

Diversity of weaves and neat compounds of weaves were prominent and interesting elements of the designs of these goods. Technically these fabrics were skilfully de-

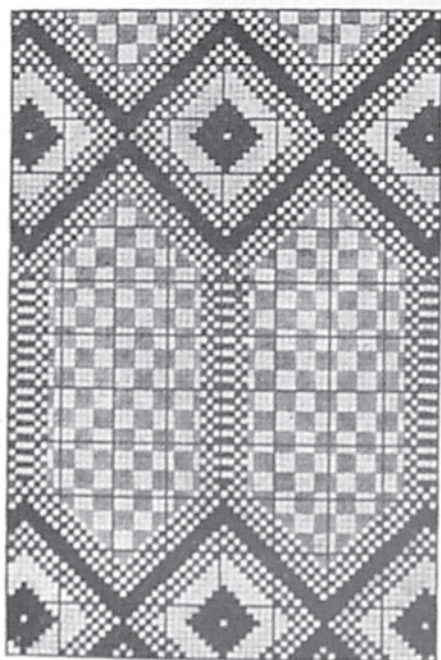


FIG. 12.
Border for Fancy Towel.—Old Bleach Linen Company.

signed and executed. Pattern in such goods is a product of weave contrasts, and they may be made as attractive

in character as styles due to blends or contrasts of colours. All the specimens of this firm were rich in weave effects. Even where considerable elegance of design



FIG. 13.
Border of Fancy Towel.—Old Bleach Linen Company.

had been obtained by blending graceful curves and lines, as in Figs. 13, 14, and 15, a liberal use of fancy crossings had been practised in the development of the integral parts

of the figuring. Certain sections of this water-lily pattern (Fig. 13), which formed the centre of a beautiful towel, with an elaborate border of other water plants, enriched



FIG. 14.
Centre of Fancy Towel, - Old Bleach Linen Company.

with pelicans and swans, were, in order to give them extra prominence in the fabric, worked out in eight-shaft weaves, while other parts were composed of

five-end crossings. But a more attractive specimen in regard to weave combination is the next example (Fig. 14), consisting of an ivy-leaf design. Here an irregular fine mat weave was introduced into the texture, which was so constructed as to fit correctly with all other weaves combined. One further illustration of the pleasing patterns exhibited by this firm is the admirable border arrangement sketched in Fig. 15. The sound yarns and neat weaves in which this graceful maidenhair-fern style was executed formed a most elegant pattern. From these analyses it is evident that the exhibits of the Old Bleach Linen Company were of an exceptional character. The design, texture, and manufacture of their fabrics were satisfactory. A high standard of excellence was seen in all the linen goods of these manufacturers, which formed a most valuable and meritorious textile display, and one, moreover, which in this kind of loomwork was without equal.

Another firm who attained some distinction by reason of their diversified and well-manufactured linen goods was Messrs. Fenton, Connor and Co., Belfast. Amongst the fabrics shown by these makers were high-class family linens and linen shirtings, various descriptions of damask towels, diapers, handkerchiefs, ducks, canvas, and holland. In addition, they had an excellent display of superior satin-finished damasks, hem-stitched sheets, pillow cases, and sham towels. A specimen of a very fine woven sheeting, some 108in. wide and containing 227 threads of warp and weft to



FIG. 15.

Fancy Tonal Border.—Old Bleach Linen Company.

the square inch, illustrated the perfection to which Messrs. Fenton and Connor have carried this branch of linen manufacture. Their show was a thoroughly practical one, and indicated the efficient standard of workmanship they put into the production of every style of linen texture seen in the extensive assortment of goods exhibited by them at Chicago.

FRENCH COTTONS AND LINENS.—The cotton and linen manufactures of other countries were, for want of variety, of little importance. With the exception of the specimens of two French exhibitors—Messrs. Binden et Julla, jun., and Messrs. Fleury et Cie.—there were very few fabrics deserving of notice. The former had a unique collection of pile towellings and other cotton fabrics with a loop surface for bathing gowns, etc. These were exquisitely designed and coloured. Messrs. Fleury et Cie. had a charming work wrought in the best quality of linen yarns, spun to an exceptional degree of extenuation—so fine, indeed, as to yield a fabric possessing some of the qualities of a silk production. It was a tablecover, about four yards long and two-and-a-half yards wide, and decoratively pictorial in style. The subject was a stag at bay, surrounded by a group of eight hounds, all of which were perfectly depicted. A gorgeous border, composed of plant and floral forms, and of birds of various kinds, framed this central group of animals. The water, foliage, and every other element of the whole composition were most cleverly executed. What skill in craftsmanship and

weaving is displayed in the production of a fabric of this order! In such exquisite but laborious textile performances the French designer truly excels. He alone in modern times appears to possess the training—artistic and technical—as well as the patience requisite to accomplish such beautiful loomwork.



PART IV.



— SILKS. —

PART IV.

SILK FABRICS.

Three countries—France, the United States, and Japan—had fine displays of silk goods. These fabrics were ingenious and elegant, both in colouring and pattern. We are sometimes referred to the ancient loom productions of Florence and Genoa as the principal textures extant possessing genuine excellence of weaving skill, and meriting study and analysis; and it is, moreover, a practice with some critics of woven art to profess little confidence in the powers of the modern craftsman. What bears the stamp of age is meritorious; what is new or the result of present-day work is said to be inferior in artistic treatment. Is not this a distorted and an inaccurate view? Generally modern fabrics, for whatever purpose designed, and of whatever materials manufactured, are superior to those produced centuries ago. A casual inspection of the French silks lately exhibited at Chicago, as also of the specimens of Lyonnaise fabrics to be seen in the Museum at Lyons, and which were originally exhibited at the Paris Exhibition of 1889, is sufficient to annihilate ideas of this kind.

FRENCH SILK TEXTURES.—Though the silks of France displayed at the World's Fair cannot be favourably compared in variety with those exposed at Paris in 1889, still they comprised specimens at once choice and novel in design. As usual, the French weaver had gleaned ideas from natural forms, but in some instances he had not been happy in a choice of subject. Several styles of pictorial treatment had been practised which seemed scarcely appropriate for textile decoration. One felt the great effort, the "straining," so to speak, which had been made to produce articles which would, in ornamentation, catch the eye, with the necessary sequence of the acquirement of extraordinary and uncommon designs, principally remarkable as woven curiosities. One firm, for example, showed a most gorgeous texture on which had been formed in the loom a faithful picture of the Niagara Falls, and in which the varied tints of the water were seen imperceptibly changing from a deep, translucent green at the summit of the Falls to white foam and spray at the base. It was a clever work, but it would be difficult to indicate its application or uses. Another eccentric exhibit was a rich silk designed for the front of a robe. The lower part of this texture was decorated with the waves of the ocean. A third example, equally curious, consisted of masses of rock scattered and broken in manifold ways. Messrs. Henry exhibited that exquisite sample of woven art, *Le Livre de Prières*, which was seen in their collection at the last Paris Exposition. Every page of this beautiful production is richly

illuminated, and the letters are as clear and accurate in shape and definition as if obtained by the ordinary processes of printing.

