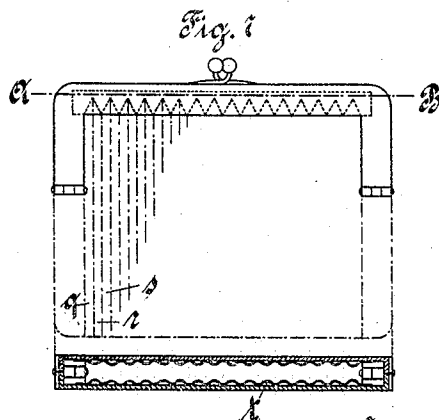
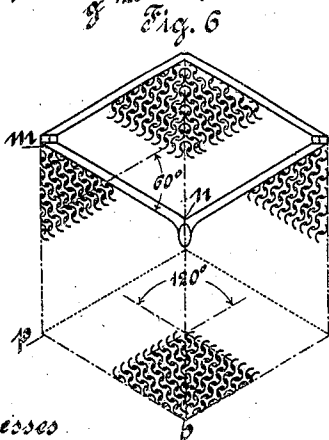
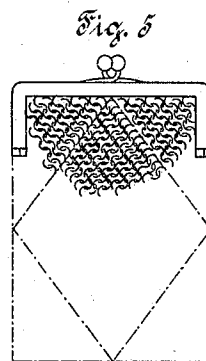
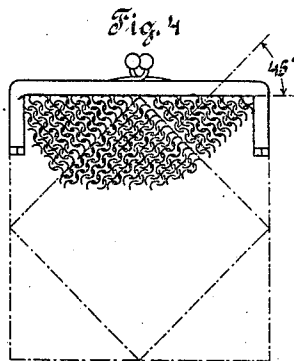
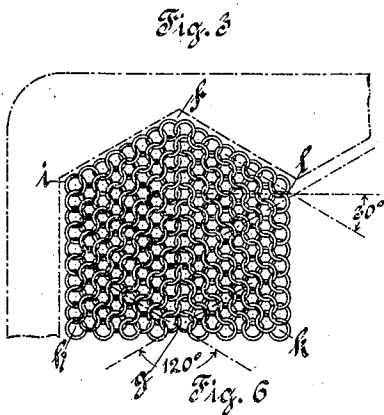
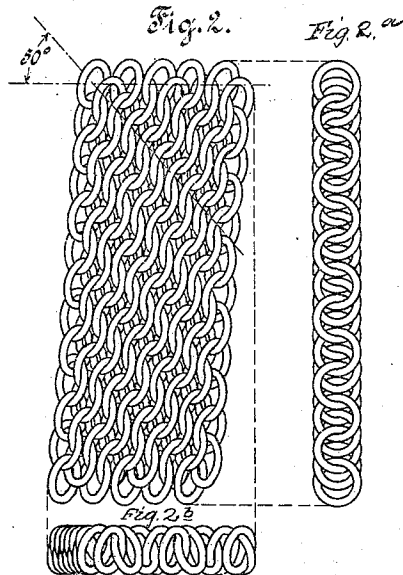
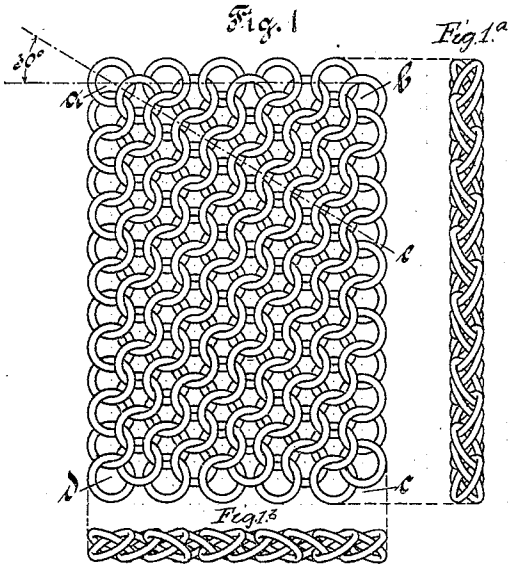


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RING FABRIC.

APPLICATION FILED JUNE 12, 1906.

1,050,216.

Patented Jan. 14, 1913.



Witnesses

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RING FABRIC.

1,050,216.

Specification of Letters Patent.

