

L. LAVECK & A. M. ROY.
MACHINE FOR REMOVING CORSET STEELS AND THE LIKE.
APPLICATION FILED JUNE 6, 1916.

1,222,307.

Patented Apr. 10, 1917.

2 SHEETS—SHEET 1.

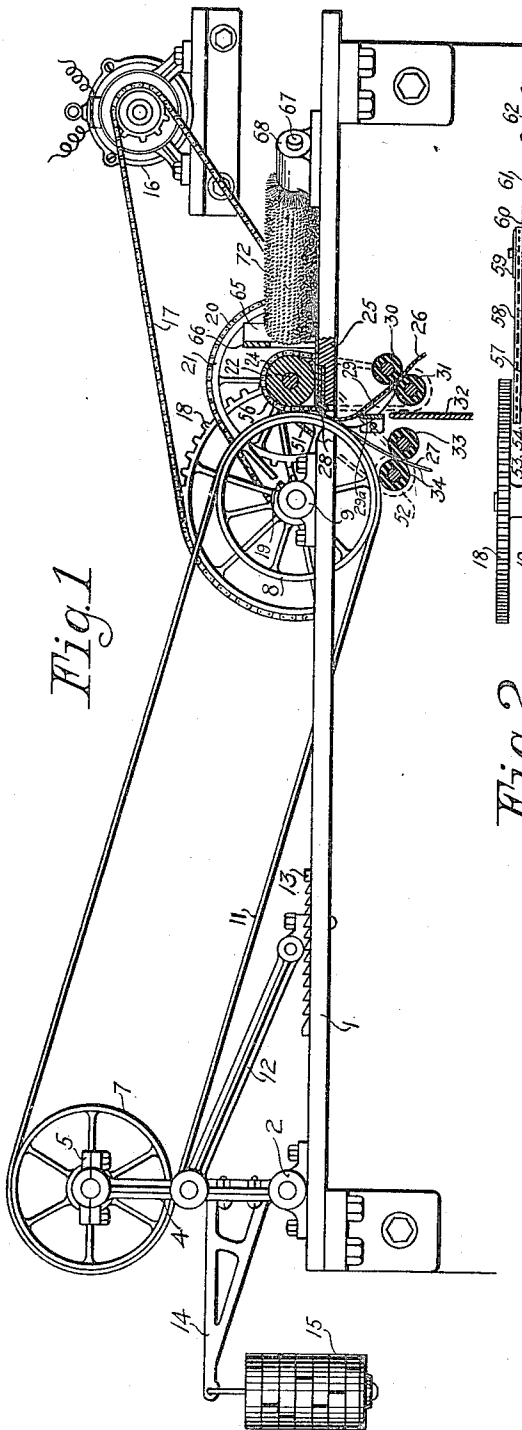


Fig. 1

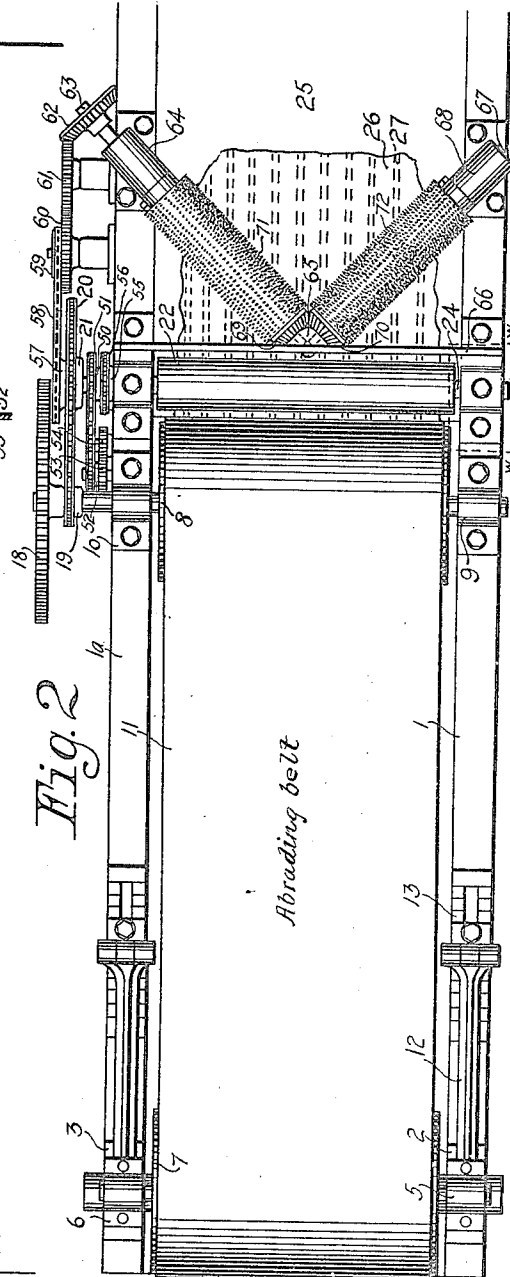


Fig. 2

Abbrading belt

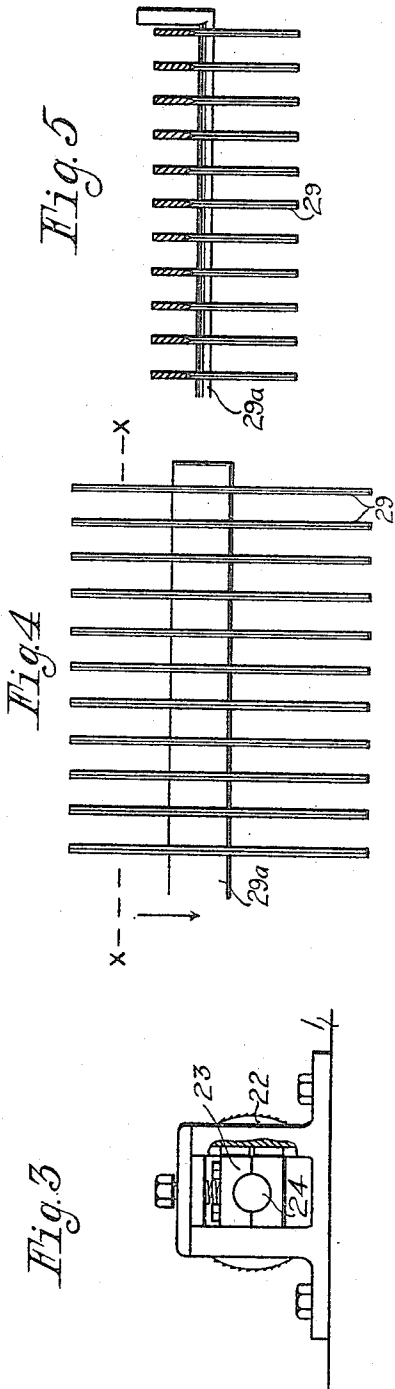
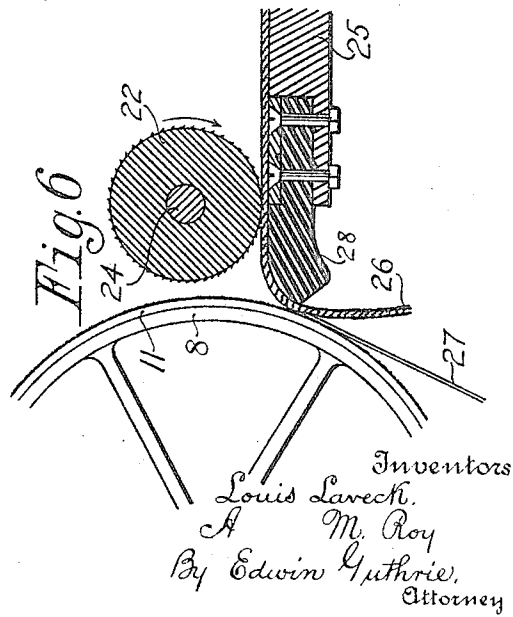
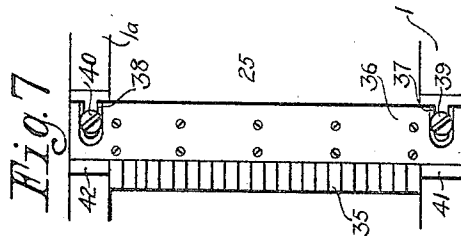
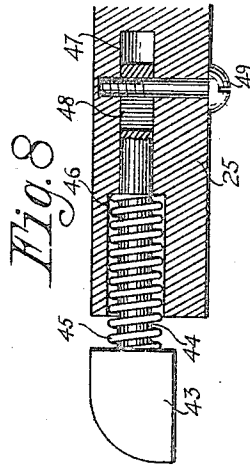
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UNITED STATES PATENT OFFICE.

LOUIS LAVECK AND ALPHONSE M. ROY, OF FULTON, NEW YORK.

MACHINE FOR REMOVING CORSET-STEELS AND THE LIKE.

1,222,307.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, LOUIS LAVECK and ALPHONSE M. ROY, citizens of the United States, residing at Fulton, in the county of Oswego and State of New York, have invented certain new and useful Improvements in Machines for Removing Corset-Steels and the like, of which the following is a specification.

