

A. WARTH.
MECHANICAL MOVEMENT.

No. 172,802.

Patented Jan. 25, 1876.

Fig. 1.

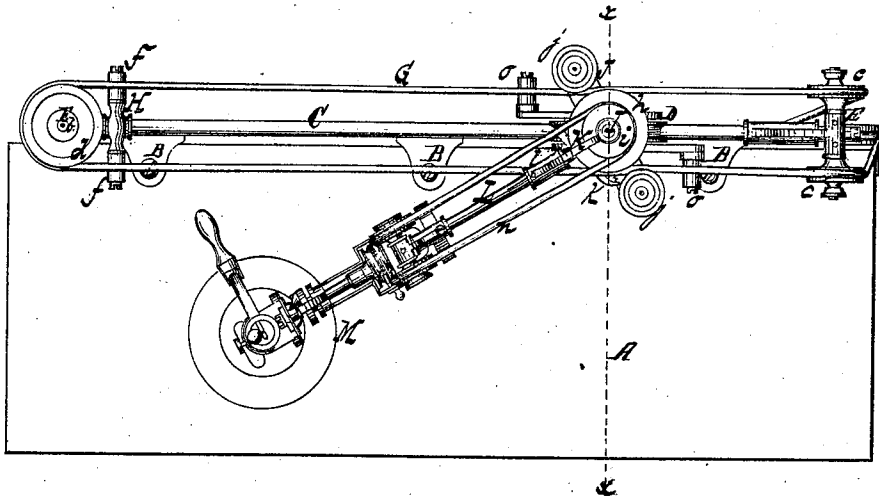
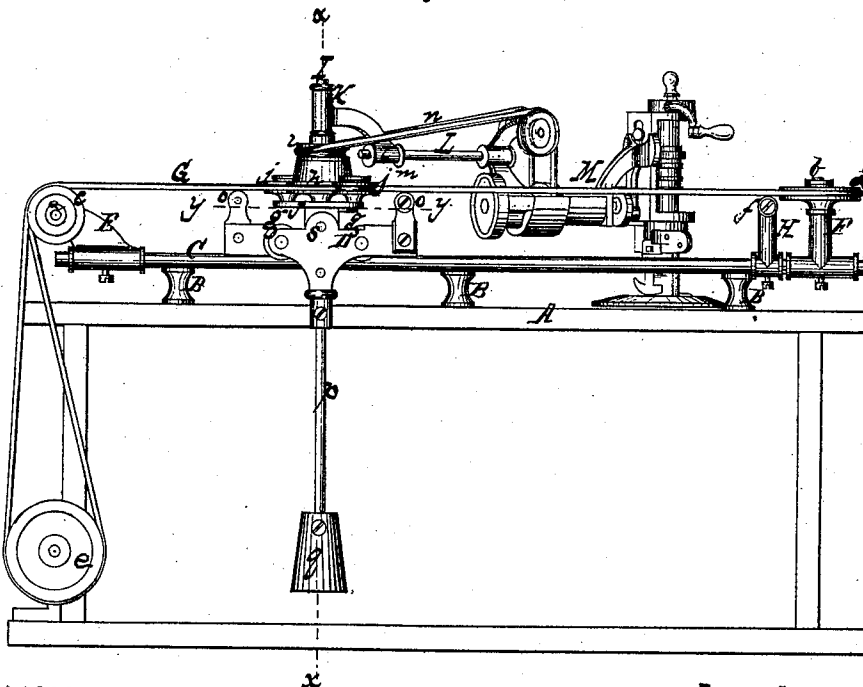


Fig. 2.



Witnesses.

Otto Hufeland
Char. Wahlers

Inventor.

Allin Warth
by Vandantonn & Hauff
his attys.

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Fig. 3.

