

(No Model.)

W. F. BEARDSLEE.

TRIMMING ATTACHMENT FOR SEWING MACHINES.

No. 295,896.

Patented Apr. 1, 1884.

Fig:1.

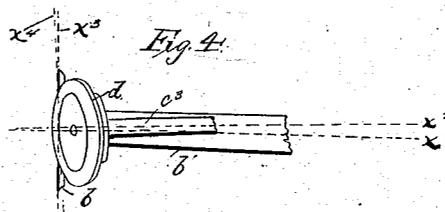
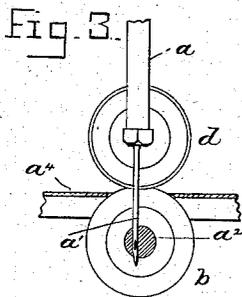
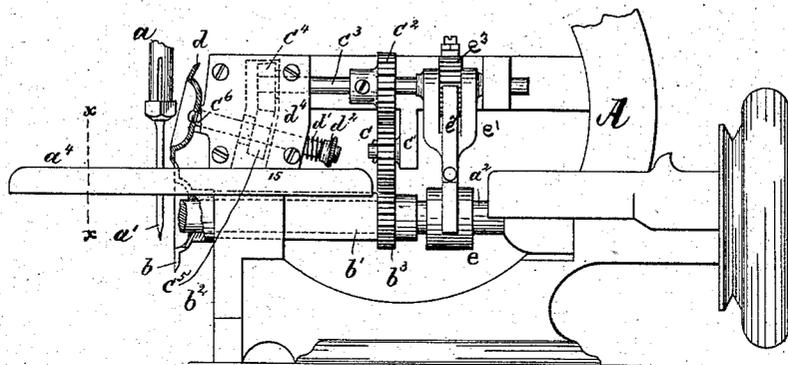
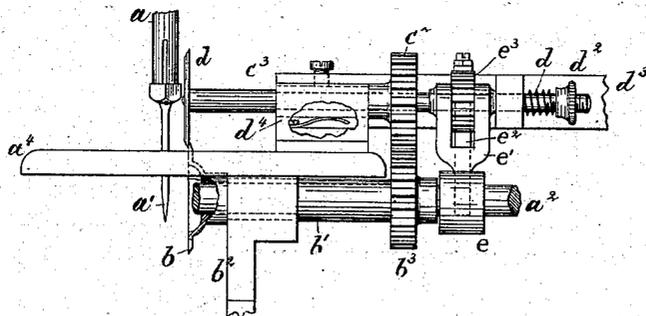


Fig:2.



Witnesses.

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TRIMMING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 295,896, dated April 1, 1884.

Application filed September 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BEARDSLEE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in
5 Trimming Attachments for Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object the production of mechanism by which the edges of knitted or other fabrics or leather may be trimmed, the said mechanism being preferably used in connection with sewing-machines of the well-
15 known Willcox & Gibbs class, or with other suitable sewing mechanism.

In this invention I employ a cutting-disk carried by a sleeve, which surrounds and forms a bearing for the hook-shaft, and in connection with the said disk I employ a second disk
20 located above it, their cutting-edges overlapping each other, the contiguous faces of the said disks being in substantially a vertical plane, with their cutting-peripheries close to
25 the needle, in order that the material being sewed may be trimmed parallel with the line of stitching. The disks as herein shown are adapted to be moved intermittingly and while the material is being fed or moved by the usual
30 feed.

Figure 1 in elevation represents a portion of a Willcox & Gibbs sewing-machine with my trimming mechanism added; Fig. 2, a modification thereof. Fig. 3 is a section of Fig. 1 on
35 the dotted line *x x*, showing the usual cloth-plate and the position of the needle with relation to the cutting-point of the cutting-disks; and Fig. 4 is a diagram in plan, representing the position of the two shafts of the two cutters
40 with relation to each other and parts of the edges of both cutters.

The machine-head A, needle-bar *a*, needle *a'*, hook-shaft *a''*, and cloth-plate *a'''* are and may be as in the Willcox & Gibbs machine;
45 and the said machine in practice will be provided with the usual hook and with a suitable four-motioned feeding device and means to move it.

50 The cutting-disk *b*, located below the cloth-plate, and having its periphery extended upward above the level of the same, is connected

with a sleeve, *b'*, which is made to inclose the hook-shaft *a''*, and also form a bearing for the latter, the shaft turning therein. The sleeve
55 *b'* takes a bearing in the upright part *b''* of the frame A, and at its rear end the said sleeve is provided with a gear, *b'''*, which, as shown in Fig. 1, meshes with an intermediate, *c*, on a stud of a hanger, *c'*, and the said intermediate is engaged by the gear *c''*, fast on the shaft *c'''*,
60 which has its bearings in a frame, *d''' d''''*, substantially such as represented by like letters in my application No. 100,971.