10 This invention relates to machines for removing corset steels, and the like, the steels being exposed by grinding off the layer of fabric covering them by means of an abrading device comprising a belt or drum or revolving roughened surface of suitable character, against which the corset is fed. This invention also comprises means for spreading the fabric flat upon the feeding table or bed. The abrading device is caused to move more rapidly and in the same direction as the feed roller, and mechanism is provided for the purpose of drawing the fabric, after being subjected to the abrading device, in one direction while the uncovered steels or stiffeners are directed and removed in another direction. Thus, the fabric and the steels are separated by the operation of this invention.

Of the accompanying drawings illustrating the construction and arrangement of the parts of this invention, Figure 1 represents a side view of all parts assembled, the feed roller and the edge of the table or bed being shown in section on the indirect broken line *w-w* of Fig. 2. Fig. 2 is a top plan view of all the parts assembled. Fig. 3 is an end view of the feed roller shaft introduced to show the movable bearing of the feed roller. Fig. 4 is a front view of the series of spaced blades for separating the fabric and steels after the action of the abrading device. Fig. 5 is a cross-section of the blades on the broken line *x-x* of Fig. 4 to show the edges of the blades all presented toward the same side. Fig. 6 is a cross-section of the end or termination of the bed next to the abrading belt, showing the yielding rubber edge portion over which the fabric and steels may bend as they pass the abrading contact. Fig. 7 is a top plan view of a yielding edge portion made of a number of blocks of rubber placed side-by-side, in order that each may bend or yield independently of any other when one of the steels is stiffer than another. In this view is also

shown the means for adjusting the yielding edge portion of the bed forward or backward. Fig. 8 is a side view of a modified construction of the yielding edge portion of the bed, comprising a spring rod or head that yields when pressure is applied that overcomes the force of the spring employed. In Figs. 3, 4, 5, 6, and 8 the scale of drawing has been increased.

Throughout the description and drawings the same numbers are used to refer to the same parts.

Considering the drawings, it will be observed that there are two side rails 1 and 1^a, and upon the rails near the left end are the bearings 2 and 3. These bearings are pivotal supports for twin vertical arms, such as the arm 4 shown in Fig. 1. At their upper extremities the vertical pivotal arms are provided with the bearings 5 and 6, and in those bearings are held the trunnions or journals of the upper drum 7. The drum 7 is one of a pair of like drums, the fellow drum being the lower one and designated by the number 8, and held in the bearings 9 and 10 on the rails mentioned.

Connecting and encircling the drums is the abrading belt 11, the outer surface being supplied with any chosen abrading material or grinding devices. It is not the intention in this application to limit the invention to the use of the belt abrading device, as it is believed that other means of common knowledge could be used for the purpose. To hold the upper drum in its raised position as set out in Fig. 1, an inclined brace 12 is employed that has its upper end pivotally secured to the arm, and its lower end provided with teeth enabling it to engage the ratchet bar 13 on the rail 1. It will be understood that there is a second inclined arm on the other rail, as shown in Fig. 2, the same in construction and operation as the arm 12 described. Whenever it is necessary to apply tension to the belt 11 in order that it may be driven without slip, a bracket 14 is secured to the arm 4, and a weight 15 hung from the outer end of the bracket. It is believed to be clear that, if desirable, the second vertical arm may be also equipped with a like bracket and weight.

As illustrated in Fig. 1, a motor 16 by means of a chain 17 drives the main gear 18 and rotates the lower drum thus driving the abrading belt 11. On the same shaft with

the gear 18 is a sprocket wheel 19, which by a chain 20 drives a sprocket 21 on the feed roller shaft. The feed roller 22 is thus driven, but at a slower rate than the belt
 5 11. Any desired speed ratio may obviously be reached by suitably proportioning the sprockets. In Fig. 3 it will be noted that the bearing 23 for the reed roller shaft 24 is movable up and down, and inequalities of
 10 thickness in the material or article passed beneath the roller will not, therefore, stop the feeding.

The table or bed proper is referred to by the number 25, and, as illustrated in Fig. 6
 15 the fabric or corset 25 and the steels or stiffeners 27 bend as they pass downwardly over the edge of the bed against the abrading belt. It is customary in practice to provide the bed with a yielding edge portion consisting of the rubber plate 28 extending
 20 along the edge. The yielding edge allows the steels to bend in passing and then to straighten out in a direction substantially tangential to the curve of the belt upon the
 25 lower drum.

