2 Sheets—Sheet 1.

A. WOOLSON.

Rest for Cloth-Shearing Machine,

No. 207,090 Fig: 1. Patented Aug. 13, 1878.

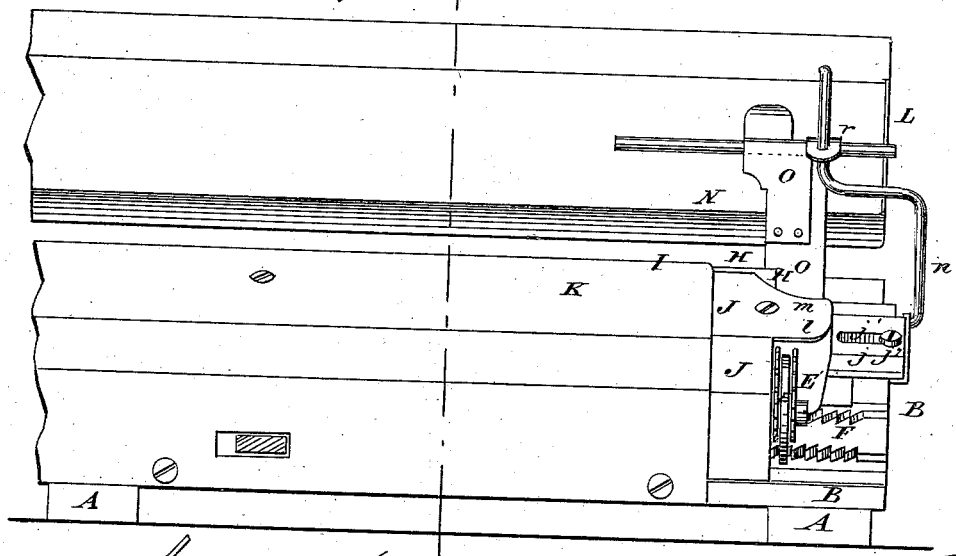


Fig: 3.

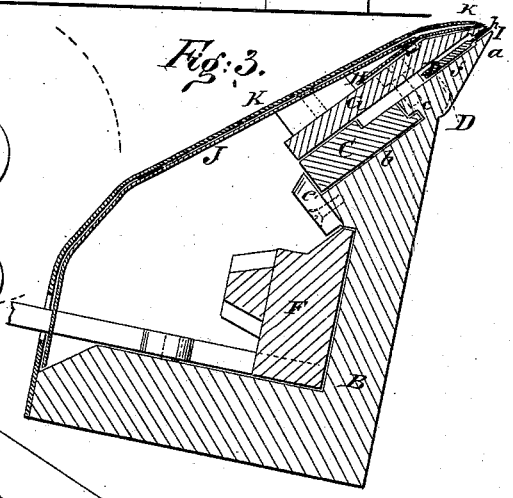


Fig: 2.

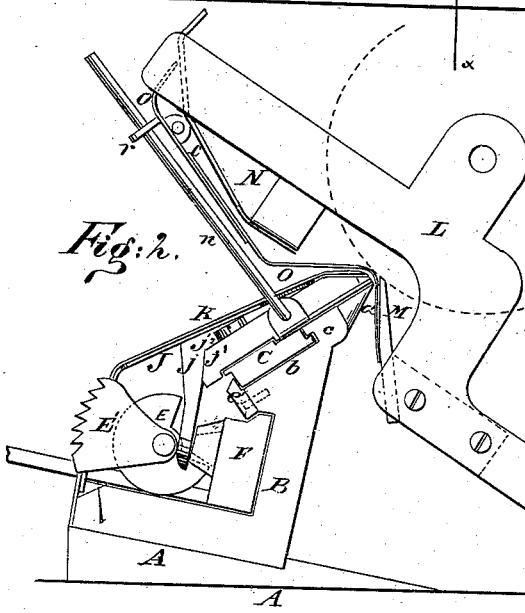
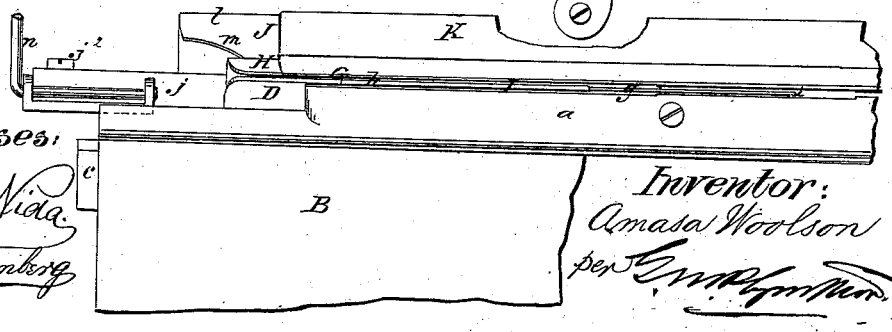


