

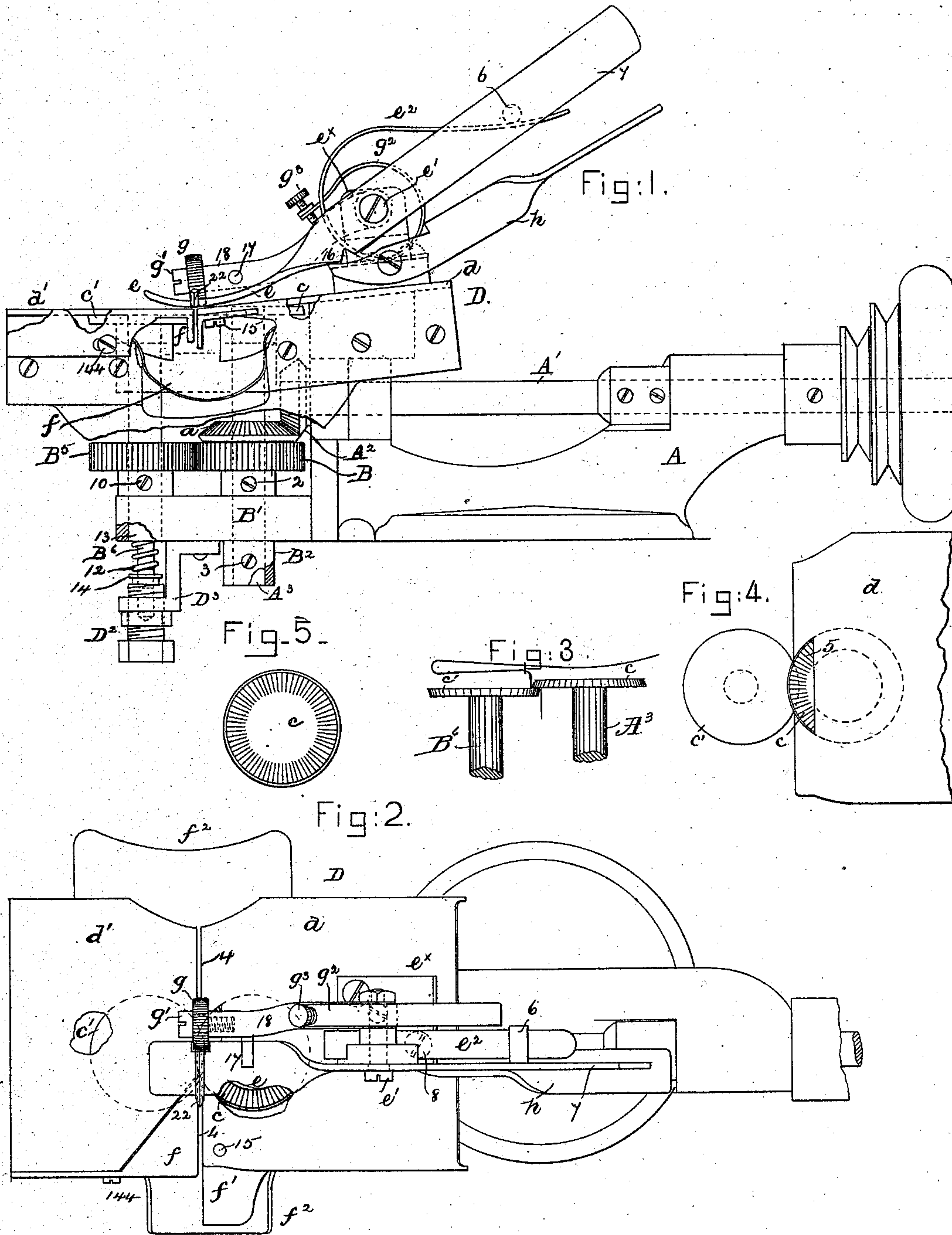
(No Model.)

W. F. BEARDSLEE & C. RUSSELL.

MACHINE FOR TRIMMING FABRICS.

No. 413,608.

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Witnesses.
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UNITED STATES PATENT OFFICE.

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MACHINE FOR TRIMMING FABRICS.

SPECIFICATION forming part of Letters Patent No. 413,608, dated October 22, 1889.

Application filed July 5, 1888. Serial No. 279,009. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM FURMAN BEARDSLEE and CHARLES RUSSELL, both of New York, in the county and State of New York, have invented an Improvement in Machines for Trimming Fabrics, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of knitted goods the end of the article, as of a stocking-leg or the ends of shirts, &c., are doubled over and stitched to form a welt, and thereafter the raw edge of the fabric projecting beyond the seam forming the welt has to be trimmed off close to the seam.

