A. WARTH.

Machine for Cutting Textile Fabric.

No. 202,901. Patented April 23, 1878.

Fig.1.

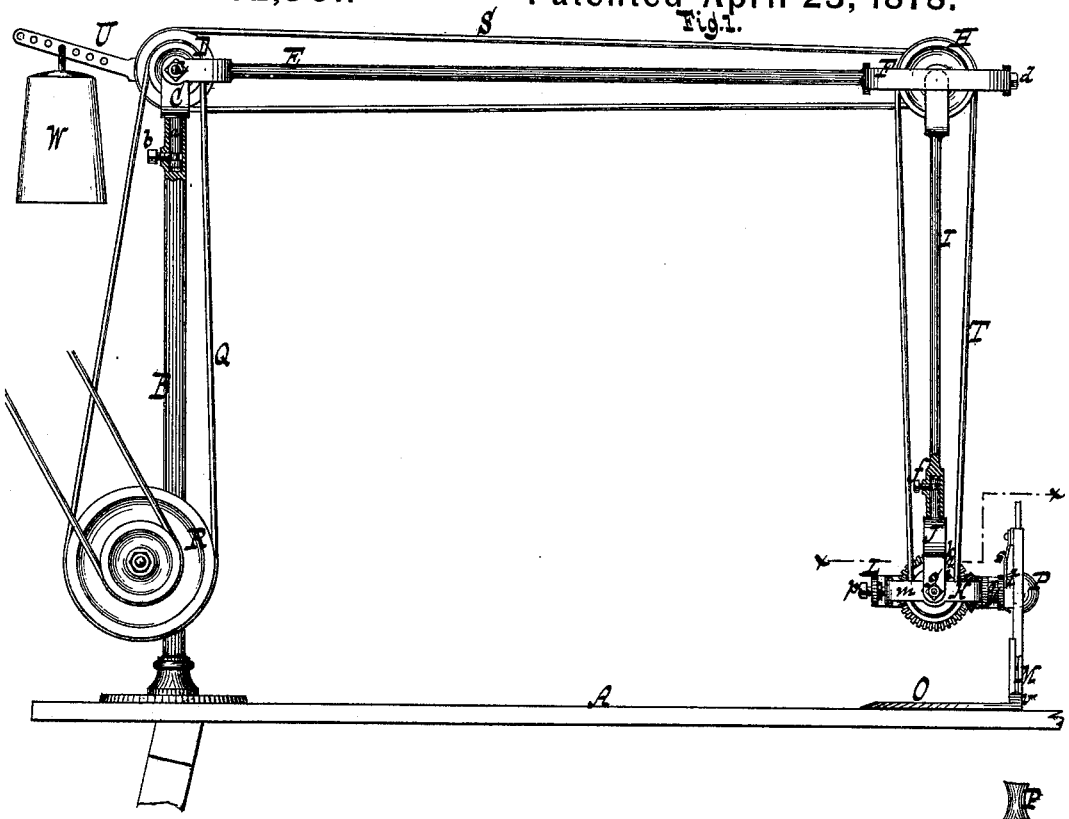


Fig.2.

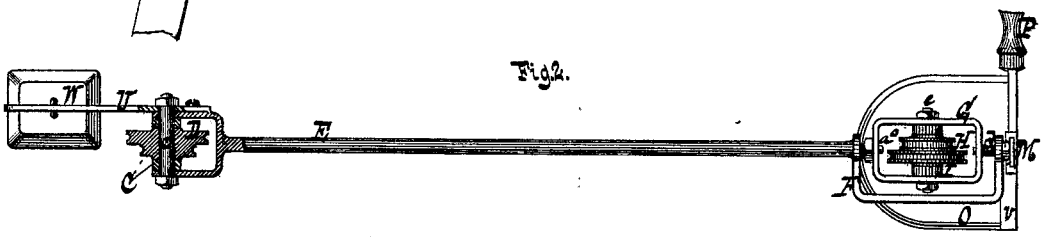


Fig.4.

