

POINTS ON JACQUARD DESIGNING.

A Jacquard designer must be, what we might call, a born artist, able to arrange on his designing paper pleasing forms in such a manner that they will repeat, *i. e.*, so they can be woven on the loom without losing any of the pleasing details of the sketch in the finished fabric. In this, the Jacquard designer differs from the true artist, he who does not care what a repeat is.

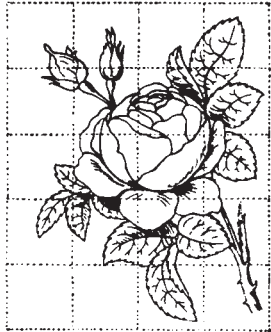


Fig. 1

To become a successful Jacquard designer, a reasonable experience and skill in free-hand drawing is required, which, when attained, should be followed by him in practice in the technical details of ornamental pattern construction. Too much stress cannot be laid on the importance of a thorough training in free-hand drawing by any Jacquard designer, for the fact that it gives freedom and position to the hand, as well as a training of the eye to grasp the proper position and details of figures in a design; it will also impart to him the feeling for beauty of line and form that it helps to bring out in the complete design.

After having mastered free-hand drawing, an excellent study will be to continue the practice of drawing by copying from good examples of woven fabrics, or from reproductions of such work, this giving at the same time very valuable data in the study of woven, figured fabrics, although in the present instance, the study more particularly refers to imparting freedom of drawing to the hand, besides a knowledge of the importance of the repeat of the pattern. It will also, if dealing with multi-colored fabrics, give the student most valuable, practical points in harmony of color. *i. e.*, the blending of colors in textile fabrics so as to produce pleasing effects.

In starting drawing direct from fabrics or reproductions of such, it will be advisable for the student to help himself along in his work by means of *squaring-off* the subject before him, using the same principle of *squaring-off* on his designing paper, a feature which, in turn, will guide him as to the proper position and shape of each figure he is copying. As will be readily understood, the more of these lines of help made by the student, the easier the work for him, as well as the more accurate his reproduction. As the student proceeds in his study, less of this *squaring-off* process will be necessary to be done by him, until finally it would be a waste of time on his part, and when he then will be able to redraw any sketch, or idea given to him, direct from the subject, on the sketching paper, or, later on, direct on the point paper.

Not every student will have a collection of plates of ornamental designs at his disposal, neither would fabrics to sketch from. In this instance it will be a

good plan on his part to use wall paper designs for his drawing objects, samples of which can readily be obtained by him in any wall paper store.

In sketching from printed or lithographed plates of designs, fabric samples, etc., this *squaring-off* process will always prove of assistance, whether the designer has to enlarge or reduce the object. Enlarging objects will also be the means for him getting a good free-hand for drawing.

Figs. 1 and 2 illustrate the procedure, showing the sketch of a rose, leaves and stem. In either instance the unit of the design is divided (see dotted lines) widthways into 4 equal parts, calling for 5 equal parts in the length of the design; or in other words each unit of the design is over-ruled by $(4 \times 5 =) 20$ squares. As will be readily understood, more over-ruling may be done; for instance, each square as shown now may be over-ruled again in its center in both directions, thus changing the 20 squares now shown into $(20 \times 4 =) 80$ squares. The more of these over-rulings we use in a given space, the easier the work for the beginner will become, whereas the experienced designer will use as few as possible, if any, of these lines; in most cases a simple outline, showing one repeat of the pattern, is all that is needed by him.

Considering Fig. 1 as the original design furnished, Fig. 2 then shows its enlargement, and vice versa; provided Fig. 2 is the original design furnished, then Fig. 1 shows its reduction. For practical work the size of the design or one repeat of the pattern on the point paper is regulated by the number of warp-threads and picks in one repeat of the pattern (or what is the same, texture of finished fabric \times size of one

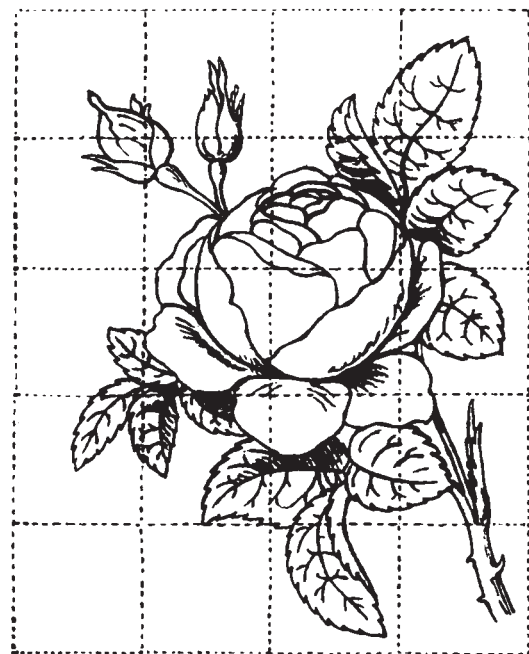


Fig. 2

repeat of the pattern expressed in inches and fractions of an inch) and the ruling of the point *i. e.*, design paper. The latter is selected, ruled warp and filling ways to suit the texture of the fabric, but the size of these rulings varies. For instance we find 8 x 8 paper with 12, 16, 18 etc., small squares to one inch; 12 x

10 paper over-ruled to the $\frac{3}{4}$ th inch, the inch, etc. The size of over-ruling to be selected depends on the character of the design. For instance, a larger apart ruled design paper can be used for a 200 or 400 Jacquard machine than if dealing with a 600 Jacquard or a fine index machine; should we use a paper to large ruled for one of these fine index machines, the design then would become too large for convenient handling.

