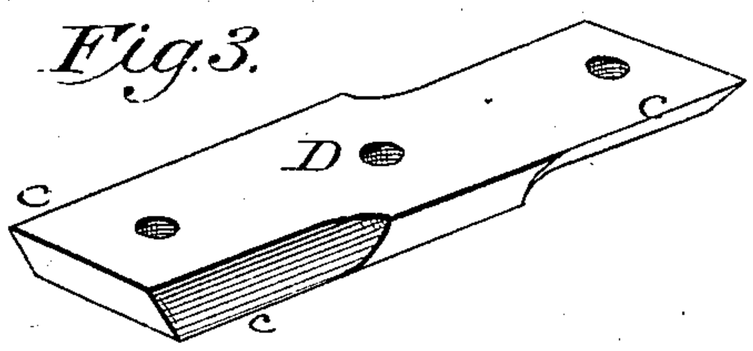
(No Model.)

J. F. THOMAS.

MACHINE FOR TRIMMING HEMS AND SEAMS OF SEWED FABRICS, &c.

No. 255,899. Patented Apr. 4, 1882.

Fig. 3.



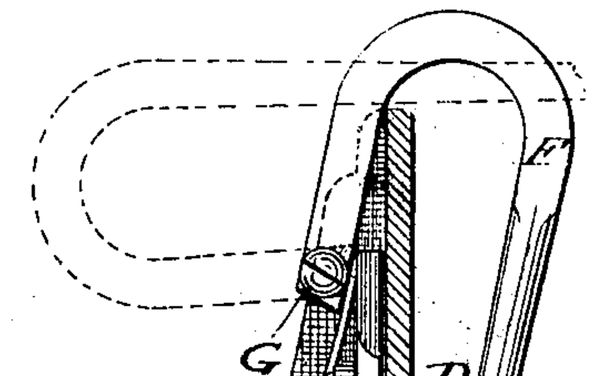


Fig. 1.

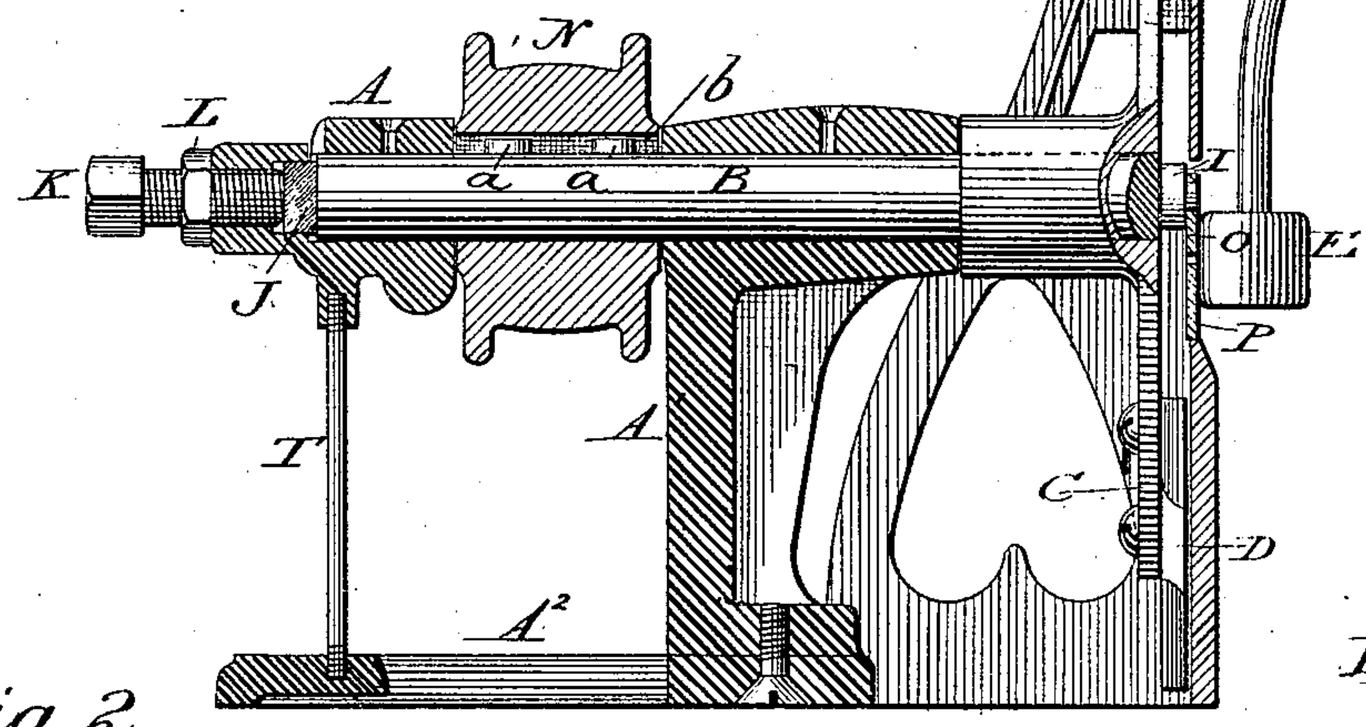


Fig. 2.

