DESIGNING AND FABRIC STRUCTURE.

OXFORD SHIRTING.

Fig. 1: Photographic Reproduction of Fabric.
Fig. 2: Pick-out of Weave; Repeat of pattern: 40 warp-threads and 24 picks.
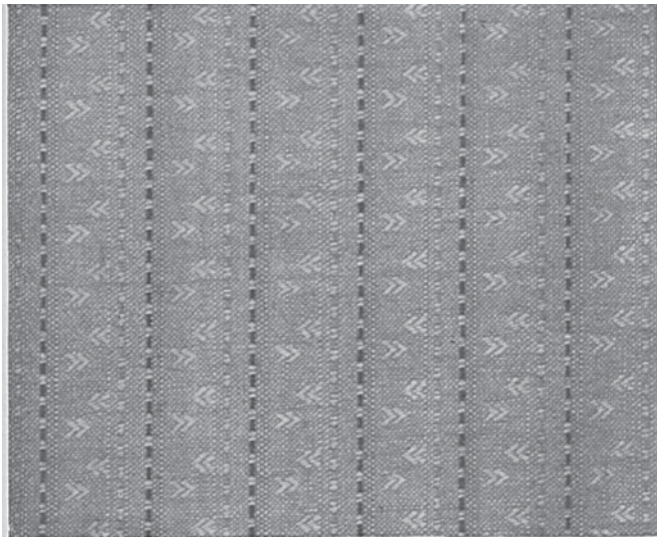Fig. 3: Drawing-in draft, 14-harness fancy draw.

Fig. 1

Warp: 72½ ends per inch.
Dress: See Color. Arrangement given above weave.
12 ends 26's Blue (*empty* type)
  4 "   2/40's Fawn (*cross* type)
  2 "   26's Red (*full* type)
  8 "   26's Blue
  2 "   32's Pink (*dot* type)
12 "   26's Blue
—
40 ends Repeat of pattern.

Selvage: 12 ends 2/40's white, each side.

Finished Width of fabric: 29¼ inches exclusive selvage, or 29½ inches including selvage.

Ends in Warp:
  72½ × 29¼ = 2120 ends in warp, and
  2120 ÷ 40 = 53 patterns in warp.
  2120 + 24 = 2144 total ends in warp including selvage.

Reed: Shrinkage from width in reed to finished fabric 6%, thus:

  29½ + 6% = 31½ inches, width of fabric in reed, exclusive selvage.

  $\dfrac{72\frac{1}{2} \times 29\frac{1}{2}}{31\frac{1}{2}}$ = 68 ends per inch on loom in reed, and 68 ÷ 2 = 34. i. e., number 34 reed with 2 ends per dent is to be used.

Take up of warp: 4%
Filling: 72 picks per inch, 14's white, bleached.

Ascertain Amount of Material

for 100 pieces @ 50 yards = 5000 yards, allowing 1% waste for warp in dressing and 5% waste for filling in weaving.

Warp: 32 Blue
    4 Fawn
   2 Pink
    2 Red
   —
   40 (Proof)

Blue Warp, single 32's.

$$\frac{53 \times 32 \times 100 \times 50 \times 104 \times 100}{840 \times 26 \times 100 \times 99} = 408 \text{ lbs.}$$

The above figures indicate the following values:
53 = patterns in warp
32 = number of *blue* ends in pattern
100 = number of pieces ordered
50 = yards in each piece
840 = standard of cotton yarn
26 = counts of *blue* warp
× 104 ÷ 100 = 4% take up of warp in weaving
× 100 ÷ 99 = 1% waste made in dressing.

Explanations given will also explain calculations for Fawn, Pink and Red Warp, substituting the proper values for 32 and 26, i. e., Blue Warp in given example.
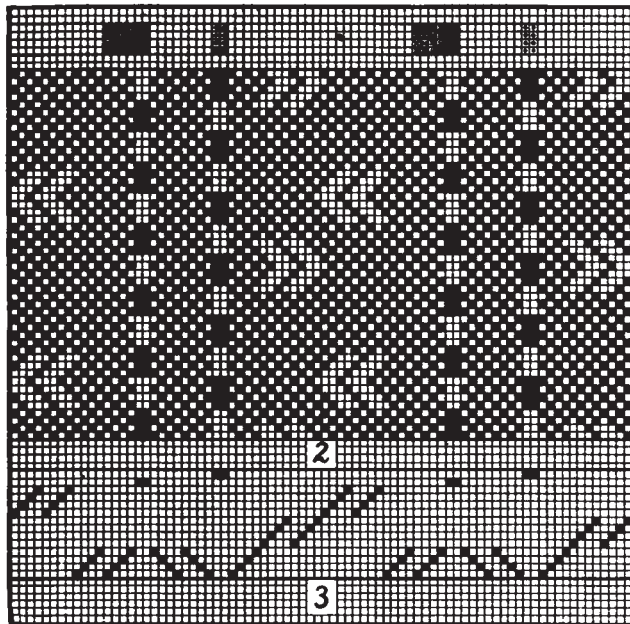
Fawn Warp, 2/40's = single 20's.

$$\frac{53 \times 4 \times 100 \times 50 \times 104 \times 100}{840 \times 20 \times 100 \times 99} = 66\tfrac{1}{4} \text{ lbs.}$$

Pink Warp, single 32's.

$$\frac{53 \times 2 \times 100 \times 50 \times 104 \times 100}{840 \times 32 \times 100 \times 99} = 20\tfrac{3}{4} \text{ lbs.}$$

Red Warp, single 26's.