Fig: 4.



Witnesses:

Chas. Nida.

H. C. Wattenberg

Inventor:

Amasa Woolson

per Munn & Co.

Atty

2 Sheets—Sheet 2.

A. WOOLSON.

Rest for Cloth-Shearing Machine,

No. 207,090. Patented Aug. 13, 1878.

Fig: 5.

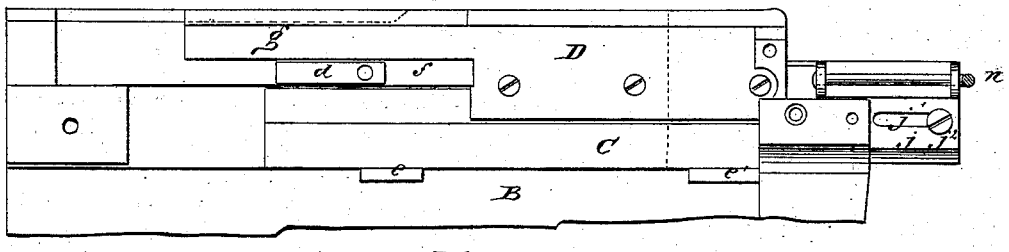


Fig: 6.

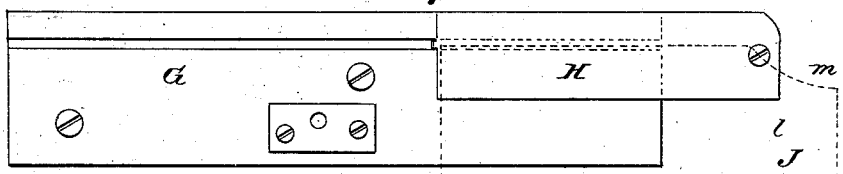


Fig: 7.

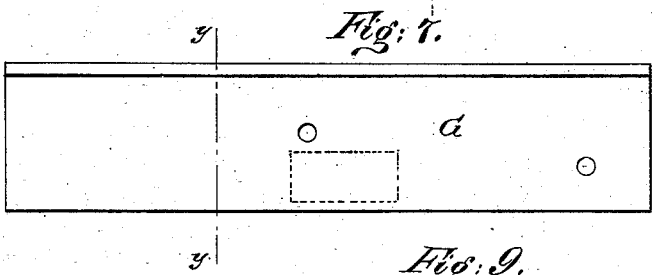
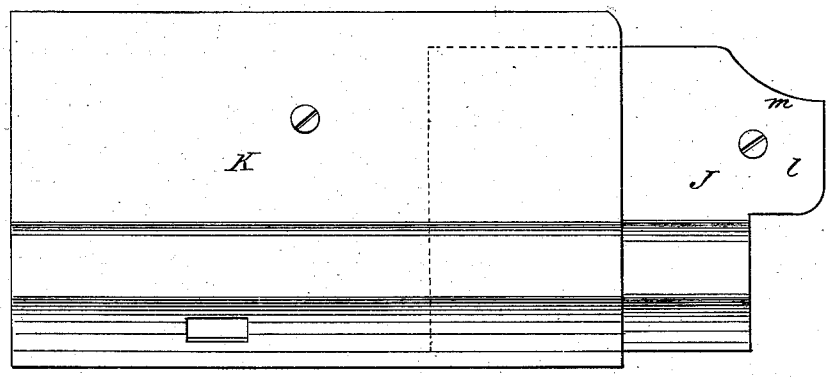


Fig: 8.

Fig: 9.



