far beyond this point in the direction of illegality and tyranny, and that not a very great deal of complaint would exist were they not to go beyond the point he indicates. Mr. Burt, however, shews how difficult it is when once liberty has been given to any extent to withdraw it again. He said:—

One thing needed was a clearer definition of what constitutes intimidation. There had been numerous cases tried, and the law as laid down by a full bench of judges now seemed to be that intimidation must be a threat which, if carried into effect, would be a criminal offence. Many cases arose also out of picketing. Workmen demanded the right of peaceful picket. At the present time some employers of labour were suggesting the abolition of picketing. It was too late in the day, however, to talk of the abolition or prohibition of picketing. (Cheers.) If 17 or 18 years ago the right of peaceful picket was allowed by the then House of Commons, now that workmen had got very much additional power, and that their trade unions were much more influential, whatever other solution of the difficulty might be possible or practicable, picketing itself, if peacefully conducted, and without violence, would have to be allowed by law.

This is a substantial refusal on the part of the mouthpiece of trades-unionists to give up one of the principal instruments of their tyranny, and out of which the most offences arise. Mr. Burt refuses to give this up on the ground that the trades-unionists are strong enough to compel Parliament to leave it in their hands, though he knows that it is an instrument that cannot be used in the manner he describes, namely, peacefully and without violence. Mr. Burt may safely be defied to adduce a single instance of a strike in which picketing has been resorted to that has not resulted in the use of threats, intimidation, or actual violence.

Our space precludes further notice of the important discussion this week, therefore we content ourselves with the statement that Mr. Robertson's resolution on the division was rejected by a majority of 46 The numbers voting were:—For, 180; against, 226.

Designing.

NEW DESIGNS.

NEW SHIRTING STRIPE.

No. 1: A new shirting pattern, 5 shaft satin, 20 dents per inch, 5 in a dent of 28's for warp; one thread is five-fold of 30's twist, two turns per inch, making a dentful; 72 picks per inch of 30's cotton for weft. Warp pattern: 30 light stone, 1 five-fold (3 blacks 2 whites); 30 light stone, 1 five-fold (3 blacks 2 whites); 30 light stone, 1 five-fold (3 blacks 2 whites); 30 light stone, 15 dark blue, 15 scarlet, 5 light rose, 15 dark blue, 5 cream, 15 havanah brown, 1 five-fold (3 whites, 2 reds), 15 dark blue, 1 five-fold (3 whites, 2 reds), 60 havanah, 5 scarlet, 10 dark blue, 5 scarlet, 60 havanah, 1 five-fold (3 whites, 2 reds), 15 dark blue, 1 five-fold (3 whites, 2 reds), 15 havanah, 5 cream, 15 dark blue, 5 light rose, 15 scarlet, 15 dark blue, and repeat from first "30 light stone." Half patterns at selvages; good beetle finish, with glossy face.

GINGHAM CHECKS.

Design 2: For gingham checks, 4 shafts, 48 end draft, 24 to the round, 32 dents per inch, 2 in a dent, 24's warp twist, 64 picks per inch of 24's weft. Warp pattern, 272 chocolate, 4 white, 12 lavender, 12 dark drab, 12 lavender, 12 dove, 8 lavender, 12 dove, 4 black, 4 white, 4 black, 12 dove, 8 lavender, 12 dove, 12 dark Capuchin, 4 black, 8 white, 4 black, 12 Capuchin, 12 dove, 8 lavender, 12 dove, 4 black, 4 white, 4 black, 12 dove, 8 lavender, 12 dove, 12 lavender, 12 dark drab, 12 lavender, 4 white; the repeat commences with the "272 chocolate." Weft checking pattern the same in every respect. Width when finished 50 inches: this extra width gives an advantage in cutting on account of the large patterns.

Another or second pattern as follows: 96 cardinal, 24 royal blue, 4 straw, 4 blue, 4 straw, 18 royal blue, 8 cardinal, 4 black, 4 cardinal, 4 white, 4 cardinal, 4 black, 8 cardinal, 18 royal blue, 4 straw, 4 royal blue, 4 straw, 24 royal blue, repeating from 96 cardinal. Weft pattern the same.

Third pattern: 60 dark cream, 4 pink, 4 white, 4 pink, 4 white, 4 pink, 4 white, 4 pink, 40 cream, 4 emerald, 4 white, 4 emerald, 4 white, 4 emerald, 4 white, 4 emerald, and repeat from "60 dark cream." Weft pattern the same.

Fourth pattern: 80 light shrimp, 30 light claret, 4 shrimp, 12 light claret, 6 shrimp, 8 light claret, 10 shrimp, 6 light claret, 12 shrimp, 4 light claret, 16 shrimp, 4 light claret, 12 shrimp, 6 light claret, 10 shrimp, 8 light claret, 6 shrimp, 12 light claret, 4 shrimp, 30 light claret, and repeat from "80 light shrimp." Weft pattern the same.

