

# Method of Preventing Spotty Effects in Rayon Fabrics

An Easy and Sure Method of Avoiding a Periodical Loose Warp Effect

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Defects in rayon fabrics have been many and varied. It is the purpose of this article to explain one type of defect, which for some time has been giving a great deal of trouble, state the cause of same, and then give the remedy.

## The Effect

Figure No. 1 shows a swatch of dyed taffeta made with a rayon warp and a tram filling. There is a visible line A-A across the piece where the normal and proper appearance of the taffeta is changed, and a loose effect is noticeable. This is shown by the shaded lines. It is visible also when these

*Editor's Note:*—The following is the first of a series of articles on present day troubles in rayon fabrics.

loosely woven places appear across the piece. Figure No. 2, a cross-section of the warp, shows how it was fed with less tension and makes larger turns around the filling than in the normal portion. Section A to B shows a cross-section of the taffeta properly woven. From B to C, it can be seen that the warp is loose and woven irregularly, and from C to D, that the warp is straightening out again, producing the same effect and the same interlacing as from A to B. This repeats in spots throughout the piece. At certain intervals, for several yards, it is apparent across the piece, then gradually spreads irregularly across the cloth until it almost disappears, only to appear again.

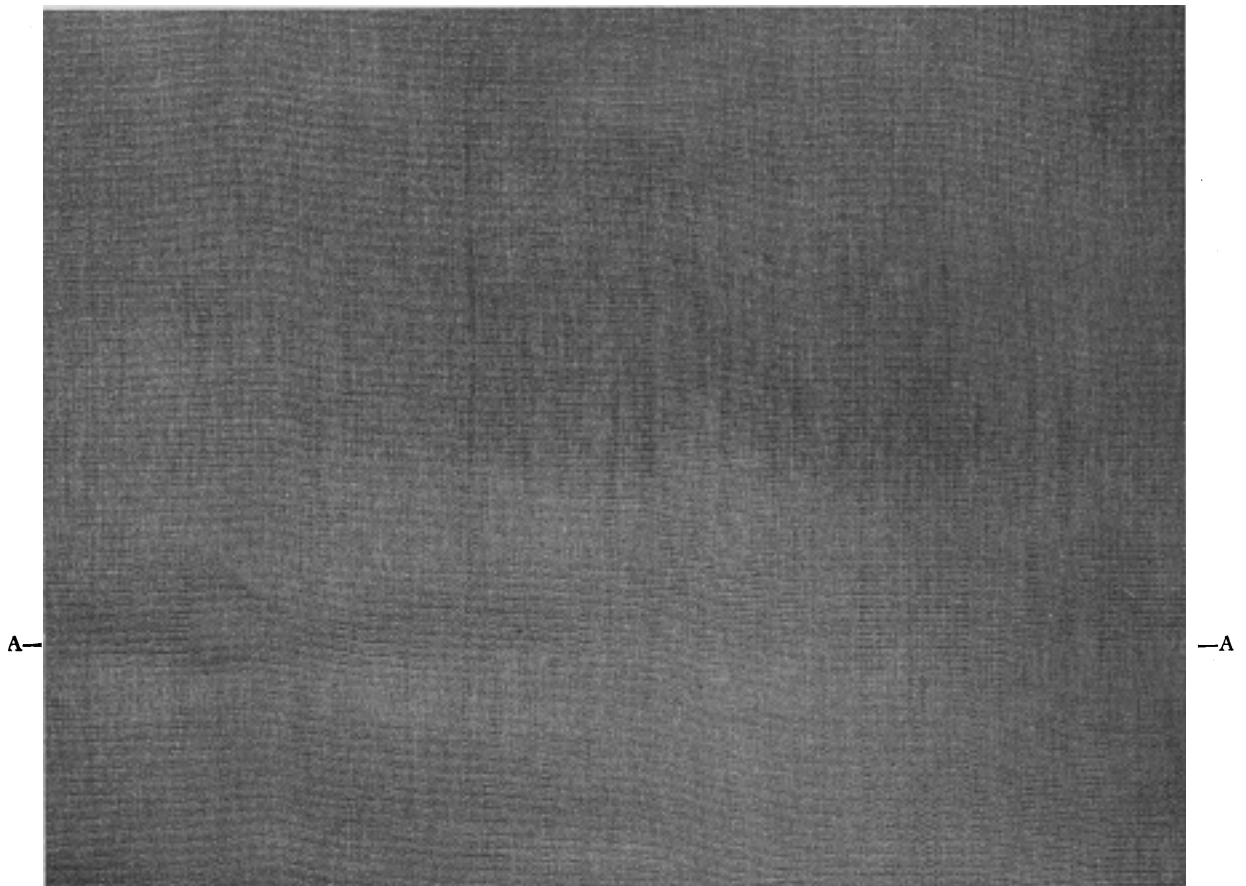


Fig. 1

## The Cause

The defect described is not caused by the yarn, the loom or its adjustment, by any particular sizing machine, nor negligence in



Fig. 2

operating the sizing machine. The trouble is that the operator has beamed the warp too loosely.

The tension put on the warp in the loom is so much greater than the tension in beaming, that the warp gradually is pulled tight on the beam during weaving. While paper wound around the beam will give the warp a certain amount of protection against contraction, as soon as the paper drops there will be a sudden and excessive feeding of the warp which causes the heavy "jump" shown by Figure 1, at points A-A, Figure 2 at point B, and Fig. 3 at points E-E, but during this process of adjusting, irregular spots are caused in the woven cloth.

