H. SMALLWOOD.

MECHANICAL MOVEMENT.

No. 373,317. Patented Nov. 15, 1887.

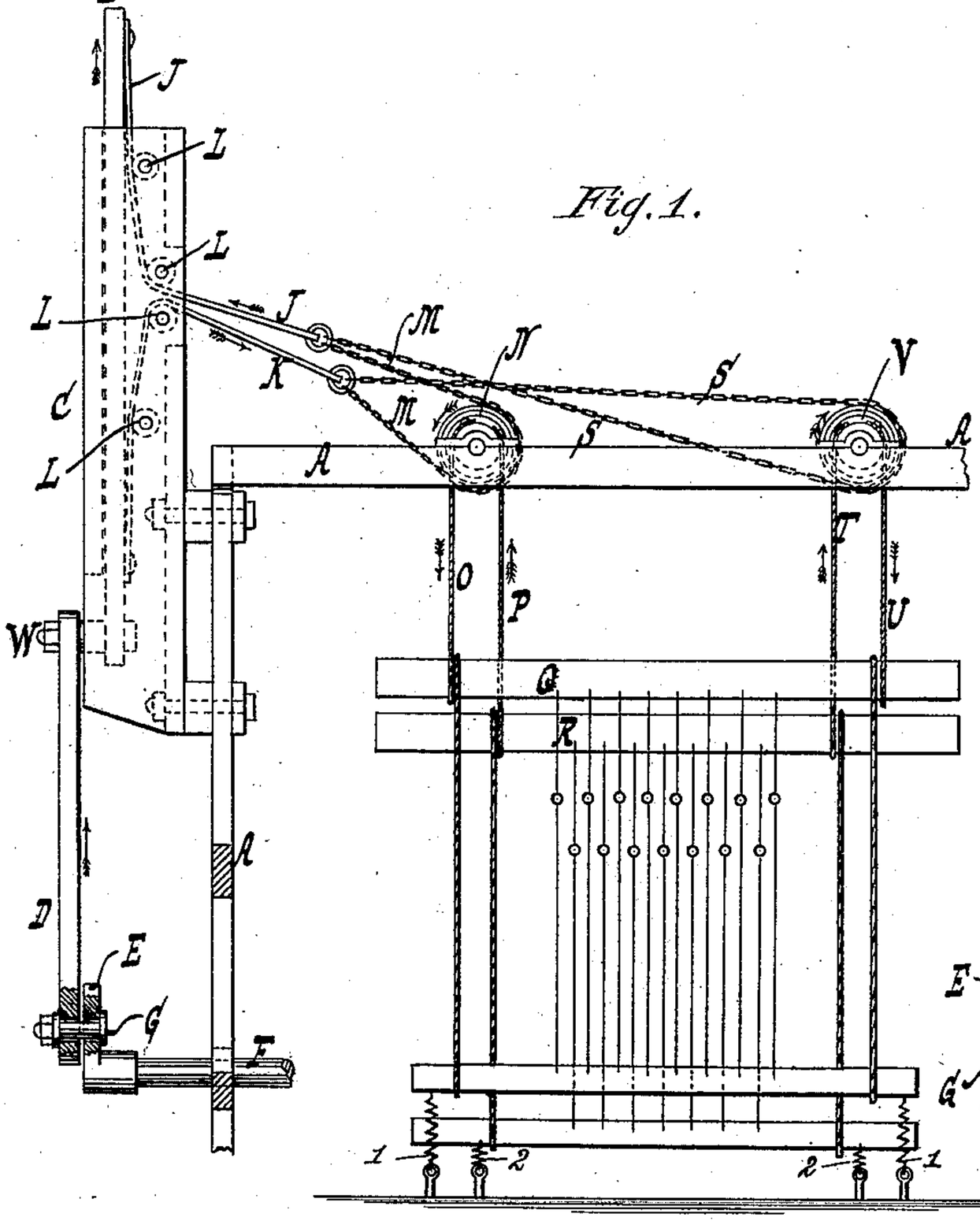

Fig. 1.