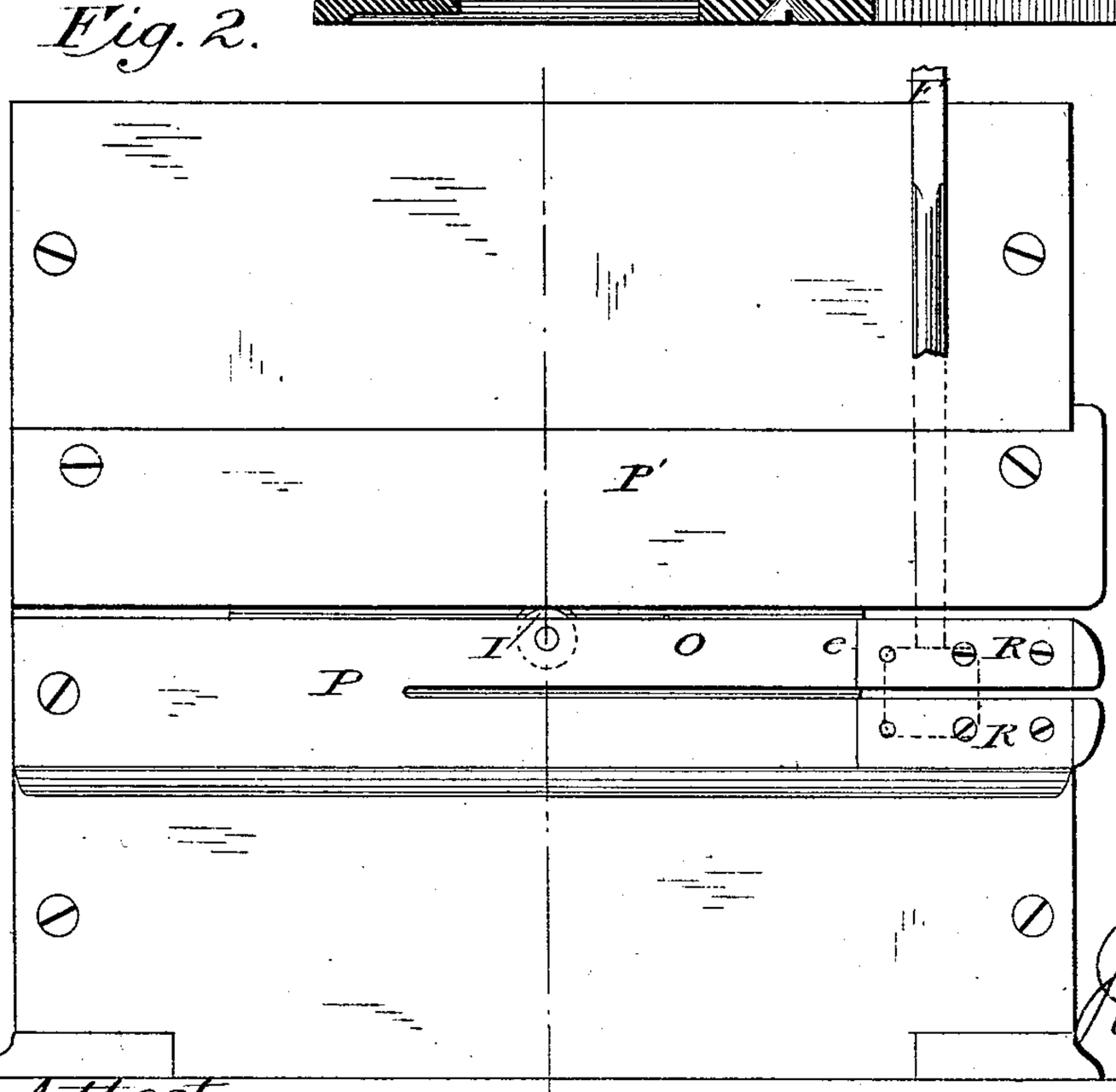


Fig. 4.