Another cause for the trouble described is having a long, soft apron wound on by hand instead of by operating the sizing machine at its proper tension, causing a semi-vacuum under the tightly beamed warp. Furthermore, an operator often may believe he has sufficient tension on the warp when he starts up, but later discovers that he should have put on more tension. This added tension then will contract that part of the warp already on the beam, causing the defect mentioned to a smaller degree.

Where flanges are used instead of paper, beams are softer on the bottom and more tension has been added later, the same defect will show very irregularly on a small scale throughout the piece, but will not have a sudden line across the whole cloth.

## The Remedy

Operators should be instructed, therefore, to observe the following points very strictly. Where leader aprons are used on the bottom of a loom beam, they should be wound on the beam with the full tension of the sizing machine. It is advisable to insert a sheet or two of beaming paper with the apron, in order to form a harder foundation for the warp. It is preferable not to use any

aprons on the loom beam. When the operator first starts a warp, he should apply as considerable tension as possible without, however, going to the extreme of breaking ends. After the warp has been beamed for a short

distance from the apron, the operator gradually can release some of the tension. It is absolutely essential that the tension put on the beam always should be more than the tension applied to the loom. If this rule is adhered to, the effect shown in Figures 1 and 2 never will be found in a woven piece of rayon material.

## Same Trouble with Other Materials

This warp sizing defect appears the worst in taffetas, but if the warp is used for a

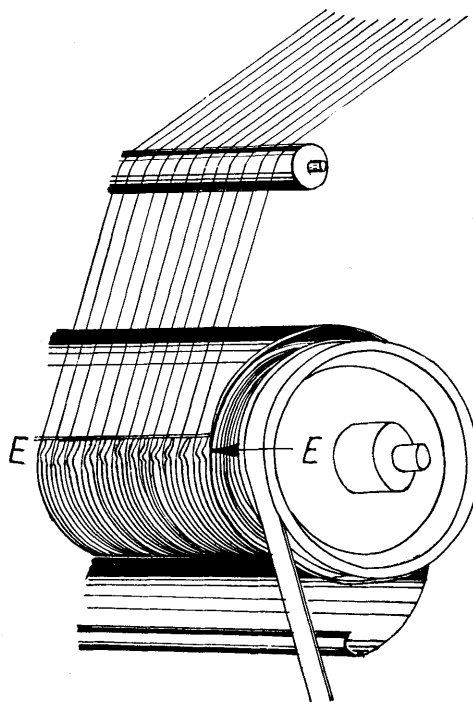


Fig. 3

twill or satin, it will show up to some degree. With a two-beam warp, or in figured goods, it will show less, mostly at the point where the paper coming off allows excessive feeding of the warp.