Witnesses:
Chas. Nida.
H. L. Wattenberg

Inventor:
Amasa Woolson
per Munn & Co.
Attys.

UNITED STATES PATENT OFFICE.

AMASA WOOLSON, OF SPRINGFIELD, VERMONT.

IMPROVEMENT IN RESTS FOR CLOTH-SHEARING MACHINES.

Specification forming part of Letters Patent No. **207,090**, 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 Cloth-Shearing Machine; 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 cloth-shearing machines.

The invention is a cloth-shearing machine, with the rest thereof having extensions constructed to slide to and from the ends of the rest, the edges of the extensions being at all times parallel and continuous with the edge of the rest, and a smooth and uninterrupted bearing-edge preserved without break or joint between the edge in the middle of the rest and the edges of the extensions.

The invention also consists in an adjustable list-shield fixed to the swinging blade-frame of a shearing-machine, and connected with a hand sliding or extension rest, whereby the shield may be adjusted parallel and simultaneously with the adjustment of the extension rest in such a manner as to be out of the way of the operator when the blades are thrown up to put in or examine the goods.

In the accompanying sheets of drawings, Figure 1 represents a front elevation of my rest; Fig. 2, an end view of same; Fig. 3, a cross-section of rest in line *x x*, Fig. 1; Fig. 4, a rear view of bearing-edge of rest, partly in section; Fig. 5, a view of face of backing with sliding bar and plate D thereon; Figs. 6, 7, and 9, detail views of plates; and Fig. 8, cross-section of plate shown in Fig. 7.

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

The invention hereinafter described applies to that class of rests in machines for shearing cloth that are provided with automatic adjustable extensions at the ends of the rest—that is, devices which may increase or decrease the length of the rest over which the goods pass to be shorn.

In shearing some kinds of cloths, such as cassimeres and others, it is very desirable that the list or selvage on the sides of the cloth be preserved unshorn; and not only this, but that the selvage or list shall present a sharply-defined and straight line of demarkation between the list or selvage and the shorn surface of the cloth, so that a sharp contrast between the unshorn list and the shorn surface of the cloth is apparent to the eye upon inspection. To preserve the list, therefore, with an unshorn and unclipped surface, and to preserve the distinctive line between the list and the cloth straight and uniform and with certainty, and at the same time present to the cloth as it passes to the blades a straight, smooth, and uninterrupted edge on which to rest, are the important features of my invention. By presenting a smooth and uninterrupted edge, I mean that notwithstanding the fact that the ends of the rest or the extensions thereof are adjustable, still no break or joint is perceptible between the parts that are so extended and the fixed or main portion of the rest, so far as their edges, or those parts against which the cloth more particularly bears, are concerned.

To accomplish these results, I construct my shearing-machine in the following manner—that is to say:

A represents the upper part of the frame-work of an entire shearing-machine, which supports the rest proper. To this frame-work is permanently fixed, at a suitable angle, the supporting-frame or backing B of the rest. This backing may also be made of any desirable shape and of any suitable material and size. The upper edge *a* of this backing is beveled to a knife-edge, as shown in Figs. 2 and 3. This knife-edge may be formed directly from the material of which the entire backing is made, or it may be formed by fixing to the backing a plate of steel or wrought-iron, and forming the knife-edge of that material. This edge should not only be formed up until it is moderately sharp, but it should be perfectly straight and parallel with the base A of the machine. On the inner inclined face of the backing B is a slideway, *b*, and a recessed channel, *c*; also, on the inner inclined surface of the backing B, and immediately above the slideway *b*, is fixed a cleat, *d*. On the inner surface of the backing B, and resting upon the slideway *b*, with its edge fitting into the chan-

nel *c*, is a sliding bar, C, and it is supported in this position by lugs *e e'* fixed to the inner face of the backing, as shown in Figs. 3 and 5, so that the sliding bar C may slide accurately on the slideway *b*, and exactly parallel with the length or edge of the rest. To this sliding bar C is fixed a plate, D, preferably of steel, which, when in place, rests upon a sliding-surface, *f*, immediately above the slideway *b* before mentioned, with its edge exactly parallel and coincident with the knife-edge *a* of the backing or supporting frame B. This plate D is constructed with a tongue, *g*, as shown in Fig. 5, so that when the sliding bar C slides on the slideway *b* the lower edge of this tongue will rest on the cleat *d*, which supports it and acts as a guide. The upper part of the plate D, near its edge, is reduced in thickness, as shown in Figs. 3 and 4. This reduction may be twofold—one, *h*, applied to the plate proper, D, and the other, *i*, applied to the tongue *g* of the plate; also, to the sliding bar C, at or near its outer end, is fixed an adjustable cleat, *j*, to which cleat are secured cams and feelers E and E', operating in combination with a double-ratchet sliding bar, F.