NOVEL CHARACTER OF FRENCH DESIGNS.—The French silks included, in addition to these extraordinary manufactures, numerous fabrics of singular novelty and beauty of design and colour composition. Many of the small effects in velvets, dress textures, and mantlings were characterised by elegance of idea and

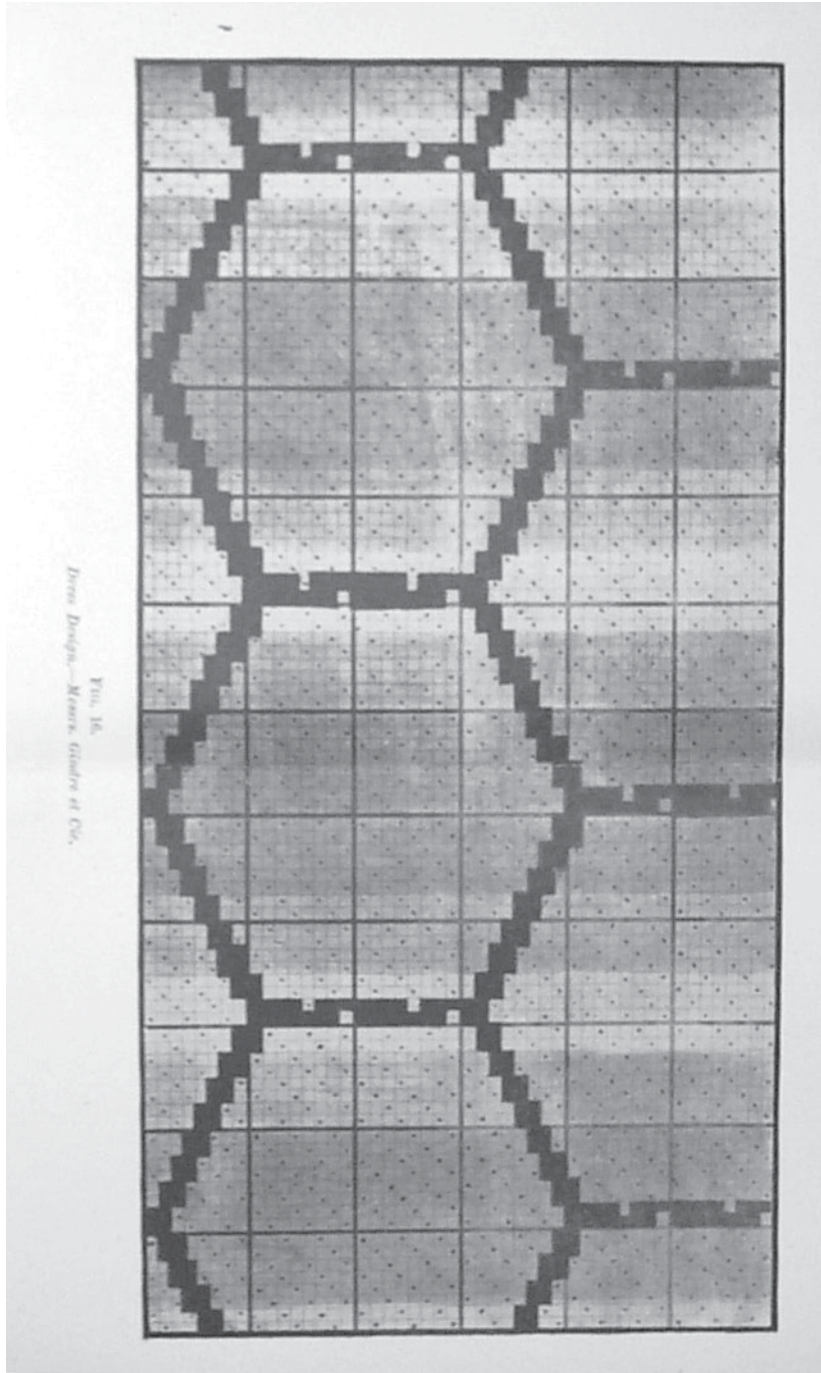


FIG. 17.
Dress Fabric, with Sateen ground.

cleverness of workmanship. A careful study of these might be profitably made by the designers and manufacturers of dress and mantle cloths in this country. The French craftsman excels in technical execution. He utilises the powers of the loom advantageously. His fabrics are full of "ideas" well rendered. The most elementary forms of design can, by ingenious schemes of

weaving, be made to give results beautiful in composition, and which possess one admirable feature—they do not tire the eye. If a few examples are considered, this style of pattern, in which several French exhibitors had charming illustrations, will be better understood. Take, for instance, the honeycomb effect in Fig. 16—an elementary species of work, but one which, when coloured and woven on the principles adopted by the makers, Messrs. Gindre and Co., yields a pleasing novelty. As indicated in the illustration, a scheme of warp colouring forming shaded stripes was used in its construction. This colouring at once served the important two-fold purpose of making the ground of the texture interesting, and of filling in the spaces due to the compact floats of weft yarn. To attain these effects economically, the design is single in construction—that is to say, only one set of weft and warp threads is used. By employing a fine twill which gives two-thirds of warp to one-third of weft on the face of the texture in the ground of the design, the requisite prominence was given to the colourings in the warp to form the shading. On the other hand, by floating the weft almost solid where the outlines of the hexagons appeared in the fabric, the geometrical forms were clearly and prominently developed. With simple elements of colouring and ornamentation a pattern had thus been produced in which all details were pleasingly brought out.

A style of design frequently observed in the French and American exhibits at Chicago consisted of detached



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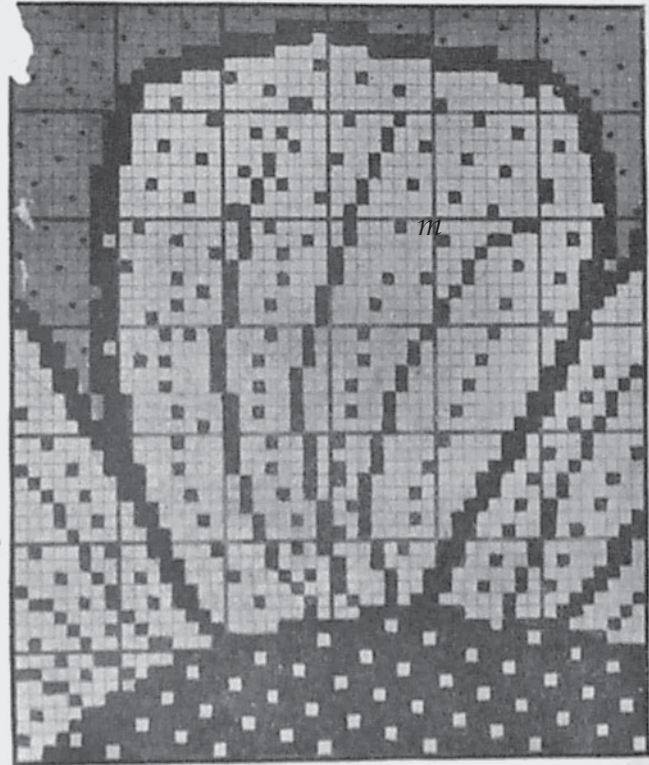


FIG. 13.—Sleeve Scheme of Weaving Fig. 17.

flowers distributed on the surface of the fabric at regular intervals. The example given in Fig. 17 is a typical one. The groundwork of these textures was invariably warp sateen, so that a smooth and rich surface was acquired on which to display in an effective manner the integral parts of the design. Dark colours, frequently black, were used largely for the foundation of the fabric. As the warp threads were extremely rank they concealed the colours of weft yarns employed in developing the

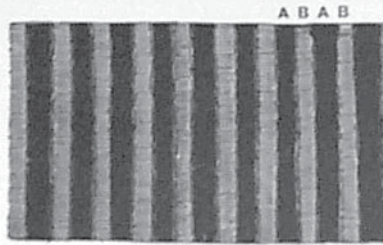


FIG. 19.
Ribbed Velvet.—Messrs. Girou Frères.

various sections of the objects composing the design. The sectional plan, given in Fig. 18, shows the principles of textural construction practised in the manufacture of these beautiful textiles. It is a small portion of Fig. 17 worked out on point paper. If it is assumed that two wefts, black and white, are used, and that the warp yarn is a tint of grey, the structure of the fabric may be lucidly explained. Such an arrangement of threads indicates that the design is due to figuring with a ground

and an extra weft yarn. No doubt in some specimens the threads forming the objects were all "extras"; in other words, they were additional to those necessary in making the textures simply; but it is sufficient in this instance to take the weft which interweaves with the warp to give a satin ground, as that which also by floating over the warp threads—according to the plan of the solid squares (■) in the example—develops the outline, stem, veins, and other parts of the flower. The petals result from the white weft, which would only be employed when these sections of the figuring were being woven. Obviously this is a useful scheme of design, and one applicable to other than silk textures.

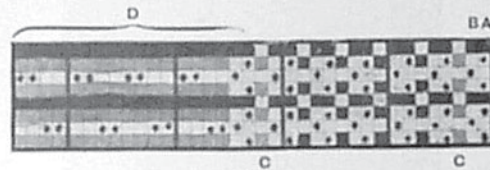


FIG. 20.
All marks correspond to Weft Floats.

