TEXTILE INDUSTRY AT THE VIENNA EXHIBITION.—No. II.

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GENERAL REVIEW OF TEXTILE MACHINERY; WOOLLEN INDUSTRY.

In order to give a correct idea of the textile fabric machinery at the Vienna Exhibition, it will be convenient to criticise briefly the various exhibited machines for weaving, spinning, dyeing, &c., reserving for a future occasion the special descriptions

and illustrations of the more important exhibits. We shall make our remarks as condensed as possible, bearing in mind that improvements in the details of existing machines, by means of which their value is increased, are often of more importance than entirely new constructions intended to supersede old inventions, such as are especially to be found in countries where industry is still in a primitive state, for example.

Woollen Industry.—Wool washing is represented both mechanically and chemically. We may here observe that the chemical exhibits are few in number and are to be found in the German department. They comprise the application of the water-glass of Van Baerle, of Worms, as a means of washing, and the exhibits of the wool-washing establishments of Berlin and of Döhren. The mechanical processes are represented by McNaught and Co., of Rochdale, who exhibit an improved construction of their well-known machines. In the drying apparatus connected with it, considerable improvements have been made.

The preparation of wool for spinning is divided, according to the quality of the material into various methods, the chief of which are, combing, carding, and tearing or reducing. In combing, long wool is used, and, as examples of the machinery employed, we find in the Exhibition two machines only, namely, worsted gill boxes and a combing machine by Messrs. Platt Brothers, of Oldham, on the Little and Eastwood system. The department of carding, however, is much better represented, and of the German exhibitors in this branch of industry, we have to mention Mr. Oscar Schimmel and Co., of Chemnitz, who show a collection of carding machines and a combined finishing spinning machine for carpet yarns. The Maschinenbau Verein, formerly C. F. Schellenberg, of Chemnitz, and the Sachsische Maschinenfabrik zu Chemnitz, formerly Richard Hartmann, of Chemnitz, exhibit carding machines, the machines of both exhibitors showing important improvements. Belgium is represented by the numerous collection of M. Martin, of Verviers, which are of great merit, whilst the carding machines of Neubarth and Longtain, of Verviers, deserve notice. In the English department Messrs. Platt Brothers have exhibited a fine collection of wool-carding machines, which are noticeable for a good combination of clearer and stripper, whilst the scutchers are well made. The doffing cylinder is provided with a grinding roller, and the taking off is effected by Martin's belt apparatus. At the taking off from the first carding machine slivers are formed, the apparatus for which is self-acting for the filling of the rollers. The apparatus for forming the carding fleeces on the second machine acts so that the material in the receiver of the fleece for finishing carders is placed in front and across the rollers. All these improvements are well designed and executed, and we consider these machines as very important features in the Exhibition. We should add that M. Bede, of Verviers (Société Houget et Teston), also exhibits a collection of carding machines, in which both simple and ingenious contrivances have been adopted for taking off by means of steel belts. M. Bede exhibits also a double-carding machine with small and large main cylinders, Bollette's mechanical feed being introduced. The leading idea in the Bede carding machines—the return to the original simplicity—is worth acknowledgment, and it has been carried out here for the first time by employing the original construction of rubbers with three rollers. The number of threads in M. Bede's carding machine with endless slubbings is taken very high, whilst his wool mill, which is on the Beu system, remains unaltered. The machines exhibited by the Erste Brünner Machinenfabriks-Gesellschaft are built according to the Belgian system, and are well executed, without, however, being characterised by any noteworthy improvement, or addition. This company constructs almost exclusively machines for working carded wool and the manufacture of cloth, and supplies all sorts of gins, carding, and spinning machines, besides all machines required for wool-washing, dyeing, &c. The manufacture of shoddy is unrepresented, with the exception of a few threads and breakers, which latter are to be found in the German department, under the name of M. Ernst Gessner, of Aue.

