A. WOOLSON.

Rest for Cloth-Shearing Machine.

No. 207,092. **Patented Aug. 13, 1878.**

Fig: 1.

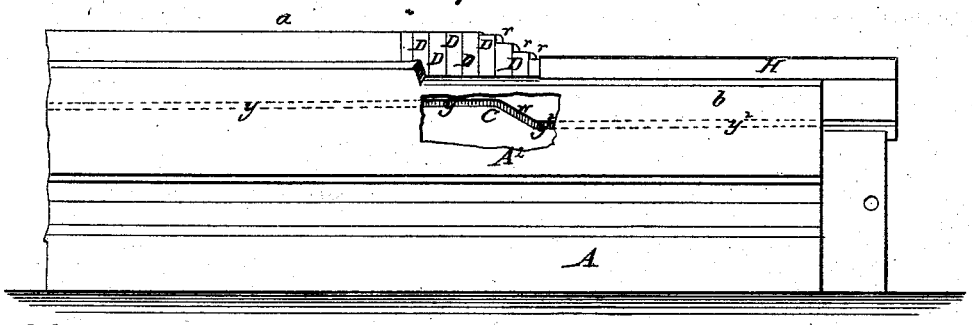


Fig: 3.

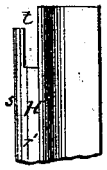


Fig: 4.

Fig: h.

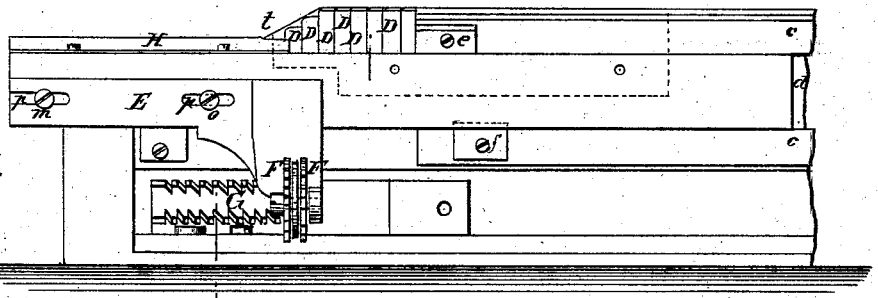


Fig: 7.

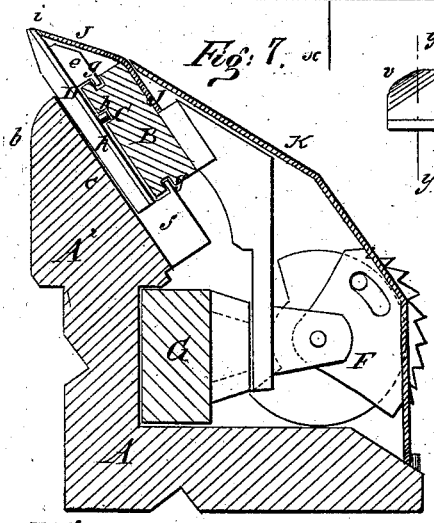


Fig: 5.

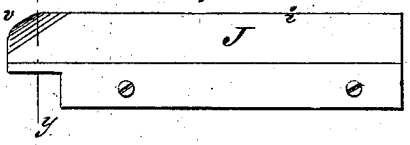


Fig: 6.

Fig: 8.

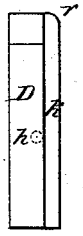


Fig: 9.

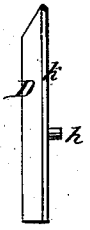
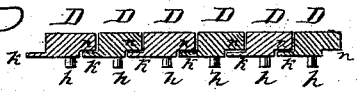


Fig: 10.

Fig: 11.



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UNITED STATES PATENT OFFICE.

AMASA WOOLSON, OF SPRINGFIELD, VERMONT.

IMPROVEMENT IN RESTS FOR CLOTH-SHEARING MACHINES.

Specification forming part of Letters Patent No. **207,092**, dated August 13, 1878; application filed March 20, 1878.

To all whom it may concern:

Be it known that I, AMASA WOOLSON, of Springfield, in the county of Windsor and State of Vermont, have invented a new and Improved Rest for Cloth-Shearing Machines; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

This invention is in the nature of an improvement in rests for cloth-shearing machines.

The invention consists in a cloth-shearing rest, with adjustable extension ends, consisting of a series of vertically-adjustable parallel sections, each section of the series being constructed with a lip which overlaps and is received into a recess formed in the section next adjacent, with the upper and outer corner of the lip of each section rounded off, the entire series of sections being combined with a sliding bar, having a cam-slot formed therein, whereby the several sections are operated, substantially as hereinafter described.

In the accompanying sheet of drawings, Figure 1 represents a rear elevation of my rest, partly in section; Fig. 2, a front view of same with covering-plate removed; Fig. 3, a part plan or top view of plate with slot; Fig. 4, an end view of same; Fig. 5, a top view of plate with bent end; Fig. 6, a cross-section in line *y y*, Fig. 5; Fig. 7, a cross-section of rest in line *x x*, Fig. 2; Figs. 8, 9, and 10, front, edge, and rear views of section; and Fig. 11, a sectional view of sections, showing pins, lips, and recesses.