PLUSHES AND VELVETS.—In plushes, velvets, and ribbons various French firms had rich displays, but for diversity of fabrics and freshness of pattern in the ordinary classes of these goods the exhibits of Messrs. Giron Frères, St. Etienne, were amongst the most meritorious. This firm displayed three distinct classes of silk manufactures, viz. :—

I.—Velvet ribbons (*velours ruban*).

II.—Plain and fancy ribbons (*rubans uni et façonnés*).

III.—Velvets and plushes (*velours étoffe et peluche*).

The first class—velvet ribbons—was splendidly manufactured. One surface of these fabrics was a rich dense pile, and the other a smart lustrous satin. These productions were soundly constructed, fine in texture, and pleasing in colour. In plain ribbons Messrs. Giron had also some beautiful specimens, comprising both single and compound weaves, such as rib or rep and

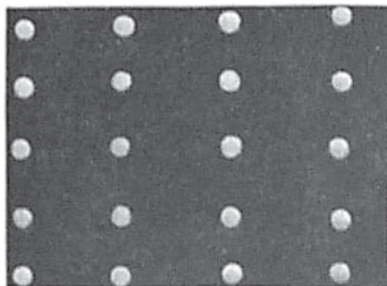


FIG. 11.

Extra Warp Spotted Velvet.—Messrs. Giron Frères.

double-satin. The fineness and rankness of the warp threads in the double makes were remarkable, and denoted skilful manipulation. Perhaps, however, the ribbed and fancy velvets of this firm were amongst the most interesting specimens in their collection. These were coloured on distinctly novel lines. Particularly was this the case in the velvets of a ribbed class. By colouring

the edges of the velvet stripes differently from the rest of the pattern, quite a rich tone of variegated tinting was acquired. Thus, the texture sketched in Fig. 19 was developed in three shades, the rib bands B being in gold, the edges of A heliotrope, and the stripes A dark brown or black. On viewing the fabric in the direction of the warp all three colours were seen, but if viewed in the direction of the weft only the edging colour or the light heliotrope was observed. The effectiveness of this simple order of colouring was therefore such as to give a two-coloured appearance to the pattern according to the way in which it was presented to the eye. In the garment this characteristic would be all the more remarkable. Fortunately, in this and other examples of Messrs. Giron's exhibit, which I subsequently describe, I am able to give accurate dissections, as the firm have kindly supplied me with duplicates of their specimens. As a result of analysis, therefore, I find that the actual scheme of construction which has been adopted in producing this texture is that given in Fig. 20. Threads C are the light-coloured yarn running down the edges of the velvet band. The first twenty ends show the method of obtaining the velvet, and the last sixteen threads—lettered D—that of the rib. The fourth and eighth sheds are for the wires when all the pile yarns are up, and all the ground threads and those for the rib section are down. Picks 1, 3, 5, and 7 are silk, and help to make the ground in the velvet part and form the rib in section B. Picks 2 and 6 are cotton, and make the foundation of

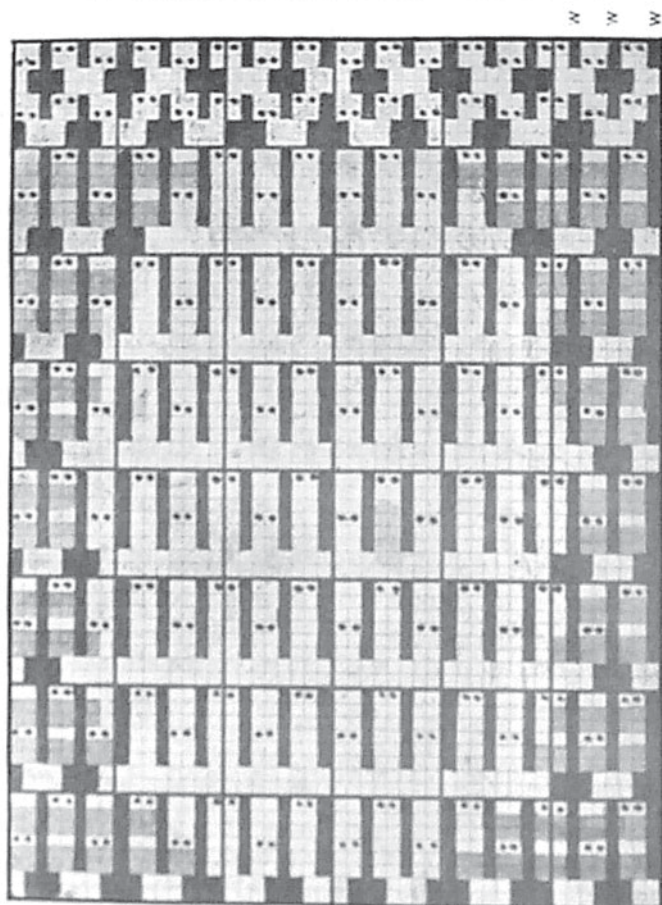


FIG. 21.
 Section of Weaving Plan for Fig. 21.
 P = Pile Yarns, S = Extra or Spotting Warp.

W = Wires.

the fabric. To acquire a soft and full ground and a satisfactory reverse side of the texture, the yarns for threads A and B of the design were of two thicknesses,



FIG. 22.

Figured Velvet, with Satin Ground.—Messrs. Girou Pères.

and had also been tensioned differently in weaving, the yarn B being about one-third longer than A. The spotted velvets, of which an example is furnished in Fig. 21,

were quite as novel as the ribbed styles. Here a series of extra warp yarns had been employed for spotting purposes, such threads floating on the back of the fabric when not forming the spots on the face. As many as three and four colours were used for this purpose. Fig. 22 is a weave section showing one spot. The first and every third sheds are for the wires, which in all cases float over the spotting yarn S. These, when not coming on to the face, are marked in grey, indicating that they are depressed, or that all the ground picks intervening the wires cover them. The pile threads P work in pairs, and float over alternate wires, being depressed both immediately before and after they are elevated to form the pile. The ground weave is two picks in a shed.

A further and more elaborate example of Messrs. Giron's exhibits in velvets is illustrated in Figs. 23 and 24. This is a light texture, with a six-end sateen ground and a velvet figure. Fig. 24 is a portion of the weave design, and shows that in weaving this texture three picks of ground weft were inserted between each wire. In the warp there are six ground yarns to one pile thread. The grey represents a part of the pattern in which the wires are floating under the entire series of pile threads, whereas in the ground or white sections they pass over the foundation and pile yarns. As in the previous structure, the pile warp is covered by the ground weft on the picks preceding and following each wire, and it is thus securely bound into the body of the fabric.

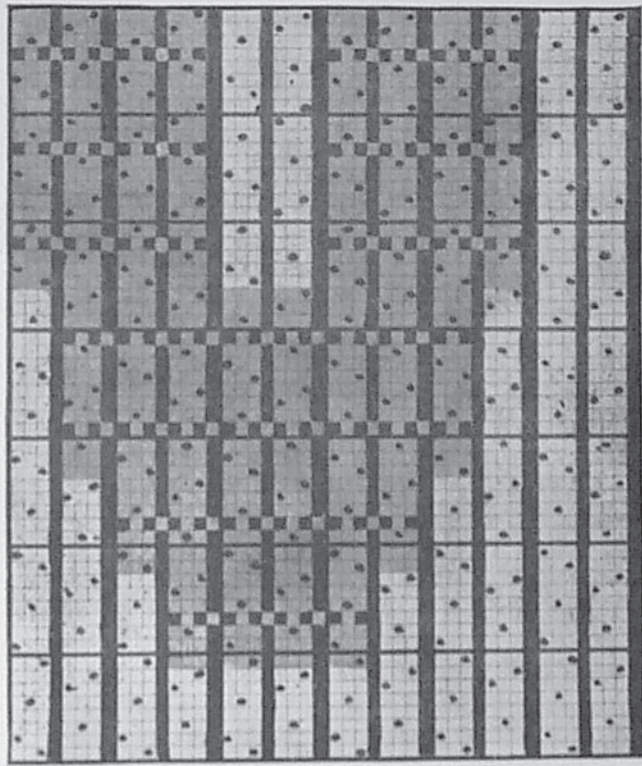


FIG. 24.—Sectional Design.

