"the chlorine on coming into contact with the organic matter being transformed into a compound substance capable of containing an exactly equivalent amount of chlorine and capable of yielding it up." In short they shewed that the chlorine could be regenerated after having acted upon the coloured substance. The laboratory experiments of MM. Naudin and Bidet were very successful, but the inventors, badly-informed perhaps as to the efficiency of the modern dynamo-electric machine, did not devote themselves to the solution of the many difficulties which crop up when a process is made use of commercially and on a large scale, and they soon gave up the research. In 1883, when M. Naudin published his results, electric bleaching was, it is asserted, well known in Russia, where Lidoff and Tikhomiroff, seeking to find the liquid possessing the maximum bleaching power, electrolysed various chlorides. These investigators gave the preference to chloride of potassium. Representing the bleaching power of an electrolysed solution of chloride of potassium by 100, that of sodium chloride was found to be 73, that of calcium chloride 24. Lidoff and Tikhomiroff also carried out electric bleaching at the Vienna Electrical Exhibition. According to M. Gime the production of hypochlorites by electrolysis has for some time past been carried out in America, and a concentrated solution of sea salt is there generally employed. In France, however, we think we are not wrong in stating that with the exception of Hermite, who generates bleaching agents for a special purpose, all the users of hypochlorites still employ chemical processes. In fact, at the Paris Centenary Exhibition, the electro chemical industry was only represented by the Hermite process, and that of Gall and de Montlaur for manufacturing potassium chlorate.—A. Rigaut in *La Lumiere Electrique.*

(To be continued.)

Satin Finish on Black Italian Cloths.—Make a mixing of 1,200 grms. farina, 1,000 grms. flour paste, 400 grms. Irish moss, 150 grms. spermaceti, 100 grms. stearine, 100 grms. French chalk, and 280 grms. logwood extract boiled with 25 litres of water. Sieve, and run through mangle and calender hot.

Magenta, methyl violet, and crystal violet, when acted on by a mixture of sulphuric and nitric acids, give new colouring matters. The methyl violet gives a violet blue, and magenta a grenat. These new colouring matters dye animal fibres in a neutral or feebly acid bath; when used in printing they do not soil the whites of the tissues, and they are fast.

A red colouring matter is obtained by heating hydrochlorite of nitrosodimethylaniline, nitrosodimethylaniline and aniline together to 100° for 12 hours. The colouring matter is obtained in the form of a brown powder, which gives shades very resistant to soap, soda, acids, air, and light.

Black on Cotton.—M. Charles Waddington produces a black on cotton by first dyeing it with primuline in the usual way, boiling 100 lb. of cotton for one hour with 1 lb. primuline and 10 lb. salt. After rinsing it is treated in a cold bath for dyeing aniline black, made of aniline oil 6 lb., hydrochloric acid 12 lb., sulphuric acid 1½ lb.; after the cotton has been immersed about a quarter of an hour it is lifted; 5 lb. of bichromate of potash are added; the cotton is reëntered, and the bath is heated to the boil in about one hour; the cloth is then taken out and washed.

Most, if not all of the direct cotton violets, such as azo violet and Hessian violet, are somewhat sensitive to acids—a property that is rather disadvantageous. A recent patent describes two new violets, one of a reddish, the other of a blue shade, which are fast to acids. They are obtained from a base azoxyaniline not hitherto used for preparing these direct colours. This new base is obtained by taking para-nitroacetanilide, and reducing it with zinc. The new base is a yellow body insoluble in water, but soluble in alcohol, on azotising and combing with naphthol sodium monosulphonate it gives a violet red dye-stuff; with the disulphonate of naphthol it gives a blue violet colouring matter, and both dye unmordanted cotton from alkaline soap baths in the same way as benzopurpurine.

Basic red colouring matters are produced by the action of dimethylaniline on fluoresceine heated to from 140—220° C. When these two bodies are heated in an alcoholic solution at 140—160° C., the fluoresceine is found to be the mostly changed into a body possessing the properties of a phenol, and of a feeble base. The inventors give the name 'methylrhodaminol' to this body. The hydrochlorate is soluble in water, and dyes animal fibres from an acid bath, and tannin-antimony-mordanted cotton a very bright red. If the temperature be further elevated the fluoresceine is transformed into a body entirely basic, to which the name 'tetramethyl rhodamine' is given; a further elevation of temperature results in the production of a third body of feebly basic nature. These bodies are strong colouring matters.