The shaft *c'''* has fast on it a bevel-gear, *c''''*, which engages a bevel-gear, *c'''''*, and drives the
65 short inclined shaft *c''''''*, provided at its outer end with the upper cutting-disk, *d*, the edge of which overlaps the edge of the disk *b*, and, as herein shown, at its front side.

The shaft *c''''''* has on it a spring, *d'*, and a nut,
70 *d''*, which latter may be turned to compress the said spring and draw the cutting-disk *d* more or less closely against the cutting-disk *b*, thus keeping the two cutting-disks near their edges
75 pressed together by a spring, which, as the cutting-disks are rotated, co-operate each to maintain sharp the edge of the other, thus avoiding frequent sharpening.

The hook-shaft *a''* has upon it an eccentric,
80 or it may be a cam, *e*, which strikes a pawl-carrier, *e'*, having a pawl, *e''*, which engages the ratchet *e'''* fast on and rotates the shaft *c'''* intermittingly, but at a different speed from that of the said rotating hook-shaft, the movement of the two disks positively being at the
85 time when the usual feeding device of the sewing-machine is operating to move the material for a new stitch.

In the modification, Fig. 2, the cutting-disk *d* is attached directly to the prolonged end of
90 the shaft *c'''*, and the said shaft is provided with a spring, *d'*, and nut *d''*, such as described in Fig. 1 in connection with shaft *c'''*, and for the same purpose.

In Fig. 2, where the upper disk, *d*, of the
95 trimmer is placed directly on the shaft *c'''*, the gear *c''* on the latter is adapted to rotate the gear *b'''* and sleeve *b'* and under cutter *b* intermittingly. By employing gears instead of the single pawl and ratchet the disks may be ro-
100 tated constantly.

I am aware that it is not new to employ a

rotating eccentric or mutilated disk which co-operates with a slotted support or throat; and I am also aware that two rotating disk-cutters have been employed to cut oval tips for hats; and so, also, I am aware that oscillating many-sided cutting-blades have been employed.

The disk *d*, Fig. 1, is concaved at its front face, leaving a backwardly-projecting flange, which at its point of contact with the lower disk is substantially in the same plane as the edge of the said lower disk. The concavity in the disk and its inclined position are of especial advantage, as it forms a space for the reception of the needle-holding nut or end of the needle-bar, thus permitting the fabric or material to be trimmed nearer the needle than would otherwise be possible.

The shaft *e* in Fig. 1 is shown as inclined downward and backward with relation to the shaft *a*; but, in addition to such inclination, the shafts, which directly carry the cutting-disks described, are so placed with relation to each other, or inclined, that their axes are not in the same vertical plane, so that the lapping edges of the disks bear against each other only at their point of contact, thus forming a relief back of the actual cutting-point. The rotating shaft *a* gives motion to the device below the cloth, which is to co-operate with the eye-pointed needle in the formation of the stitch.

In order to bring the trimming mechanism very close to the line of the seam, and yet allow the usual Willcox & Gibbs hook to be employed, I have concaved the outer face of the under cutting-disk, *b*.

In this my apparatus the cutting-edges will preferably be set a little in advance of the stitching-point; but the material may be cut or trimmed exactly opposite the side of the needle or a very little behind it; but in all cases the cutters in operation on a sewing-machine will cut the material substantially at the stitch-forming point, which enables a curved or irregular shape to be trimmed substantially parallel with the seam, which is also curved and irregular; whereas if the disk-cutters were located several stitches back of the stitching-point only a straight edge could be trimmed.

I claim—

1. In a sewing-machine, the upper rotating cutting-disk, *d*, combined with the cutting-disk *b*, having its axis of rotation coincident with that of the shaft *a* and turning on the said shaft, to operate substantially as described.
 2. The rotating cutting-disk *d* and the disk *b*, having its axis of rotation coincident with that of the shaft *a*, the said disks having their cutting-edges placed close to and substantially opposite the needle to trim the material substantially at the stitching-point, and means to connect and rotate the said disks in unison, combined with a suitable spring to hold the overlapping edges of the said disks together at their cutting-point to effect the sharpening of the said disks, substantially as described.
 3. The rotating hook-shaft *a*, provided with an eccentric or cam, the shaft *e*, a pawl and ratchet to actuate the said shaft intermittingly, and the upper rotating disk, *d*, moved intermittingly by the said shaft, substantially as described, but at a different speed, combined with the disk *b*, its carrying-sleeve having its axis of rotation coincident with that of, and serving as a bearing for, the hook-shaft, and with means to actuate the said sleeve from the said shaft, to operate all as set forth.
 4. The needle and needle-bar of a sewing-machine combined with a trimming mechanism having a disk, *d*, the face of which is concaved and set at an inclination to the line of reciprocation of the needle-bar and needle, substantially as described.
 5. In a sewing-machine, the hook-shaft combined with the sleeve *b* thereon, and its attached cutter *b*, having its outer face concaved for the reception of part of the hook, substantially as described.
- In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM F. BEARDSLEE.

Witnesses:

G. W. GREGORY,
B. J. NOYES.