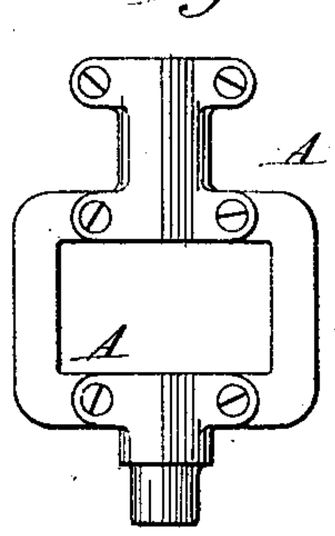
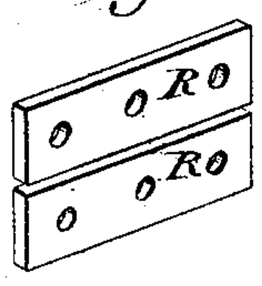


Fig. 5.



Inventor.
J. F. Thomas.
by Dodgeson,
Attys

Attest.
Sidney P. Hollingsworth
Walter S. Dodge.

UNITED STATES PATENT OFFICE.

JOHN F. THOMAS, OF ILION, NEW YORK.

MACHINE FOR TRIMMING HEMS AND SEAMS OF SEWED FABRICS, &c.

SPECIFICATION forming part of Letters Patent No. 255,899, dated April 4, 1882.

Application filed January 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. THOMAS, of Ilion, in the county of Herkimer and State of New York, have invented certain Improvements in Machines for Trimming Hems and Seams of Sewed Fabrics, &c., of which the following is a specification.

My invention relates to machines for trimming hems and seams of sewed articles or the edges of fabrics which are loose and rough, it being more especially designed for use in connection with knit goods or fabrics.

The invention relates more especially to the machine patented to W. Denton, September 8, 1881, No. 246,733, or machines of that character; and my invention consists, first, in a new style of cutter, whereby it is provided with four distinct cutting-edges instead of one; second, in providing stationary cutters or holding-plates separate from the face-plate proper; third, in providing novel means for adjusting the cutters with their carrying head and shaft; and, fourth, in the manner of constructing the frame and mounting the driving-shaft and pulley therein, so that the shaft and cutters can be adjusted without moving the pulley, all as hereinafter more fully set forth.

Figure 1 is a longitudinal vertical section of the machine. Fig. 2 is a front elevation of the face-plates. Fig. 3 is a perspective view of one of the cutters detached; and Fig. 4 is a top plan view of that part of the frame in which the shaft and pulley are mounted. Fig. 5 represents one of the stationary cutter-plates shown detached and in perspective.

The general construction of my improved machine is similar to that shown in the patent above referred to, and need not therefore be fully described, excepting so far as is necessary to illustrate my improvements.

The cutters are attached rigidly to a rapidly-revolving disk, C, mounted rigidly on the end of shaft B, driven by the pulley N, to which motion is imparted from any suitable motor. These cutters D are made of a rectangular piece of steel, with its edges beveled as represented in Fig. 3, by which it will be seen that each cutter is provided with four distinct cutting-edges, *c*. It is also provided with three holes, as shown, by two of which it is bolted fast to the disk C in such a manner that one of the cutting-edges *c* will project beyond the periphery of the disk C, as shown in Fig. 1. It will readily be seen that when the projecting edge becomes dull the cutter can be turned end for end, so as to bring another edge into operation, and that when that also has become dull the cutter can be detached and turned over and the other two edges be brought successively into operation in the same manner. By this improvement the capacity of the cutters is greatly increased and much time saved.

In the original machine the face-plate P′ was extended entirely across the face, so that its slotted end served as the stationary cutter or holding-plates. Instead of this construction, I provide two small steel plates, R R, which are firmly secured to the frame at the point where the fabric is held, while the rotating cutters D pass and cut off the protruding edges, the face-plate P′ being only long enough to meet the inner end of the plates R at the point marked *e* in Fig. 2. This not only enables the plates R to be tempered and ground on their adjoining edges, but it also enables them to be turned end for end and also face for face, thus providing them also with four distinct cutting or holding edges, the same as the moving cutters have. While the real function of these plates R is to hold the material while the moving cutters really perform the cutting action, still it will be seen that the two cutters D and R operate on the principle of shear-blades, where one of the blade is held stationary while the other moves, as is customary in metal-cutting machines, and hence I term them "cutters."