Designing.

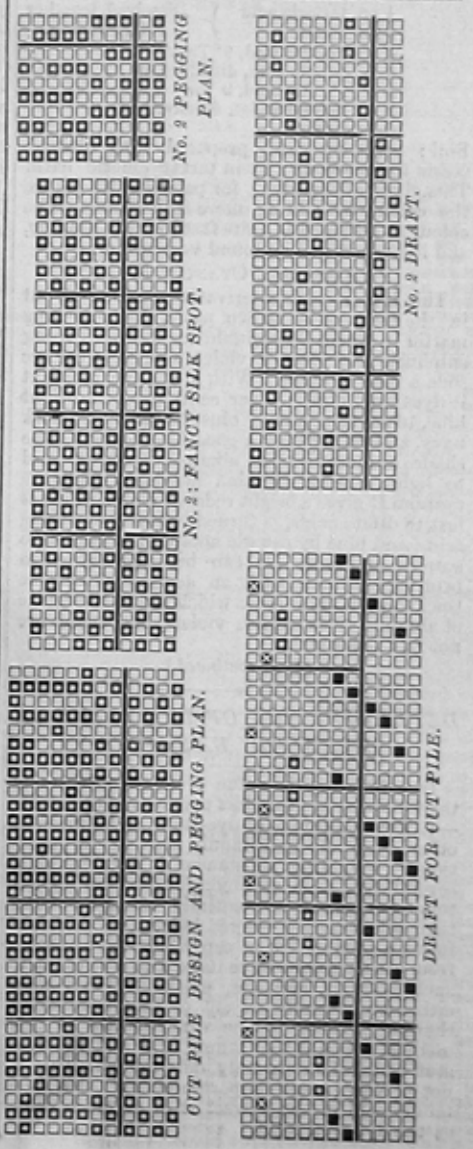
NEW DESIGNS.

CUT PILE PLAIDS OR CHECKS.

No. 1.—This cut pile design is for plaids or checks in fancy colours: cotton, linen, silk, mohair, or woollen, in fact any textile material may be used, especially for the back, the brightest and most costly for the face, the colours for winter being black, green, dark red, brown, tan, blue, and grey. The design would be most effective in heavy plush stripes, and by using good combinations of printed or twisted yarns, with wefts of various shades, the skins of animals, such as tiger, leopard, beaver fur, etc., may be very closely imitated in a novel and striking manner. For instance, a golden brown weft with a very large but irregular block of black and white print picked two and two would give a beautiful imitation of the feathers of owls, and with another weft of a very light stone, checked 2 print, 2 golden brown, 4 of light stone, a strong resemblance would be obtained to other skins. With a little ingenuity the changes are almost unlimited. It will be seen from pegging plan and draft that 32 to the round on 12 shafts, with 40 ends in the draft, gives a great amount of scope for diversity of colour changes; 80 ends per inch, or a 16 reed, 5 in a dent, of 50's two-fold yarn for warp would form a good foundation; it would require four ends of ground warp of cotton or other materials, and one double end of plush warp wool, or other fibre to form one dent; we merely suggest this idea. Then 3 picks of ground cotton and one double pick of spun silk, mohair, or angola for pile. The stars in the draft shew the wove plush warp (on a second beam), and the spaces the stars are in are the healds that the plush warp threads are drawn through. The crosses give the weft plush, and the dots on the other 6 shafts are for the ground, which may be made as small or as large as may be considered necessary for a pattern. The colours can at any time be changed to different colours for the pile warp, and also any variety of shades for pile wefts, according to the nature of the plaid or check required. The flushings of the pile warp and weft would be most conveniently cut diagonally, as by so doing the flushings both of pile warp and weft would be cut at the same time. We would further point out, in conclusion, that the ground fabric may be produced by one colour of warp. The pile warp and weft may be the same colour as each other, but different from the ground; or the pile warps in different colours in each stripe, and at intervals ground twilled or figured. We thus indicate what we believe would form a very elegant and useful addition to our winter novelties in dress materials and vestings.