Similar letters of reference indicate like parts in the several figures.

The purposes and advantages to be derived from the employment of cloth-shearing machines with rests capable of being elongated are well known to cloth-finishers, and need not be adverted to here further than to say that in constructing rests with adjustable extensions the preservation of the lists or selvages unshorn with a straight and distinct line, to mark the selvage from the sheared surface of the cloth, and the preservation on the edge of the extension portions of the rest of a smooth, even, solid, and unbroken surface to support the cloth against the action of the shearing-blades, are paramount features to be considered.

To arrive at this, I construct my rest with a suitable backing or support, A, which backing is secured to the upper portion of the frame-work of a shearing-machine. This backing may be of cast or wrought metal, and of any suitable form, and its rear side, or rather upper edge, may, for the purpose of description, be divided into two parts, *a* and *b*, the part *a* being somewhat higher than the part *b*, and the part *a* relating more particularly to that portion of the rest that is fixed and unadjustable, and the part *b* relating to the features of the extension portion of the rest. The inner face of the vertical portion A^2 of the backing A is beveled off, as shown in Fig. 7, and into this beveled face *c*, which is truly planed, is formed a slideway, *d*, the slideway extending the entire length of the fixed portion *a* of the rest, and terminating at the beginning of the adjustable or extension portion *b*. This slideway may be formed directly into the beveled face *c* of the backing itself, or it may be formed in a separate plate and be fixed to the backing. At suitable distances above and below the slideway are secured lugs *e* and *f*. Into this slideway *d* is accurately fitted a sliding bar, B, so that it may freely slide within the slideway, into which it is held and guided in its motion by the lugs *e* and *f*, the edges of which enter into rabbets *g* formed in the sliding bar B. Into the back of the sliding bar B, throughout its entire length, is formed a cam-slot, C, and of the form shown in Fig. 1. Placed against the inner beveled face of the portion *b* of the backing, or that portion which pertains more particularly to the adjustable or extension features of my rest, are a series of sections, D, arranged side by side, and snugly fitting between the back of the sliding bar and the beveled inner surface, *c*, of the part *b* of the rest, the combined inner surfaces of these sections lying in the same horizontal plane as and forming substantially a continuation of the slideway *d*. To the inner face of each of the sections D are fixed pins *h*, which enter into the cam-slots C in the back of the sliding bar, and each section D has formed upon one of its sides a lip, *k*, which lip is received into a recess, *n*, formed in the face of the section next adjacent, so that the

lip *k* of one section will be received into the recess *n* of the next adjoining section, and so on through the entire series. The upper corner of the lip *k* of each section is carefully rounded off, as at *r*, Figs. 1 and 3. To the sliding bar B are fixed, by set-screws *m* and *o* passing through slots *p* in a bar, E, feelers F, which feelers operate cams or catches in connection with a double ratchet-bar, G, so that as the ratchet-bar is moved backward and forward by any suitable means the cams will engage in the ratchets of the bar G, and move the sliding bar B backward and forward.

The construction of the feelers, double ratchet-bar, and cams having been patented by me on the 16th day of August, 1864, neither they nor their particular construction need be described in this place.

To the upper edge of the sliding bar B, and covering the upper ends of a portion of the sections D, is fixed a plate, H, which is bent, as shown in Figs. 3 and 4, the bend *r'* in the plate forming a smooth surface, and the outer edge, *s*, of the plate is beveled or sharpened to fit snugly against the outer surface of the back A at or near its edge *a*, and in continuation of this edge. This plate H has also formed in it a slot, *t*. Also to the sliding bar B is fixed a plate, J. This plate has its upper edge, *i*, sharpened, which sharpened edge lies parallel to and coincident with the edge *a* of the fixed or unadjustable portion of my rest, and one end of this plate projects to some extent over a portion of the sections D, and this projecting end, or the upper part thereof, is bent, as at *v* in Fig. 5.

To the bar E is secured a covering-plate, K, the upper edge of which last-mentioned plate is beveled or sharpened so as to lie closely against the surface of the plate J without material break in the surface formed by the two plates at their place of contact.

Now, my rest, constructed substantially as I have above described it, is operated in the following manner: The cloth to be sheared passes over the surface of the rest, or that portion, *b*, which constitutes the permanent or fixed part of the rest, and the list or selvage of the cloth is guided from the action of the shears by being allowed to drop below such action, from which it is guided by the bent portion *v* of the plate J. As the cloth passes over the rest its selvages are brought in contact with the feelers F, throwing the cam attached to them either into the upper ratchets of the ratchet-bar G, or, when not in contact with the feelers, permitting the cams to drop into the lower ratchets of the ratchet-bar G, alternately moving this ratchet-bar in and out within the rest, keeping the list substantially in a straight line, as it passes over the rest, to the action of the shears. This operation of the feelers, cams, and ratchet-bar, in connection with the list or selvage, need not be more particularly described here, since, as before stated, it was patented by me on the 16th day of August, 1864.

