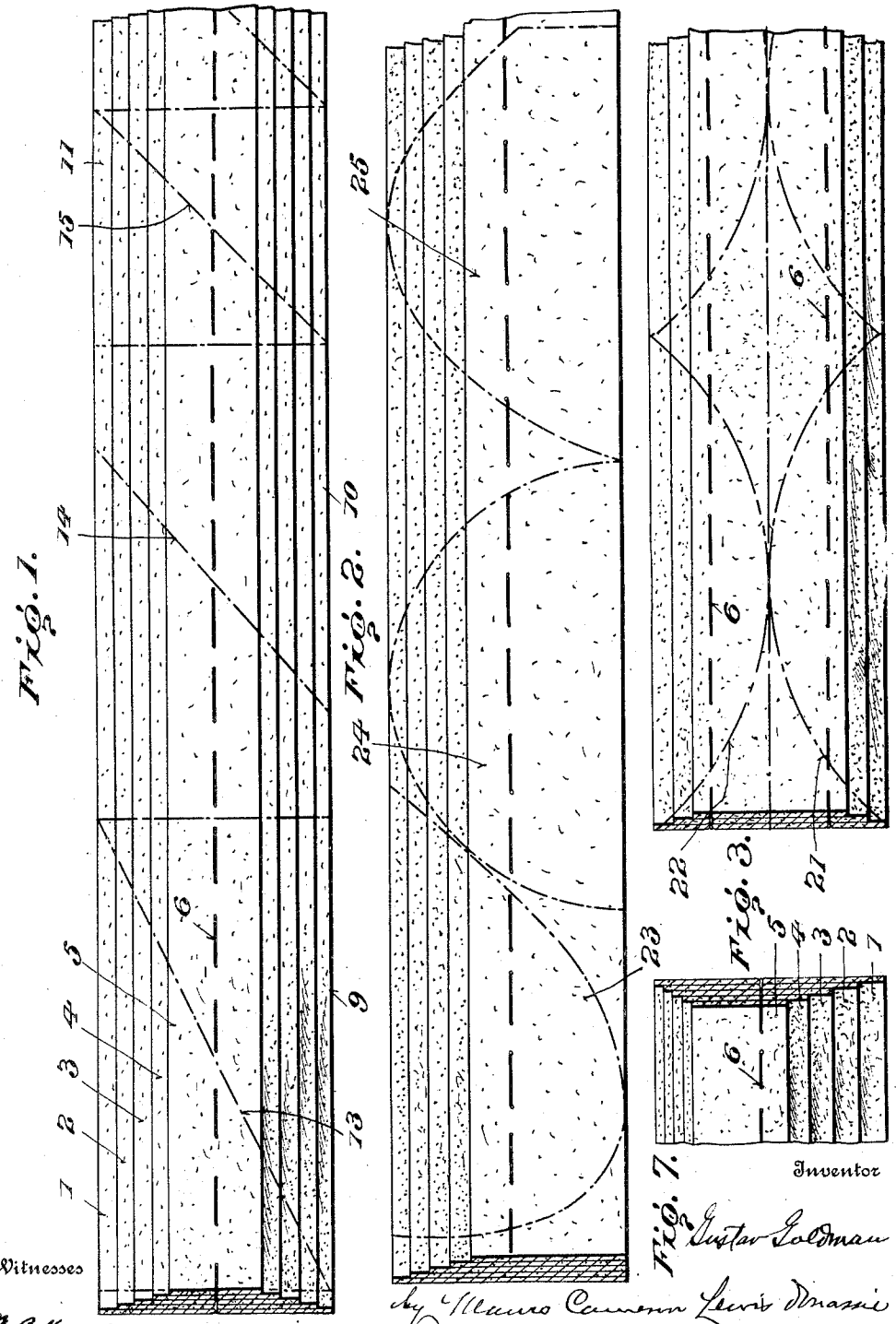
No. 873,999. PATENTED DEC. 17, 1907.

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METHOD OF MAKING GARMENT PADS.

APPLICATION FILED MAR. 5, 1907.

3 SHEETS—SHEET 1.



Witnesses

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Fig. 4.

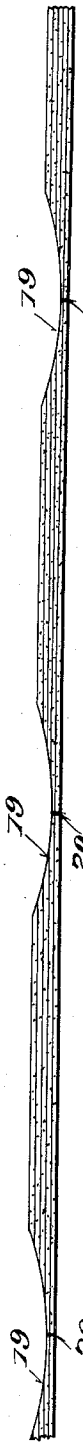


Fig. 5.

