

# The Manufacture of Fashioned Knit Goods

By KARL ABERLE, REUTLINGEN, GER.

*(Concluded from October issue, p. 933)*

This working procedure is most generally and profitably applied for the manufacture of double-sided fabrics, rib and cardigan fabrics. Best fitted for these fabrics are hand or power-cardigan stitch. The position of the end needles requires special attention. It is understood that the left motion of the carriage forms the finished loop on the front, and the wale on the rear needle bed with reciprocate result while traveling to the right. At the turn of the carriage with the yarn carrier, the yarn has to be laid around the first needle similar to the above-mentioned wale, which could not be done if the end needle picked up the double loop or tuck stitch. The end needle has to project without fail on the rear right and on the left side in the front needle bed. The widening needles have to be pushed into operation in this rotation. On hand and power machines there are special widening devices to take care of the carrier travel, switching and setting of needles.

The widening of tubular work is not quite as easy and productive as on flat work. The

increasing of working needles is apt to create little openings in the fabric at the joints of the tube. Therefore, it is recommended to widen tubular work by means of the slower but superior method with decker handles. Only the improved working methods permit the widening of tubular fabric by gradual operation of additional needles.

## A Useful Patent

The German patent granted to G. F. Grosser, Markersdorf, covers a particular method according to which the widening of a tubular fabric is made more productive. This method is a departure from usual methods and has been satisfactorily demonstrated on knitting machines. It not only prevents holes in the fabric while increasing the number of operating needles, but it forms wales in the widened parts of the tubular fabric, which imitates the appearance of narrowed goods. The essence of this method is a conjunctive work of the end needles at the point of widening. The ad-



controlled by means of counting chains or counting Jacquard. The German patent No. 37,957, granted to G. F. Grosser, Markersdorf, during 1885, proposes the use of counting

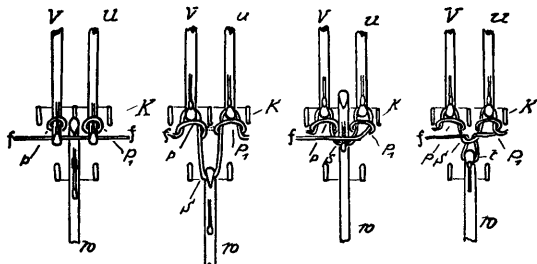


Fig. 8      Fig. 9      Fig. 10      Fig. 11

chains to bring the end needles for the purpose of widening automatically in operating position. The counting chain permits not only the regulation of the helping needles (springs) but the yarn carrier stops as well.

The older devices, of course, have their shortcomings. A particular disadvantage was the use of the helping needles or needle bed springs only to push the needles into working position. This required helping needles or springs with comparatively long shafts in order to permit the corresponding shifting of the needles, which, on the other hand, caused friction and affected the free movement of the needles in the slots. The consequence was a heavy running machine and often considerable trouble arose in finer gauges. These shortcomings had to be eliminated. An improvement is the "coulier" device, the subject of German patent No. 206,184, which effects the rising of the required widening end needles independently from needles and springs. The needles are brought directly in operating position by means of a pusher adjusted on the lock which acts also on the springs independently. Even on the latest improved machines the rising of the needles is effected with correspondingly constructed helping needles.

Another interesting device of this kind takes care of the casting-off and disengaging of single loops and needles, for which purpose special needles with different butts are employed generally.

G. F. Grosser first introduced a method of engaging or disengaging single needles with

butts of the same height by means of a so-called slur bar. This bar arranges the needles into two groups simultaneously, operated by special constructed locks in such a manner that the one working group takes part in the formation of loops, whereas the other group, which has to be disengaged, is carried slightly behind the yarn carrier and cannot pick up the yarn of the latter, but does cast-off their loops. This method is particularly advisable where a change from 2:2 rib to full-cardigan or reverse is desired. This practicable device is applied with advantage on multi-section narrowing or widening machines.

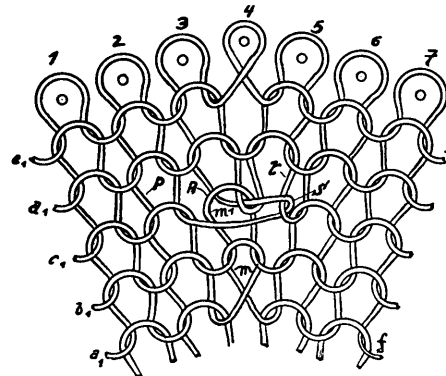


Figure 12

On hosiery and knitting machines of ordinary construction the widening work is comparatively simple, as already illustrated. A different proposition develops on so-called double-lock machines. The "coulier" device has to be placed between the lock mechanism in such a way that it operates alternately, once in the preceding lock and the next time in the succeeding lock to bring the needles in working position before they come within reach of the working locks.

Simultaneously with the automatic setting of the needle-bar the yarn carriers are automatically moved to the ends. If these automatic functions are controlled by paper cards, they must be accordingly punched. One hole in the card sets the shifting levers in action, whereas the full card acts reversely and makes these parts inoperative. Experience has shown that paper cards are especially adapted for the automatic hosiery and knitting machines, with corresponding increase in production.