Spinning machines for carded wool are in considerable force. We find self-actors exhibited by the Chemnitzer Maschinen Verein, formerly Schellenberg, and by the Sächsische Maschinenfabrik zu Chemnitz, formerly R. Hartmann. Both these machines are well known, and the improvements introduced will be the subject of our special illustration and description. The Austrian self-actors of Messrs. Josephy's Erben and of the Erste Brünner Maschinenfabriks Gesellschaft are imitations, and show nothing original. It is, however, otherwise with the self-actor for carded wool exhibited by M. Bede, of Verviers (Société Houget et Teston). In this self-actor the toothed gearing has been eliminated as much as possible, and friction gearing has been substituted, so that the simplicity and easy working of the machine has been increased. It remains, however, to be seen whether the system adopted will work well for a prolonged period, and whether exact accuracy will be preserved. We have now to mention four interesting spinning apparatus for carded wool, namely, the water-spinning frame by M. Vimonts, improved by MM. Bede and Co., the water-spinning frame by M. Célestin Martin, of Verviers, the "Patent Continuous Wool Spinner" for carded wool, by John G. Avery, of Worcester, U.S., and the carding machine for carpet yarn by Messrs. Oscar Schimmel and Co., of Chemnitz. Of the latter we need not say more at present; the construction is not new, but is very suitable for coarse yarns. Avery's machine is very ingenious and original, and the inventor can only have arrived at the finished result by a prolonged study of the old Hargreave spinning machine. We shall shortly publish an illustration of this machine with special description, and need therefore only mention here that the most important parts of the machine—such as moving gear, carriage guide and tube apparatus—are all quite original, and further that Potter's new annular spindle has been adopted. We must, however, find room for a quotation from Mr. Avery's circular, in which he announces the merits of his invention: "We call special attention of spinners of short wools to this new and economical process of spinning. We claim to do more and better work with one half the number of spindles at less than one half the expense, occupying less than one quarter the space than the most improved process now in use in Europe. We make a large per cent. of saving in waste; yarn drawn by this process is more even." MM. Bede and Co. have endeavoured to improve Kimont-Sykes's throstle by altering the shape of the wings, by covering the faces with cloth, leather, &c., to increase friction, and by arranging each spindle in such a manner that it can be thrown out of gear.

The improvements of the water-spinning frame, by M. Célestin Martin, are of great importance; they contain many excellent details, and may be considered as a step in the right direction for solving the water-spinning problem for carded wool. The new compensating lever for flattening and stretching of the thread, is ingeniously arranged, and this, as well as other minor details in the construction of the machine, cannot remain without due acknowledgment. It shows besides that the final solution of the question of water spinning for carded wool is not far removed, and that the long-continued experiments made in this direction have produced at last some satisfactory results.

The exhibition of tools and details for spinning carded wool is very large. We may call attention to the numerous samples of cards exhibited in the Austrian department, amongst which, deserving of notice on account of careful and uniform workmanship, are those of M. Franz Blumenstock, of Reichenberg, whose works comprise a wire-drawing establishment, and who also exhibits cards, the wires of which can be renewed, and which are used for flax spinning; further, Messrs. Herkners Sons, of Reichenberg, Messrs. Hachnel, Maennehard, and Co., of Bielitz, Messrs. Struck and Beer, of Brünn, &c. Of German exhibitors of cards, we have to mention Würkert Brothers, of Leisnig, the mechanical works for the manufacture of cards (formerly Lossius), of Mittweida, Mr. Joh. Ch. Fischer, of Chemnitz, also Messrs. Hugo Hensch and Son, and Messrs. Schmitz and Marx, of Aix-la-Chapelle, whilst the first position in this branch of industry is still occupied by D. Ullhom, of Grevenbroich. The card manufacture of Würtemberg is represented by the exhibits of Mr. Joh. G. Finkh, and from Belgium excellent cards are sent by MM. Harstmans frères, of Liége, and of Messrs. Th. J. Martin, of La Pisseroule-Dison, near Verviers. Swiss cards are shown by Messrs. Schelling and Co., of Horgeu, and by the mechanical works for the manufacture of cards at Ruti; both works are in the canton of Zurich, and the latter establishment has already acquired a first-class name.

Generally speaking, mechanical science has done very much during the last few years for the manufacture of cards for the spinning of carded wool; but we regret we do not find in the Exhibition a single machine for the manufacture of cards.

It would appear that the cards with leather backs are preferred, whilst the cards on cloth seem to be going out of favour. The size and shape of the wires used for the cards in great varieties are worthy of attention. We believe that the use of wires of triangular section, and bent to a sharp angle, as we notice them in the Exhibition, is not to be recommended, because the point cut upon the wires becomes too long, and the side edges of the triangular wires are slowly ground, and gradually get extremely sharp.

In connexion with this subject of the cards we have to mention a very well arranged grinding apparatus, made and exhibited by M. Célestin Martin, of Verviers. This apparatus is provided with rotating discs acting alternately, which produce round points to the wires. Compared with this thoroughly finished apparatus, that of M. Ernst Gessner for grinding the wires cylindrically, scarcely merits observation. A gin for colonial wool, and of excellent workmanship, is exhibited by Messrs. Rossberger and Schröter, of Chemnitz, whilst M. Rudolph Honegger, of Wetzikow (canton Zurich) and Messrs. Bernhard and Philipp, of Chemnitz, exhibit a number of details for carding and spinning machines. These details, which have to be executed very carefully, are now in considerable demand amongst the makers of spinning machinery, who are thus saved the trouble of making them themselves, and can always rely upon the excellence of the workmanship.