The construction and operation of these cams, feelers, and double-ratchet bar need no particular description here, since they were heretofore patented to me on the 16th day of August, 1864.

The cleat *j* has a slot, *j'*, formed in it, provided with a set-screw, *j²*; also, to the backing or support B, immediately over the sliding bar C and plate D, but in nowise interfering with their sliding, is secured a plate, G. This plate has its upper side beveled to an edge, which edge lies parallel to and in close contact with the edge of the plate D. To the sliding bar C, and immediately above the last-mentioned plate G, is fixed a plate, H. This plate may be of steel, and bent so that its upper part will lie snugly against the beveled side of the plate G, and its upper side is brought to an edge, which edge lies exactly parallel and coincident with the edge of the plate G.

To the sliding bar C is also fixed, in any suitable manner, a thin sheet-metal plate, J. The upper side of this plate is beveled to an edge, so that its upper side is substantially lost in the bevel of the plate H, forming substantially a continuation of said bevel. The outer end of this plate projects somewhat, as at *l*, and the upper part of this projection has a curved notch, *m*, formed therein. This plate also forms a covering-plate and outer surface for the extension, and was included in my patent of August 16, 1864; and, finally, over the last-mentioned plate J is placed a covering or surface plate, K. This plate K is secured the backing or frame-work B, and it forms a covering for all of the last-mentioned plates, and its upper side is bent to a bevel, and it is brought to a sharp edge exactly parallel and coincident with the edges of the several plates before named, the several edges of the backing or supporting-frame B, the plate D, the plate G, the plate H, and the plate K all converging at or about the same angle, and all being parallel and coincident with each other, said several edges constituting the edge I of the rest, the aggregated edges of these several plates giving to the edge I an appreciable width to form a bearing-surface for the cloth as it is shorn.

To the rear of the rest above described, and fixed to the base A in any desirable manner, but so that it may swing to and from the rest, is the blade-frame L. To this frame is secured the ledger-blade M and the revolving cutters. To the guard N of this frame, and on its outer or front face and near its ends, is affixed a list-saving shield, O. This shield may be affixed in any desirable manner; but it is necessary that it should be attached so as to have a sliding motion parallel with the length of the guard. The shield proper may be constructed of thin sheet metal, or of paper, if desired, and it is bent to the form shown in Fig. 2, so that when the blade-frame L is swung forward to bring the ledger-blade M in contact with the edge of the rest the shield O will be interposed between the ledger-blade and the edge of the rest.

From the sliding bar C (to which it is attached at one end by a pivotal or hinge joint) extends an arm, *n*, the other end of this arm passing up to and through a lug, *r*, at the head of the list-shield O.

Now, my improved shearing-machine being constructed substantially as above described, its operation is as follows: The cloth to be sheared, with the list thereon, is passed over the covering-plate K or face of the rest and edge I, (which edge, as is seen from the foregoing description of its construction, offers a fair and smooth support for the cloth as it is sheared, and is inclined to such an angle as will bring the surface of the cloth fairly against the ledger-blade,) so that as it passes over this edge it is shorn by the action of the revolving cutters in the ordinary manner.

As it is desirable that the lists or selvages on each side of the cloth shall be preserved unshorn, these selvages drop from the edge I of the rest (or rather from that portion of the edge that is formed by the extension at each of its ends) into the notch *m* of the plate J, which brings the surface of the selvage below the edge of the rest and out from the action of the revolving cutters, preserving its surface unshorn; but to more effectually prevent the list from being shorn, and its inner edge from being notched by irregular clipping, the shield O covers the list from its inner edge outward, preserving that portion of it which is covered by the shield from the action of the revolving cutters.