No. 2 design is in every respect (except figure) a counterpart of *No. 1*. We have given a different method of drafting so that the warp ends will be better separated in the course of weaving, and no doubt *No. 1* draft ought to be on the same principle. The same reeds and counts of warp and weft as in *No. 1* design; the warp may be linen, worsted, or two-fold cotton, the weft silk, 32-end draft on 10 shafts, 10 to the round, weft and warp self colours, as in *No. 1*, and by way of contrast warp dark dahlia; weft, a twisted yarn of equal parts of white and maize, white and red fawn combined, light pink and coral very loosely twisted; warp, scarlet; weft, grenat, light and dark; warp, claret brown; weft, light, mid and dark cuir; warp, dark prune; weft, dark buff, all the light shades of blue and drabs, creams, light, mid and dark lavender; warp, light myrtle green; weft, every tint and shade of lilac and drabs; warp, very dark blues, deep purples; weft, dark orange, dove, and white.

FIGURE 29.



FIGURED DRESS OR MANTLE CLOTH.

Figure 29 is a suggestion for application to textiles in either light or heavy silk, cotton, worsted, or woollen goods. A portion of the design is shewn developed on point paper in *Design 205*, the full figure worked out on this scale occupying 192 threads and 192 picks. Our idea here has been to develop the figure as a light texture; therefore plain ground is used, a weft flush of seven for the weft figure, and a simple crape weave for the conventional leaf being introduced. The following is a suitable sett for a light silk cloth :—

Warp.	*Weft.*
2/60's silk.	60's silk.
40's reed 2's.	80 picks per inch.

The crape effect in this sett will probably not be quite so clearly developed as is requisite to give the characteristic effect, in which case either a thicker weft than warp should be introduced, or a more pronounced weave be inserted.

As a cotton fabric about the same balance of structure should be maintained, but the remarks made above are equally applicable here.