$$\frac{53 \times 2 \times 100 \times 50 \times 104 \times 100}{840 \times 26 \times 100 \times 99} = 25\tfrac{1}{4} \text{ lbs.}$$

Selvages, 24 ends white, 2/40's = single 20's.

$$\frac{24 \times 100 \times 50 \times 104 \times 100}{840 \times 20 \times 100 \times 99} = 7\tfrac{1}{2} \text{ lbs.}$$

Filling, 14's count, 31½ inches in reed, 72 picks

$$\frac{31.5 \times 72 \times 100 \times 50}{840 \times 14} = 964\tfrac{1}{2} \text{ lbs.}$$

408	lbs.	Blue Warp	
66¼	"	Fawn	"
20¾	"	Pink	"
25½	"	Red	"
7½	"	Selvage	
964½	"	Filling	

1492 lbs. Total Amount of Yarn Required to Produce 5000 Yards of Fabric.

NOVELTIES IN WORSTED TROUSERINGS.

Fig. 1 shows the weave for a bold hair line effect; showing black stripes $\tfrac{1}{16}''$ wide to alternate with salt and pepper effect stripes $\tfrac{1}{8}''$, wide.

Repeat of weave: 4 warp-threads and 8 picks; 8, 12 or 16-harness straight draw.

Warp: 4320 ends, 2/60's worsted.

Reed: 16½ @ 4 ends per dent. 66 ends per inch, 65½ inches wide in reed.

Dress: 8 ends 2/60's worst., black & white tw.
         4 "   2/60's worsted, black.

     12 ends in repeat of pattern.

Filling: 98 picks per inch, arranged thus:
         1 pick 2/52's worsted, black, face.
         1 "   "   "   , gray mix, back.

     2 picks in repeat of pattern.
Finish: Worsted finish, 56 inches wide.

Fig. 2 shows the weave for a neat stripe effect, showing black hair lines upon a gray ground.

Repeat of weave: 6 warp-threads and 4 picks; 12-harness straight draw.

Warp: 4080 ends, 2/36's and 2/40's worsted.

Reed: 15½ @ 4 ends per dent, 62 ends per inch, 65¾ inches wide in reed.

Dress:
     2 ends 2/40's worst., pearl & black tw. ⎫
     1 end 2/36's worsted, dark gray.   ⎬ 4 times.
     2 ends 2/36's worsted, black. ⎭
     1 end 2/36's worsted, dark gray.   ⎫
     2 ends 2/40's worsted, medium gray. ⎬ twice.
     1 end 2/36's worsted, dark gray.
     2 ends 2/36's worsted, black.
     1 end 2/36's worsted, dark gray.

     24 ends in repeat of pattern.

Filling: 60 picks per inch, 2/36's worsted, black.
Finish: Worsted finish, 56 inches wide.

Fig. 3 shows the weave for a neat filling rib effect, in black, upon a gray twill ground.

Repeat of weave: 63 warp-threads and 6 picks; 9 or 12-harness fancy draw.

Warp: 4032 ends, 2/60's and 2/32's worsted.

Reed: 15½ @ 4 ends per dent, 62 ends per inch, 65 inches wide in reed.

Fig.1   *Fig.2*   *Fig.3*
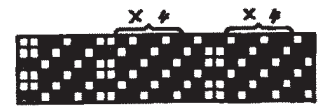
Dress:
     2 ends 2/32's worsted, black.
     1 end 2/60's worsted, lt. gray & blk.
     1 "   "   " , dove gray.
     1 "   "   " , black.
     1 "   "   " , dove gray.
     1 "   "   " , lt. gray & blk.
     2 ends 2/32's worsted, black.
     1 end 2/60's worst., lt. gray & blk. ⎫
     1 "   "   worsted, dove gray. ⎬ 9 times.
     1 "   "   " , black. ⎭
     3 ends "   " , dark gray.
     2 "   "   " , dove gray.
     1 end "   " , lt. gray & blk.
     1 "   "   " . dove gray.
     2 ends 2/32's worsted, black.
     1 end 2/60's worsted, lt. gray & blk.
     1 "   "   " , dove gray.
     1 "   "   " , lt. gray & blk.
     1 "   "   " , dove gray.
     3 ends "   " , dark gray.
     1 end "   " , black.
     1 "   "   " , lt. gray & blk. ⎫
     1 "   "   " , dove gray. ⎬ 9 times.

     63 ends in repeat of pattern.
Filling: 52 picks per inch, 2/48's worsted, black.
Finish: Worsted finish, 56 inches wide.

According to the latest census the total number of sheep throughout the world is given at 601,691,272, of which Europe has 184 millions, Asia 92 millions, Africa 50 millions, North America 58 millions, South America 99 millions, and Australia 116 millons. The yearly yield of wool is estimated at 2,919,657,520 pounds, or 8,341,879 Australian bales, divided as follows, according to continents: Europe, 814,077,011 pounds; Asia, 273,146,000 pounds; Africa, 174,919,-000 pounds; North America, 337,751,900 pounds; South America, 499,645,160 bales, and Australia, 820,012,449 bales.

The number of sheep in 1905 was 454,666,936 and in 1895 was 526,883,135.

The Georgia-Alabama Fair Association, an organization composed of the leading merchants and cotton factors of this section is planning to hold a big exposition of cotton and manufacturing in Columbus, Ga., early in the fall. The merchants and manufacturers of this entire section are cooperating in the movement to make the event one of importance, and the chances are that it will be the biggest thing of its kind ever held in the State. E. C. Mayo is secretary of the association.