

Established 1875

Walker Manufacturing Co.

Kensington Ave. and Ontario St., Philadelphia, Pa.

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REEDS PATENT DOUP HARNESSES
 HEDDLES Slasher Combs
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INSINGER LOOMS

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NARROW FABRICS

THE INSINGER COMPANY

4655 STENTON AVE. GERMANTOWN, PHILADELPHIA

stalled in their new mill building which is now nearing completion.

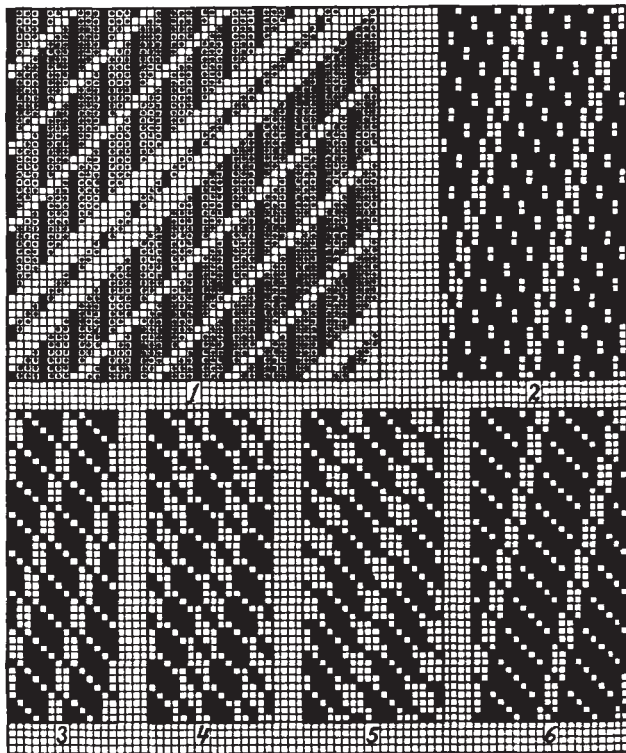
The Standard Silk Company have had one at their Phillipsburg mill since 1911.

John H. Meyer & Company's Reymdale Dye Works at Northampton, Pa. are long time users of the Permutit system, as is the Lehigh Silk Dyeing Company of Allentown, Pa.

A STUDY IN WEAVE FORMATION.

How to Construct 75 deg. Diagonals.

These diagonals, the same as those of 70 deg. grading described in the January issue of the Journal, have the regular 45 deg. twills for their foundation.



The angle, *i. e.*, the steepness of the present diagonal twill or cord effect will be more acute than those of 70 deg. grading, since in the present instance we use only every fourth warp-thread of the foundation twill, whereas in the construction of the diagonals explained in the January issue, we used every third warp-thread of the foundation twill.

A. KLIPSTEIN & CO.

(Established 1872)

644-52 Greenwich St., NEW YORK

IMPORTERS OF

CIBA AND CIBANON FAST VAT DYES

and all colors made by the
 SOCIETY OF CHEMICAL INDUSTRY
 IN BASLE, SWITZERLAND.

Using every fourth warp-thread of the regular twill for the construction of the new diagonal will indicate to us that with any foundation weave divisible by 4, the new diagonal will call for only one-fourth of the number of warp-threads or harnesses as was required for the foundation twill; again, if dealing with foundation twills the repeat of which is divisible by 2, but not by 4, half the number of warp-threads and harnesses that are required for the foundation twill are needed only for the diagonal. In this way, a 24-harness regular twill will result in a $(24 \div 4 = 6)$ 6-harness, 75 deg. diagonal; a regular twill repeating on 36 warp-threads in turn will call for $(36 \div 4 = 9)$ 9 warp-threads or harnesses for the repeat of its mate 75 deg. diagonal. Using a 34-harness regular twill for our foundation will result in a diagonal repeating on $(34 \div 2 = 17)$ 17 warp-threads or harnesses for its repeat, for the fact that 34 is not divisible by 4, but only by 2.

Remember that no reduction in the repeat of the foundation twill takes place, the same being identical for the regular twill as well as that of its mate diagonal, and for which reason the repeat of the three examples previously quoted with reference to the diagonal obtained is, 6 by 24, 9 by 36, and 17 by 34 respectively.

In order to explain subject, the accompanying plate of diagonals is given, an explanation as to their construction fully explaining subject to the reader how to construct any number of these 75 deg. diagonals.

Fig. 1 is the $\frac{2}{4} \frac{8}{4} \frac{8}{2} \frac{8}{2} \frac{8}{2} \frac{8}{2}$ 48-harness regular twill; the weave being shown in two kinds of type, *i. e.*, every fourth warp-thread of the twill is shown in *full* type, the other three warp-threads being shown by *dot* type. Using only the warp-threads shown in *full* type results in the 75 deg. diagonal shown in Fig. 2, the same repeating on 12 warp-threads and 48 picks.

Fig. 3 shows us the 75 deg. diagonal obtained from its mate $\frac{1}{4} \frac{4}{4} \frac{4}{4} \frac{4}{4} \frac{4}{4}$ 28-harness regular twill, the diagonal Fig. 3 repeating on 7-harnesses and 28 picks.

Wave Fig. 4 shows us a diagonal repeating on 8 warp-threads and 32 picks, Fig. 5 shows us a diagonal repeating on 9 warp-threads and 36 picks, and Fig. 6 a diagonal repeating on 10 warp-threads and 40 picks.

In order to ascertain the foundation twill from a diagonal, the reading off of the first warp-thread will indicate the interlacing of either the first warp-thread or the first pick of the foundation twill.

Having thus indicated either the warp-thread or the pick on the point paper, produce the twill then by its rule of construction that "every successive warp-thread stitches in every successive pick."