(No Model.)

W. DIEBEL.

POWER SHEARS FOR CUTTING KNIT OR WOVEN FABRICS, &c.

No. 262,748. Patented Aug. 15, 1882.

FIG. 1.

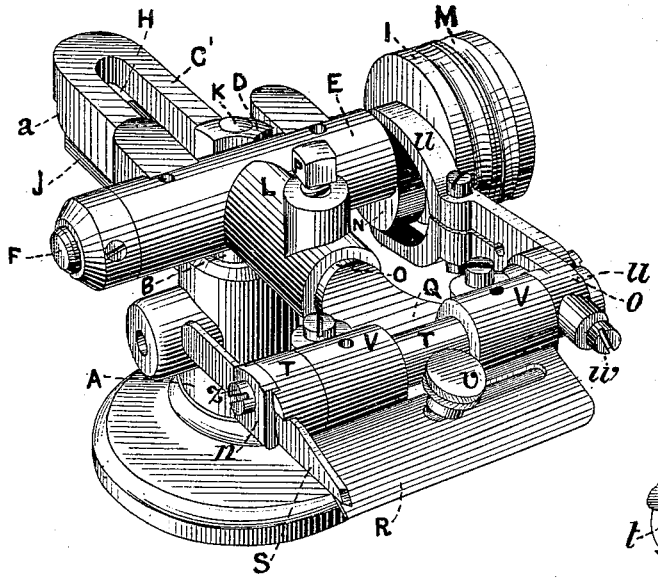

FIG. 4.

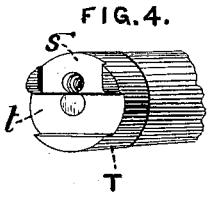

FIG. 2.

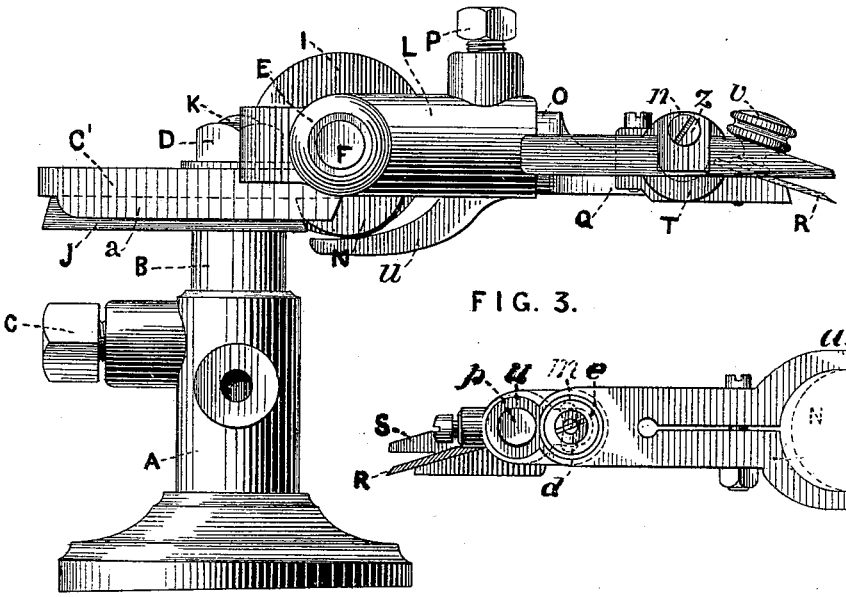

FIG. 3.

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POWER-SHEARS FOR CUTTING KNIT OR WOVEN FABRICS, &c.

SPECIFICATION forming part of Letters Patent No. 262,748, dated August 15, 1882.

Application filed June 23, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DIEBEL, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Power-Shears for Cutting Knit or Woven Fabrics, &c.

The following is a specification of my improvements, reference being had to the accompanying drawings, wherein—

Figure 1 is a view in perspective, and Fig. 2 an end elevation, of my improved shear, Fig. 3 being an elevation of a portion thereof, seen from the opposite end to that indicated in Fig. 1. Fig. 4 is a view in perspective of the end portion of the rock-shaft.

It being often desirable to trim the seams or edges of sewed fabrics, it is found convenient to have the trimming device in juxtaposition to the sewing-machine in order to avoid loss of time in handling the goods and to accomplish the trimming immediately after the sewing operation.

The object of my invention is to provide a means of adjusting the shears vertically and horizontally, so that they can be set in any desired position; also, to permit the adjustment of the blades relatively to one another, so as to compensate for the wearing away of their cutting-edges, and also to render the parts readily detachable, so that they can be replaced or renewed without trouble.

