W. H. & C. H. MITCHELL.

APPARATUS FOR STRETCHING PORTIONS OF FABRICS.

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907,081. Patented Dec. 15, 1908.

Fig. 3.

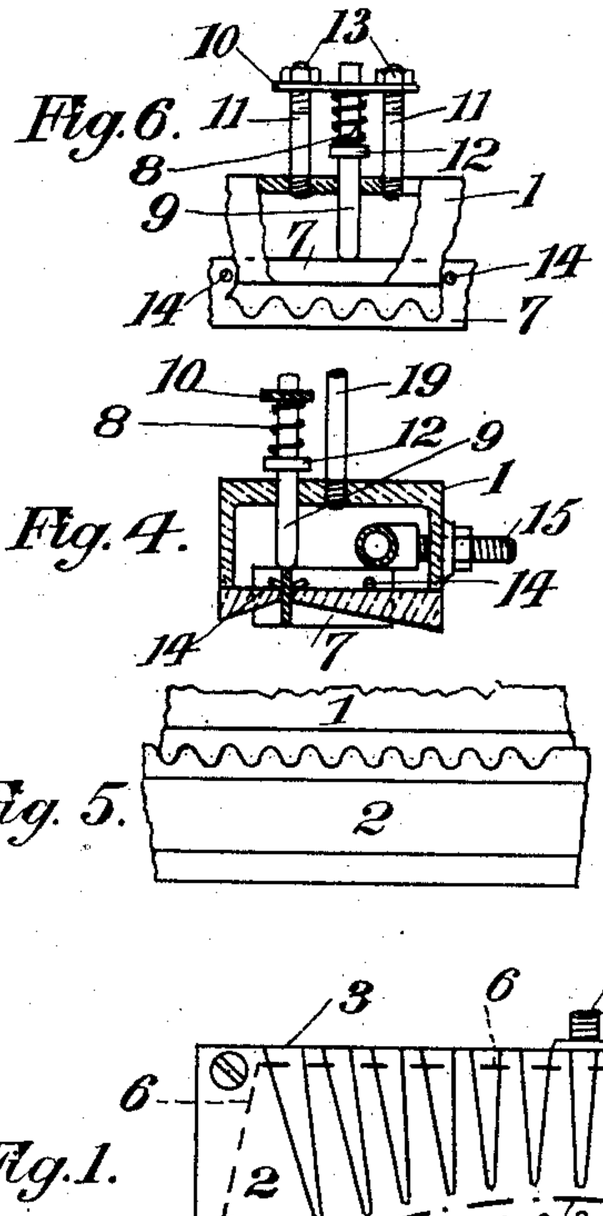
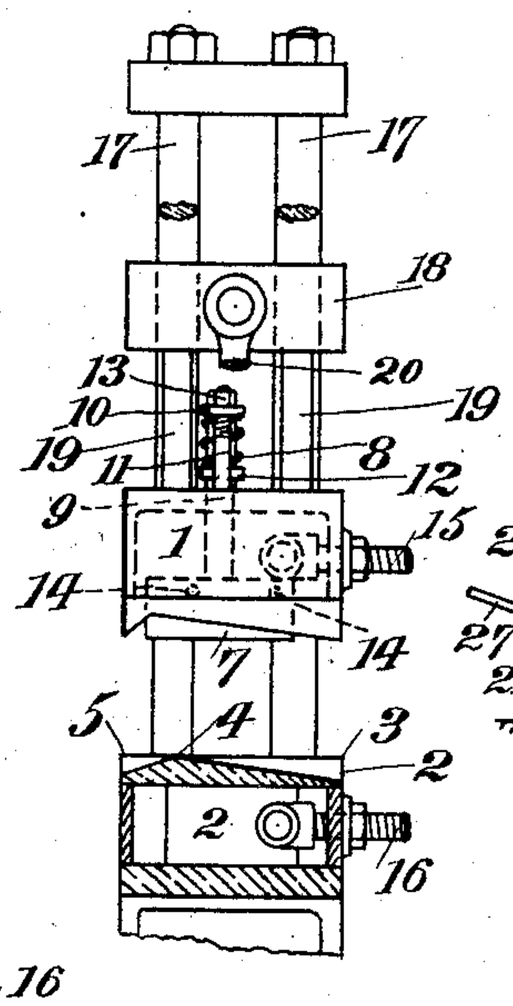


Fig. 6.

Fig. 4.

Fig. 5.