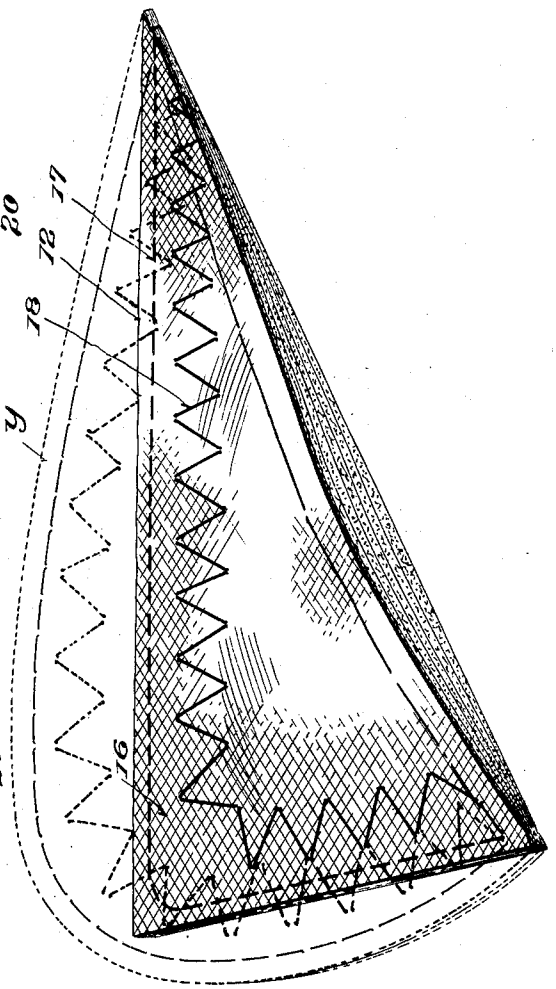


Fig. 6.

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3 SHEETS—SHEET 3.

Fig. 8.

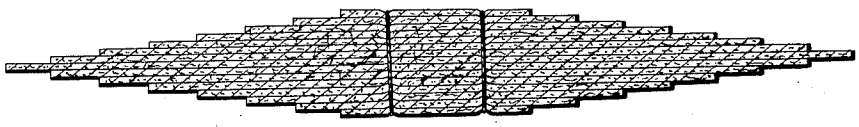
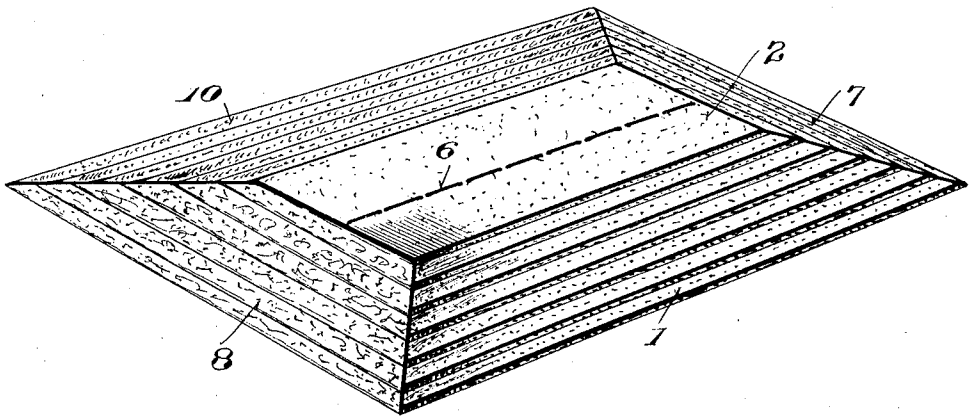


Fig. 9.



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UNITED STATES PATENT OFFICE.

GUSTAV GOLDMAN, OF BALTIMORE, MARYLAND.

METHOD OF MAKING GARMENT-PADS.

No. 873,999. Specification of Letters Patent. Patented Dec. 17, 1907.

Application filed March 5, 1907. Serial No. 360,705.

To all whom it may concern:

Be it known that I, GUSTAV GOLDMAN, of Baltimore, Maryland, have invented a new and useful Improvement in Methods of Making Garment-Pads, which improvement is fully set forth in the following specification.

This invention relates to the manufacture of garment pads, and has for its object to provide a process whereby such pads may be formed with the required slope or taper of the exterior surface, with the necessary resiliency of the fibrous materials of which the pads are composed, and with a minimum amount of material and labor.

