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

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The textile machinery for the preparation of the flax is not better represented than that of cotton, described in our former article. Although there are to be seen at the Vienna Exhibition a number of flax-breaking and scutching machines, they embody nothing new or original, and we may simply say that the whole of the flax, hemp, and jute spinning is represented by the exhibits of Messrs. S. Lawson and Sons, of Leeds; Messrs. Combro and Bourbai, Falls Foundry, Ireland; Mr. T. Barracough, of Manchester; and Mr. T. F. Bridge, of Son, of Halifax. However, we should mention that M. Germain, of Brügge, exhibits in the Belgian department of the Agricultural Hall a series of the Belgian manner of working the flax, to which full descriptions and plans have been added, and the whole exhibit is one of no little interest or merit. Referring to the flax-breaking machines exhibited by Belgium, we find two, one of which is designed and patented by M. Lague Crochet, of Courtrai, whilst the other is exhibited by M. Julien Idée Crochet, of Brussels, who is well known for his numerous constructions in this branch of industry. M. Lague Crochet’s machine is designed on the principle of a rotating main cylinder (tambour) combined with several rotating and oscillating rollers, which may be adjusted according to the softer or harder quality of the flax. The system may be arranged with two or three rollers, and the machine may be worked by hand or steam, in which latter case it delivers per day from 30 to 32 per cent. of about 2500 kilogrammes of raw material. The same exhibitor shows also a scutching machine of simple construction, and which is provided with an adjustable and flexible blade for the feeding of the flax; the machine being controlled by means of a foot-heel. M. Julien Idée Lefèvre, of jute, is represented at the Vienna Exhibition only by the two firms mentioned above, with the exception of Mr. T. Barracough, of Manchester. This latter machine is really very simple in its constitution, and general use, and is adapted for power working. A bobbin-roller is firmly fastened to a spindle which forms a tube on its further end, into which the mass of fibres is brought, passing through several openings of the tube and back again, and coming thus into the arm of the wing, which is also hollow and provided with slots. From the wing the thread is brought to the pin, where it is wound up. A forward and backward running screw, and a tube provided with small pins and connected with the bobbin, produces the alternate motion of the pin, whence the winding off of the thread is effected in the proper manner. The take-off of the material is done by hand, and the material is advanced on the machine, which is thus pulled by hand. The material is then pulled by a feed roller, whilst the forward and backward running screw, or the tube connected with the bobbin, is pulled by the hand. The exhibition of the machine exhibits much to be desired. The Slavonic machine is very primitive in its construction; it is a working with small rollers, a quick and powerful movement with a screw that allows the rollers to make between 500 and 600 strokes per minute, whilst the lower series of rollers advances but slowly. This machine is said to possess many advantages, and is stated to be an improved machine, but it is not shown that the machine exhibits much to be desired. The machine breaks hemp and flax in a satisfactory manner, and at short intervals, so that the broken flax come out as is curled by a crisping iron; roasted as well as raw flax and hemp may be worked by the machine. Three horse power is required to drive it, and the production is stated to be for hemp, 12,000 lb. per day, and for flax 18,000 lb. In the German department of the Agricultural Hall we find three systems of flax-breaking machines represented. We may mention first the machine worked by hand and constructed by Kaselowski, for the use of the small farmers; this machine has a roller with cutters and an oscillating knife, which, besides being moved up and down by means of a crank, has a partially circular motion, acting thus in a scraping manner upon the stems of the flax. The feeding roller is provided with a fore-and-back motion, whence the material, well prepared, goes under the cutters. The scutching machine by Kaselowski does not contain radial blades, but is provided, like a water wheel, with curved blades mounted upon the cylinder. The stand and the working holes are provided with a movable and feathering revolving horizontal beam which prevents any heavy blow of the blades upon the flax. These machines are built by Mr. W. Hahlerberg, engineer, of Minden, and they can be obtained for the price of £60. The Wameck, of Oels, exhibits two systems of flax-breaking machines; one of which contains, in an horizontal plane, six pairs of rollers, the upper of which are fixed, whilst the lower ones