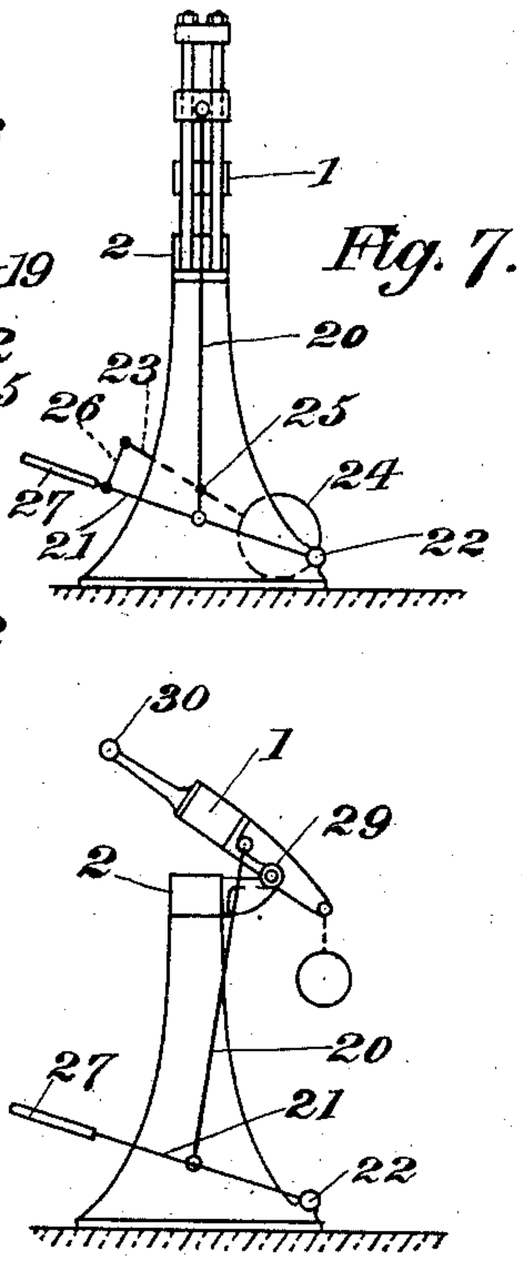


Fig. 7.

Fig. 9.

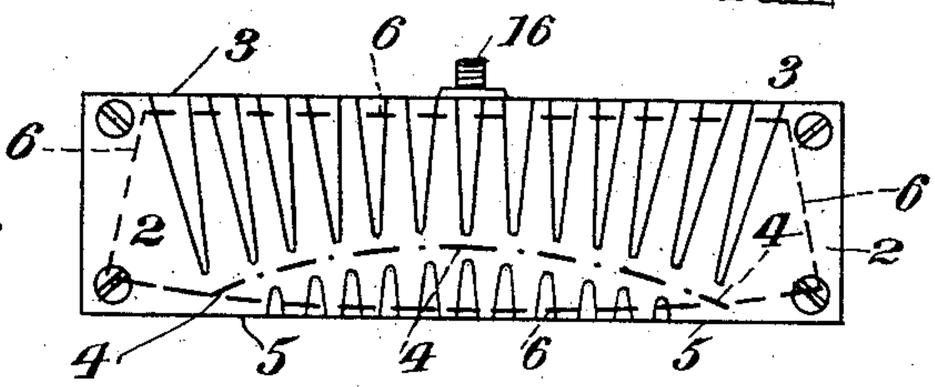


Fig. 1.

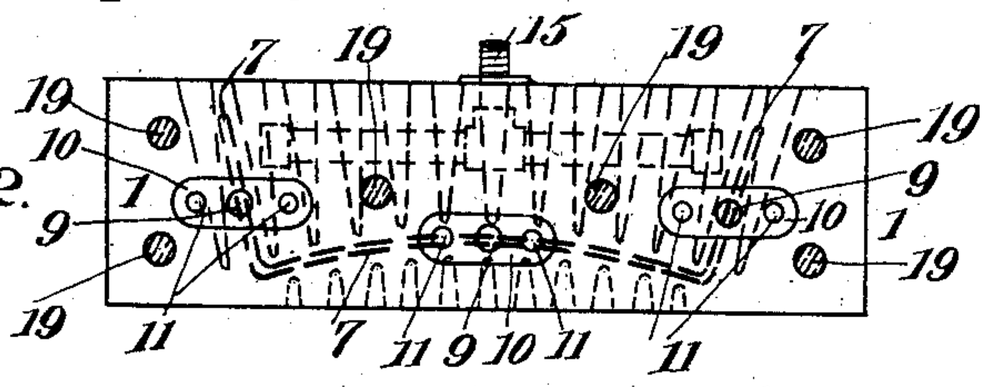


Fig. 2.