Patented Jan. 14, 1913.

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To all whom it may concern:

Be it known that I, CHARLES HOLL, a subject of the German Emperor, and residing at Strassburg, Alsace, Germany, have invented certain new and useful Improvements in Ring Fabrics, of which the following is a specification.

The present invention relates to improvements in the manufacture of purses, bags and the like of the so-called mesh type, consisting of interwoven metal rings, forming a flexible fabric and suspended from a suitable frame; and the particular object of the invention is to work up this mesh fabric in such manner that the rows of rings in pieces of this fabric are pushed together to a fixed position of certain ring rows with reference to the axis of suspension and the fabric joined, in this position, to the frame, the texture then being distinguished by a remarkable capability of lateral expansion, and at the same time a decorative effect is obtained.

Figure 1 illustrates on an enlarged scale a piece of the well known fabric with the rows of rings in position with reference to the direction of suspension. Fig. 1^a is a side edge view of the same, and Fig. 1^b a bottom view. Fig. 2 is an illustration of the same fabric-piece but in a contracted state. Fig. 2^a is a side edge view of the same, and Fig. 2^b a bottom edge view. Figs. 3, 4, 5, 6 and 7 illustrate applications of the ring fabric to the frame of purses or other bag-like structures.

The ordinary metal ring fabric is obtained, as is well known, by direct and indirect intermeshing of rings, whereby in the finished piece certain characteristic rows of rings are obtained which through their ring-composition and their different position in the texture are clearly recognizable.

In the piece of fabric shown on an enlarged scale in Figs. 1, 1^a and 1^b, the several ring rows are clearly distinguishable. For the manufacture of my improved fabric only those in the direction *a—e*, and those parallel thereto are of special importance, as they alone, by reason of their relative position, have influence on the expansibility of the ring fabric. These rows, called rows of scales, are in so far characteristic, that their individual rings all cut the fabric plane at the same angle, and are so intermeshed with the succeeding parallel rows, that they may be shoved over or under one

another like so many scales. The rows in the fabric can thus be pushed together, and the piece reduced in width in the direction of these rows without formation of folds. But so far, it has not been possible to retain the pieces in this contracted state without at the same time showing folds and uneven grouping of the rings. According to the present invention, I have succeeded in this, by pushing together the several rows of rings at a certain inclination in the direction *a—e* relative to the horizontal axis of suspension, forming, as it were, a condensed or contracted texture and by then suspending the fabric in this position and state to the frame.

It is obvious that in the ordinary method of suspending the fabric to the frame, whereby the rows of rings (scales) run either normal or parallel to the axis of suspension, a permanent and uniform contraction of the fabric cannot be obtained. Also, with any other inclination of these rows to the horizontal the intended result cannot be obtained in as satisfactory or perfect manner, inasmuch as either the inclination to the axis of suspension is too great, so that the rings in the rows roll back into the normal expanded or non-contracted condition, or the fabric does not allow of the intended contraction without forming folds, owing to the adjacent rings knocking together. The desired result is obtained in the best manner for the intended purpose only when the single pieces of fabric are so put together and the fabric is so suspended from the frame, that the rows of rings or scales, in the normal, non-contracted state of the texture, are inclined at an angle of 30° relative to the axis of suspension. This angle results from the manner of meshing, as shown in Fig. 1. An exceptional situation is obtained when the angle of inclination rises to 45°. In this instance, the frictional conditions obtained by the contraction and weight of the fabric, counterbalance, as it were. If, then, a piece of fabric in normal, or non-contracted state (with the rows of scales at 30°) is suspended in the direction *a—b* and then pushed together, the fabric will contract along these rows, and as is essential in this invention, remain in this state. Figs. 2, 2^a, and 2^b, illustrate such a contracted piece of ring texture as it is employed for the fabrics according to my invention for manufacturing purses, etc.

The bottom and side edge views make very clear how the rings are shoved over and under one another, and the angle of inclination is, according to the contraction, about 50°.

Hence it appears that by pushing together, more or less condensed or contracted portions are produced, of which the first stand out from the contracted fabric, whereby upon joining such pieces a smooth effect is obtained. Joining such pieces, shown in Fig. 2, in a fabric, and suspending it from a suitable frame, make it obvious that such texture will expand again to the same extent under lateral pull.

