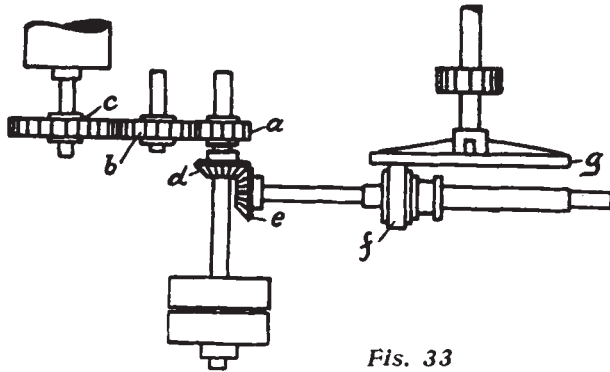


feeding can be regulated to suit the ribbon under operation.

Drive shown in diagram Fig. 33 refers to special silk ribbons requiring considerable tension. In this



Figs. 33

instance the quetsch is driven direct through gears a, b and c, the drying section being driven from the same shaft that drives the quetsch, by means of friction drive d, e, f and g. This explains that the feeding of the ribbon to the drying section is a given quantity and the take up of the latter a varying one, to be regulated by the character and finish of the ribbon under operation.

(To be continued.)

RIBBONS, TRIMMINGS, EDGINGS, ETC.

(Continued from May Issue.)

Weaves for Double Cloth Fabrics.

STITCHING BOTH STRUCTURES.

Three different ways are at our disposal for accomplishing this, viz:

- (1) Using a special binder warp,
- (2) Stitch back warp to face filling.
- (3) Stitch face warp to back filling.

(1) USING A SPECIAL BINDER WARP.

This arrangement is extensively used in connection with Suspender Webs, Horse Reins, etc. By it, the narrow-ware fabric, by means of two warp-threads weaving single cloth, is subdivided into a series of hollow ridges or tubes, i. e., hose-structures, running side by side of each other warp ways in the web, and which hollow tubes are, as a rule, filled with rubber strands and stuffer warp-threads.

The weave used for these two ends, interlacing in single cloth, is either the plain (taffeta) or more frequently the 2 by 4 rib weave, warp effect.

Fig. 76 shows us such a suspender weave, interlaced with taffeta.

The arrangement of warp-threads used in the dressing of the warp is thus:

- 2 ends, warp rib (warp-threads 1 and 2, see cross type), i. e., single cloth,
- 3 ends, face warp (warp-threads 3, 4 and 5, see full type)
- 1 end, back warp (warp-thread 6, see dot type)
- 1 end, rubber (warp-thread 7, see rectangle type)
- 1 end, stuffer warp (warp-thread 8, see circle type)
- 1 end, back warp (warp-thread 9, see dot type) and
- 3 ends, face warp (warp-threads 10, 11 and 12, see full type).

12 ends, in repeat of pattern.

The rubber and the stuffer warp-threads (7 and 8) rest in the tube weaving portion of the fabric.

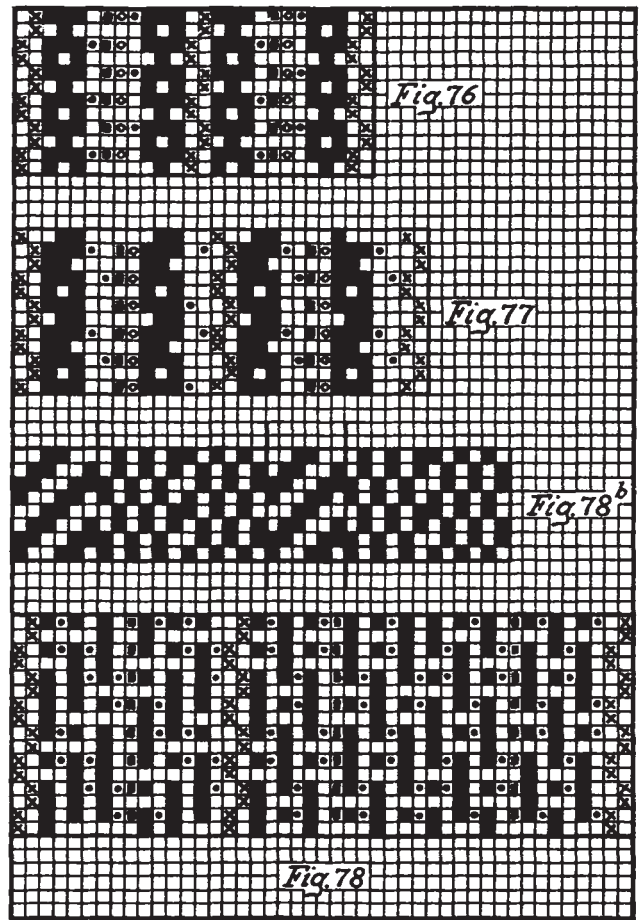
This repeat of the pattern is duplicated as often as required by the width of the suspender web to be made (2 repeats only are given in our example) closing the web on the right hand side with 2 ends rib weave, i. e., single cloth, the same as it was started on the left hand side of the web.