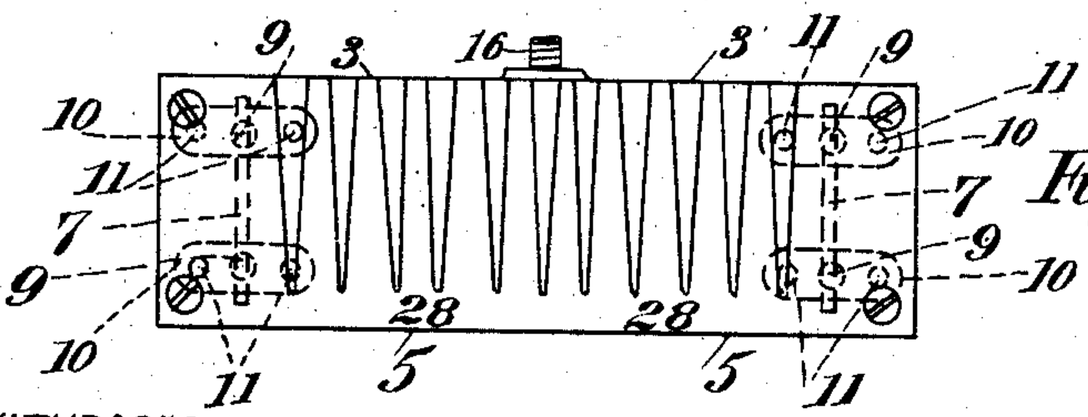


Fig. 8.

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APPARATUS FOR STRETCHING PORTIONS OF FABRICS.

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Application filed June 13, 1908. Serial No. 438,358.

To all whom it may concern:

Be it known that we, WILLIAM HENRY MITCHELL and CHARLES HENRY MITCHELL, subjects of the King of Great Britain and Ireland, both of Crown Works, Harehills Lane, Leeds, in the county of York, England, clothing manufacturers, have invented new and useful Improvements in Apparatus for Stretching Portions of Fabrics, of which the following is a specification.

Our invention has reference to apparatus for stretching portions of cloth, and other fabrics, for use in making clothing, which is required to be neatly adapted to the figure of the wearer; and it has for its object to provide a press that shall effectively expand and stretch one, or both, edges of a piece of material, so that it may take the form of either a curve on one edge of the fabric only (the said fabric being nevertheless doubled when required), or that of a double curve, such as that, for example, which assists in forming the collar of a coat, partaking of a shape that is more, or less, conical in parts of its doubly curved formation.

Referring to the drawing, Figure 1 is a plan of the upper side of the lower pressing block; Fig. 2 is a similar view of the upper side of the top pressing block; Fig. 3 is an end elevation, partly in section, of the two blocks, with suitable mountings; Fig. 4 is a transverse section of the top block; Fig. 5 is a front elevation of the central portion of the two blocks engaged together; Fig. 6 is a front elevation of the central portion of the top block, and details mounted thereon; Fig. 7 is a diagrammatic side elevation of a complete form of press; Fig. 8 is a plan of the upper side of a modified lower block for stretching material on one edge only, and Fig. 9 is a diagrammatic side elevation of a modified press suited for blocks in accordance with Fig. 8.

We will presume that a piece of fabric for a collar of a coat requires both edges stretched.

We provide top and bottom pressing blocks 1 and 2, heated by gas, or other convenient means, such blocks being, say, for example, about twenty inches long, for a collar of medium size, and some five, or more, inches broad, for a collar of medium height. Along the longitudinal edges 3 of the bottom block (Fig. 1) which is to form the outer edge of the collar, are a series of depressions, or waves, in any suitable number (thirteen are shown on the drawing) which commence with a depth of about half an inch and decrease and disappear at the part of the block at 4 where the curved center line of the top ridge of the collar is to be placed—see the dotted curve at 4—some of the longer depressions being thus about three, or more, inches in length. These longer depressions, or waves, are arranged radially, which, for conical collars, is preferable, though not actually necessary. Similar waved depressions are formed on the opposite side, or edge, 5 of the bottom block and these (eleven of them are shown) assist in forming the inside of the collar. They nearly meet the other waved depressions, running inwards to the distance required towards the line 4, their depth being also some half inch, and decreasing and disappearing at 4. A parallel arrangement of waves at the edge 5 is used as it is found most suitable. The "collar-ridge position" 4 is thus a suitable curve between the inner ends of the series of waves, and it constitutes a flat portion of the block, as shown. A variety of blocks may, when required, be provided for different curves, and for this, and other purposes, it will be found convenient to form the waved flutings in separate plates which may be screwed to the other parts of the blocks.

The top block 1 has projecting waves the counterpart of those in the block 2 (except that the thickness of the material requires their being slightly less) so that while the press is being closed, the material is forced into the tapering corrugations between the two blocks, and in this way it is stretched, as desired, along (in this case) both its edges, in proportion to the depth and number of the tapering waves. The outline of a piece of cloth, as placed for pressing, is shown by the dotted line 6 in Fig. 1 and it is curvilineally treated on both its edges, while the "collar-ridge position" remains unstretched, or nearly so, on the curve 4.