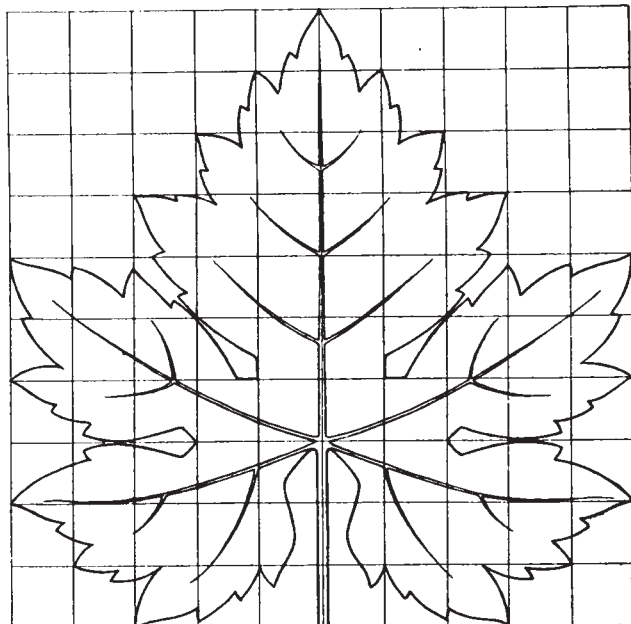


Fig. 3

Fig. 3 shows the over-ruling of a leaf with $(10 \times 10 =)$ 100 squares for guiding the student in copying it in a larger size.

Fig. 4 shows another method of over-ruling frequently practiced, *viz*: dividing the repeat of the object into four squares (or rectangles if such a case comes up, on account of different dimensions possible in width and length of the sketch) over-ruling the same in turn by three oblique lines in each direction.



Fig. 4

The same as we thus proceeded with a leaf, the complete repeat of a design is similarly treated. If so desired, in the latter instance, additional over-ruling can be done by drawing two horizontal and two vertical lines through the four points where the oblique lines meet. If necessary, this then can be followed up by additional oblique lines, etc.

This "over-ruling" of a sketch as thus explained for the purpose of copying or transferring, is also made use of by the designer in preparing original sketches for a given space, as indicated to him by the texture of fabric to be made and the tie-up of the Jacquard harness.

(To be continued.)

COTTON CARD CLOTHING.

(Continued from May issue.)

Proper Tension.

All card-mounting machines should be provided with an accurate tension recorder, and the fillets wound on at a steady, regular tension throughout. Careless and quick mounting with uneven tension is liable to disarrange the disposition and angle of the wire, also it is absolutely essential that a proper amount of tension be given to the fillets, for, if too slack, nothing but trouble will ensue when got to work, and if too much tension be put on, the fillets will be strained and the angle of the teeth may be pulled out of the perpendicular, thus making the angle too obtuse.

A good practical tension for hardened and tempered steel four-ply fillets is to have about 45 lb. to the rib registered on the recorder. Cylinder fillets are mostly made two inches wide, with eight ribs in the width; this means a tension of 360 lb. when winding on the full width of fillet.

Doffer fillets, as mentioned before, are generally one and a half inch wide, with six ribs; the tension for these would be 270 lb. for full width.

As stated previously, the fillets have to be shaped at each end; this is done by tapering them down by removing some of the teeth and cutting through the foundation to get the required shape.

Some card clothiers commence the taper from a three-rib width, while some prefer to start with four ribs for cylinder fillets. Following on the rule for tension as previously given, if commencing the tail-end with three ribs, the tension would be 135 lb., gradually increasing as the full width of fillet was reached. The usual method of making the tail-end is what is termed the *inside* tail-end, that is, the necessary tapering is done so that the unavoidable gaps in the wire are all away from the edges of the cylinder. It is thus possible to get a full, unbroken fleece of cotton all across the card, and this, in conjunction with the improvements to the build of the cards, gives better selvages, with less flocking at the sides of the cards, and also increased production by permitting the use of a wider lap than could be used with the old style of tail-end, *viz.*, the outside tail-end.

Covering Cylinder.

Cylinders are best clothed from the front of the card, and this is done by removing the doffer. In this way the knee of the tooth is in the direction of motion, and is not disturbed so much when passing through the feeding of the mounting machine as is the case when clothed from the back of the card.

Covering Flats.

The strips of card clothing for covering the flats are attached in different ways, the object being in any case to hold the wire to the various parts in such a way that they cannot rise or blister, so that an unvarying carding surface is presented. One plan is to drill a number of small holes near the edges of the flats, and through these, and similar holes made in the strip of card clothing, lead rivets are passed. One side of the strip is first fastened by these rivets, the strip then stretched and the other side riveted.

A better arrangement is to secure the strips by clasps which pierce the edges of the strips and are then clenched on the under side, in this way protecting the strip from the action of the revolving brush which otherwise frays the foundation of the clothing.