The exhibit of Messrs. Giron Frères was undoubtedly a most admirable one. It contained samples in several styles of silk, velvet, and plush fabrics, exquisitely coloured, cleverly manufactured, and, while not elaborate in design, neat and new in construction, and well adapted for the purposes of apparel to which they were principally intended to be applied.

GERMAN SILK MANUFACTURES.—The silk dress and mantle fabrics of Germany were not by any means nearly as rich or diversified as those of France, yet in simple spotted patterns some excellent samples were exhibited. Only two specimens need be referred to, as they give a fair idea of the lines on which the German craftsman had been working. The first (Fig. 25) is a small spot which was developed in extra weft yarns on an ordinary weave groundwork. It was executed in bright but harmonious colouring. The next illustration (Fig. 26) is more ingenious both in design and weave elements. Here two spots similar to the one shown in grey were set across or made to oppose each other on a running key pattern, which formed a sort of groundwork, due to floating the ground weft pretty liberally. Such a scheme of pattern development would not have been possible with good results had not a warp twill been used for the ground of the texture. The principles of design here illustrated afford suggestions of lines of work for those occupied in the origination of dress and mantle styles. A considerable percentage of the German silks were

elementary patterns executed in the extra-weft method of designing. In mantles of the matelasse order they

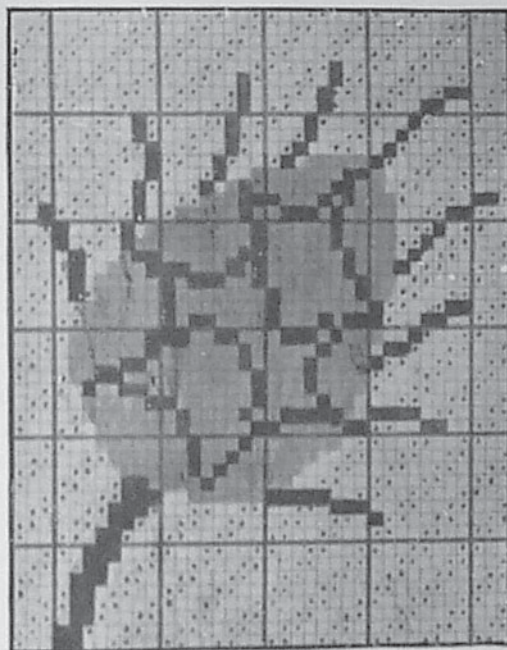


FIG. 25.
Extra Weft Figuring for Mantle Fabric.

had some good work; indeed, in this branch of manufacture their exhibits were distinguished by exceptional excellence of production.

SILKS OF JAPAN.—While German manufacturers, as just indicated, attained considerable success in the production of fabrics of a matelasse order, in which silk yarns are employed for figuring or ornamentative purposes, the Japanese craftsman had various admirable exhibits at the Fair in white textures for handkerchiefs, and also in fabrics which owed their embellishment in the first place to the skill of the weaver, and in the second place to that of the embroiderer. In the Women's Building—particularly in the sections devoted to the United States—there were numerous cleverly-embroidered stuffs, but these were not comparable, either in design or technical execution, to similar work wrought by the Japanese. It was not merely in strength of design and colouring that the latter excelled. Several of their specimens were rich in beauty on account of the skilful way in which the designer had combined the kindred arts of weaving and embroidery, or caused the operations of the loom to lend force and character to the embroiderer's work. To those concerned in the development of the art of acquiring pattern on woven surfaces by the needle, these exhibits were most instructive. They showed how the work of the loom can be made to contribute very materially to the beauty of the pattern obtained by the less expeditious but more costly work of embroidery. Of course in some specimens it was simply a plain-woven texture that had been treated in this manner; but there were also many charming examples, illustrating the value of weaving in displaying

effects due to artistic needlework. In the use of various materials in this art the Japanese follow the practice of other Eastern nations. Some of the more elaborate and

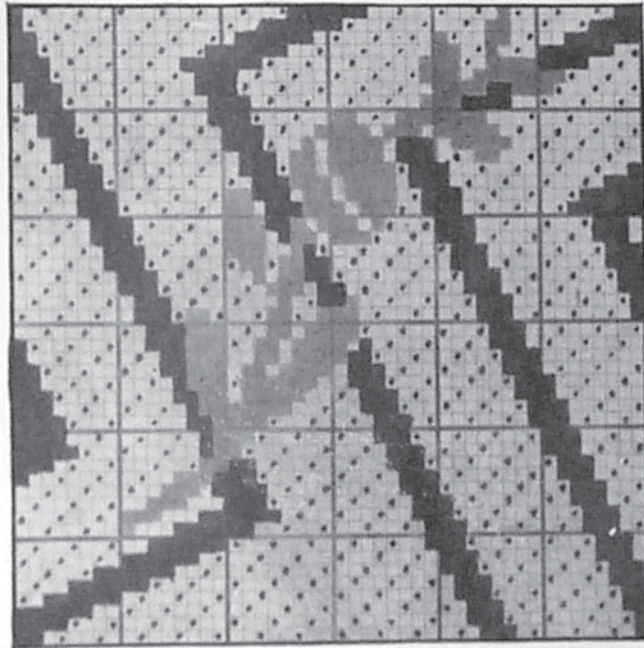


FIG. 26.

pictorial exhibits contained parts of feathers, beads, and pearls, in addition to silk, woollen, and cotton yarns, in divers colours.

Not having space to treat more lengthily of this valuable class of decorative textiles, I consider it important to briefly point out *en passant* the ample field there is in this ancient Eastern art for the exercise of

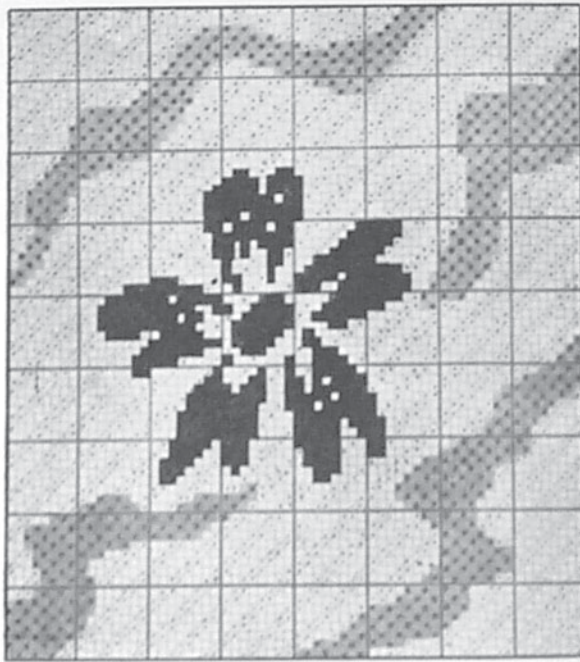


FIG. 33.

Part of the Design of the Centre of a Handkerchief, from Japanese Exhibits.

skilled female labour. The embroideries of both Japan and of the art societies and institutions of the States of America accentuate this fact.

