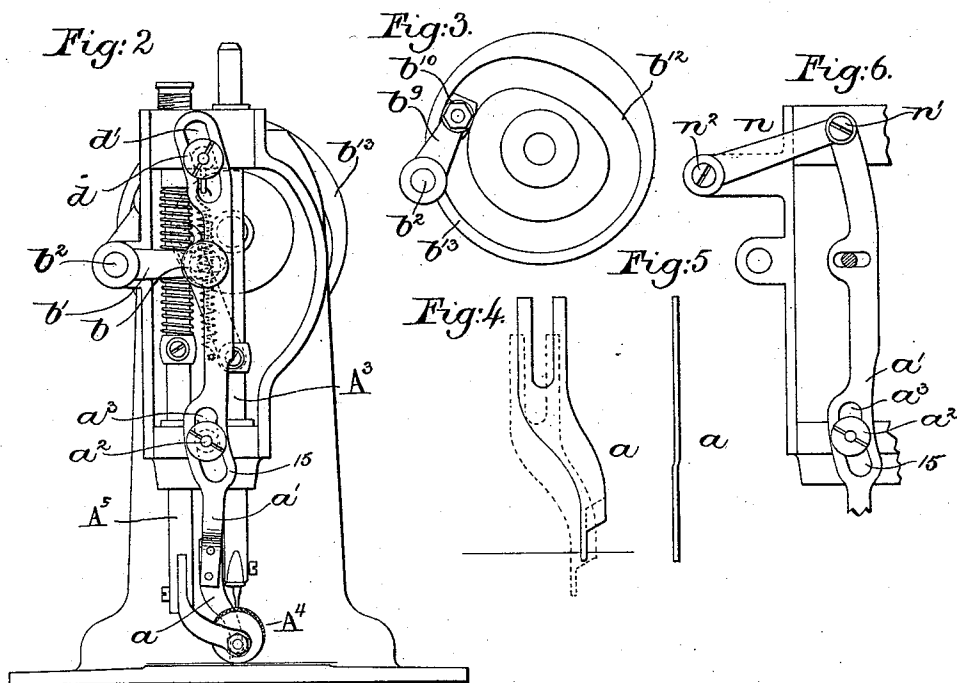
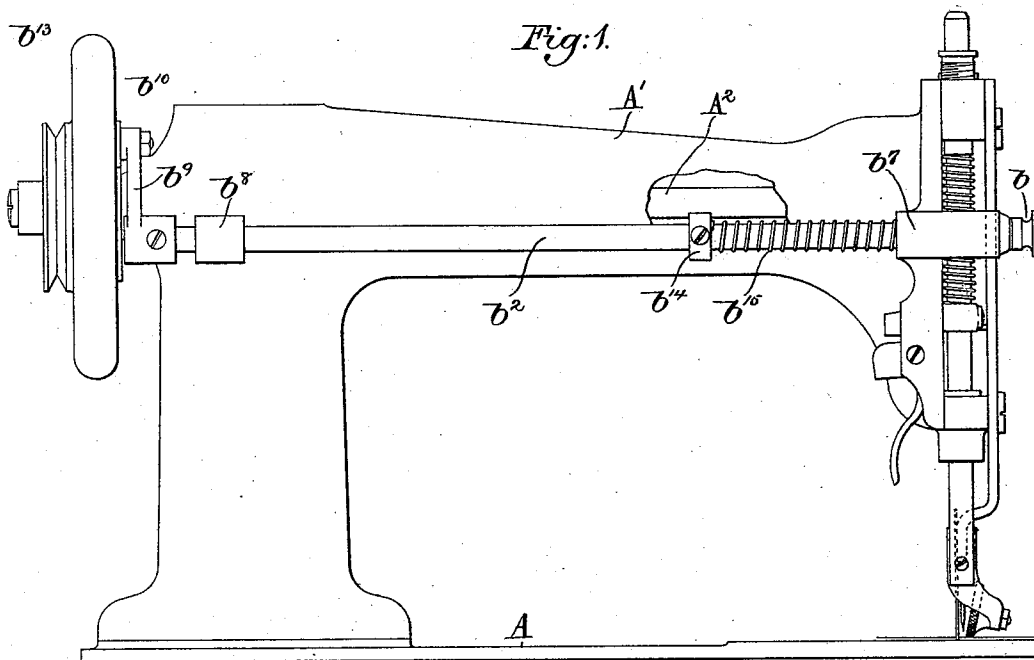


(No Model.)

W. F. DIAL.
SEAM TRIMMER FOR SEWING MACHINES.

No. 466,272.

Patented Dec. 29, 1891.



Witnesses:

Edward F. Allen.
Fred S. Greenleaf.

Inventor:

Wilbur F. Dial.
By Leroy S. Gregory, atty.

UNITED STATES PATENT OFFICE.

WILBUR F. DIAL, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO THE
WHEELER & WILSON MANUFACTURING COMPANY, OF SAME
PLACE.

SEAM-TRIMMER FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 466,272, dated December 29, 1891.

Application filed May 18, 1891. Serial No. 393,147. (No model.)

