THE WEAVING OF FILLING LENO

By J. T. B. Forsyth Dyeing Co.

For more than twenty years there have been to my knowledge in various textile journals in this country and abroad frequent inquiries for information regarding the methods employed for weaving filling lenos, such as are seen in certain kinds of scrim and curtains, and occasionally in imported towelings. This information no one seemed able or willing to impart. One reason is perhaps that many of the filling leno effects are not woven automatically, but are put in by hand, and come under the head of hand-drawn work. The lack of information obtainable as to the weaving methods of filling leno effects is due principally to the fact that no one has tried to produce this weave in any quantity, because it is the general conclusion that, outside of the interest usually taken in novelties, the manufacturer of filling leno would have no better chance of selling his product over the counter than he would have of disposing of any good warp leno of the same grade, and that the production of the filling leno is consequently not worth the effort. Many manufacturers and weavers have grown up with the idea that a filling leno is practically impossible and unprofitable, and a good thing to let alone.

Before allowing ourselves to concede that
anything is impossible simply because someone has said so, let us recall for a moment the story of Columbus and the egg. After filling leno. Fig. 2 shows the lay of the binder thread, looking down from above the cloth, as it appears before being drawn tight. Fig. 3 shows a section of the same binder thread. After a careful study of Figs. 1, 2 and 3 there can be no question remaining except as to how the binder thread woven. In other words, the crossing of the filling threads does not occur until after all the picks are in, and is then due to the tightening up of the binder threads.

Fig. 1 is a sketch of the simplest form of can be inserted during the process of weaving. If this can be done, we are well on our way toward the successful accomplishment of one kind of so-called filling leno.
I will now consider the attachments required on a common power loom to insert a binder thread as shown in Figs. 2 and 3. Mounted in brackets fastened to the breast beam, 6 inches above and directly over the fell of the cloth, is a 7/8-inch shaft, on which brass castings are fastened at intervals. To the lower end of each of these are brazed or otherwise fastened strips of spring steel, 1/16 inch by 1/4 inch, bent to the proper form and forked at the end to engage the binder thread. Fig. 4 illustrates the principle involved, but no attempt is made to show the exact form required. Fastened to the most convenient end of the shaft is a double end lever, to one end of which is fastened a spring; and to the other end a strap or cord, which passes over a pulley to the jacks of an open shed dobby. Mounted on the arch of the loom are brackets carrying a spool of binder yarn, and an easer similar to a trailer lappet. Fig. 5 shows this device and also the openings in the reed through which the loopers project.

In weaving the filling leno shown at Fig. 1, it makes no difference whether it is one pick crossing one or ten crossing ten, the motion is the same. The loopers must be
made to assume three different positions (which can be readily accomplished with an open shed dobbey) all the way out, half way in, and all the way in, as illustrated in Figs. 6, 7 and 8, the loom being fitted with a warp and attachments shown at Fig. 5. These three positions of the loopers will cause the insertion of a binder thread in any number of picks in a position similar to the construction shown at Fig. 1. Fig. 15 shows the position of the looper at the second pick; Fig. 16, at the third pick; Fig. 8 at the fourth, fifth and sixth picks.

These sketches illustrate one of four ways of producing filling leno effects on a power loom. A loom fitted as shown at Fig. 5 is not more difficult to run than a trailer lappet, and if properly adjusted should weave at about 150 picks per minute with a 30-inch reed spacer.

Figs. 1, 9, 10 and 11 show filling leno effects in stripes and blocks, while Figs. 12, 13 and 14 illustrate the much doubted, but not impossible weave in net effects. It is in the latter class of work, especially such as is shown at Figs. 12 and 13, that the future of the filling leno undoubtedly lies. Many such intricate and interesting weaves are not only possible, but are entirely practicable. Fig. 17 shows the crossing of picks in a plain weave, using a colored thread as a binder which weaves into the plain cloth ten picks before and after crossing the filling and then floats until the next repeat. It is afterwards cut off by hand.