FANCY CLOTHS.

Designs 3 and 4 give warp and weft effect on fancy cloths. In the one case more warp is required than weft and in the other more weft than warp. We merely suggest the two designs, or rather ties, of an eight shaft, eight to the round, straight-over draft. They will be found useful for cotton vestings or strongly-made cotton goods.

COTTON TROUSERINGS.

Design 5 on the same number of shafts, straight-over draft, will also produce a very heavy cotton fabric for trouserings, etc. It is a matting, and might be made on two shafts, 4 in a heald; but we give this tie so that Nos. 3 and 4 may be made on the same number of shafts if a change is required.

Design 6 or tie is also a straight-over draft on 8 shafts; we cannot afford space to give particulars of all these ties, so give as briefly as possible details for No. 6, which is a good diagonal for heavy cottons, say 12's warp and weft, four in a dent, 16 dents per inch, 64 picks of 12's weft, woven all grey, then well bleached or dyed in fancy shades. Let this diagonal run to the right, and it will not only finish better, but the appearance will be more effective.

ZEPHYR STRIPES.

Plain woven zephyrs, in stripes fashionably known as the "Vega," were very popular a few years ago. They are now coming to the front again in new styles, with beautiful colourings for summer wear. They are extremely usefu as wash goods, being well dyed in the hank before being woven; thus rendering the colours absolutely fast—the principal feature in these fabrics. For warp 40 dents per inch, two in a dent of 30's twist, 72 picks per inch of 30's weft. *No.* 1 *Warp Pattern*: 60 dark blue, 6 rose pink, 6 white, 24 rose-pink, 6 white, 6 rose-pink; weft one shuttle all white well bleached. *No.* 2: 80 dark heliotrope, 6 sky blue, 6 white, 24 light cinnamon-brown, 6 white, 6 sky blue, 80 dark heliotrope, 16 mid blue, 4 white, 12 mid blue; weft all bleached white. *No.* 3: 96 navy blue, 6 light new drab, 6 white, 30 light new drab, 6 white, 6 light new drab, 96 dark navy blue, 24 light new drab, 8 white, 24 light new drab; weft all light new drab. *No.* 4: 60 terra cotta, 8 white, 4 terra cotta, 8 white; weft all white. *No.* 5: 40 rose-pink, 4 green, 12 white, 4 green, 40 rose pink, 4 dark brown, 8 white, 4 dark brown, 8 white, 4 dark brown, 8 white, 4 dark brown, 8 white, 4 dark brown, 8 white, 4 dark brown. Weft all white; soft, clear finish; 28 inches wide. All these patterns will be found desirable for present demands.

THE ANALYSIS OF PATTERN.—VII.

GAUZE FABBICS.

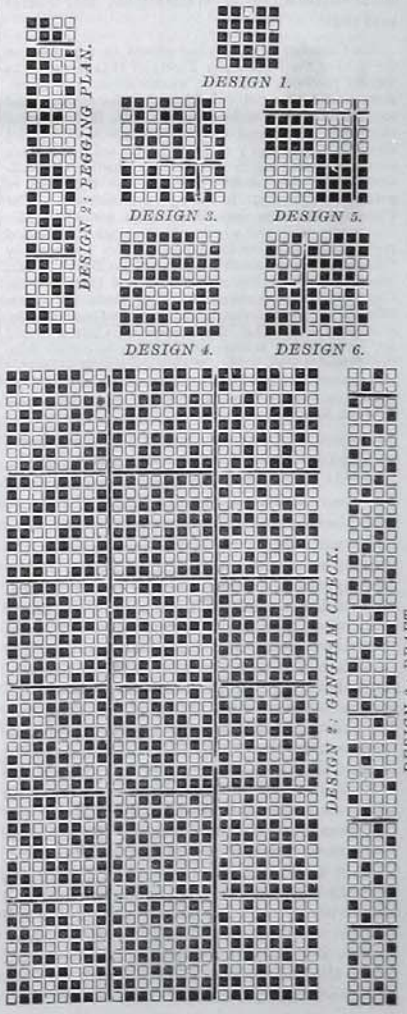
The analysis of gauze patterns in some respects is much easier than the analysis of ordinary cloths, since with an ordinary piece-glass it is usually quite an easy matter to follow each individual thread throughout the repeat. This, as we shall see directly, is not the most difficult part of the work to be done: it is the drawing out of the weaving particulars, the reduction of the pattern to the least possible number of shafts, that calls forth all the energies of even the experienced analyst.

For convenience, the subject will be treated under the two heads Ordinary Gauze Fabrics, and Figured Gauze Fabrics.

ORDINARY GAUZE FABRICS.