Heretofore garment pads have been made by hand by placing the body of fibrous material upon a piece of woven fabric cut in a crescent or other desired shape, the operator placing her hand upon the fiber and pulling it off around the edges to cause it to conform to the desired outline, and piling other layers of fiber upon the fibers first laid down until a pad of approximately the desired weight, thickness and taper is secured, after which the pad thus constructed is tested in a testing machine to ascertain if it is of the desired height or thickness. If found to be too thick, some of the fiber is removed; if found to be too thin, fiber has to be added, after which the pad is weighed to ascertain if the required amount of fiber is in the pad, and if the weight is found to be improper, additional changes have to be made in the pad. Another method consists in cutting or stamping crescent-shaped pieces of different sizes from sheets of fibers, and superimposing these one upon another to form the finished pad. Still another method is that of laying down carded fibers by a carding engine or engines with or without suitable binding material between the fibers; then passing the fibers over a suitable heating table and forming rollers; then skiving out suitable transverse channels in the strip of fibers; and then cutting the pads from such skived strip. Other similar methods have been employed, but the above are sufficient to indicate in a general way the methods in commercial use prior to the date of the present invention. In all of these there is more or less waste of material, which necessarily adds to the cost of the finished article. Furthermore, in all except the last-named process there is more or less lack of uniformity in the finished pads, and this itself is an undesirable effect.

The object of the present invention is to provide a process whereby the necessary taper of the exterior surface of the pad may be obtained without destroying the resiliency of the fibers, and with the utmost possible economy of material and labor in the manufacture thereof.

With this object in view, the invention consists, broadly stated, in laying down a plurality of layers of batting or wadding of fibrous material (such as cotton batting or wadding) one upon the other, the several layers differing in width, preferably decreasing in width from the bottom to the top layer; then cutting the pad from this tapering pile of strips of batting or wadding, after which a final layer of fibrous material of the shape of the cut pad or other suitable shape is stitched to one or both faces of the pad.

More specifically speaking, the invention consists in laying down a series of long strips of batting or wadding of fibrous material such as cotton batting or wadding, one upon the other, which strips gradually decrease in width, preferably with the bottom strip as the widest and the decreasing width being a gradual decrease so that the top strip is the narrowest, whereby there is obtained a long pile of strips which slopes from its highest longitudinal line toward one or both edges of the pile; then cutting said pile into transverse sections, the ends of the sections sloping in the same or reverse directions, as may be desired, then dividing the sections to form a pair of pads, and then covering the face (and in some cases both faces) of each pad with a layer of fibrous material, preferably a woven fabric, and stitching said layer or layers to the pad. While by preference the strips are laid or piled in the order of their widths with the widest strip at the bottom and the narrowest at the top, such arrangement of the strips in the pile is not essential, as any desired order of arrangement of the strips of different widths in the pile will result in a pile tapering from its highest longitudinal line towards one or both edges of the pile.

In laying down the long strips one upon the other, they may be laid with their longitudinal centers one immediately above the other, in which case the pile will slope equally towards both edges; or the pile may be formed so that the longitudinal center of each strip is shifted slightly to one side of the longitudinal center of the strip immediately beneath it, whereby the pile will slope or taper towards each edge, but there will be a more gentle

slope towards one edge than towards the other; or the longitudinal strips may be laid down with one edge of each strip in the same vertical plane as one edge of each of the other strips, whereby a pile will be obtained with one vertical edge or face and one sloping or tapering side or face. In dividing the pile of strips to form pads, they may be divided by rectangular transverse cuts into sections of any desired length, and these sections then divided by a direct diagonal vertical cut so as to form the rectangular section into pads. The pads may be triangular in form or not, depending upon the character of the diagonal cut. If this cut extends from one corner of the section across to the other diagonal corner thereof, the pads will be triangular; if on the other hand, the diagonal cut does not extend from one diagonal corner to the other, the pads will be approximately triangular in form, though not absolutely so. The longidinal sections may be in the form of squares, in plan, in which case the pads will be in the shape of right-angle triangles having an equal base and altitude, or the sections may be oblong rectangles, in which case the base of the triangular pad will be greater than its altitude.

In dividing the long pile of layers of batting into transverse sections, the cut which thus severs the sections may be, and preferably is, an inclined transverse cut, the adjacent cuts being inclined in reverse directions, or in the same direction, as may be desired, so that each section will slope at the ends. This form of cut absolutely avoids the waste of any material, and all of the fibrous material laid down in the long pile of superimposed strips enters into the finished pads. Moreover, the aggregate length of the pads cut from any given pile will greatly exceed twice the length of the pile. Thus, from a pile sixty inches long sixteen pads nine inches long may be cut, that is, two pads from each seven and one-half inches in length of the pile. This is due to the fact that the transverse inclined cut is at such an angle that only seven and one-half inches of the length of the pile is required to form each pair of pads, as will be readily understood from the drawings and description herein. If desired, however, the pile of superimposed strips may have transverse sloping channels cut at suitable intervals which channels extend nearly through the pile, after which the pile is severed into sections by a direct transverse cut. This last method of cutting is the least desirable for the formation of most kinds of pads, since it requires two operations and results in some waste of material.

