(No Model.) 2 Sheets—Sheet 1.

J. UPSDALE.

MANUFACTURE OF GLOVES.

No. 386,943. Patented July 31, 1888.

Fig. 6.

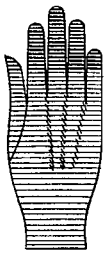


Fig. 1.

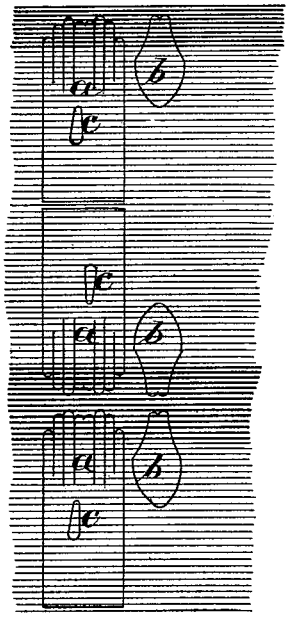


Fig. 2.

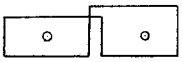


Fig. 3.

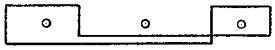
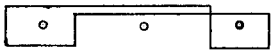


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

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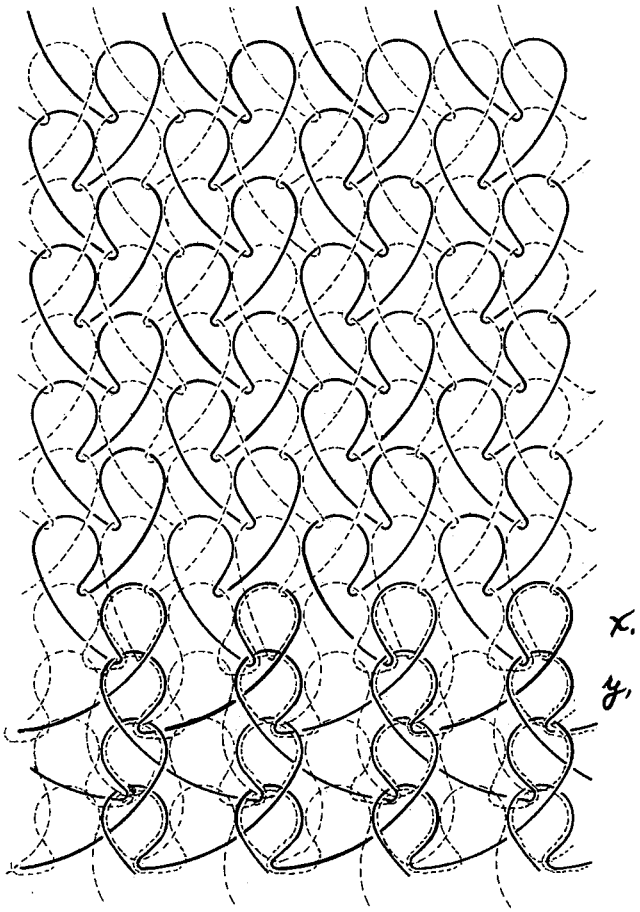
Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN UPSDALE, OF LONDON, ENGLAND.

MANUFACTURE OF GLOVES.

SPECIFICATION forming part of Letters Patent No. 386,943, dated July 31, 1888.

Application filed April 23, 1888. Serial No. 271,643. (No model.) Patented in England December 28, 1887, No. 17,853.

To all whom it may concern:

Be it known that I, JOHN UPSDALE, a subject of the Queen of Great Britain, residing at 4 Falcon Avenue, Falcon Street, in the city of London, England, merchant, have invented certain new and useful Improvements in the Manufacture of Gloves, of which the following is a specification.

The object of this invention is to form knitted gloves with the tip ends of the fingers of stouter fabric than the remainder of the gloves.

I first form in any ordinary warp-machine a length of fabric, alternately a broad transverse band of ordinary plain unthickened work, and then a narrow band of thickened work, and so on. The fabric so formed is subsequently cut up into parts or blanks suitable for being sewed together to form gloves. The tip ends of the fingers are cut from the narrow thickened bands and the remainder of the glove from the broad band. The thumb-pieces are cut separately and subsequently sewed in as usual.

Figure 1 is a diagram of part of a length of warp fabric with alternate bands of thickened and unthickened work with lines marked upon it to indicate the shape of the parts or blanks which are to be cut from it to form the gloves. Fig. 2 is a diagram of the way in which each of the threads are lapped under and over the needles to produce ordinary unthickened work. Figs. 3 and 4 are diagrams of the way in which they are laid under and over the needles to produce the thickened bands. Fig. 5 is a diagram showing the formation of the fabric employed, and Fig. 6 is a view of the completed glove.

The construction of warp-knitting machinery is well understood.

In working the machinery to produce a length of fabric with alternate thickened and unthickened bands, the machinery is set to work in the ordinary manner for producing plain unthickened work. When a band of the required width has been made, the machine is stopped, and the two bars which carry the two sets of thread-eyes are disconnected from the cams by which they were previously traversed to and fro and by which the thread-eyes, as they were swung to and fro between the needles, were made to lap their threads over and under the needles in the ordinary manner, and as is shown by the diagram, Fig. 2. Other cams are then set to act upon the two bars, and these cams are of such a shape as to give to the bars an increased traverse and to cause the thread-eyes which they carry each to work with three needles in place of with two, as they did previously. The thread eyes of the bottom bar are, by the cams, now brought into action, made to lay their threads under and over the needles in the way shown in the diagram, Fig. 3, and the thread-eyes of the top bar are made to lay their threads under and over the needles in the way shown at Fig. 4.

Pieces of the shape marked *a* in the diagram, Fig. 1, are subsequently cut from the fabric produced in the above manner, each to form a blank for the main portion of a glove. Other pieces (marked *b*) are also cut from the fabric, as indicated by the diagram, to form the blanks for the thumb-pieces. These thumb-pieces are sewed to the slits *c*, cut through the pieces *a*, as is usual.

The fabric may be made from any material used in the manufacture of warp fabrics, such as silk, spun silk, wool, cotton, lisle, or admixtures of these.

In Fig. 5 one set of threads is shown by full lines *x*, and the other set of threads by dotted lines *y*, so that the way in which the threads run may be more clearly seen. Both sets of threads would, however, be of the same thickness and material.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is—

1. The hereinbefore-described process for the manufacture of gloves, consisting in first forming a warp fabric with alternate broad bands of ordinary warp fabric and narrow bands of thicker work, then cutting from such fabric glove-blanks with the tip ends of the fingers cut from the thickened band and the remainder from the broad band, and then finishing the gloves in the usual way.

2. The hereinbefore-described process for the manufacture of gloves, consisting in first forming a warp fabric with alternate broad

bands of plain warp fabric and narrow bands of warp fabric, made thicker by the threads of which the fabric is composed, having a greater to-and-fro traverse given to them than in the work composing the broad bands, then cutting from such fabric glove pieces or blanks with the tip ends of the fingers cut from the thickened band and the remainder from the thinner band, and then finishing the gloves in the usual way.

JOHN UPSDALE.

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