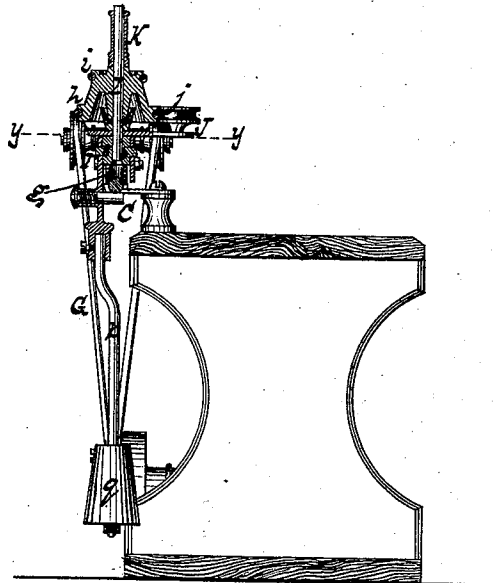
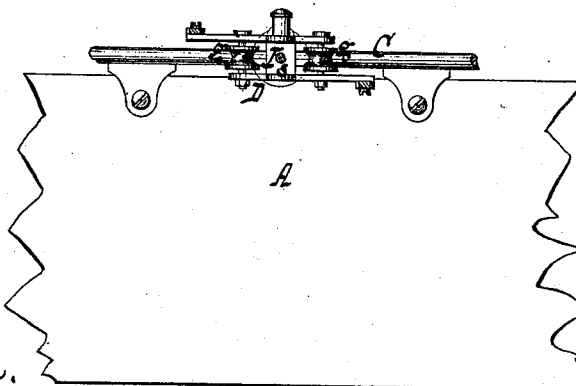


Fig. 4.



Witnesses.

Otto Shifeland.
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UNITED STATES PATENT OFFICE.

ALBIN WARTH, OF STAPLETON, NEW YORK.

IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **172,802**, dated January 25, 1876; application filed December 1, 1875.

To all whom it may concern:

Be it known that I, ALBIN WARTH, of Stapleton, in the county of Richmond and State of New York, have invented a new and Improved Mechanical Movement, which invention is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a plan or top view. Fig. 2 is a rear view. Fig. 3 is a transverse section in the plane $x x$, Fig. 1. Fig. 4 is a horizontal section in the plane $y y$, Fig. 2.

Similar letters indicate corresponding parts.

This invention relates to certain improvements on that class of mechanical movements which are composed of a carriage acted on by a belt that receives a continuous motion from some source, said carriage being provided with a swivel-standard, and with a pulley, from which motion is transmitted to a working-machine, as fully described in my Patent No. 151,457, dated May 26, 1874.

My present improvement consists in combining with the carriage and the carriage-supporting rail, and with the traveling belt, suitable supports, which retain said belt in the proper position, and prevent the same from running off from its pulleys; also, in combining with the carriage and its standard an arm radiating from the same, and bearing at its outer end a socket, which is open at both ends, and in which the rod is secured which connects the traveling carriage with the working machine, so that said rod can be moved in or out, and the tension of the belt transmitting motion to the working machine can be adjusted; further, in the combination, with the carriage and with the rod connecting the same to a working machine, of a balance-weight, which counterbalances, to some extent, the weight of the working machine, and facilitates the motion thereof over the work table or bench; also, in combining with the carriage and its guide-rail suitable grooved supporting-rollers, to facilitate the motion of said carriage; further, in the combination, with the rod or standard which rises from the carriage, and with said carriage and the rod connecting the same to a working machine, of

a joint, whereby the motion of the working machine and the operation of the apparatus are materially facilitated.

In the drawing, the letter A designates a table, on which, near one of its edges, are secured a series of posts, B, which form the supports for a rail, C, on which travels the carriage D.

From the posts, which are situated near the ends of the table A, rise standards E F, one of which forms the bearing for a horizontal arbor, a , while in the other is secured a vertical arbor, b .

On the horizontal arbor are mounted two pulleys, $c c$, and on the vertical arbor a single pulley, d , the diameter of which is equal to the distance between the pulleys $c c$. A belt, G, is stretched round the pulley d , over the pulleys $c c$, and round a pulley, e , which is mounted on the driving-shaft.

In the example shown in the drawing this driving-shaft is mounted beneath the table A; but its position may be changed, as circumstances may require.

When the driving-shaft is in motion the belt G moves with it. This belt I have termed the "traveling belt."

If this belt is of great length, and it is left entirely unsupported between the pulleys $c c$ and the pulley d , it is liable to sway up and down to a considerable extent, and also to run off from its pulleys.