Now, as this ratchet-bar G reciprocates it carries with it the sliding bar B, causing it to reciprocate in like manner within its slideway; and as this last-mentioned bar reciprocates or slides, the pins *h* in the inner face of the sections D are brought successively in contact with the inclined portion *w* of the cam-slot C, and the sections are in this way successively raised up to the exact level or horizontal plane of the sharpened edge *i* of the plate J, so that when the upper ends of these sections are in this raised position they are coincident and parallel with this edge, substantially bringing up parallel with said edge the portion *b* of the rest, and making it a continuation of the portion *a* or the edge *i* of the plate J, as the several sections are raised to the same level as is such edge, the extent or length of this continuation depending upon the number of sections which are raised; and the sections, when they are raised, are held in the required position firmly by the portion *y* of the cam-slot C. The extent of the extension or prolongation of the fixed rest depends upon the distance which the sliding bar B is allowed to move in one direction, for when this bar moves in another and reverse direction the inclined portion *w* of the cam-slot C operates in a reverse manner from that I have just described, carrying the several sections brought in contact with it successively below the level of the edge *i* of the plate J, or the fixed rest, in which position they are retained by the part y^2 of the cam-slot C, so that as the sliding bar B reciprocates rapidly, these sections are alternately raised and lowered, and in this way increase or decrease the extent of the bearing-edge of the rest.

As the sections are forced upward the angular portion *w* of the cam-slot C acts simultaneously on three of the several sections, raising one section to the exact level of the edge of the rest, the next one slightly less, and the third one still less. This is caused by the angular portion *w* of the slot, which necessarily raises the sections to a height corresponding to the pitch of the angle; and since by this operation the lowest of the raised sections is brought immediately beneath the extremity of the bent end *v* of the plate J, and projects slightly beyond this extremity, it is apparent that if the corner of the lip *k* were left square the list, as it passed over such a corner, would catch in it and be torn, and interrupt the passage of the cloth. To obviate this the outer corner of each lip is rounded off, as shown in Figs. 1 and 8, the rounded-off portion *r* forming substantially a continuation of the bent end *v* of the plate J, as each section is brought beneath said end, and permitting the free passage of the cloth over such rounded portion without danger of being obstructed or injured.

By constructing the sections D with the lips *k*, not only is each section retained with certainty in its proper position, but the sliding of the sections is rendered positive, and the opportunity of presenting a rounding cor-

ner to the list as it passes over the sections is provided.

When the rest or the part *a* thereof is prolonged by the elevation of the sections D to its level, it will be found that the upper ends of the raised sections present a smooth and continuous edge, corresponding exactly in height, angle, and width with the unadjustable portion *a* of the rest, the length of the extended portion of the rest in this way formed depending, as before stated, on the number of sections that are elevated, and the elevation of the sections depending upon the position of the cam-slot C in the sliding bar B, and the position of the sliding bar is dependent upon the action of the cam and feelers with the double ratchet-bar G, which are governed by the contact or non-contact of the selvage against the feelers, as before stated.

As the sections are elevated one after another to the level of the rest, or depressed or lowered from such level, the height and extent at which the rounded end of the lip *k* shall project beyond the extremity of the plate J may be regulated to some extent by slackening the set-screws *m* and *o*, and permitting the cams with the feelers F to be adjusted in their relation to the ratchets in the ratchet-bar G, and also in their relation to the position of the angular part *w* of the cam-slot C in the back of the sliding bar B, for the position of this angular portion of the slot, in connection with the extremity of the plate J, determines the degree of elevation or depression that each section shall have, and this elevation or depression of the sections fixes the extent that the curved corner of the lips *k* shall project beyond the extremity of the plate J, and also to some extent the degree that the slot *t* is filled by the sections D.

Instead of providing each of the sections with a pin to enter into the cam-slot of the sliding bar, it is obvious that slots may be formed in the sections, so that they will be operated by one or more pins in the sliding bar, producing substantially the same operation.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A rest for a cloth-shearing machine, with extension ends, consisting of a series of vertically-adjustable sections made with lips, the lip of one section being received in a recess formed in the next adjacent section, and the upper outer corner of the lip of each section rounded off, substantially as and for the purpose described.

2. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections combined with one or more covering-plates, which form, with the upper ends of the sections, the edge for supporting the cloth to the action of the cutting-blades, substantially as described.

3. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections, each section having fitted to it a pin, in combination with a sliding bar provided with a cam-slot, whereby the sections are elevated and depressed positively, substantially as and for the purpose described.

4. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections, in combination with a sliding bar provided with a cam-slot and double ratchet-bar, feelers, cam, and devices for reciprocating the ratchet-bar, whereby the sections may be automatically and successively elevated and depressed, substantially as and for the purpose described.

5. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections, in combination with a plate, J, with one of its ends bent, substantially as and for the purpose shown and described.

6. In a rest for a cloth-shearing machine, a series of vertically-adjustable sections, in combination with cams adjustably secured to the bar B by set-screws *m* and *o* and slots *p*, whereby the extent of the elevation or depression of the sections in their relation to the bent end *v* of the covering-plate J may be regulated, substantially as described.

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