Fig. 77 shows us a suspender weave using the 3-harness twill, warp effect, for the interlacing of face and back warp.

The arrangement of warp-threads used in the gamut is:

- 2 ends, warp rib, single cloth (cross type)
- 3 ends, face warp (full type)
- 2 ends, back warp (dot type)
- 1 end, rubber warp (rectangle type)
- 1 end, stuffer warp (circle type)
- 3 ends, face warp (full type)
- 2 ends, back warp (dot type)

14 ends, in repeat of pattern.



Two repeats of this pattern, plus the 2 ends single cloth which form the selvage on right hand side of web are given in the weave plan. The number of repeats of the patterns to use depends on the width of the fabric made.

Fig. 78 shows us a weave for horse reins, arranged with one end face (see full type) to alternate with one end back (see dot type) warp and filling ways, in the double cloth tube sections of the fabric, using also a stuffer warp (see rectangle type). Warp rib,

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i. e., two ends single cloth (see *cross* type) are used for uniting the double cloth structures in one fabric.

Fig. 78^b shows two repeats of the face weave (the same being used for both sides) of the fabric, the heavy lines, extending above and below the weave, indicating where the two warp-threads weaving single cloth (2 by 4 warp rib), produce cut lines in the fabric structure.

(To be continued in August issue.)

Trade of the United States with the World.

American business men who have desired a concise statement of the foreign trade of the United States will find it in a new bulletin issued by the Bureau of Foreign and Domestic Commerce. The same shows the quantity and value of the principal articles imported from and exported to foreign countries during the fiscal years 1912 and 1913, giving separately the quantity and value of the dutiable and free imports. Copies of the bulletin, Series No. 15, may be obtained from the Superintendent of Documents, Washington, price 15 cents.

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WORLD'S PRODUCTION OF RAW SILK FOR THE YEAR 1913.

COUNTRIES.	PRODUCTION IN POUNDS.
<i>Western Europe:</i>	
France	772,000
Italy	7,804,000
Spain	181,000
Austria-Hungary	580,000
Total	9,337,000
<i>Levant and Central Asia:</i>	
Asiatic Turkey	
Anatolia	904,000
Syria and Cyrus	1,080,000
Other provinces	287,000
European Turkey—Adrianople	187,000
Balkans—Bulgaria, Servia, Roumania...	276,000
Greece, Saloniki, and Crete	463,000
Caucasus	849,000
Turkestan and Central Asia (exports)...	496,000
Persia (exports)	463,000
Total	5,005,000
<i>Extreme Orient:</i>	
China	
Exports from Shanghai (including tussahs, yarns, etc.)	12,787,000
Exports from Canton (including shipments to Bombay and India).....	6,129,000
Japan Exports from Yokohama.....	26,125,000
East Indies, Exports from Bengal and Kashmir	220,000
Indo-China Exports from Saigon, Haifong, etc.	33,000
Total	45,294,000
Grand total, provisional	59,636,000

The 1913 production was slightly in excess of the corrected total for 1912, which was the greatest ever recorded.

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Side view of Soap Foam Degumming Machine

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