To all whom it may concern:

Be it known that I, WILBUR F. DIAL, of Bridgeport, county of Fairfield, State of Connecticut, have invented an Improvement in
5 Seam-Trimmers 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, relating to seam-trimming mechanism for sewing-machines, has for its object more especially to improve that class of trimming mechanism wherein a blade or knife is carried by a vertically movable or
15 reciprocating bar contained in the head of the overhanging arm of the machine, the object of this present invention being to impart to the said blade or knife a drawing cut, such a cut being much more efficient than a plung-
20 ing cut, and also more efficient than a cut made by a diagonal edge of a vertically-movable blade.

My invention consists in the combination, with a suitable stitch-forming mechanism, of
25 a vertically and laterally movable knife-holder.

In this invention the blade or knife carrier has a rocking movement imparted to it just as and during the time that the blade or knife
30 is acting to cut the material.

Figure 1 is a rear side elevation of a sufficient portion of a sewing-machine to illustrate my invention, the overhanging arm being broken out somewhat; Fig. 2, a front end elevation with the cap removed; Fig. 3, a detail of
35 the cam for moving the cutter-bar. Fig. 4 shows in full lines the blade as it commences to cut, the dotted lines showing the sliding movement given to the blade; Fig. 5, a right-hand-edge view of the blade shown in Fig. 4,
40 and Fig. 6 shows a modification to be described.

The bed A, overhanging arm A', shaft A², needle-bar A³, actuated by a link connected to said shaft, the presser-foot A⁴, and its shank
45 A⁵ are and may be all as usual.

The blade a is connected to the lower end of a blade-carrier a', herein represented as a flat bar having its fulcrum upon a stud a², the stud entering, as represented, a slot a³ in
50 the bar, the stud forming a fulcrum for the

blade-carrier. The blade-carrier is reciprocated in this instance of my invention by means of a pin or device b at the end of a rocking arm b' of a rock-shaft b². To rock the blade-carrier in order that the blade may
55 have a lateral movement as it enters the material in its descent, I have provided a rocking device which in the embodiment of my invention shown in Fig. 1 is represented as
60 a stud d entering a slot d' of the said bar, the inclination of the slot more or less controlling the extent of lateral movement of the blade while cutting the material. The slot referred
to is angular with relation to the line of reciprocation of the blade-carrier, so that as the
65 blade-carrier reciprocates it is also rocked, and the greater the inclination of the slot the greater the rocking movement.

The slot d' and stud d constitute a simple rocking device for the lever; but I may instead use any other suitable rocking means
70 to impart to the blade-carrier a rocking movement during each cutting operation, this invention not being limited to the particular construction of the rocking device, for prior
75 to this invention I am not aware that a vertically-reciprocating blade-carrier has ever had a rocking movement during the trimming-stroke to cause the vertically-reciprocating
blade to move laterally in contact with the
80 material to act with a draw cut.

As an equivalent for the slot and stud I may employ a short link n, represented in Fig. 6
85 as pivoted at n' to the blade-carrier and at n² to the frame of the machine.

The rock-shaft b², loosely fitted into its bearings b⁷ b⁸, has at its rear end an arm b⁹, provided with a suitable roller or other stud b¹⁰, which enters, as herein shown, a groove b¹² in
90 the balance or hand wheel b¹³.

The rock-shaft b² has a collar b¹⁴, against which acts one end of a spiral spring b¹⁵, the said spring acting at its other end against the bearing b⁷, normally keeping the roller or other stud b¹⁰ in the cam-groove b¹²; but when
95 it is desired to suspend the operation of the cutter, the operator will engage the stud b at the end of the arm b' and pull the rock-shaft to the right, thus withdrawing the roller-stud from its actuating-groove, and then by mov- 100

ing the pin in an upward direction the bar a' may be elevated for a greater distance than when in regular operation, and in so doing the inclined portion 15 of the lower part of the slot a^3 , by acting on the fulcrum-stud a^2 , causes the lower end of the bar a' to be thrown to the left, away from the needle-bar.

It is not intended to limit this invention to the exact devices shown for actuating the rocking shaft b^2 .

I am aware that blades or cutters have been connected to the lower end of vertically-reciprocating bars of many different shapes; but I am not aware that a vertically-reciprocating bar has ever had combined with it any device by which to vibrate the bar while the blade is in contact with and cutting the material to thus make a draw cut, and in my invention the draw of the cut is in the same general direction as the feed, so that the cut produces the least possible strain on the material.

I am aware that a vertically-reciprocating bar has been employed to which the knife is jointed, a pin on the lower end of the knife working in a slot beneath the bed-plate, and I am also aware that the lower end of a knife so jointed to the bar has been connected by a link to an ear beneath the bed-plate; but such constructions I do not claim.

I am aware that a vertically-reciprocating

cutter-carrying bar having a blade or knife rigidly attached thereto has been employed, the said bar having slots therein parallel to the line of reciprocation, fixed pins entering said slots and guiding said bar in its straight up and down reciprocations, as in United States Patent No. 212,122; but such construction I do not claim.

I claim—

In a seam-trimming apparatus, a cutter-carrying bar, a blade or knife rigidly attached thereto, means to reciprocate the said bar vertically, and a fulcrum for said bar and on which it slides, combined with a guide for said bar located angularly with relation to the line of reciprocation of the bar, to rock the same upon its fulcrum and carry the knife bodily in the direction of the feeding movement of the material while said knife is descending, to thereby cut the material in the direction of the progress of the seam, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILBUR F. DIAL.

Witnesses:

GEO. W. GREGORY,
ISAAC HOLDEN.