In addition to the substantially triangular form of pad indicated above, other forms of pads may be cut from the pile of fibrous strips in which the shapes of the pads render it impossible to cut from the pile without waste of material. Some of these various shapes will be hereinafter specifically described.

For the purpose of illustrating the method of procedure followed in practicing the invention, the accompanying drawings are referred to, in which are shown piles of various character, and dotted lines are employed for indicating the various shapes of pads which may be cut therefrom. It is to be understood, however, that these drawings are simply for the purpose of illustration, and are not designed to indicate the limits of the invention, reference being had to the claims for that purpose.

In said drawings—Figure 1 is a plan view of a pile of strips of fibrous material such as cotton batting or wadding, showing strips of different widths superimposed one upon the other, with their longitudinal centers in the same vertical plane; Fig. 2 is a like pile with one edge of each strip in the same vertical plane as that of the other strips; Fig. 3 is a pile of strips similar to Fig. 1, and is here shown for the purpose of illustrating another form of pad which may be cut therefrom; Fig. 4 is a side elevation of a pile of strips showing the manner of cutting the pile into rectangular sections by reversely inclined transverse cuts; Fig. 5 is a side elevation of the pile of strips showing the manner of forming transverse channels in the pile, and then dividing the latter into sections by transverse cuts; Fig. 6 is a perspective view of one form of pad; Fig. 7 is a broken plan view illustrating a pile in which the longitudinal centers of the several strips constituting the pile are placed each slightly to one side of the strip immediately beneath it; Fig. 8 is a sectional elevation showing a pile in which the strips are arranged with the widest one at or about the middle of the pile with gradually narrower strips towards the top and bottom of the pile; and Fig. 9 is a perspective view showing the inclined cuts shown at 7 and 8, Fig. 4.

Referring to Fig. 1, numerals 1, 2, 3, 4 and 5 each indicate strips of fibrous material such as cotton wadding, in which 1 is the widest strip, 2 is narrower than 1 and is placed thereon, 3 is narrower than 2 upon which it rests, 4 is narrower than 3 upon which it rests, and 5 is the narrowest of all the strips and rests upon the strip 4. Each of the strips 2, 3, 4 and 5 has its longitudinal center immediately above the longitudinal center of the strip 1, and preferably the strips are secured together in some suitable manner, as by a longitudinal line or lines of stitches 6.

Referring to Figs. 4 and 9, 7, 7 are inclined transverse cuts here shown as parallel to each other, each of the cuts being inclined in the same direction and at the same angle to the plane of the lowermost strip constituting the pile, and 8 is a like

inclined transverse cut with the same angle of inclination as the cuts 7, 7, but inclined in the reverse direction, so that each of the sections 9 and 10 will be composed of a pile of strips with the strip on one side of the pile much shorter than that on the other. The section 9 will have the topmost strip (that is, the narrowest strip) longer than the bottom strip, whereas in section 10 the reverse of this will be the case. This, however, will make no appreciable difference in the contour of the finished pad. If desired, all the cuts may be inclined in the same direction, that is, a cut inclined as in dotted lines *x* may be used instead of the cuts 8.

As shown in Figs. 1 and 4, the sections 9 and 10 are oblong rectangles, while the section 11 is substantially square in plan view. If it is desired to make a pad of the form of that shown at 12 in Fig. 6, the section 9 (Fig. 4) is divided into two parts by a diagonal line 13 (Fig. 1) extending from one corner of the section across to the other diagonal corner of the section. If, however, the pads are to be of substantially the outline shown in plan in the section 10 of Fig. 1, the diagonal line 14 extends across the section 10 in such a way as to divide the section into two exactly equal parts. When pads having two of their sides of equal length are desired, they are cut from a square section 11 by means of diagonal line 15. The triangular sections thus formed are then covered with a layer of fibrous material, either in the form of woven fabric or of wadding, and corresponding approximately in outline to the outline of the pad, as shown in full lines in Fig. 6, or having any other outline, as for example, that shown in dotted lines *y* in said figure, said covering being placed upon one or both sides of the pad, as may be desired. This covering 16 (Fig. 6) is then preferably stitched to the pad by lines of stitching extending through the several layers. Preferably, there is a border-line of stitches 17 extending around two of the sides of the pad, and a staggered line of stitches 18 well inside of the border-line of stitches 17. In some instances, instead of relying upon the inclined transverse cuts 7 and 8 to give the end tapers to the pad, the pile of strips is provided with transverse channels 19, 19, cut therein, and the sections are then divided by right-line cuts 20 at substantially the lowermost part of the channels 19, as clearly shown in Fig. 5. In this way the required slope to the ends of the pads is obtained, but as before stated, the loss of material equals that removed to form the transverse channels 19.