The tubular base-piece A may be mounted upon a table or other support convenient to a driving-shaft, and receives the telescoping standard B, which, by means of the set-screw C, may be adjusted at the proper height and horizontal angle. A horizontal guide-piece, J, mounted upon the telescoping standard B, carries the slotted arm C′, whose downwardly-depending side flanges, *a*, conform to the sides of the piece J, and the sleeve E and socket L, at right angles thereto, and cast in one piece with the arm C′. A vertical screw-shank, K, projects upwardly from the guide-piece J through the slot H of the arm C′, and is provided with a nut, D, by means of which the arm C′, its sleeve E, and socket L may be set at any desired position horizontally. The sleeve E forms the bearings of the shaft F, which is provided with the eccentric N and the usual fast and loose pulleys, I M, respectively.

A cylindrical shank, O, fits snugly in the socket L, and is capable of adjustment by means of the set-screw P. The shank O terminates in a downwardly-inclined platform, Q, which supports the shearing mechanism. This latter consists of a stationary lower blade, R, formed of a steel plate, which is adjustable laterally by means of the clamping-screw *r* and an upper blade, S, which is oscillated by means of the rock-shaft T. To render the upper blade, S, adjustable in the direction of its length, I form a horizontal slot, *t*, and a vertical slot, *s*, in the head of the rock-shaft. The upper blade, S, consisting of a rigid flat bar of steel, fits snugly in the recess formed by the slot *t*, and is held in position by means of the clamping-piece *n*, which is secured in the vertical slot *s* by means of a screw, *z*.

It will thus be seen that by slightly loosening the screw *z* the blade S is permitted to slide longitudinally in the recess *t*, so as to be adjustable at any point or removed for sharpening when necessary.

The rock-shaft T, supported in bearings V V, is actuated by means of the eccentric N and strap *u*, the latter being constructed so as to allow of considerable play to compensate for the differences of position of the shearing mechanism relatively to the shaft F, caused by varying adjustments of the shank O in the socket L.

The device whereby the eccentric-strap *u* is attached to the rock-shaft T forms another and valuable feature of improvement. The projecting end, *p*, of the rock-shaft passes through a crank, *o*, is secured to it by means of a set-screw, *w*, and is then received into a snugly-fitting eye in the end of the strap *u*.

A clamping-screw, *d*, mounted upon the rear end of the crank *o*, passes through a curved slot, *m*, formed in the strap *u*, as indicated by the dotted lines in Fig. 3, and is provided with a collar, *e*, by means of which the strap can be securely clamped to the crank *o*. Within the limits of the arc of this slot *m* the crank *o* and rock-shaft T, and consequently the blade S,

can be rotated and secured in any desired position relatively to the eccentric-strap *u*, the object of such adjustment being as follows:

It is desirable to have the cutting action take place as near as possible to the tips of the shear-blades, and as the upper blade wears away rapidly in a vertical direction it is necessary to provide some means whereby the vertical separation of the edges can be compensated.

The slot *p* permits the rotation of the rock-shaft T and crank *o* through a considerable arc, and as the distance from the center of the rock-shaft to the tip of the blade S is greater than the length of the crank *o* the arc through which the end of the blade S may be adjusted is of greater extent than the whole depth of the blade. As the blade S becomes worn away vertically its edge may be adjusted downward, so as to cut against the fixed blade R until too thin to sustain the strain of cutting, after which, by loosening the clamp *u*, the blade S may be protruded forward, so as to bring fresh portions into operation. The strip which forms the blade S can thus be used down to the utmost possible limits of length and width, while any wearing away of its thickness can be compensated by the lateral adjustment of the lower blade, R.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination, with the base-plate and the shears, of the telescoping standard B, adjustable both vertically and axially, arm S, adjustable horizontally, and their respective clamping devices, substantially as set forth.

2. The combination, with the shears and the base-piece, of the socket L and shank O and clamping device, substantially as set forth.

3. The combination, with the stationary blade, of an oscillating blade adjustable in the arc of its oscillation, substantially as set forth.

4. The combination of the blade S, the slot *t* in the head of the rock-shaft, and the clamping device *u*, substantially as set forth.

5. The combination of a laterally-adjustable fixed blade with an oscillating blade adjustable both longitudinally and in the arc of its oscillation, substantially as set forth.

6. The combination of the rock-shaft T and the crank *o*, secured thereto, with the eccentric-strap *u* and curved slot *p* and the clamping device, whereby said crank and strap may be adjusted relatively to one another, substantially as and for the purposes set forth.

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