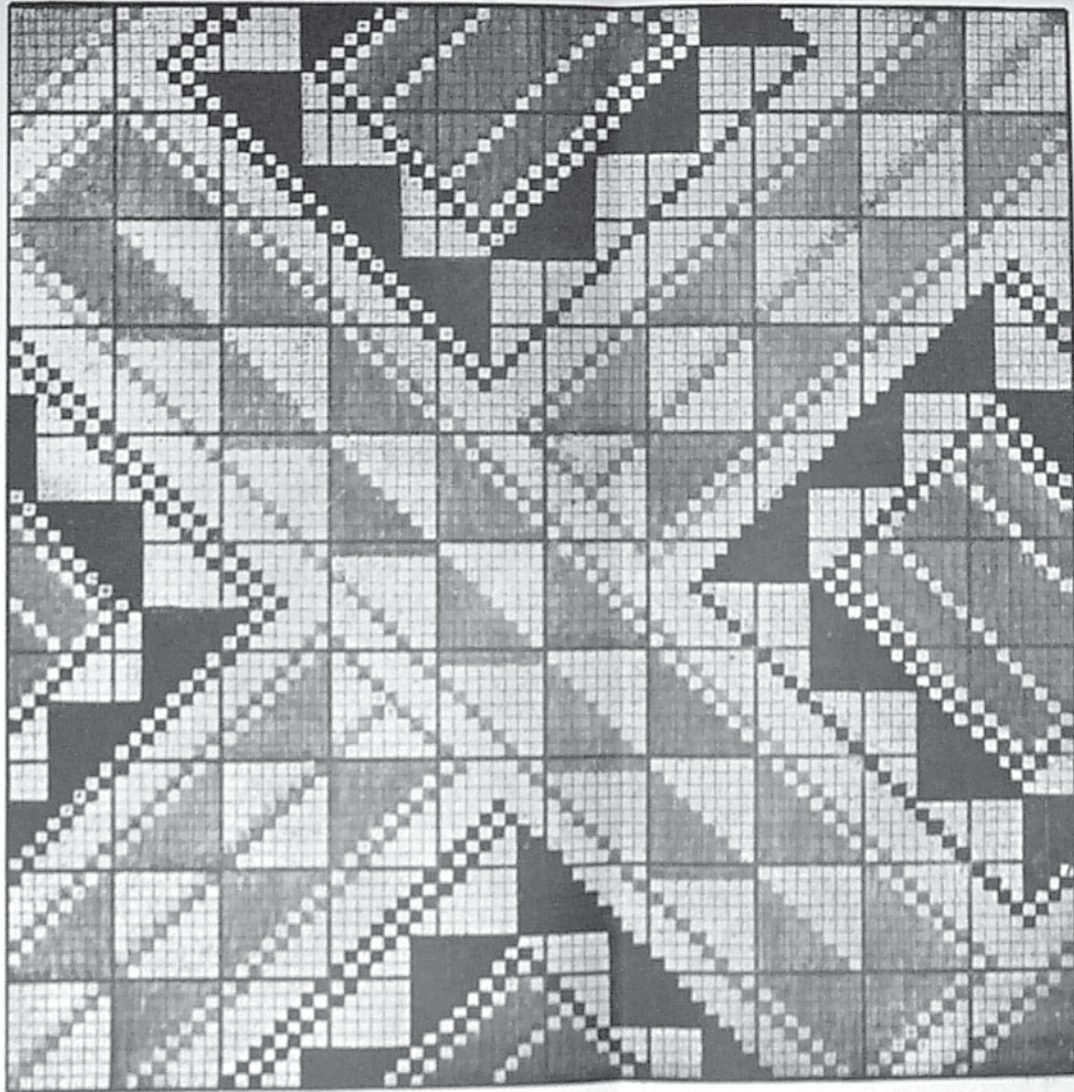


FIG. 2.
Pattern for Centre of a Japanese 50 Handkerchief.

Coming to the woven silks proper of Japan, these were characterised by exceptional freshness, and rare composition of design. Generally, these were fine in structure and composed of white warp and weft. The patterns were frequently as interesting in weave as in ornamental qualities. Two examples—illustrative of the painstaking study the Japanese are obviously making of weaving in all its technical aspects—are given in Figs. 27 and 28. The former was used as the design for the centre of a silk handkerchief, with a fancy diagonal border. It is constructed on a simple geometrical base, deriving its effective composition from the novelty of the weave elements combined. The peculiar arrangement of warp and weft floats gives tone and richness to the whole pattern. Fig. 28 is another style for a silk neck-scarf. In this instance the weave for the border was the common twill. This illustration is only a section of the complete design, which might be worked out on 96 threads and picks, the little object developed in full squares being made, in the other part of the design, to lean the opposite way to that shown. In the woven fabric, the effects represented in grey, and dotted plain, were very pretty on the fine twilled groundwork. They possessed a soft and somewhat indefinite character, which helped to give a clear and smart development of outline to the principal objects. This is an assortment of effects applicable to various styles of fabrics, but more particularly to worsted and cotton dress textures, and silk scarfs and neckties.

The one point most apparent in the silk exhibits of Japan was the rapid progress the textile craftsmen of that country are making in the more intricate branches of the weaver's art, and also in the successful use of those mechanical appliances which have hitherto been the peculiar property and invention of the manufacturing peoples of the Western world.

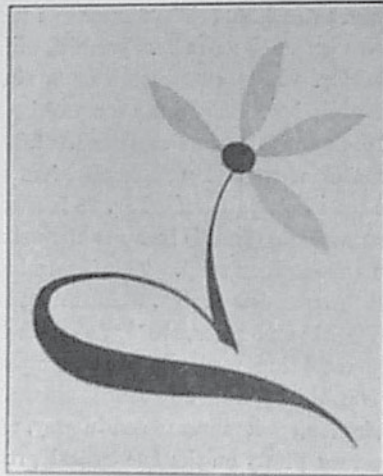


FIG. 29
Design with Satin Ground, from the United States Collection.

SILK EXHIBITS OF THE UNITED STATES.—These were of no common order. French, German, and British manufacturers alike must have viewed them with

surprise. Patterns so clever as these in construction, design, colouring, and finish have only been produced by skilful and ingenious craftsmen. They are not the performances of those who have only attained a mediocre standard in designing and manufacturing, but of well-trained and practised artisans, under the supervision of designers familiar with the principles of

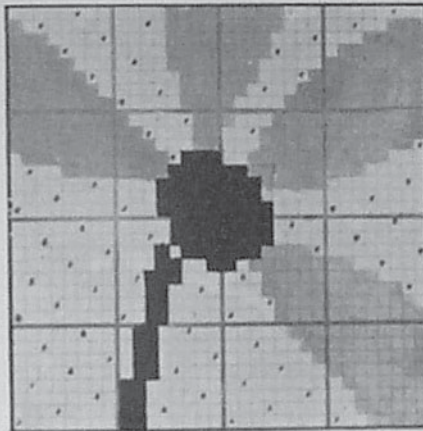


FIG. 20.
Section of Design for Dress Textures.

weaving and of artistic design. Perhaps the greatest degree of success in this section of American textile exhibits was seen in the fabrics made for robes, costumes, and for plain and fancy ribbons, in the designs for which rare excellence of craftsmanship was

displayed. There can be no doubt that the silks *en masse* were more creditable than the wool, worsted, and cotton manufactures. The only styles of silk weaving which were meagrely typified were velvet and



FIG. 31.

Silk Exhibited by the Meyenberg Corporation.

plush goods, and what may be termed the heavier classes of silk productions, such as tapestries and highly-decorative textures. And even here exception must be made to the magnificent display of curtains, hangings,

and tapestry fabrics of Mr. William Robertson, New York. His most creditable show comprised charming textiles for upholstery purposes, which were original and artistic in design, choice in colour-composition, and cleverly executed in a technical sense. Not a few of Mr. Robertson's specimens compared favourably with similar textures of French manufacture.

A general survey of the silks of the United States led one to conclude that in the immediate future France and other European countries cannot reasonably anticipate to export to America any considerable quantities of silk fabrics.

STYLES OF AMERICAN SILK PATTERNS.—In analysing the exhibits in detail it may be advantageous to consider, in the first instance, the simpler types of patterns. A style of design in which several specimens were exposed consisted of a finely-woven satin ground with small detached figures developed in extra weft yarns, and occurring at moderate distances apart. As an elementary illustration of this kind take Fig. 29, a portion of which is represented in Fig. 30, extended on point paper, and prepared for the loom. This neat little figure was woven in brilliant colours on a black satin ground. Two extra wefts were used in its construction, one for the grey and the other for the black sections of the sketch. Each repeat of the design contained two objects leaning in opposite directions.