In the original machine the only means of adjusting the cutters was by moving the standard in which the shaft was mounted, said standard being provided with slots, through which bolts were inserted to fasten it to the base-plate or bed of the machine. When it was desired to adjust the cutters these bolts were loosened, and the standard with its shaft, pulley and disk, or cutter-head with its cutters were all moved bodily by hand, and the bolts then tightened or screwed down. This not only requires considerable time, but it is difficult to make and retain the adjustment with the degree of accuracy required; for, as will

be seen, the disk must be so set as to cause the cutters D to move in a plane exactly parallel with the inner faces of the stationary plates or cutters R, which is difficult to do by hand without many trials and much care, and, besides, even when the proper adjustment has been effected, it is very liable to be disturbed by the act of tightening the bolts which hold the standard on the bed. Instead of this plan, I secure my standard A′ rigidly to the bed A^2, and support its rear end by a bolt or rod, T, as represented in Fig. 1, so as to hold it firmly in position and prevent any jar or tremor of parts when running at a high speed, as these cutters necessarily must in order to operate properly on the soft and pliable fabric to be cut. In this standard A, I mount the shaft B at right angles to the face-plates, as shown in Fig. 1, so that when once mounted there is no possibility of the cutter-head or disk, with its cutters D, getting out of line. Then to adjust the cutters I provide a set-screw, K, which is screwed into the rear end of the standard or frame A, directly behind the shaft B, so that by turning this screw K.the shaft B, with its disk, and the cutters D can be adjusted with the utmost accuracy and ease. A jam-nut, L, is also provided, as shown in Fig. 1, to keep the set-screw tight and prevent it from working loose when set as desired. J represents a disk, usually of horn, rawhide, or similar material, interposed between the point of the set-screw and the end of the shaft. At the opposite end of the shaft I secure a stud, I, to prevent the shaft from playing longitudinally in its bearings, said stud being secured to one arm, O, of the face-plate P′, as shown in Fig. 1, and in dotted lines in Fig. 2, this arm O being slightly curved inward and tempered, so as to form a spring which causes the stud I to press constantly against the front end of the shaft, and thus prevent it and the cutters D from moving beyond the point to which they may have been adjusted. At the same time the elasticity of the arm O will permit it to yield sufficiently to admit of the required adjustment of the shaft with its cutters.

Instead of keying the pulley N fast on the shaft B, I mount it loosely thereon, but prevent it from turning independently of the shaft by means of two or more studs, *a*, which fit and move longitudinally in a slot or groove on the inside of the pulley, as shown in Fig. 1.

As shown in Fig. 4, the frame A is made with an opening just wide enough to admit the pulley N and form a bearing at each end, so as to prevent it from moving endwise with the shaft B. By these means it will be seen that the cutters can be adjusted at will without disturbing the alignment of the shaft and without moving the pulley from its position.

Instead of using a coiled spring to hold the presser-arm F to its work, as in the original machine, I use a flat spring, H, as shown in Fig. 1, made to bear against the end of the arm back of the pivot G in such a manner as to press the roller E on the end of the arm against the fabric when inserted in the slot of the face-plate. The pivoted end of this arm F is beveled, as shown in Fig. 1, so that when swung back the spring will bear on this beveled end and hold the arm up out of the way, as indicated by the dotted lines, and yet in a position to be more readily reached when desired. By the addition of these several improvements a machine can be made which is far superior in its construction and operation to those heretofore made.

I am aware that cutters in wood-working machines have been made with two cutting-edges, so that by reversing them either edge could be used at will, and therefore I do not claim such; but

What I do claim is—

1. The cutter D, provided with the four separate edges and so made that it can be reversed end for end and face for face, substantially as described.

2. The stationary holding and cutter plates R, provided with the right-angled edges and with the holes or means of securing them in place, arranged substantially as shown, whereby they can be reversed, and thus bring their different edges into operation successively at will, as set forth.

3. The adjustable shaft B, having the pulley N secured thereon, so as to turn with the shaft, but allow the latter to move endwise independently of the pulley, in combination with the frame A, constructed to form end bearings for the pulley, the adjusting-screw K, and bearing-stud I, all arranged to operate substantially as and for the purpose set forth.

4. In combination with the adjustable shaft B, having the cutters D attached at right angles thereto, as shown, the spring arm or plate O, provided with the stud I, arranged to bear against the end of the shaft B, substantially as shown and described.

5. The combination, in a seam or cloth trimming machine, of the reversible moving cutters and the stationary reversible cutter or holding plates, substantially as shown and described.

JOHN F. THOMAS.

Witnesses:
WALTER BAKER,
L. E. MOORE.