

thrown away their old reputation, which was worth money to them, and which when lost is so hard to restore. We venture to say that none of these mills who now sell their goods anonymously to the trade are making the money they did when their products went forth with their own name and fame proclaimed to the trade and the consumer. Many of them are now seeing their mistake, and at this late date are trying to get back to their original position, and, though the struggle will be hard, we think they are wise in so doing. The Shakespearian proverb that "good name in man or woman is the immediate jewel of the soul" will certainly apply to the woolen manufacturers. A proof of this is that the very houses who have persuaded some Canadian manufacturers to take off their names from the goods and drop the mills' identity, are now making specialties of goods turned out by English and Scotch manufacturers whose trade rests entirely upon their reputation, and who ticket with their own name every piece of goods that goes out.

FIRST BREAKER FEEDING IN WOOL CARDING.

If there is any one point to which a wool carder should devote attention more than another, says the *Industrial Record*, it is the first breaker feed. It is also the point to which those who aim to improve carding machinery can advantageously direct their efforts. We hear a great deal about the importance of doubling up the web, in one form or another, on the second breaker, to overcome the uneven work of the first card. This is simply to remedy what should with proper care be prevented. The first breaker has all the requisites for producing even work, if it receives the stock evenly and in proper condition. On the other hand, no system of doubling yet devised, or which is likely to be, will overcome all the disadvantages that exist under present methods. If these causes were few and simple, and produced unevenness in anything like a regular succession of coarse and fine drawings, then a sufficient number of doublings might produce an even feed for the second card. For instance, if the only unevenness resulted from what variation might arise from the weighings of a fairly accurate scale, an equal number of light and heavy feeds might be brought together in the second card to make even work. But this could only be done when the variation was slight, such as would come from a lack of sufficient sensitiveness in the scale. For if there was any defect of the mechanism that made large differences, there is no likelihood that these differences would occur with sufficient regularity to be matched up together. It may be thought that this is supposing a case which is not likely to exist; but in both hand and machine feeding there are and always have been in use scales that are thus defective, and not as much to be depended upon for uniform results as the common spring balances. It is just because of this idea that a subsequent evening-up is an easy matter that the importance of an exact weighing apparatus is overlooked. So little attention is usually paid to this

matter that there are doubtless very many managers and carders who would be amazed if they should undertake a critical test of the scales in use in their rooms. In all probability they would find that no two of them could be made to give the same results. When nothing is to be lost by honest weight, and so much depends on exactness, one would suppose that none but the best and most exact of weighing machines would be in use, especially in these days when appliances for all other purposes are made so absolutely perfect. Their cost, too, would make but a nominal addition to the expense of equipping the carding room of a woolen mill.

But even with scales which will invariably give weights exact to the fraction of a grain, like results are not always obtainable. The causes that prevent the best of scales from giving exact results are those which militate most against the possibility of evening-up again by the doubling process. The carder must be very watchful or have his assistants carefully trained, if he would get the same weight of roving from any two of them either with hand or machine feeding. Stocks worked together, which are of different lengths, quality or weight in staple, when not thoroughly mixed before coming to the first breaker, will give uneven work from perfectly uniform feeding, because some of these varying fibres will throw out more waste than others, thus leaving a lighter web to be delivered from the card. Unevenness comes in the same way from stock that is not evenly lubricated or moistened. Either oil or water, or both, will add weight but not bulk, and if one portion of the stock which is being fed to the card contains more of these ingredients than another, by just so much will it decrease in weight when the oil and water is dried or washed out. This shows that it is just as essential that stock should be in such condition that it will not shrink more from one feed than from another, as it is that the same weight should be given at all times.

Now, how does the doubling up of the carded stock on the second card remedy the unevenness resulting from these causes? Changes among the help are frequently unavoidable. If the help is to be permanent, however, and a good tender is put at the work, any alteration from the previous feeding may be soon remedied; but if a poor operative is tried, no good work may be turned out until other changes are made. But it is just the temporary changes of the tenders which work the most mischief, for then the work is always at sixes and sevens. Many mills, in order to supply their other machinery with work, are obliged to run the card room overtime. In some of these the tenders are changed two or three times a day, and the time of the different reliefs varies from one to five hours.

Batches or lots of stock are very seldom fed to the cards from the bulk, but are brought to them in boxes, baskets, or sacks, in such quantities as are convenient for transportation from the picker or stock room. The same carelessness that leaves the stock half mixed almost always results in feeding it to the card in such a manner that the better portion will be fed to it for some time, for example, for a day or half a day, when it is