This class includes all those patterns in which ordinary warp or weft figuring is absent, the beauty of the pattern thus depending on the delicacy of the lace-like effect obtained by the varied orders of crossing. A simple example is given in *Figure* 1, by means of which the system of indicating gauze on point paper may be briefly described. The threads marked s s are termed the stationary threads, *i.e.*, they are the threads round which the crossing thread works. These are the threads which the analyst first searches for, since the whole pattern literally revolves round these. The threads marked c c are termed the crossing threads, and the essential feature of gauze is that these threads may be lifted at either side of the stationary threads, on one side by the doup, on the other by the doup shaft, which consequently works in conjunction with the doup. It is evident then that to each pair of threads three shafts must be allotted, viz., doup, D; stationary, S; doup shaft, D S; as indicated in *Design* 22. The analyst then should first search for the stationary threads, and having found these, should indicate them in red pencil on point paper, taking care to leave a sufficient number of spaces for the doup and doup shaft. Having indicated these particulars as already shewn, each thread must now be followed throughout the repeat *marking for rises.* In following the crossing thread it is observed that it first rises on one side of the stationaries, and then on the other; thus, taking the doup to lift on the right-hand side, and the doup shaft on the left, the doup only in *Fig.* 1 will be raised for the first pick, the doup shaft only for the second, and so on, the stationary threads being bound to the weft by the crossing thread alone.

In effects similar to this, simple as they apparently are, there are difficulties often occurring, some of which may be illustrated by *Figure* 2, which is the gauze ground taken from a



figured fabric. Since each thread does an equal amount of bending, the first question which arises here is—which are the stationary threads? It is quite allowable in one sense for either *a* or *b* to be taken as such, but if *a* (which in reality represents two threads) be examined, it will be found to be bound to the weft only by the crossing threads *b*, therefore fulfilling the same conditions as indicated in *Figure* 1. Threads *a* must therefore be taken as the stationary. There is another point also which must not be overlooked, viz., that the effect is constructed as indicated, with the idea of making the stationary threads bend, and thus produce more of a lace-like effect, since the crossing threads, *b*, interweaving with the picks, obtain a firmness to which the stationary threads, in their comparatively loose state, must yield. *Design* 23 is the point-paper design for *Figure* 2, which should be followed out, remembering that *a* and *b* each equal two threads, which will be split in the figure to form plain, etc., picks; *c*, *c*, *c* also equal two picks, each likewise split in the figure into two separate picks.

Having shewn the method of transferring gauze effects on to design paper, attention must now be directed to the drafting, or "douping" as it is termed. *Figure* 1*a* indicates the draft for *Figure* 1, and *Design* 22*a* the pegging plan, in which it will be observed that the only difference from *Design* 22 is the relative positions of doup and doup shaft, it being a custom in practice to place these together, while the threads they really represent, or rather the positions they represent, are separated by the stationary threads.

The draft and pegging plan for *Figure* 2 are given in *Figure* 2*a* and *Design* 23*a*, where it will be noticed that should the figure be drafted as indicated, two doups will be required, while should threads *a* be taken as crossing threads, there will be only one doup required. The fact that this is a ground effect for a figure accounts for this, which will serve as well as an introduction to that important matter, the reduction of the number of doups. The simplest case in which this is possible is illustrated in *Figure* 2 and draft *Figure* 2*a*. It will at once be realized that this is simply what is termed a point draft, one doup under these conditions working the crossing thread on opposite sides of each group of stationaries. The analyst then should carefully examine the pattern before him with the idea of grouping those threads together, *which work alike or exactly opposite.*

Another case in which figures can actually be woven with one doup only is illustrated in *Figure* 4. A careful examination of this effect will shew that should the doup lift the crossing threads on the right-hand side of the stationaries, it must be lifted every other pick to form the plain weave, while the shafts lifting on the left-hand side of the stationaries form the gauze crossing; should the positions be reversed there will be no reduction in the doup shafts, but a considerable increase in the number of doups required.

The introduction of thick threads may sometimes prove confusing to the analyst, so he should remember that thick threads conform to the same laws as thin ones. For example, in *Figure* 3, if the thin threads edging the stripes be examined, it will be found that they work precisely the same as the thick threads, therefore an extra doup for them is not needed.

Another type of effect, to which attention should be briefly directed, is that illustrated in *Figure* 5. Here we have a combination of gauze, twill, and plain stripes. It is evident that in this case ordinary shafts will be required for the twill and plain, while the full complement of doup, doup shafts, and stationaries will be required for the gauze stripe. This means specially constructed healds, which of course implies extra expense, while at the same time it should be noted that once constructed the healds will only produce that particular width of stripe.

In analysing any type of gauze effect, there are two laws which may be of great service to the analyst. They are—firstly, in order to produce a clear precise crossing, the crossing threads must go over the pick preceding and succeeding such crossing; and secondly, in order to comply with the above law, all picks and threads must be grouped together in odd numbers when gauze and plain, etc., are combined.