These difficulties I have obviated by securing on the guide-rail C one or more T-shaped standards, H, on the ends of whose horizontal arms are secured rollers f , which support the traveling belt G. Said T-shaped standards may be made adjustable on the guide-rail, so that their position can be changed to suit circumstances.

The carriage D is provided with grooved rollers g , which travel on the guide-rail C, and from said carriage rises a vertical rod or standard, I, on which are mounted loosely a transverse bar, J, and a double pulley, $h i$.

On the transverse bar J are secured two pulleys, j , and if said bar is turned in an oblique position the pulleys j compress the two strands of the traveling belt against the cir-

cumference of the pulley *h*, the diameter of which is equal, or nearly so, to that of the pulley *d*.

The transverse bar *J* is locked in its oblique position by a suitable latch or catch, *k*; and if motion is imparted to the traveling belt *G*, the pulleys *h i* of the carriage are caused to revolve, while the carriage can be freely moved on the guide-rail *C* without interrupting the motion of its pulleys.

On the rod or standard *I* of the carriage *D* is mounted loosely an arm, *K*, which is provided with a socket, *l*, for the reception of rod *L*, that forms the connection between the carriage *D* and the working-machine *M*.

In the example shown in the drawing I have shown a machine for cutting textile fabrics attached to the rod *L*; but any other working machine—such, for instance, as a drilling-machine or a mortising-machine—may be substituted for said cutting-machine.

The socket *l* is open at both ends, so that the rod *L* can be passed clear through it, and said rod is secured in position by a set-screw, *m*, so that it can be adjusted backward and forward.

Motion is imparted to the working machine by a belt, *n*, which extends over the pulley *i* of the carriage *D*, and, by moving the rod *L* backward or forward in its socket *l*, the tension of this belt can be regulated.

If the belt should stretch at any time, a slight motion of the rod *L* in the proper direction will readjust its proper tension.

On the carriage *D* are secured supports *o o* for the traveling belt, so that the same is not liable to run off from the pulley *h*.

From the bottom edge of said carriage extends a rod, *p*, on which is secured a weight, *q*, that serves to counterbalance, to some extent, the weight of the working machine attached to the rod *L*, so that said working machine can be moved over the table *A* with little exertion. This motion of the working machine is still further facilitated by constructing the guide-rail *C* in the form of a cylindrical rod, and by providing the carriage with grooved rollers *g g*, the grooves of which fit said rail, so that the carriage will not only move easy in the direction of the length of said rail, but it can also be turned on said rail if it is desirable to raise the working machine on the table, while the balance-weight on one side, and the weight of the working machine on the opposite side, keep said carriage securely down on the guide-rail.

The rod or standard *I* is connected to the carriage *D* by a hinge-joint, *s*, so that when the working machine is brought close to the traveling belt it can still be lifted off from the table *A*.

By these means the position of the working machine over the table *A* can be readily accommodated to the work to be accomplished.

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

1. In a mechanical motion composed of a carriage, a traveling belt, and a standard connecting the carriage to a working machine, I claim the combination of supports *H*, one or more, with the traveling belt and the carriage, and the swivel-arm and rollers on the carriage, for throwing the carriage in or out of gear with the traveling belt, substantially as and for the purposes set forth.

2. In a mechanical motion composed of a carriage, a traveling belt, and a standard connecting the carriage to a working machine, I claim the swivel-arm *K*, provided with a socket, *l*, which is open at both ends, and through which extends the rod connecting said carriage to the working machine, substantially as and for the purpose described.

3. In a mechanical motion composed of a carriage, a traveling belt, and a standard connecting the carriage to a working machine, I claim the combination of a balance-weight with the carriage, the rod connecting the working machine to said carriage, and the swivel-arm and rollers on the carriage, for throwing the carriage in or out of gear with the traveling belt, substantially as and for the purpose set forth.

4. In a mechanical motion constructed as above stated, I claim the combination of grooved rollers with the guide-rail *C* and with the carriage *D*, and the swivel-arm and rollers on the carriage, for throwing the carriage in or out of gear with the traveling belt, substantially as described.

5. In a mechanical motion, as above described, I claim the combination of a hinge-joint with the rod or standard *I* and the carriage *D*, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of November, 1875.

ALBIN WARTH.

Witnesses:

W. HAUFF,
E. F. KASTENHUBER.