As the fabric, with the upper layer of cloth ground off, and the exposed steels pass downwardly from the edge plate 28, the fabric encounters a series of blades presented
 30 edgewise and arranged vertically or slightly inclined, and spaced apart. The steels pass between the blades and are not materially diverted thereby from their normal path, but, the fabric is turned away from the
 35 abrading belt. The blades are designated by the number 29 and they are connected and supported by means of an edged backbone 29^a. After being turned aside by the blades the fabric passes between two extractor rolls
 40 30 and 31, by which the fabric is drawn to one side of the partition 32 and deposited in a selected compartment, while the steels pass between the extractor rolls 33 and 34 and are deposited in another compartment.

45 Considering now, Fig. 7, it will be understood that the yielding edge portion of the bed or table 25 may be made up of a number of rubber blocks 35 arranged side-by-side and secured in place by means of the cover
 50 plate 36. The plate 36 has near its ends the recesses 37 and 38, and by means of the screws 39 and 40, the plate may be adjusted forward or backward in the recesses 41 and 42 in the rails.

55 Next considering Fig. 8, it will be understood that the edge of the bed may comprise a number of devices each having a head 43 and a shank or stem 44 encircled by a spring 45 seated in a suitable cavity 46.
 60 The shank or stem is movable back and forth in a bore 47 in the bed, and has a vertical slot 48 through which a screw or bolt 49 passes movably. It is believed to be clear that if pressure is exerted upon the head 43 by
 65 fabric drawn more or less tightly over it,

the head will yield backwardly when the force compresses the spring 45. Occasionally, it is most advantageous to have the edge of the bed formed of the independent, resilient sections described. Each section may
 70 then yield in correspondence with the thickness of that particular portion of the corset between it and the abrading belt, without affecting the yielding of the next sections. Where the thickness of the corset acted upon
 75 varies at different points or lines of its width the sectional edge is especially useful.

Again considering Fig. 2, there will be observed on the shaft 24 of the feed roller 22, a sprocket wheel 50 which is connected by
 80 a chain 51 with a sprocket wheel 52 upon the outer end of the extractor roller 34. The roll 34 is thus driven, and by means of the meshed gears 53 and 54 the roll 33 is also revolved. Also in Fig. 2 is shown a sprocket
 85 wheel 55 on the shaft of the feed roller, and a chain 56 thereon. By means of a sprocket wheel not shown, the chain 56 drives the extractor roll 31, and meshed gears similar to the gears 53 and 54 drive the fellow roll 30.
 90 The construction and operation are alike in all respects to those described as relating to the extractor rolls 33 and 34, and it is thought need no special explanation.

On the outer end of the feed roller shaft
 95 24, as shown in Fig. 2, is a sprocket wheel 57 connected by a chain 58 with a sprocket wheel 59 that is in one piece or fixed upon a gear wheel 60. The sprocket 59 turns the gear 60, and the gear 60 rotates the gear 61
 100 by which is driven the angular gear 62 on the diagonal shaft 63. One end portion of the shaft 63 is held in the angular bearing 64, and the other end of the shaft is rotatively supported in the upright block or bar
 105 65 of triangular cross-section which is attached to the middle of the bridge 66 that spans the bed from rail to rail. A second shaft 67 extends also in a diagonal direction with respect to the bed 25, and at an angle
 110 with the shaft 63. The shaft 67 is journaled in the angular bearing 68 at its outer end, while its inner end is supported in the block or bar 65 already mentioned. Near the ends of the shafts 63 and 67 described as journaled in the block or upright 65, the shafts are provided with the miter gears 69 and 70, and the cylindrical spreading and feeding brushes 71 and 72 are thus driven. It is not
 115 the intention to limit this invention to the spreading and feeding brushes illustrated and explained, for the reason that other equally well known means could plainly be substituted to the same end. The revolvable brushes are convenient, adaptable and effective, and form what is thought to be the most advantageous mode of spreading and feeding the particular articles intended to be
 120 treated.

In the operation of this invention, be- 130

lieved to be now readily discernible from the drawings and the foregoing explanation, the corset or part thereof is fed upon the table 25 under the roller 22 and over the yielding edge of the table or bed against the abrading belt 11. The diagonal brushes 71 and 72 operate to spread the corset laterally as well as to aid its feed to the feed roller 22. The abrading belt grinds off the upper layer of cloth exposing the steels and permitting them to be removed. The series of blades 29 divert the fabric to the extractor rolls 30 and 31 by which it is drawn from the belt, while the steels straighten out and pass between the rolls 33 and 34 into another compartment or receptacle.