The Meyenberg Corporation, Hoboken, New Jersey, had some beautiful silk plushes in a very choice

assortment of shades, and also some fabrics constructed on this principle. An interesting texture of this firm is illustrated in Figs. 31 and 32. Here, as in the previous example, the ground weave is satin, the figuring being due to special weft yarns; but a novel feature is obtained in the development of the leaves in the design by using two shades of weft, and working them both on

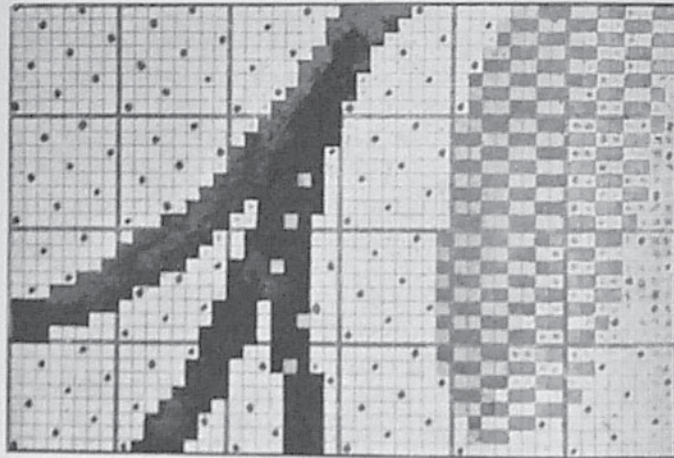


FIG. 32.
Section, showing Scheme of Weaving for Fig. 31.

the same ribbed principle—possibly that seen in the sectional plan given in Fig. 32.

Messrs. Cheney Bros., South Manchester, Connecticut, had a good, all-round display, comprising raw and

thrown silks, and plain and figured fabrics. Amongst their fancy patterns was a novelty of considerable merit. This—Figs. 83 and 84—was composed of shaded curves neatly grouped together. The shaded effects could be



FIG. 83.
Silk exhibited by Messrs. Cheney Bros.

got on the principle indicated in Fig. 84. The warp cord formed, in this example, an attractive groundwork on which to display the shading in the curved figures due to combining weaves derived from a sateen base.

DESIGNS IN WHICH CORD OR REP WEAVES OCCUR.—Cord weaves seem to have been exceptionally popular with the silk designers in the States, hence they frequently occurred in their productions exhibited at the World's Fair. Both Messrs. Doherty and Wadsworth, New York, and the William Strange Company, of the same city, had liberally introduced these makes into their designs. The former firm had unquestionably a solid collection of novelties in both silk ribbons and dress goods. Their patterns were elaborate and fresh in

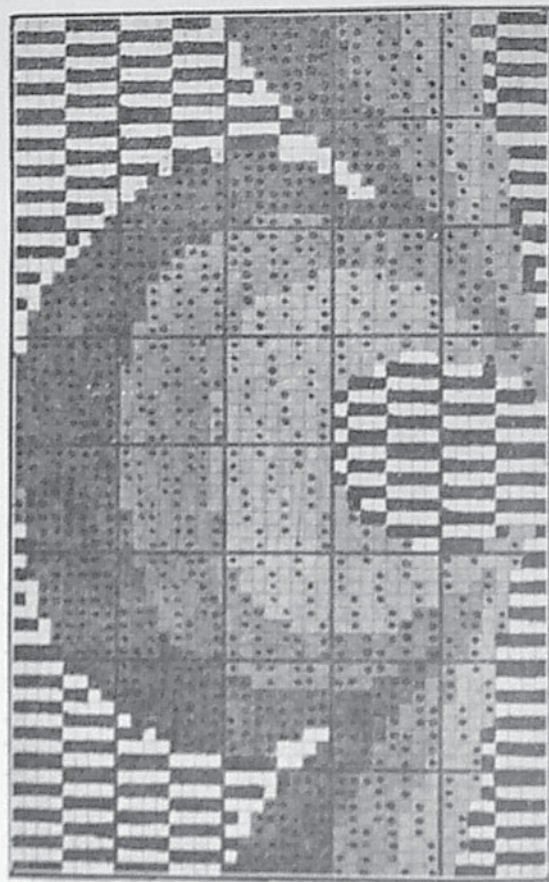


FIG. 34.
Section of Design for Fig. 33.

idea and arrangement, and, in many instances, choice in colouring. Fig. 35 is a sketch of a small object observed in one of their exhibits. It was developed on a richly-ornamented groundwork consisting of a running or

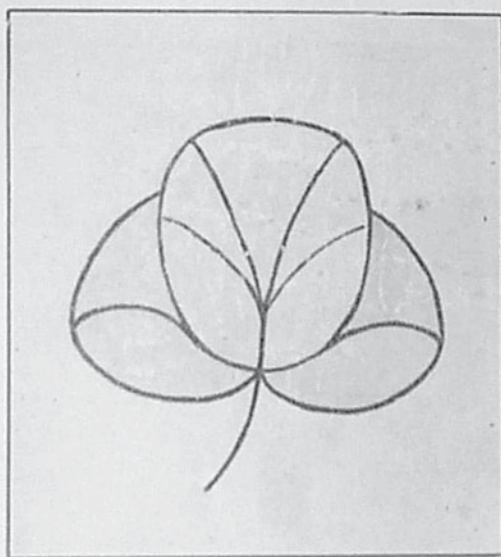


FIG. 35.

continuous design. The weave for the foundation of the texture was sateen, while the interior of the fan-like figures was composed of warp ribs of different degrees of flush, as typified in the sectional design shown in Fig. 36. The succeeding example—Figs. 37 and 38—was a

pleasing exhibit of the William Strange Company. This concern showed some splendid dress and ribbon styles. Several of the figured ribbons were rich in decorative qualities. The dress texture, taken as an illustration, affords some idea of the ingenious weave compounds

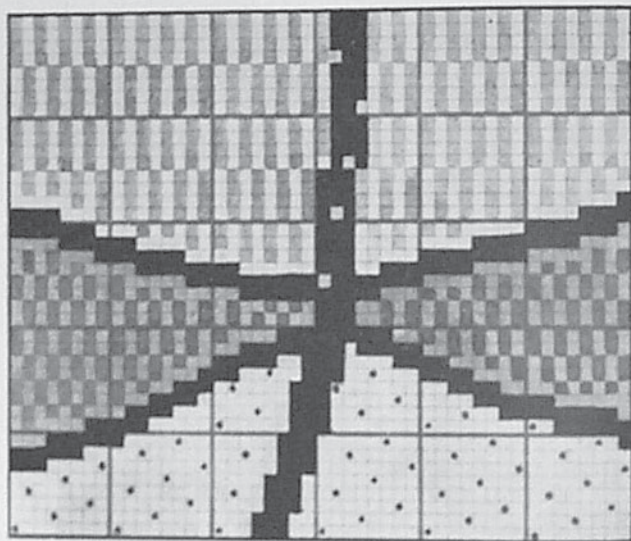


FIG. 36.
Sectional Plan, showing Scheme of Weaving for Fig. 25.

practised by the designer of these admirably executed fabrics. In this example—Fig. 38—the ground-make is weft rib, a weave which at once forms an effective contrast between the warp sateen composing the circular

spots, and the weft sateen used in the twig portions of the design. Such a combination makes it feasible to get two distinct species of figuring in the same texture with one shade of yarn, and yet so dissimilar from each other in effect that though they may actually interlace, a



FIG. 27.

From the William Strange Company's Exhibit.

clear and precise development of all the integral parts of the design is observed. The skilful adjustment of weaves on the lines indicated always points to the technical capacity of the designer, and is evidence of

his practical knowledge of the effects obtainable in the loom. French textile craftsmen, as mentioned in treating of French silks, have made a thorough study of this important branch of designing in relation to woven fabrics, and from this and other examples already described of American manufacture, it is obvious that

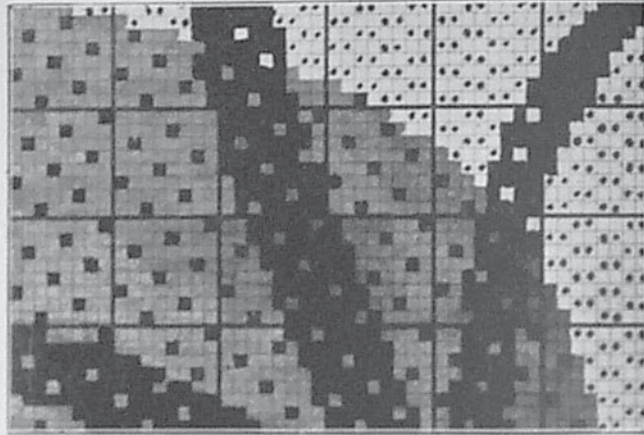


FIG. 38.
Sectional Plan, showing Scheme of Weaving for Fig. 37.

designers in the United States are progressing on similar lines, which can alone ensure complete success.