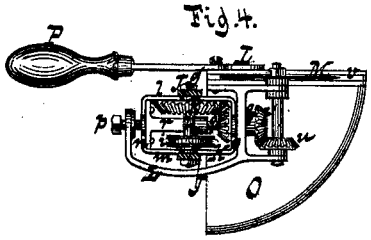


Fig.3.

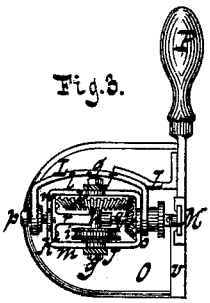
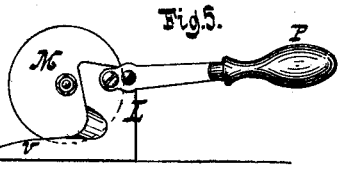


Fig.5.



Witnesses

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UNITED STATES PATENT OFFICE.

ALBIN WARTH, OF STAPLETON, NEW YORK.

IMPROVEMENT IN MACHINES FOR CUTTING TEXTILE FABRICS.

Specification forming part of Letters Patent No. **202,901**, dated April 23, 1878; application filed February 7, 1878.

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 useful Improvement in Machines for Cutting Textile and other Materials, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 represents a sectional elevation of my machine when arranged for a reciprocating cutter. Fig. 2 is a sectional plan or top view. Fig. 3 is a horizontal section in the plane *x x*, Fig. 1. Fig. 4 is a similar section when a rotary cutter is used. Fig. 5 is a side view of the rotating cutter.

Similar letters indicate corresponding parts.

This invention relates to an improvement in that class of machines for cutting textile and other materials in which the cutting mechanism is secured to a foot-plate provided with a knife-receiving socket, one or both edges of which co-operate with the cutting-edge of the knife, the foot-plate being provided with a handle, which serves to move it beneath the material to be cut, and being also connected to suitable mechanism for imparting the desired motion to the knife.

Various means have been used heretofore for the purpose of moving the foot-plate, which carries the mechanism for imparting motion to the cutter, beneath the material to be cut, without disengaging the cutting mechanism from the driving mechanism, such being shown first in my Patent No. 106,101, Reissue No. 5,186, and also in my Patents No. 130,343, Reissue No. 6,238, No. 130,344, and No. 151,456.

My present invention consists in the combination, with the foot-plate and with the cutter supported by said foot-plate and engaging with the knife-receiving socket, the edges of which serve to lift the material to be cut to the cutter, of a U-shaped bracket, one arm of which forms the bearing for the shaft that serves to transmit motion to the cutter, and which, for the sake of brevity, I term the "transmitting-shaft," while its other arm is tapped to receive a screw; a swivel-frame which is supported on two of its opposite sides on said transmitting-shaft and screw, while its two other sides are supported on a rod which forms the bearings for a hollow arbor running at right angles to the transmitting-shaft, and being geared together with the same; a swivel-fork which forms the bearings for said rod, two gimbal-joints, a fixed standard, and suitable belts and pulleys, so that great freedom is obtained in moving the cutting mechanism in various directions, and a very rapid and steady motion can be imparted to the cutter, while the handle and the base of the foot-plate enable the operator to retain the cutting mechanism in the required position. The transmitting-shaft is steadied at its inner end by a bracket secured to the swivel-frame.

In the drawing, the letter A designates a table, from which rises a standard, B, the upper end of which is bored out to receive the shank *a* of a fork, C. This shank is provided with a circular groove, which engages with the point of a screw, *b*, so that the fork C can swivel freely in the standard B. In said swivel-fork is secured an arbor, *c*, which forms the bearing for a cone-pulley, D, and for the forked end of a rod, E. On the opposite end of this rod is firmly secured a U-shaped bracket, F, and its end is turned down to form a pivot, a^o, which engages with a hole in one side of a frame, G, (see Fig. 2,) the opposite side of which is supported by the inner end of a screw, *d*, secured in the U-shaped bracket F, so that said frame can freely turn on its bearings. In this frame is secured an arbor, *e*, which extends at right angles to the rod E, and on which revolves a cone-pulley, H. From the arbor *e* is suspended a forked rod, I, the lower end of which is bored out to receive the shank of a swivel-fork, J, said shank being retained in its socket by a circular groove and set-screw, *f*. (See Fig. 1.) In the swivel-fork is secured an arbor, *g*, which extends through the opposite sides *l m* of a frame, K, Figs. 3 and 4, and through a hollow arbor, *h*, on which are firmly mounted a pulley, *i*, and a bevel-wheel, *k*. The side *n* of the frame K has its bearing on the end of a screw, *p*, and the side *o* on a shaft, *q*, the inner end of which is steadied by a bracket, *r*, extending through under the hollow arbor *h*, and firmly secured to the frame K.