Having now described this invention, and explained the manner of its operation, what we claim is:—

20 1. In a machine of the character described, the combination with a bed, of a feed roller transversely arranged upon the bed, a revoluble abrading device adjacent to the feed roller, means for revolving the abrading device more rapidly than the feed roller re-
25 volves and in the same direction, means arranged upon the said bed and constructed to laterally spread a layer of fabric upon the bed while the fabric is fed to the said
30 abrading device, means for directing the steels from the abraded fabric in one direction, and means for drawing the fabric in another direction.

35 2. In a machine of the character described, the combination with a bed, of a feed roller transversely arranged upon the bed, a revoluble abrading device adjacent to the feed roller, means for revolving the said abrading device and the said feed roller in the
40 same direction and for revolving the abrading device more rapidly than the feed roller, means arranged upon the said bed and constructed to feed fabric upon the bed toward the feed roller and at the same time to
45 spread the fabric laterally, means for directing the steels from the abraded fabric in one direction, and means for drawing the fabric in another direction.

50 3. In a machine of the character described, the combination with a bed, of a feed roller transversely arranged upon the bed, a revoluble abrading device adjacent to the feed roller, the said bed terminating near the
55 said abrading device, means for revolving the said abrading device and the said feed roller in the same direction and for revolving the abrading device more rapidly than the said feed roller is revolved, means arranged upon the said bed and constructed
60 to laterally spread a layer of fabric upon the said bed while the fabric is fed to the said abrading device, and means arranged beneath the said bed and arranged to draw the fabric downwardly over the end of the
65 bed and from the said abrading device.

4. In a machine of the character described, the combination with a bed, of a feed roller transversely arranged upon the bed, a revoluble abrading device adjacent to the feed roller, the said bed terminating near the
70 said abrading device, means for revolving the said abrading device and the said feed roller in the same direction and for revolving the abrading device more rapidly than the feed roller is revolved, means arranged
75 upon the said bed and constructed to feed fabric upon the bed toward the feed roller and at the same time to spread the said fabric laterally, and means arranged beneath the said bed and arranged to draw the said
80 fabric downwardly over the end of the bed and from the said abrading device.

5. In a machine of the character described, the combination with a bed, of a feed roller transversely arranged upon the bed, a revoluble abrading device adjacent to the feed
85 roller, the said bed terminating near the said abrading device, means for revolving the said abrading device and the said feed roller in the same direction and for revolving the abrading device more rapidly than the said
90 feed roller is revolved, means arranged below the said abrading device and feed roller for directing the steels in one direction, and means for drawing the fabric in another
95 direction.

6. In a machine of the character described, the combination with a bed, of a feed roller transversely arranged upon the bed, a revoluble abrading device adjacent to the feed
100 roller, means for revolving the said abrading device and the said feed roller in the same direction and for revolving the said abrading device more rapidly than the feed roller is revolved, means arranged beneath
105 the said bed and arranged to draw the said fabric from the abrading device, and means arranged beneath the said abrading device and constructed to draw the steels from the said fabric.

7. In a machine of the character described, the combination with a bed, of abrading and feeding mechanism, the said bed having a yielding edge next to the said abrading
110 mechanism over which fabric may be fed to the abrading mechanism.

8. In a machine of the character described, the combination with a bed, of abrading and feeding mechanism, the said bed having an edge next to the said abrading mechanism
120 comprising independent, resilient, removable sections whereby each section may yield to a different extent to allow for different thickness of the material acted upon.

9. In a machine of the character described, the combination with a bed, of abrading and feeding mechanism, the said bed having a yielding edge portion next to the said
125 abrading mechanism over which fabric may be fed to the abrading mechanism, and
130

means for adjusting the said yielding edge portion toward or from the said abrading mechanism.

5 10. In a machine of the character described, the combination with a bed, of abrading and feeding mechanism, means arranged beneath the said mechanism for drawing the fabric from the abrading mechanism, and means arranged between the said
10 fabric-drawing means and the said abrading mechanism for separating the fabric from the steels.

11. In a machine of the character described, the combination with a bed, of
15 abrading and feeding mechanism, means arranged beneath the said mechanism for drawing the fabric from the abrading mechanism, and a series of spaced blades vertically supported between the said fabric-drawing means and the said abrading mechanism for separating the fabric and the steels. 20

12. In a machine of the character described, the combination with a bed, of abrading and feeding mechanism, means arranged upon the said bed and comprising
25 diagonally disposed revoluble brushes acting directly upon the bed for laterally spreading and for feeding a layer of fabric upon the bed toward the said feeding and abrading mechanism. 30

In testimony whereof we affix our signatures.

LOUIS LAVECK.
ALPHONSE M. ROY

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."