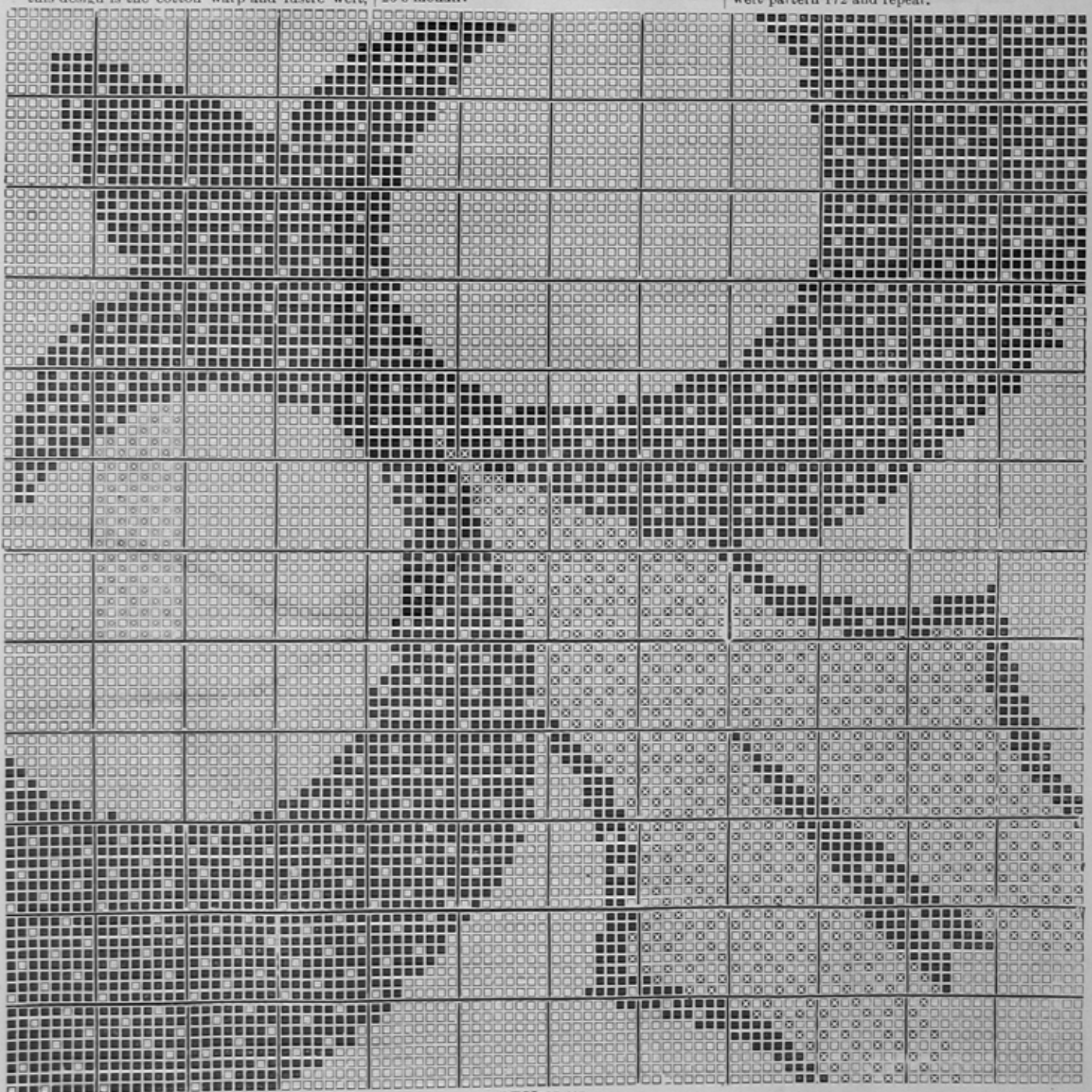
Probably the most suitable type of cloth for this design is the cotton warp and lustre weft, either single or backed. The setts previously furnished in this journal for cloths of this type are suitable for this figure. As a single cloth the plain ground and weft flush figure should be retained, but the conventional leaf might be most effectively developed as an extra weft, and we would suggest the trial of marble non-lustrous yarns, dark tones. Properly manipulated some effective results could, in our opinion, be obtained thus.

Again, if the figure be developed for a mantle cloth, cotton warp with lustres and woollen weft, we would suggest that an attempt be made to utilise the woollen weft for surface figuring. Of course the ground and main figure should be developed for the most part in distinct weft flush weaves, but properly used the non-lustrous woollen should prove of some service. A better class of yarn than that usually used for backing should be inserted; in fact we recommend the trial of this class of goods in finer setts than usual, say 2/60's cotton in the place of 2/40's, slayed about 30's reed 2's, replacing the 12 sk. woollen and 10's lustre worsted or mohair, with say 20—28 sk. woollen, and about 20's mohair.

FOUR-END TWILL FANCY CHECK.

All large checks and tartans are now worn biased or cut so that the checks meet most accurately in the centre of the skirt, forming vandykes. There are some patterns woven diagonally; they are, of course, extremely expensive, but they answer the requirements of fashion without incurring the risk of having the checks all askew and the folds drooping irregularly. Any really good and experienced dressmaker, however, will give a satisfactory joining with the ordinary check or tartan if a good ground is given in the pattern between the smaller crossings.

We suggest a check in 80 reed, 2 in a dent, 30's twist for warp, 80 picks per inch of 30's weft, 54 inches wide, or, if reed space in loom will not permit, 27 inches to 30 inches broad, warp pattern 60 ends of very light fawn, 6 of opal blue, 60 light fawn, 4 light or opal blue, 4 light fawn, 4 opal, 8 light fawn, 6 opal, 8 light fawn, 4 opal, 4 light fawn, 4 opal; total ends in pattern 172 and repeat; weft pattern, 120 picks of light fawn, 4 opal, 6 light fawn, 4 opal, 24 light fawn, 4 opal, 6 light fawn, 4 opal; total weft pattern 172 and repeat.



DESIGN 205.