The top block 1 is slotted immediately over the "collar-ridge position", so as to allow a projecting tongue-piece 7 to pass through in such a way that, when the press is being closed, this projecting tongue-piece 7 will first come in contact with the cloth, or fabric, over the said collar-ridge position and hold it from being displaced during the stretching process. The gripping-tongue however is only held projected by springs

8 and after the fabric is secured in position, these springs give way and allow the press to be fully closed.

As shown in Fig. 2 in dotted lines, the tongue-piece 7 is arranged to press on the two angled ends of the material, as well as at the center of the curve between the meeting ends of the waves from each edge. Each of the spindles 9 impinges on the tongue-piece 7 and is supported at its head by a cross-bar 10 carried by two uprights 11 secured in the top of the block 1 through which the spindle passes so that the spindle is guided in the top of the block and on the cross-bar 10. On each spindle 9 is a collar 12 for the spring 8 to press against, the upper abutment of the spring being the cross-bar 10. By adjusting the nuts 13 at the head of the uprights 11, the intensity of the spring pressure can be regulated as desired. Pegs 14 prevent the tongue-piece 7 from being pushed too far down. Access to the interiors of the hollow blocks 1, 2, and to the burners therein (the pipes leading to which are marked 15, 16,) can be had by unscrewing the plates which form the blocks proper.

The top block 1 may be arranged to move vertically, or it may be hinged on any suitable framing and may be counterbalanced so as to rise out of the way when released. It may be brought down by hand into position and a pedal, or footboard, may be arranged for holding it down. In Fig. 3, 17 are vertical guides for a horizontal crosshead 18, which crosshead is connected with the block 1 by the studs 19. Two connecting rods 20, one at each side of the press, may be coupled to a pedal below, as shown in the diagram Fig. 7; here the connecting rods 20 are coupled to the pedal levers 21, whose fulcra are on the axis 22, and any convenient balance-lever 23 and weight 24 may be employed. The balancing gear has its fulcrum at 25 and a link 26 connects the said lever with the pedal-platform 27. The particular advantage of this arrangement is that the gripping-tongue 7 descends onto the material vertically, and minimizes the chances of disturbing its position on the lower block.

Before the material is inserted in the press it may be damped (if not sufficiently damp to begin with, which is often the case) and it may be left in the press for a short time to steam and dry to its newly stretched lengths and positions.

The blocks 1 and 2 may be of any size and form, the dimensions given being descriptive only; the stretching by suitable taper corrugations, suitably placed and formed, both as to position and depth, being the important points.

Other gripping tongues may of course be designed for other purposes, and there may be any number of them as may be convenient.

An example of a modification is shown, as to its corrugations and gripping tongues, in Fig. 8, which is a plan of a bottom block 2 suitable for stretching material on one side of the block only. Here the corrugations, or flutings, are deepest on the edge 3, and they decrease and disappear near the side 5, as shown, the line at 28 being straight, or curved as required. The positions of the two tongue pieces 7 are shown in dotted lines. They run transversely at each end to deal with the tendency there would otherwise be of the cloth being drawn in lengthwise, especially on the side 3. Supposing such a press to be used for trousers stretching; the cloth would first be doubled and the fold arranged on, or along, the side 5 of the press, and the two edges (those to be afterwards sewn) arranged over the deep corrugations next the side 3 so that they would receive the curvilinear stretch. In such a press as this, when used for trousers, or any other garment of considerable length, it would prove inconvenient to have any end obstructions, such as the guide pillars 17 in Fig. 3, and the top block 1 may be hinged at the side on the axis 29 (Fig. 9), and in this way any overhanging length of material may be provided for. In this case the connecting rod 20 couples the upper block 1 to the pedal-lever 21. The handle 30 is to assist in drawing down the said top block.

We wish it to be understood that we have no rolling action between the two faces of our press, the faces approaching one another in as direct a vertical line as the guides, or hinges, respectively, allow.

Pressing blocks of the particular type described are not essential and I use the term "pressing blocks" in the following claims to cover any suitable pressing means having its pressing surface formed in the manner described.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:

1. In apparatus for stretching material, the combination of pressing blocks, with opposed faces approximately flat and having two sets of correspondingly tapered waved depressions meeting in a curved line for producing two corrugating effects when closed, and having plain parts between the two sets of waved depressions for the protection of the portion of the material not to be stretched.

2. In apparatus for stretching material, pressing blocks, the opposed faces of which are approximately flat and have correspondingly tapered waved depressions for producing a corrugated effect when closed, and with plain parts at the places where the material is not to be stretched, one, preferably the upper, of the blocks, being provided with

a device for bearing upon and holding the material without piercing or damaging it, so that the parts not to be stretched do not move towards the waved depressions as the press closes; substantially as hereinbefore described.

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

WILLIAM HENRY MITCHELL.
CHARLES HENRY MITCHELL.

Witnesses:
WILLIAM SNOWDON,
ERIC. VERNON WEINPENNY.