

very active part being taken by an apprentice of Jedediah Strutt, who in England invented a machine for making ribbed work. Some Germans also established the business at Germantown, near Philadelphia, where the trade flourishes to a very great extent. Now, however, the work is literally revolutionised. Instead of the square frame, with its straight row of needles, which the thread traversed from end to end and back, the work is accomplished with almost incredible rapidity by a revolving circular machine. This kind of machine has been in use for a number of years in England, and some ten or twelve years ago we saw one at work at an exhibition of the Franklin Institute. This pattern of the machine is now at work at

SIMPSON'S KNITTING FACTORY,

in this city. The needles, instead of being in a right line, are ranged side by side, accurately equi-distant, in an open circular frame of iron, with their points or hooks pointing inwards. This frame or disc revolves, carrying the needles about fifty revolutions a minute, the number of needles being six hundred, each one making a complete loop at every revolution, so that one of these machines makes 3,000 loops a minute, or 75 yards of continuous circular cloth, for under shirts, daily. This is drawn up on a roller, the tension being nicely regulated by the machine itself, so as to ensure evenness of texture in the fabric throughout. This winds the cloth up over head; and another, which for its neatness and symmetrical structure we admired still more, winds its cloth around a nether roller, doing about the same quantity of work. These two are kept at work on under-shirts, and four others on stockings, one of which is for ribbed work. These latter are, of course, smaller, as the leg is smaller than the body, and their productive capacity is about twelve dozen pairs of socks daily, that is, without feet, as the shirts are without sleeves; these have to be added afterwards.

To describe the delicate and complicated machinery used in knitting, without drawings, is impossible. In nearly all cases the needle or hook is still Lee's; that is, an iron or steel hook, bent back over the stem and possessing so much elasticity that, with the *presser bar* in the old frame, or the *presser wheel* in the rotary machine, it admits of instant pressure down *into* a bed or indentation punched in the shank, immediately under the hook, to receive it, that when thus down it may form a closed eye, over which the loop on its stem may slip and become part of the cloth. Let us suppose a loop to be still in the hook over which the last one passed, and it will be seen, at least imperfectly,

how the successive loops form the endless chain which constitutes the fabric, just like hand knitting. But, in order to be understood, the operations must be watched and studied.

The wool used in this establishment, we are happy to learn, is all Canadian, and to prepare it for the knitting machine here are two sets of cards. Only one, however, was running when we visited the factory. We have seen some very good cards in Canada, but we have nowhere any better than these, and certainly none in better working condition. There are two spinning jacks, one of 120 and the other 240 spindles.

All the machinery we saw running was excellent. Of the picker, however, we cannot speak favourably, and we say so because, as on a former occasion, we are anxious to call the attention of woollen manufacturers to the fact that a good picker is a very important article. And we speak advisedly when we say that the truncated conical machine which we spoke of in Vol. IV. page 255, would pay for itself in a very short time in its saving of cards and the time lost in dressing. It would present the wool to the first breaker in almost as favourable a condition as that in which it is now presented to the second, and its superiority on coming from the condenser would be manifest. There is some new machinery in process of erection here, and considerably more will be in operation within three months, included in which there will be a new and ingeniously contrived machine for the more effectual mixing of cotton and wool, several frames for adding feet to socks, and other work for which they are best adapted, and we have a hope that the *picker* which we have spoken of will be included.

The number of hands employed by Mr. Simpson is at present about forty, and the contemplated extension of the business will add perhaps as many more.

At present the consumption of wool is at the rate of 90,000 pounds a year, and Canadian wool is preferred; but there has been some difficulty in obtaining a full supply, to which fact we would call the attention of our farmers.

The goods produced here find a ready market, on which we congratulate the proprietor and thank him for his courtesies.

THE CHOLERA.

In all human probability, ere a few months elapse, this fearful visitation and scourge will be upon us; and it therefore behooves not only our Municipal rulers, but every householder and private individual amongst us, to do what we can