The machine herein to be described has more particularly for its object the trimming of the raw edges of the material from the welt.

Our improved machine has rotary shear-cutters located below the cloth-plate, and the latter has an opening, down through which the fabric acted upon by a presser-foot is borne against the upper or serrated face or side of one of the rotary cutters, the said cutter thus acting as a feeding device.

In our improved machine the right side of the fabric is uppermost and the raw edge referred to down, so that the line of stitching thereon is always clearly visible to the operator, so that he may keep the said line of stitching in proper position to trim or cut off the waste edge of the fabric at a uniform distance from the line of stitching, which cannot be quickly and readily done when the wrong side of the fabric is uppermost. All the gearing and the rotating cutters being below the cloth-plate, there is no liability of injury to the hand of the operator. By placing the cutters and feed below the cloth-plate ample and free space is left above the said plate for the operator to manipulate the work. Above the cloth-plate we have added to the machine a flat and a roller presser and a gage by which to gage the line of seam.

Our invention consists, essentially, in a cloth-plate having a slot extended through the same for a part of its width, combined

with two rotating shear-cutters having overlapping edges and bearings below the said cloth-plate for the shafts carrying the said cutters, substantially as will be described.

Other features of our invention will be hereinafter described in the claims at the end of the specification.

Figure 1 in front elevation, partially broken out, represents a trimming-machine embodying our invention, the cloth-plate being partially broken out to show the parts below it. Fig. 2 is a top or plan view of Fig. 1. Fig. 3 is a detail, to be referred to, of the rotary cutters, the said figure also showing a piece of knitted goods with a welt and with the raw edge of the fabric in position and as being cut. Fig. 4 is a detail of the cloth-plate with the cutter and feeder below it, and Fig. 5 is a top view of the cutter *c*.

The frame-work *A*, of suitable shape to sustain the working parts, has bearings for the main horizontal shaft *A'*, which at its forward end has a bevel-gear *A²*, which engages a bevel-gear *a*, preferably of larger diameter, at the upper end of the vertical cutter-shaft *A³*, the said bevel-gear having secured to or forming a part of it the toothed gear *B*, the hub of the latter being secured to the shaft *A³* by a set-screw *2*, the said shaft below the bearing portion *B'* having attached to it, as herein shown, by a screw *3*, a sleeve or collar *B²*, which contacts with the bearing portion *B'* and prevents longitudinal motion of the shaft, yet by loosening the set-screw permits the said shaft to be adjusted longitudinally. The shaft *A³* at its upper end has fast on it the rotary cutter *c*, it being located close to the under side of the part *d* of the cloth-plate *D*, herein shown as composed of two plates *d* and *d'* separated by a slot *4*. The part *d* of the cloth-plate is slightly inclined with relation to the face of the said cutter *c*, and the plate *d*, near the slot *4*, (see Fig. 4,) is cut away to permit the serrated upper portion of the cutter *c* to come against the fabric lying on the cloth-plate, the upper side of the said cutter being serrated or toothed, as at *5*, (see Fig. 4,) to engage and move the fabric during the rotation of the cutter, the fabric being borne

against the said serrated feeding-surface by the presser-foot e , having its fulcrum on a stud e' , extended from a stand e^* on the plate d , a spring, as e^2 , normally acting against a pin 6 on an arm 7 of the presser-foot to keep the presser down upon the fabric. One end of the spring e^2 is fastened to the stand e^* by a screw 8. (Shown by dotted lines, Fig. 2.) The toothed gear B engages a toothed gear B^5 on and rotates the cutter-shaft B^6 , to the upper end of which is secured the second rotary cutter c' . The hub of the gear B^5 is secured to the shaft B^6 by a set-screw 10, so that the said shaft may be raised and lowered or adjusted vertically to bring the edge of the said cutter c' in proper position with relation to the edge of the opposed cutter c . The lower end of the shaft B^6 is reduced in diameter below the bearing B' , and receives upon it a spiral spring 12, which at one end acts against the shoulder 13 of the said shaft, and at its other end is supported, preferably, on a washer, as 14, resting upon the end of a hollow adjusting-screw D^2 , screwed into a bracket D^3 , attached to or forming part of the bearing B' , the said spring normally acting to keep the cutter c' pressed against the cutter c by a spring-pressure. The part d' of the cloth-plate has adjustably attached to it by a screw 144 a corner-plate f , adjustment of which enables the mouth or entrance portion of the slot 4 to be made narrower or wider, according to the thickness of the goods to be trimmed, the said carrier-plate, as shown in Fig. 1, having a depending flange to aid in uncurling the waste edge of the knitted fabric, which edge passed into the slot 4 is to be passed between the rotary cutters to be cut off. The corner-plate f has co-operating with it a second flanged uncurling-plate f' . (Shown as attached to the plate d by a screw, as 15.) The waste material cut from the knitted fabric drops into the trough f^2 . The stand e^* has pivoted to it a presser-locking lever h , which, when the presser is lifted, enters a notch 16 thereon and keeps the presser e elevated, the latter as it rises acting on a pin 17, extended from the arm 18, having its fulcrum on the stud e' , the said arm carrying the presser-wheel g , mounted on and turning on the screw-stud g' . A spring, as g^2 , connected to the stand e^* by a suitable screw, is extended over the arm 18, and is shown as provided with an adjusting-screw g^3 , by which to regulate the effective pressure of the said spring g^2 on the said arm, and consequently the pressure of the wheel g on the fabric resting on the serrated surface of the combined cutting and feeding wheel c .