In addition to the shapes of pads illustrated in outline in Fig. 1, other shapes of pads may be cut. For example, as shown in Fig. 3, there may be cut from the pile pads having the outline shown by dotted lines 21, in which case the pads would be thickest along their curved edges and tapered to their thinnest part along their straight edges. Other forms of pads are shown at 23, 24 and 25 in Fig. 2. It will be observed from an examination of all of the forms of pads indicated in outline in Figs. 1, 2 and 3, that the taper towards the sides of the pads is due to the different widths of the strips superimposed upon each other, and this without regard to the particular form of pad that is to be cut therefrom. It will also be observed that by following the process herein indicated and the patterns of pads shown in Fig. 1, the pads may be formed absolutely without any waste of material, all of the material which is laid down in the pile of strips entering into the finished pads.

In forming the piles of strips, the strips may be superposed one upon the other by hand, if desired, but manifestly they may be laid down one upon another by machinery, thereby minimizing the cost and labor. It will also be apparent that while the transverse cuts and channels indicated may be made by the use of suitable hand-tools, they may nevertheless be also cut by the use of suitable machinery, and thereby reduce the labor incident to the formation of the pads to a minimum.

While cotton wadding or batting is referred to herein as illustrating the fibrous material used, the invention is not limited to cotton fiber, as wadding or batting of other fibers may be used without departing from the invention.

What is claimed is:

1. The process of making garment pads, which consists in laying down a series of long strips of fibrous material of different widths one upon another, then dividing the pile into sections by inclined transverse cuts, and then dividing said sections into two parts by a transverse cut.

2. The process of making garment pads, which consists in laying down a series of long strips of cotton wadding of different widths one upon another, then dividing the pile into sections by inclined transverse cuts, whereby each section is formed with reversely inclined or sloping end portions, and then dividing each section into two similarly shaped pads by a single transverse cut.

3. The process of making garment pads, which consists in laying down a series of long strips of fibrous material of different widths one upon another, then dividing the pile into sections having sloping end portions, and then dividing each section into two similarly shaped pads by a single transverse cut.

4. The process of making garment pads, which consists in laying down a series of long strips of fibrous material of different widths one upon another, then uniting the strips together, then dividing the pile into sections having sloping end portions, and then divid-

ing each section into two similarly shaped pads.

5. The process of making garment pads, which consists in laying down a series of long strips of fibrous material of different widths one upon another, then stitching the strips together, then dividing the pile into sections having sloping end portions, and then dividing each section into two similarly shaped pads.

6. The process of making garment pads, which consists in laying down a series of long strips of cotton wadding of different widths one upon another, then stitching the strips together, then dividing the pile into sections having sloping end portions, and then dividing each section into two similarly shaped pads by a single transverse cut.

7. The process of making garment pads, which consists in laying down a series of long strips of fibrous material of different widths one upon another, then uniting the strips together, then dividing the pile into sections having sloping end portions, then dividing each section into two similarly shaped pads, and then stitching a facing of fibrous material to the pads.

8. The process of making garment pads, which consists in laying down a series of long strips of cotton wadding of different widths one upon another, then stitching the strips together, then dividing the pile into sections having sloping end portions, then dividing each section into two similarly shaped pads by a single transverse cut, and then stitching a facing of fibrous material to the pads.

9. The process of making garment pads, which consists in laying down a series of long strips of fibrous material of different widths one upon another, then stitching the strips together, and then cutting the pads from the pile of strips.

10. The process of making garment pads, which consists in laying down a series of long strips of fibrous material of different widths one upon another, then stitching the strips together, and then cutting the pads from the pile of strips by right-line and diagonal transverse cuts.

11. The process of making garment pads, which consists in laying down a series of long strips of cotton wadding of different widths one upon another, then stitching the strips together, then cutting the pads from the pile of strips, and then stitching a facing of fibrous material to the pads.

12. The process of making garment pads, which consists in forming a long narrow pile of fibrous strips of different widths, which pile slopes from its highest longitudinal line towards its edges, then uniting the strips of the pile by a line of stitches, then dividing the pile into rectangular longitudinal sections, and then dividing each section into two similar triangularly shaped pads.

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

GUSTAV GOLDMAN.

Witnesses:
WM. J. ROTH,
LEM KAHN.