To summarise our remarks as follows will conclude this section of our treatment. In analysing gauze fabrics proceed as follows:—(1) Indicate clearly on design paper the number of shafts required for the plain or twill, etc., stripes, should there be any, and for the gauze as already explained; (2) group all the threads and picks as they appear in the pattern, by means of brackets on the design paper; (3) obtain the full design by following each thread throughout the repeat by means of the piece-glass; (4) examine to see what reduction can be made in the number of doups, and make the draft and pegging plan accordingly.

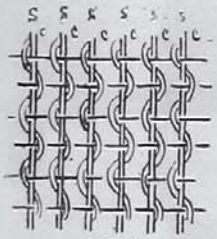
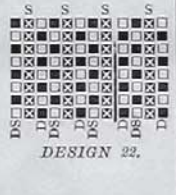
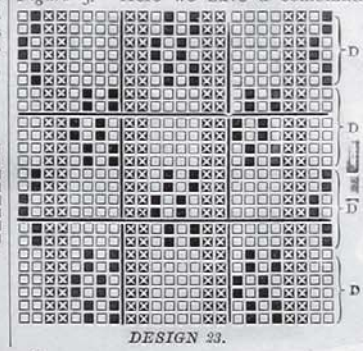


FIG. 1.



DESIGN 22.



DESIGN 23.

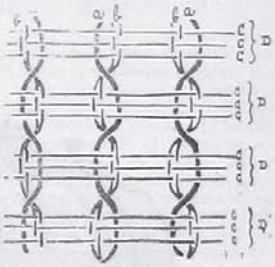


FIG. 2.

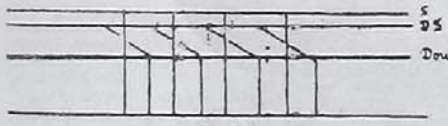


FIG. 1a.

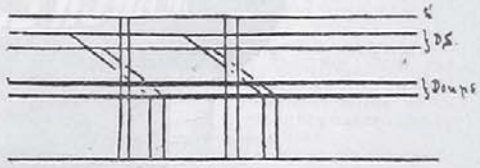


FIG. 2a.

DESIGN 22a.

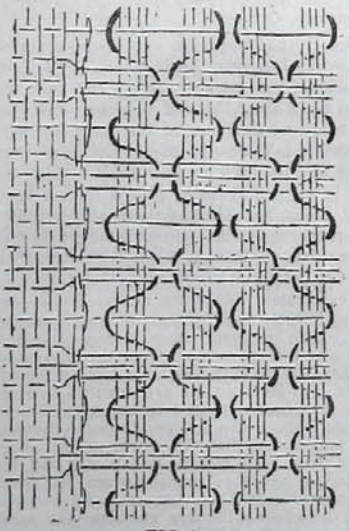


FIG. 3.

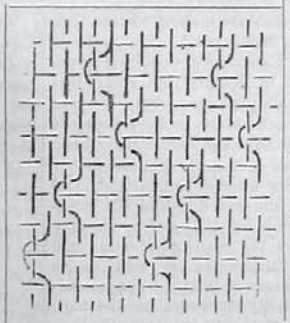


FIG. 4.

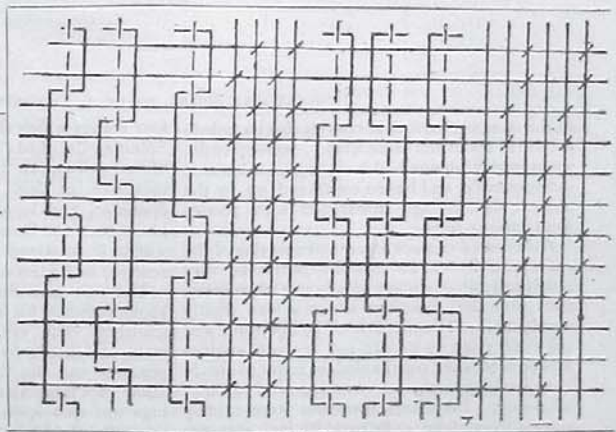
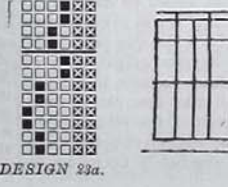


FIG. 5.



DESIGN 23a.

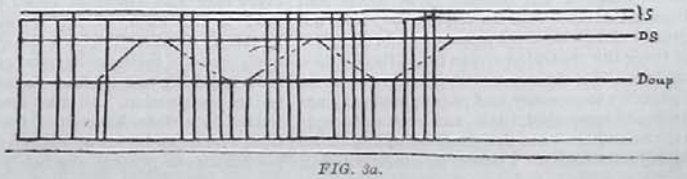


FIG. 3a.