Now, as the cloth is rapidly passed over the edge of the rest to the cutters, as is well known, it sways more or less from side to side on the rest, and by reason of this swaying it is diffi-

cult to present the inner edge of the selvage in a perfectly straight, sharp, and bold line in contrast to the surface of the cloth, which is desirable. To accomplish this the automatic adjustment of the extension patented by me August 16, 1864, and shown in connection with the sliding rest described in said patent, is in part employed in my present rest, for as the double-ratchet bar F is made to move with a rapid reciprocating motion the extension ends of my rest are moved alternately to and from the ends of the fixed rest, which alternate motion is regulated by the passage of the lists over the feelers E′, causing the cams E, fixed to these feelers, to engage alternately in the opposite ratchets of the ratchet-bar F, compelling the extension ends to move out as the feelers are moved up, and to move in as they drop by gravity when disengaged from the passing lists, so that the position of the list on the rest in its relation to the action of the shears or cutters is maintained substantially in a straight line, notwithstanding the swaying of the cloth in its passage over the rest.

The width of the list saved from being shorn may be regulated by the set-screw j^2 and the slot j^1 of the cleat j, for by adjusting the cleat more or less to the extent of the slot j^1 the width of the list is increased or diminished as may be desired, substantially as is described in my patent of August 16, 1864, before referred to.

Now, as the extension ends are alternately moved in and out from the fixed rest the list-shield O is moved simultaneously and parallel with the extension ends; and as the inner edges of the shields O are coincident with the ends of the rest and the curved notch *m*, into which the list drops, the revolving cutters are prevented from clipping the list, and its inner edge is preserved straight and distinct, since every tendency of the list to pass out of a straight line and from beneath the shield O is counteracted by the automatic and simultaneous adjustment of the extension with said shield, as before described.

Now, as the extension ends of the rest are moved inward and outward, as described, the sliding bar C carries with it the plates D and H, the sharpened edges of which slide in the space formed between the sharpened edge *a* of the backing or frame B and the covering-plate K, which space they fill, rendering the edge I substantially solid to all intents and purposes, and under all circumstances, notwithstanding they slide within said space, forming, with the plates G and K, a smooth bearing for the cloth at the edge of the rest, which permits it to pass readily over this surface without interruption or danger from being torn by sharp angles. Besides, the appreciable width offered by the bearing of this rest and the angle at which it is presented to the ledger-blade enable it to present a greater surface of cloth to the action of the cutters than is done by any other rest heretofore constructed with extension ends.

List-shields have been heretofore employed in connection with cloth-shearing machines, and I do not claim the same, broadly, as my invention; but they have never before been attached to the swinging blade-frame, but always to the rest itself.

It is obvious that many of the details of the construction hereinbefore described may be modified, as experience or circumstances may require, without departing from the featnres of my invention. I do not therefore wish to be confined to such specific construction of details; but,

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

1. In a cloth-shearing machine, the rest provided with extensions constructed to slide to and from the ends of the rest, the edges of the extensions being at all times parallel and continuous with the edge of the rest, and a smooth and uninterrupted bearing-edge preserved without break or joint between the middle or fixed edge of the rest and the edges of the extensions.

2. In a cloth-shearing machine, the stationary rest combined with extension ends, the edge thereof having a space parallel with the rest, which space has within it one or more plates constructed to slide within said space simultaneously with the sliding of the extension, the edges of the sliding plates within said space substantially filling it, and making the edge of the rest and its extension practically a solid bearing-surface for supporting the cloth to the action of the shearing-blades.

3. In a cloth-shearing machine, the cloth-rest formed of a series of plates with sharpened edges, the said edges converging and being coincident and parallel with each other.

4. In a cloth-shearing machine, the combination, with revolving shearing-blades, of an extension-rest, the bearing-edge of which is placed at an angle with the ledger-blade, whereby the entire width of the edge of the rest and its extension supports the cloth against the action of the shearing-blades.

5. In a cloth-shearing machine, the extension ends of the rest thereof, in combination with adjustable list-shields, which are attached to the blade-frame, and devices for automatically adjusting the same parallel and simultaneously with said rest or the sliding parts thereof, substantially as described.

AMASA WOOLSON.

Witnesses:

JAMES T. WARREN,

HENRY CLOSSON.