In practice the portion of the machine below the cloth-plate will be inclosed by a suitable shield.

The diagonal location of the plate d with relation to the cutter c enables a portion of the face of the cutter to be extended to the surface of the plate d to act as a feed, and yet

the said plate covers the greater portion of the said cutter and feeder c .

The bed-plate is shown as made in two parts, as $d d'$, with the slot 4 between them; but it will be understood that the two parts $d d'$ might be connected at the rear of the cutting-points of the cutters $c c'$ and the slot 4 extended but slightly beyond the cutters, as shown in Fig. 4.

In practice one of the two shafts A^3 or B^6 will be slightly tipped with relation to the other, as in United States Patent No. 295,896, to afford clearance.

The presser-foot e has attached to it a gage 22, made as a prong or finger to enable the operator to keep the line of stitching in correct position to insure the trimming of the fabric parallel to the stitching.

Fig. 3 shows the material in position to be trimmed, and, referring to the said figure, it will be seen that the piece of knitted fabric above the cutters has a welt at one end and that the raw edge of the material beyond the seam, used in forming the welt, is extended down between two cutters, leaving the line of seam uppermost and the upper portion of the fabric entirely uncovered, except by the presser-foot.

In Fig. 3 the cloth-plate has been omitted, and the parts above it, to avoid confusion in the drawings.

We have shown the material as held down against the serrated feed-wheel by a presser; but the machine could be used to good advantage and do good work were the presser omitted, the operator by her fingers or hand on the material above the feed-wheel pushing the said material against the feed-wheel through the opening in the bed-plate, and in this use of the machine it would not be necessary to incline the bed-plate.

We claim—

1. In a machine for trimming fabrics, a cloth-plate having a slot 4 extended through the same for a part of its width, combined with two rotating shear-cutters having overlapping edges, and bearings below the said cloth-plate for the shafts carrying the said cutters, substantially as described.

2. In a machine for trimming fabrics, two rotating cutters, one of which has a feeding-face, and means to rotate them, combined with a slotted cloth-plate to support the fabric above the said cutters, one portion of the cloth-plate being inclined with relation to the face or upper side of one of the cutters, whereby a portion of the face of one of the cutters is enabled to come against and feed the fabric, and with a presser to operate substantially as described.

3. In a machine for trimming fabrics, two rotating cutters, one of which has a feeding-face, means to rotate them, and a spring to press the two cutters together, combined with a slotted cloth-plate to support the fabric above the said cutters, one portion of the

cloth-plate being inclined with relation to the face or upperside of one of the cutters, whereby a portion of the face of one of the cutters is enabled to come against and feed the fabric, substantially as described.

4. In a machine for trimming fabrics, two rotating cutters, one of which has a feeding-face, means to rotate them, and the presser-foot *e* and roller *g*, combined with a cloth-plate to support the fabric above the said cutters, one portion of the slotted cloth-plate being inclined with relation to the face or upper side of one of the cutters, whereby a portion of the face of one of the cutters is enabled to come against and feed the fabric, substantially as described.

5. In a machine for trimming fabrics, two rotating cutters, one of which has a feeding-face, means to rotate them, and the presser-foot *e* and roller *g*, and guide 22, combined with a slotted cloth-plate to support the fabric above the said cutters, one portion of the cloth-plate being inclined with relation to the face or upper side of one of the cutters,

whereby a portion of the face of one of the cutters is enabled to come against and feed the fabric, substantially as described.

6. In a machine for trimming fabrics, two rotating cutters, one of which has a feeding-face, means to rotate them, and the roller *g*, its arm 18, spring *g*², and adjusting-screw *g*³, combined with a slotted cloth-plate to support the fabric above the said cutters, one portion of the cloth-plate being inclined with relation to the face or upper side of one of the cutters, whereby a portion of the face of one of the cutters is enabled to come against and feed the fabric, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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CHARLES RUSSELL.

Witnesses:

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