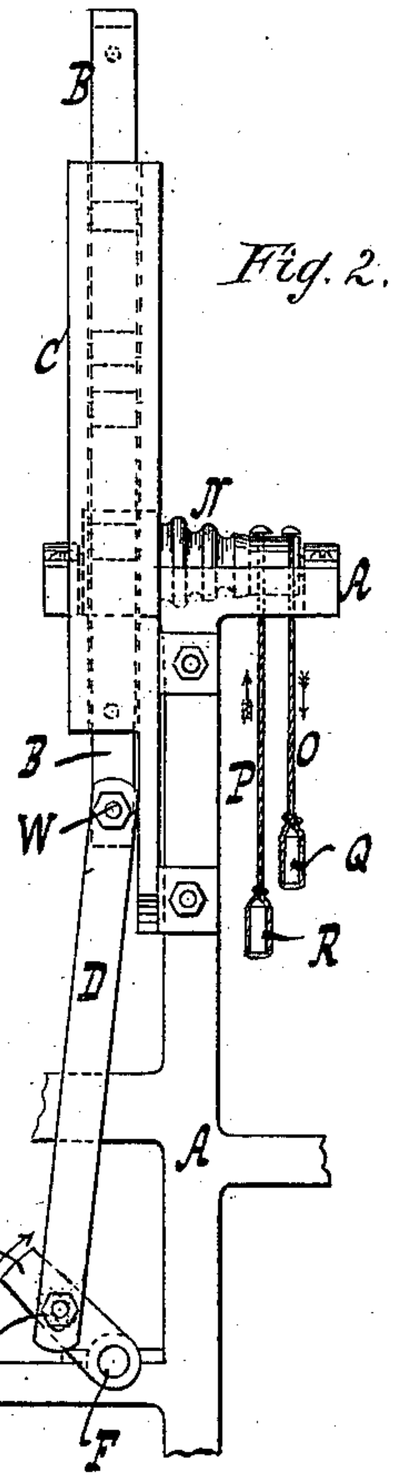

Fig. 2.

WITNESSES:

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JOHN HENRY SMALLWOOD, OF PATERSON, NEW JERSEY, ASSIGNOR TO H. H. FREEMAN & CO., OF SAME PLACE.

MECHANICAL MOVEMENT.

SPECIFICATION forming part of Letters Patent No. 373,317, dated November 15, 1887.

Application filed January 13, 1887. Serial No. 224,226. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY SMALLWOOD, a subject of the Queen of Great Britain, residing at Paterson, in the county of Passaic and State of New Jersey, have invented new and useful Improvements in Mechanical Movements, of which the following is a specification.

This invention relates to an improvement in mechanical movements, as set forth in the following specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation, partly in section, of a mechanical movement. Fig. 2 is a side elevation of the same.

Similar letters indicate corresponding parts.

The arrows shown in the drawings indicate the direction of movement of the parts at one moment.

A is a frame or support, of wood, iron, or any suitable material.

B is a reciprocating actuator operating in a guide-frame, C. Motion is imparted to the reciprocating actuator by suitable means—such, for example, as a rod or pitman, D, connected by suitable means—such as a pivot, W—to the actuator B. A crank, E, mounted on a shaft, F, and connected by a pivot, G, with the pitman D, imparts motion to the latter, and thereby reciprocates the actuator B, said actuator, as here shown, consisting of a sliding bar. To the upper and lower portions, respectively, of the actuator are attached the ends of two straps or chains, J K, which extend toward each other and then pass over guides—such as pulleys L—and are connected to cords or chains M and S as follows: The cord or chain M passes around a pulley, N, on the frame A, and has one end connected with the strap or chain J and the other end connected with the strap or chain K, while the cord or chain S passes around a secondary pulley, V, also on the frame A, and has one end connected with the strap or chain J and its other end connected with the strap or chain K. The pulley N is connected by cords or chains O P with the object to be operated, and likewise the secondary pulley V is connected with the object to be operated. As shown, the object comprises two beams, Q R, to which an alternating motion is to be imparted. The rising movement of the actuator draws the strap or chain J, and consequently the cords or chains M S are moved and the pulleys N and V thereby oscillated in opposite directions, as indicated by the arrows, Fig. 1, this being permitted by reason of the strap K moving in the direction of the arrow adjacent to said strap. The downward movement of the actuator necessarily oscillates the pulleys in the opposite directions, and such oscillating movements impart alternating motions to the beams Q R.

The pulley N, as shown in Fig. 2, is cone-shaped, so that by placing the chain M about different diameters of said pulley the latter can be oscillated with greater or less speed.

As an example of applying my invention, I will mention that the rods or beams Q R can be part of the heddle-frames of a loom-harness, the alternate movements of the beams actuating the heddles to form sheds for the fabric being woven, as usual. The heddle-frames can be depressed by springs 1 2, or otherwise. I do not, however, confine my invention to the special purpose alluded to.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a main frame, A, a vertical guide-frame, C, the reciprocating actuator B in the guide-frame, the two straps or chains J K, connected, respectively, with the upper and lower portions of the actuator, guide-pulleys L on the guide-frame for the straps or chains, the pulleys N and V on the main frame, cords or chains O P and T U, respectively connecting the latter pulleys with the object to be operated, and cords or chains M and S, passed, respectively, around the pulleys N and V, and each chain having one end secured to the strap J and the other end secured to the strap K, for oscillating the two pulleys in opposite directions, substantially as described.

2. The combination of a frame, A, the reciprocating actuator B, the two straps or chains J K, connected, respectively, with the upper and lower portions of the actuator, guides L

for the straps or chains, the pulleys N and V on the frame, and cords or chains M and S, passing, respectively, around the pulleys, and each strap having one end secured to the strap J and the other end secured to the strap K, for oscillating the two pulleys in opposite directions, substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

JOHN HENRY SMALLWOOD. [L. S.]

Witnesses:

JAS. W. ROW,

W. F. CHILDS, Jr.