SHADED PATTERNS.—The scheme of designing practised in the construction of the style illustrated in Fig. 39 may next be described. Here the circular spots are so grouped as to form *en masse* a shaded band, on the surface of which

a running figure or scroll is developed. This sketch, which is a modified representation of the original specimen, is taken from a beautiful ribbon exhibited by the Phoenix Silk Manufacturing Company, New Jersey, who had also samples in dress silks, linings, braids, and serges. From the sectional design—Fig. 40—the reader may possibly be able to understand the principles of weaving which underlie the construction of this suggestive sample in woven ornament. A unique feature of its composition consists in its being sateen throughout, and yet all parts of the pattern were prominently displayed in the texture. It will be observed that the ground is a warp sateen, the round objects a similar make weft plush, while the scroll might be either extra warp or weft, according to which scheme of manufacture should prove the least costly and yield the best results. If the pattern composed of curves should be a resultant of extra weft (as it was in the original), it should be woven by the swivel apparatus, thereby saving a considerable quantity of silk. In addition to the design thus acquired, the warp was beautifully shaded in colour, the several tints of thread being systematically grouped, to give a well-gradated effect. Underlying this class of pattern work there are principles of weaving which might be applied with advantage to various descriptions of worsted and cotton, as well as to silk fabrics. Textiles decorated on what may be termed this compound scheme of design (for in this illustration there are distinctly two classes of effects

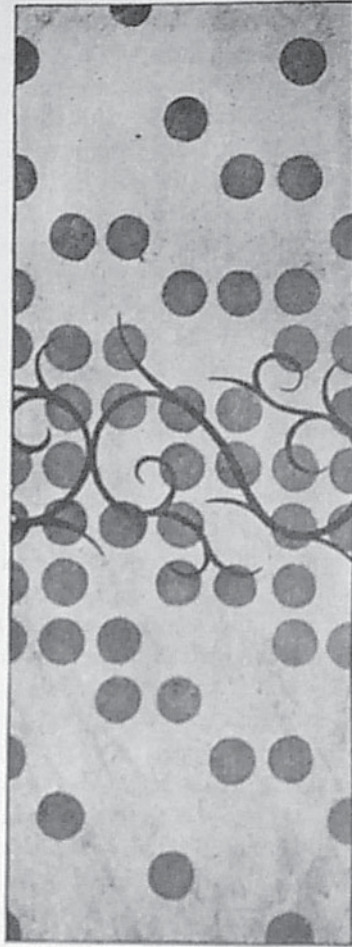


FIG. 23.
Exhibited by the Phoenix Silk Manufacturing Company.

—one formed by an ingenious grouping of simple spots, and the other by a graceful amalgamation of curves), invariably possess qualities which give them a richness of tone pleasing to the eye. It may be pointed out that a geometrical form of pattern might be used as a groundwork, which could be developed in subdued

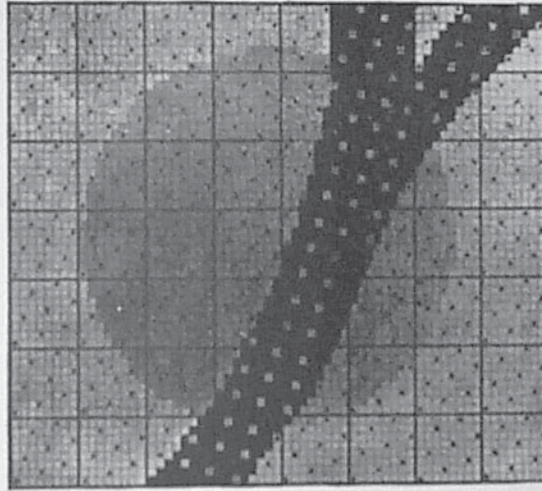


FIG. 40.
Section showing how Fig. 39 may have been produced.

weaves, whilst additional ornamentation might be got by arranging on this basis small detached objects. An idea thus worked out, though comprising the primary element of Fig. 39, would, in one sense, be

the reverse of it, inasmuch as the principal or most prominent part of the style would consist of several figures, whereas the secondary pattern would be continuous.

FIGURED STRIPES.—Another admirable stripe found in the United States collection is given in Fig. 41. It is illustrative of a style exhibited by Messrs. Pelgram and Meyer, New York, and was planned on totally different lines from the previous example. It formed an exquisite silk robe. Two colours of warp yarn were employed as well as two colours of weft. By assuming these to be two tints of grey in the warp—they were a beautiful slate and black in the pattern—and the wefts black and white, it may be indicated in what way this well-contrived design was possibly executed. The ground weave was warp sateen throughout, the figures being developed in floats of weft, the white weft only being required in such sections of the pattern as were of this shade. The sectional design, Fig. 42, shows how the sketch may have been prepared for the loom. It represents a part of the bud in the right-hand corner of Fig. 41. For twenty-seven picks, only the black weft would be needed. Then black and white would run alternately as far as the sixty-eighth pick, when the white would cease and the black form the rest of the bud. There is a degree of shading seen in this style, but no attempt is made at realistic treatment; indeed, this is only rarely an acquisition in textiles intended for apparel. An element of shading, however, often improves and beautifies textile design. It is a



FIG. 41.
Silk Stripe.

question which only the practical expert can determine as to how and to what degree this kind of treatment is desirable in textural work. Here, as in other examples

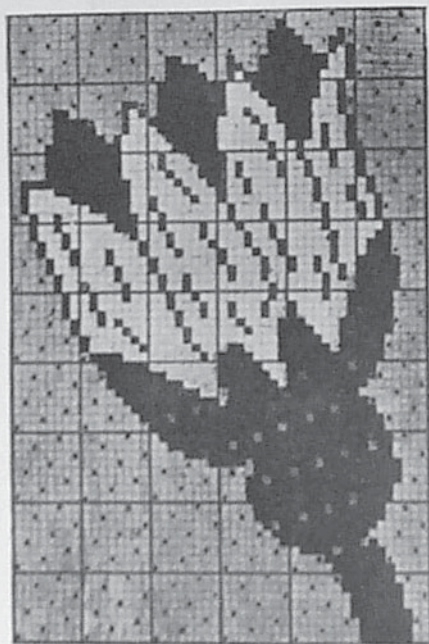


FIG. 42
Showing method of developing Fig. 41.

which have been alluded to, the designer has adopted those schemes of weaving which have been specifically appropriate to the styles of pattern acquired. Messrs.

Pelgram and Meyer had also a remarkably good show of designs constructed on the historic pine base. These were cleverly coloured and full of complex weave details. Perhaps in this line of pattern their exhibits were unsurpassed for novelty in shade, idea, and manufacture.

Fig. 43 is an example of a striped class in which two types of design are combined. Moreover, in the fabric



the figuring in section A was due to floats of weft, whilst that in B was a product of warp cord. Both stripes had a plain weave for the ground, but by developing the patterns in warp and weft floats respectively the woven

specimen possessed much diversity of effect. The actual scheme of execution is shown in Fig. 41, where a small portion of the patterns forming bands A and B are shown developed in weft sateen and warp rep or cord, four picks in a shed. Supposing the warp to be, say, white silk, and the weft black, then the groundwork being plain would be a mixture of these two shades, the figuring in A solid black, and that in B solid white. This is an admirable idea for dress fabrics, and also for silk scarfs and handkerchiefs. The combination of makes is one which, while giving clear development of design, also yields a fabric rich in textural composition.

