of a pore along threads of a warp and lengthways a weft in a unit cell of a woven fabric is identical: $S_{wp}^{N} = S_{wft}^{N}$.

If the fifth phase of a woven fabric structure is created by use of threads of a warp and a weft of one kind of fibers, but different thickness (Figure 3(b)) the area of a pore will look like the extended rectangular: the narrow part turns out due to use of a warp threads of rather big thickness, and wide – due to small density of an arrangement of more thin wefts ($d_{wp} > d_{wft}$, $L_{wp}^{N} < L_{wft}^{N}$, $S_{wp}^{N} < S_{wft}^{N}$). The image of cross-section of an unit cell of a woven fabric evidently shows a degree of freedom of a way of an air flow in direction A_2 between threads of a warp and to direction B_2 between wefts.

On Figure 3(c) with the element of a woven fabric with threads of a warp of flax and wefts of a cotton is presented. To receive the fifth phase of a structure, a weft and warp threads have different thickness at equal density of an arrangement in structure of a woven fabric: $d_{wp} < d_{wft}$, $L_{wp}^{N} = L_{wft}^{N}$, $S_{wp}^{N} > S_{wft}^{N}$. The rectangular area of a pore has an intermediate appearance in comparison with the previous variants (a) and (b). Thus it is possible to receive any form of a rectangular of the area of a pore at normal density of an arrangement of threads in a woven fabric of the fifth phase.

It is considered to be, that at limiting density the woven fabric cannot have a pore for free flow of air. We shall consider validity of this opinion.

Use of a warp and the weft threads of fibers of a different kind brings the corrective amendments in development of woven fabrics. Confirming to it on Figure 4 three variants of an unit cell of a woven fabric of the same fifth phase of a structure, but from warp and a weft threads of fibers of a different kind are presented at various combinations of density of an arrangement of threads of a warp and a weft in woven fabrics: (a) - normal on a warp and limiting on a weft, (b) and (c) – limiting on a warp and limiting on a weft.

As already it was specified earlier, the most contrast on bending rigidity from among natural are representatives of vegetative fibers - bast and representatives of fibers of an animal origin – woolen.

Reception of an average fifth phase of a woven fabric structure from threads with various physical properties is always intertwined to difficulties of designing. Designer has to solve a problem of creation of identical on size of height of a wave of a bend for such threads, and, a trial and error method. To reduce pore for search of acceptable decisions of the necessary structure of a fabric, it is useful to receive knowledge of a direction of rational search of an effective variant of parameters of threads and a woven fabric.

The interesting variant of an unit cell of a woven fabric is presented on Figure 4(a): rather thin (but rigid to a bend) flax threads of a warp are bent rather thick (but soft) by weft threads a from woolen fibers on the same size, as wefts. It is curious, that equality of waves of a bend $h_{wp}(5) = h_{wft}(5)$ is reached at equality of limiting density of an arrangement of wefts and normal density of an arrangement of warp threads $L_{wft\ (5)}^{lim} \approx L_{wp}^{N}$. Due to use of a warp and the weft threads of different thickness $d_{wp} >> d_{wft}$ (Figure 4(a)) is formed pore for a free air flow with the area in the form of *the* extended rectangular along woolen threads of a warp.

The pore of the square form from threads of different thickness and a different kind of fibers can be received due to distinction in density of an arrangement of threads of a warp and a weft in an unit cell of a woven fabric (Figure 4(b)). In particular, the degree of distinction in density of an arrangement of threads in a woven fabric should be selected according to a measure of distinction of conditional diameters thin wefts of a cotton fiber and thicker woolen threads of a warp. At $d_{wp} > d_{wft}$ and $L_{wft} < L_{wp\ (5)}^{lim}$ it is received the square area of pore $S_{wp\ (5)}^{lim} = S_{wft}$. Free flows of air are represented idealized on kinds A_2 and B_2. Here it is recommended to pay attention to one *feature*: in a reality the air flow round the warp threads of rather big cross-section (A_2) and the weft of small section (B_2). As a result the distance between air flows along of a warp threads will be less, than lengthways wefts. Differently: the quantity of streams of air along warp threads will be essential *more*, than lengthways a weft. This imperceptible at first sight should be meant a subtlety to designers of all kinds of woven fabrics of technical and household purposes.

The combination of limiting density of an arrangement of a warp and weft threads in a woven fabric (Figure 4(c)) of synthetic fibers can be accompanied by formation of a pore of rectangular form: $S_{wp\ (5)}^{lim} > S_{wft\ (5)}^{lim}$ *at* $d_{wp} < d_{wft}$, $L_{wft\ (5)}^{lim} \neq L_{wp\ (5)}^{lim}$. Here the air flow between Kevlar threads is essentially narrowed rather by greater