then **pass** on to the next thread, leaving an empty square for every warp thread that is passed over by the filling. This is a good system where coarse yarns are used.

The second method, and where fine counts of yarns are being used, is to lay the sample flat on something of an opposite color to the piece of cloth being analyzed whenever possible. Having placed the cloth, it may be fixed by thumb tacks to prevent it from moving about. Put the pick glass on the cloth and begin at the bottom of the cloth from the left hand corner, putting a mark on the design paper for a thread raised as in previous method. Care must be taken that every pick begins from the same thread, otherwise a broken pattern will result. It is advisable for a learner to take out a few threads at the side and also at the bottom of the cloth, then it will be almost impossible to begin on the wrong thread. Practice will soon make the person proficient in the art of picking out in many patterns will not need to take out many threads, however, but will read the pattern direct.

The question will occur as to which are the warp threads and which are the filling threads. A few rules can be given which will assist in determining to which of the sets the threads belong.

1. If on the sample there is a piece of selvage the question is at once decided, as the selvage threads always run in the direction of the warp.

2. If the threads are one way 2-ply and the other single, it is safe to assume that the 2-ply are the warp yarns.

3. If the threads in one section produce a regular set effect and the other not so set but irregular, the first threads are the warp.

4. Reed marks of any kind will at once show which are the warp threads.

5. If there is any nap on the cloth it is supposed to lay in the direction of the warp.

6. If one set of threads are twisted harder than the other, the hardest twist is most invariably the warp, the warp threads are generally the smoothest and strongest and made from the best material.

This latter examination of the threads is very safe in determining to which set the threads belong. Occasionally, particular threads are intended to show prominently. This is often done by an arrangement in the weave, and particular care is required so that the thread can have its right place The colors and their order must be specially noted, the number of threads in a pattern, and the number of patterns in the width of the cloth.

PEROXIDE VATS.

The introduction of peroxide of sodium bleaching for all kinds of textiles, more particularly, however, the mixtures, has been attended with a good deal of difficulty, due to the fact of strongly rooted prejudices on the part of bleachers and mill owners against the introduction of a new and untried process. Untried it is only in so far as the non-user has not yet tried it, because hundreds of mills could attest its valuable qualities. So as to enable others to really try and become acquainted with its improved method of bleaching, the Roessler & Hasslacher Chemical Company, of New York, have decided to place at the disposal of any large bleacher a small trial bleach vat, built exactly on the lines of the regular vat needed for practical work, for which upon its return in good condition, there will be no charge. The only expense, therefore, connected with the trials to ascertain whether the claims made for peroxide of sodium are based on solid facts, is the cost of the chemicals needed for the experiment, and, in view of the small quantity of the latter required, this will be very slight. The result of this latest move on the part of this firm has immediately shown its wisdom, the first order for vats having had to be supplemented several times by rush orders for more.—Fibre and Fabric.

LIGHTING THE MILL.

The importance of having the textile mill well lighted is perhaps not regarded so much as it should be. Not only is it a consideration, so far as the health and comfort of the employees is concerned, but it has an important bearing on the quality of the work turned out. In the larger mills, belonging to wealthy companies, no doubt due attention has been given to this matter, but in many of the smaller mills it is treated as of minor importance. Such a condition not only causes a discontented feeling among those operatives who, through no fault of their own, are unable to turn out work as good as some of their fellow workers, but it also causes a variation in the work turned out by the mill, which has been known to result detrimentally to the mill's reputation.

In England, as far back as 1885. special attention was directed to the matter. Quite a number of mills were furnished with ground glass, by means of which, on account of its roughened surface, the light was diffused in the mill. With the ordinary window glass, the rays of light are not bent or diffused, but come in directly or practically so. In cases where the rays are not diffused, the parts of a mill or room that are situated nearest to the windows are, of course, the best lighted, and as one recedes into the interior the light becomes dimmer and dimmer, until in some cases it becomes so faint that artificial light must be employed the brightest days.

While ground glass does not diffuse the rays of light to a great extent, yet it does so more than one would believe would be the case. An examination of the interior of mills in England, using ground glass in place of ordinary window glass, showed that the interior of their rooms was much better lighted, and that the light penetrated farther. Although the difference in the lighting of mills which had these two kinds of windows was not very great, there was a difference, and one that was worth something to English manufacturers.

Noting the value of this diffusion of light, a great advance in the method of effecting it has been made of late. Glass is now made so that the rays of light can be diffused to such an extent that the interior of the largest mills can be given a uniform light. It has been noticed that mills which have availed themselves of the diffusion of light have been able to turn out a more even production, and that the operatives are much more contented with their work and conditions. Happy and contented operatives are the best workmen. Gloomy rooms affect the most sunny-tempered. When by the use of this diffusion of light the whole build ing can be diffused with God's sunlight, should any short sighted calculations of cost be allowed to figure in the question?

COTTON IN HAWAII.

Jared G. Smith, United States special agent in charge of the Hawanan Experiment Station, has been successful in his experiments of growing cotton and Sumatra tobacco. He believes that both articles may become staple products of the islands.