SUMMARY.—It has been possible in the typical examples which have been given of the fabrics exposed at the World's Fair to afford a general idea of the standard of woven manufacture practised by the several nationalities exhibiting specimens of their art and craftsmanship. One fact is obvious—namely, that in whatever light we view the textile work of the United States, in the course of time the race with this and other countries will be a close one, so far as exporting textiles to the American Continent is concerned. Hitherto we have maintained our supreme position in woven manufactures. British loom work is in many branches of industry ahead of that of other countries. With regard to fancy textures composed of carded and combed yarns and produced in the West Riding of Yorkshire, the border towns

of Scotland, and the West of England, it is certain that if unfair tariffs were removed or even relaxed, neither the productions of Continental manufacturers nor the operations of the vast concerns of the New World are as yet capable of diminishing British trade in these classes of fabrics. There are, moreover, considerable powers of expansion in every branch of the textile

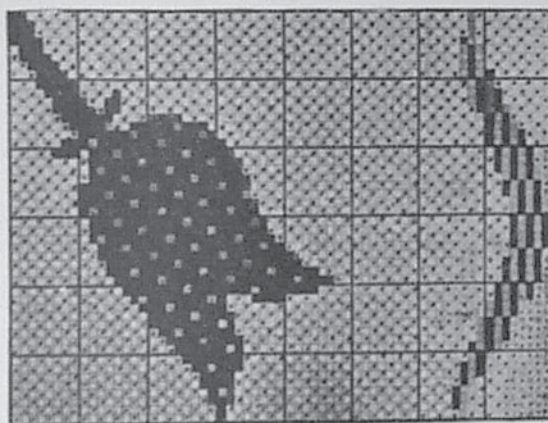


FIG. 44.

industries. Cotton and linen manufacturing in plain, fancy, and ornamental textures, as practised in Lancashire and the North of Ireland, is in respect of excellent workmanship—at least, judging from the exhibits at Chicago—in a most encouraging condition. Fortunately, there are signs of strength in the manifold

departments of British woven craftsmanship. But, what about other countries? Their industrial status concerns us in more aspects than one. If they are our competitors, or in the course of training for competition with our manufactures, it interests us to know the nature of their woven achievements. Commencing with France—it has no formidable competitor in decorative and richly-ornamented silks for costly robes and mantles. The designers of Lyons and St. Etienne exercise a species of skill in the development of effects in this material, which is not a pure product of culture—however perfect that may have been—but is in no ordinary sense a hereditary endowment. Germany is sparing no pains to obtain a place in the markets of the world for her silk manufactures, and the weavers of Crefeld are competent of doing excellent work; but still French fabrics are superior to those woven on German looms in both design and scheme of construction. In the meantime the weaving arts in Japan advance apace; and the silk goods displayed by the Japanese at the World's Fair denote that they have already attained some distinction in textile manufacture. On every hand the industrial conflict intensifies. An analytical survey of the weaving trades of the country discovers various signs of keener instead of relaxed competition. In the past it has been severe enough, but none save the false prophet would predict a lessening of this force, which at once creates and destroys, locating trade and generally awarding success to the most skilful.

All interested in this country's industrial prosperity cannot, in the face of these considerations, but experience some degree of anxiety for the future. Certainly previous generations of craftsmen effected advancement against great odds, and the natural conjecture is that years to come will be the prototype industrially of the past. History, it is believed, in these matters will repeat itself. That entirely depends upon the capabilities of the present and future generations of manufacturers. Considering our advantages, and our position as a manufacturing people, the further growth of the British textile industries ought to be ensured.



APPENDIX.

THE WORLD'S FAIR: AN OBJECT LESSON TO BRITISH TEXTILE MANUFACTURERS.

The following is the substance of a letter which appeared in *The Times* of the 20th of September, 1893. I wrote it with a view of bringing home, to all interested in textile work, the present-day need of combining knowledge, skill and enterprise, so that improvement may be continuously effected in British woven manufactures.

“There were several features about the woven specimens at the World's Fair which indicated that the textile arts, especially as practised in European countries, had not been satisfactorily typified. Indeed, in the exhibits of the industrial arts generally, incompleteness was frequently observed, but possibly in no instance was this more marked than in woven manufactures, for exactly those countries—Great Britain, Germany, and Belgium—whose loom productions are distinguished by the highest standard of workmanship are most inadequately represented. But waiving these points, the textiles at the Columbian Exposition have their instructive side. Inasmuch as they are largely the results of American and Canadian factories, they constitute a

singular object-lesson to the makers of woven fabrics in this country. It is always advantageous to be *au fait* with the degree of skill a competitor possesses and exercises, but particularly is this the case when that competitor belongs to a nation which is a considerable consumer of our manufactures. It is not a question of any material suggestions for future lines of work which British producers may glean by considering the textiles displayed by the United States at Chicago, for these exhibits prove the American manufacturers to be painstaking copyists of English, Scotch and French patterns. Their works confirm the character they have previously earned as reproducers of the inventions, in textural design and materials, originated by the craftsmen of the Old World. Novelty, consequently, whether of texture, colouring, or style was a rare element in the American fabrics, made of woollen or worsted yarns, exhibited at the Fair; yet the paramount utility of these productions to the British manufacturer is apparent in the definite and instructive manner in which they display the standard of textile manufacturing which has been attained in the States. Considering that British-made textures have to carry an almost prohibitive tariff in America, and that hitherto our exports to the United States in woven goods, of wool, cotton, and linen have been so extensive as to find employment for a vast number of hands in great Britain and the North of Ireland, it is surely important for us to know what the Americans are capable of accomplishing in the loom, because it may be taken for granted that when they are

competent of producing fabrics of similar qualities to those made in this country our exports will not simply decline, but be practically suspended.

Fortunately, a careful inspection—amounting in some instances to analysis—of the large assortment of fabrics made in the States and exposed at Chicago does not suggest that this doom is likely to be immediately precipitated upon our American export trade in woven materials. At present we possess the start, and that a considerable one, in the industrial race. We have this forcibly illustrated by the specimens of the few exhibitors of woollens and worsteds from the West of England, Yorkshire, and the Tweed districts of Scotland, in cottons by Lancashire firms, and in linens by the flax manufacturers of Ulster, which are characterised by effectiveness of style and skilful execution. But it would be nothing less than a suicidal policy for us to close our eyes to the progress which has been made in every species of textile work by the American craftsman. With him no task is considered impossible, and he is fully convinced that it is only a matter of time and the Britisher will be forced out of the field. It must be remembered that there are material elements of future expansion and improvement in the American system of manufacturing. Many of the mills are equipped, or partially equipped, with British machinery, and are managed by British foremen, whilst energy and enterprise are evident in every department of the operations of their colossal concerns. What is more, there is in the

United States at least one efficient and well-organised textile school, which I was informed on the occasion of my visit is financially satisfactorily supported by those interested in its work, and it is becoming a custom for the rising generation of manufacturers to either graduate at that institution or at one of the various weaving and designing schools of Great Britain so munificently endowed by the Clothworkers' Company of London.

These are some of the factors which are contributing to the twofold growth of the textile industries in America, that of magnitude, and of capacity in the art of effective and economical manufacturing.

We learn from the textiles at the Chicago Exhibition that there is a more formidable source of disaster threatening this country's trade in woven materials with the American Continent than that of injurious tariffs, one which involves improved methods of fabrication, better designing, and more artistic workmanship than have hitherto been observed in the textures produced in the United States and Canada. All the American fabrics exposed at the World's Fair denote that the fundamental principles of the weavers' art have been more than mastered by the New World manufacturers, and moreover, that they are on the highway to success. Our strength lies in excellence of style and design in our productions, and in clever, trained, cultured craftsmanship. Practices of adulteration in cloth-making—though yielding economic results in the form of cheap fabrics—do not conduce to advance our industrial status. With the

climate and other advantages we possess—such as natural aptitude for industrial activities and the admitted practical capabilities of the British artisan—the future of our textile industries should be bright and prosperous; but it is plain, from these considerations, that we need to foster and encourage in every possible way all efforts, educational and otherwise, which tend to improve and develop British crafts and industries.”

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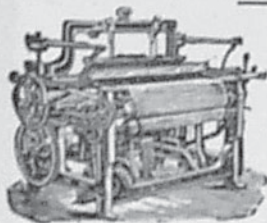
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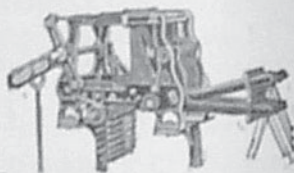
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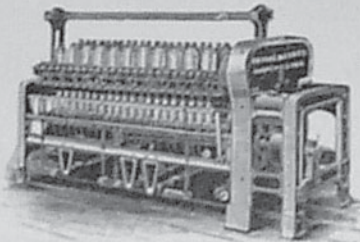
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