are put in an alternate motion by an ingenious combination of levers. The rollers have a diameter of about 6 in., and the upper rollers are loaded. The second of Wameck’s flax-breaking machines contains two pairs of rollers, and the backward motion of which is produced by a wheel sector, and its alternately entering into the one or the other disc of the sector being changed by the sector being taken to two parts, the larger one for causing the forward, whilst the smaller one produces the backward motion of the flax, and the flax is broken between the rollers. The machine is extremely simple. In the American department we find a flax-breaking and scutching machine, which is a combination of the cylinder system, and is provided with oscillating top cylinders, whilst the scutching apparatus is worked by two foot levers, and is provided with radial blades. The machine exhibits by Messrs. James Combe and Co., of Manchester, is quite a model of the excellent construction and workmanship of the machines built by this firm, and we notice many improvements for fastening the flax, for removing the fibres, for the motion of the comb, &c., of which we shall have to speak further on. Next to these machines we find those by Messrs. Lawson and Co., who exhibit a series for the preparation of jute, with considerable improvements, which we shall afterwards notice in detail. The next may be considered the only one represented at the Exhibition only by the two firms mentioned above, with the exception of Mr. T. Barracough, of Manchester. This latter machine is really very simple in its constitution, and the use of general power is adapted for power working. A bobbin-roller is firmly fastened to a spindle which forms a tube on its further end, into which the mass of fibres is brought, passing through several openings of the tube and back again, and coming thus into the arm of the wing, which is also hollow and provided with slots. From the wing the thread is brought to the pin, where it is wound up. A forward and backward running screw, and a tube provided with small pins and connected with the bobbin, produces the alternate motion of the pin, whence the winding off of the thread is effected in the proper manner. The take-off of the material is done by hand, so that, as we stated already above, the machine is nothing else but a large spinning wheel, the motion of which is effected by mechanical power, whilst the manual labour is limited to the formation of the fibres. This machine is exhibited for the manufactory of jute, Mahall hemp, hemp, flax for ropes, &c., and producing in ten hours between 40 and 70 kilogrammes of yarn, for which one-third of a horse power is required. The other size is for finer yarns of the same materials for cords, thin and supple, and supplies between 20 and 25 kilogrammes of yarn with one-quarter of a horse power. The space required by this machine is 3 ft. 8 in. by 2 ft., whilst the larger machine measures 3 ft. 8 in. by 3 ft. 6 in. Mr. Barracough exhibits further tweed making machines for string, and one of which is a range for two and the other for one ball. We find, besides, in the agricultural departments, and especially at the exhibits of flax, flax, and models of roasting stoves and apparatus, &c., instances of the Spanish, Portuguese, and Italian exhibits, &c. At the Dutch exhibits of flax, we find the simple instruments used by the rural population for the preparation of their flax, instruments which used to be necessities at every farmhouse, for example, the wooden hammer for the breaking of the flax, the highly painted beetle, &c. Before concluding this notice of appliances for preparing fibrous matters for thread, strings, and ropes, we should not omit to mention that in the cold climate, the wood not allow of cultivating the plant of hemp and the flax, another material for the purpose of tying and fastening has been introduced, thin shaving of wood which the machine planes off the surface of the timber in various lengths, up to 60 ft. and 90 ft. We find no information on this purpose at the Exhibition exhibited by Messrs. W. Gibson and Sons, of Fonsed, near Gothenburg, which belongs strictly to the wood-working machinery, and which will be dealt with under that section. The shavings remain over their whole length undivided and unbroken, and are thus durable, and may be used as means of fastenings, or may be twisted round themselves, when great strength is given to them. An interesting example of how near the textile industry is connected with wood-working, a branch of industry which is also to do with flax, we may mention the modes of preparing flax, straw, cane, and wood, for the manufacture of hats, baskets, &c., as in many cases, wood is used for and through weaving, and belong then to the textile industry. Mr. A. Moritz, of Schwert, has exhibited for this purpose small Planishing machines for cane and wood, also straw-splitting and flattening machines of simple but exceedingly suitable construction.