The set-screw *p* is secured in one arm of a U-shaped bracket, L, and the shaft *q* extends through the other arm of this bracket, and on

it is firmly mounted a bevel-wheel, *r*, so that it serves to transmit motion to the knife M. When a reciprocating knife is used, as shown in Figs. 1 and 3, the slide connects, by a rod, *s*, with an eccentric wrist-pin, *t*, secured in a disk mounted on the outer end of the transmitting-shaft *q;* but if a revolving knife is used, as shown in Figs. 4 and 5, a bevel-wheel, *t'*, is mounted on the outer end of the transmitting-shaft, and this bevel-wheel gears in a corresponding bevel-wheel, *u*, secured on the knife-shaft.

The U-shaped bracket L is firmly secured to a standard, N, which rises from the foot-plate O, and to which is firmly secured a handle, P, that serves to guide the cutting mechanism. In the foot-plate is formed a knife-receiving socket, *v*, the edges of which serve to lift the material to be cut to the knife.

The small speed of the cone-pulley D connects, by a belt, Q, with the driving-pulley R, while the large speed of said cone-pulley connects, by a belt, S, with the small speed of the cone-pulley H, and the large speed of this cone-pulley connects, by a belt, T, with the pulley *i* in the hollow arbor *h*.

From the forked end of the rod E extends a lever, U, from the outer end of which is suspended a weight, W, that serves to balance the weight of the cutting mechanism, so that the mechanism can be moved easily over the table A. In the example shown by the drawing, the standard B rises from the table A; but, if desired, said standard may be reversed and secured to the ceiling over the table A, leaving the table entirely free for the manipulation of the material to be cut.

The means above described for transmitting motion to the knife are similar to those described in the patent of R. T. Smith for transmitting motive power, No. 59,089, dated October 23, 1866, and also to those described in the patent of J. V. Jenkins for sheep-shearing machines, No. 18,151, patented September 8, 1857; and the cutting mechanisms shown in these two patents could be used for cutting textile and other materials; but in order to adapt the same fully to this purpose it is essential that the cutting mechanism shall be provided with a foot-plate and with a cloth-lifting knife-receiving socket, such as described in my Patent No. 106,101, and in others, as above mentioned.

I disclaim the devices shown and described in Smith's patent, No. 59,089, and in Jenkins' patent, No. 18,151, when used separately and without the foot-plate, its cloth-lifting knife-receiving socket, and handle and cutting mechanism; and I also disclaim in this application for a patent the foot-plate with its cloth-lifting knife-receiving socket, handle, and cutting mechanism, such being claimed in my Patent No. 106,101, Reissue No. 5,186, when used independent of the peculiar joints, arms, and pulleys above described.

A swivel-frame has heretofore been pivoted in a bracket for supporting the gear for operating cutters. Therefore, as such arrangement is old, the same is not claimed by me.

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

The combination, with the foot-plate O, the knife or cutter M, supported by said foot-plate, and the knife-receiving cloth-lifting socket *v* and handle P, both secured to said foot-plate, of a U-shaped bracket, L, transmitting-shaft *q*, swivel-frame K, arbor *h*, carrying a pulley, *i*, and bevel-wheel *k*, swivel-fork J, rod I, arbor *e*, swivel-frame G, cone-pulley H, U-shaped bracket F, forked rod E, arbor *c*, cone-pulley D, swivel-fork C, and standard or hanger B, all constructed and adapted to operate substantially as herein shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 2d day of February, 1878.

ALBIN WARTH. [L. S.]

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.