Fig. 3 shows the manner of joining and suspending two parallel trapezoidal pieces of fabric $f, g, h, i-f, g, k, l$ in their non-contracted or normal state, in order to clearly show the position of the rows and their inclination relative to the horizontal. The rows of rings of succeeding pieces or strips inclose between them an angle of 120°. It is immaterial whether the frame is angularly recessed, as shown, or not. If now the several pieces are pushed together and joined in a single fabric, and then suspended from the frame, the finished bag will show great capability of distention on lateral pull. In Fig. 3 the two rows of rings of adjacent fabric strips are joined, with their end rings along the line $f-g$, forming a chain line, the working forces in which have a tendency to so hold the rings arranged, that the ring centers are equidistant. The rings in the rows lying close together, the rows clearly stand out in the fabric, and appear as zigzag lines all over the fabric, and by reason of the peculiar interconnection of the strips, these latter appear distinctly separated along their edge lines $f-g$. This purely decorative effect may be used to great advantage in the manufacture of purses and like structures of the precious metals.

Fig. 4 illustrates an example of an exceptional case of suspension on the frame. In this case the rows of scales are inclined at an angle of 45° to the horizontal and stand normal to each other in the single joined pieces. The pieces of fabric are shown in their normal or non-contracted state in order to demonstrate the inclination and position of the several ring rows to each other. Fig. 5 on the contrary is an illustration of the same purse but with the ring fabric in contracted condition.

Another manner of application of the new fabric is shown in Fig. 6 where the bag is shown composed of four parallelograms m, n, o, p , two forming the front part and two the rear part of the purse. The joining edges of these fabric elements, for instance, come together on the line $n-o$ and the rows of rings running at an angle of 120° to the frame, are thus inclined toward one another, as clearly shown. The bottom of the bag is

likewise made up of a fabric of a regular geometric form, corresponding to the frame, and in the example shown, a rhomb. If this is held horizontally, the bag will assume the shape of a four-sided hollow prism, the upper side of which (surrounded by the frame) is missing. If the new fabric, in case it is composed, as shown in Fig. 3, of a number of strips, is to hang in regular folds or waves, another manner of suspension must be resorted to, which is shown in Fig. 7. The strips of fabric q, r, s , will, in contracted state, hang down straight. For producing the wavy effect, the angle of the zigzag line in the frame must be made smaller. For covering over the line of attachment of the fabric to the frame, a cover strip t may be used, and if the waves are desired to be repeated at shorter intervals, this cover strip may be made undulating, as shown in the ground plane of Fig. 7. It is obvious that such a bag or purse is exceptionally extensible, without being laid in folds in its normal, or non-extended condition, such manner of suspension being especially suitable for pushing together the rows of rings as close as possible.

Claims:

1. In combination, a suspending frame, a ring fabric suspended therefrom comprising a plurality of parallel rows of rings, each ring in a row extending in a plane substantially parallel to the planes in which each of the other rings in said row extends whereby the planes containing the rings in said row will all approach at substantially the same angle the general plane of the fabric, and all the rings in one row angularly approaching said fabric in one direction and all the rings in an adjacent row angularly approaching said fabric in a substantially opposite direction, said rows being disposed at an oblique angle to the axis of suspension.

2. A suspended ring fabric comprising a plurality of parallel rows of rings, all the rings of any one row being in overlapping relation and disposed to approach the general plane of the fabric at substantially the same angle, the angular approach of the rings of any one row being in an opposed direction to the angular approach of the rings of an adjacent row, the rings of each row being non-concatenated with respect to each other, and all of the rows being disposed at an oblique angle to the axis of suspension.

3. A suspended ring fabric comprising a plurality of parallel rows of rings, all the rings of any one row being in overlapping relation and disposed to approach the general plane of the fabric at substantially the same angle, the angular approach of the rings of any one row being in an opposed direction to the angular approach of the rings of an adjacent row, the rings of each row being non-concatenated with respect to

each other and a ring of any one row being interlinked with two rings of an adjacent row, and all of the rows being disposed at an oblique angle to the axis of suspension.

the line of suspension, each of said rows being at an angle to the line of suspension, which angle varies as the individual rings of the row are moved with respect to each other. 15

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES HOLL.

Witnesses:

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BENJAMIN F. LIEFELD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."