

MANUFACTURING IN EUROPE.

Of all European nations only three, England, France, and Germany, claim to have a textile industry. Manchester, Bradford, Glasgow, Lyons, Elbeuf, Crefeld, Chemnitz, and many more are well-known centres of European textile industry, and the manufacturers of these towns can be found in almost every part of the world. The lion's share of this trade is, however, taken by England, whose cotton industry, with its 42,000,000 spindles (that is more spindles than the rest of the world put together), has reached a stadium of development that the inventors of the spinning-frame and power-loom would have hardly dreamed of one hundred years ago. In order to protect themselves against the too great productivity of England, the European States have nearly all placed high import duties on foreign goods so as to secure the home market to their own manufacturers. Lyons is still the centre of the silk industry, but the Swiss and German silk trade keenly compete for the trade of Lyons. The country which shows the relative increase in textile industry during the last ten years is Germany, and that country is now aspiring for a good share of the world's textile trade, as is proved by the efforts made to establish in several cities permanent exhibitions of samples for export. But, notwithstanding all the efforts of the French and Germans, England has so far retained her industrial supremacy, and her industries show no sign of decay. Will the efforts of Continental Europe be at last crowned by success, and will the Continent succeed in obtaining the principal share of the world's textile commerce? Time will show. But as civilization travels westward so does commerce also, and the position and resources of the United States, and its progressing industrial capacity, permit us to expect that in the fight for the world's commerce the industrial powers of Europe will not have to fight alone, but will have to count as a competitor the great American Republic, whose incalculable resources will be a heavy odd in favor of the younger continent.—*New York Dry Goods Bulletin.*

ANTWERP INTERNATIONAL EXHIBITION.

We have received the prospectus of the great international exhibition to be held at Antwerp in the year 1885, commencing on the 2nd of May, and lasting for five months. This exhibition which, while the inception of the project was due to private enterprise, is supported by the Government of Belgium and the city of Antwerp, being under the patronage of the King of the Belgians, is intended, as a matter of course, to further international exchange and to offer to all the nations an opportunity to exhibit their various products to the people of the Low Countries more particularly, and its originators believe that, from the commercial position of this city, a vast number of visitors will attend it.

The exhibition proper will be divided into five sections, education and the several arts, navigation, commerce, fisheries and pisciculture, electricity and agriculture, forestry and horticulture. It will likewise conclude with an exhibition of painting, sculpture, architecture and engraving, with a convocation of the artists of all nations. The grounds secured comprise an area of 54½ acres, and a dock for the accommodation of the marine section, and the buildings, which will be very large, are being constructed upon the most approved principles.

The first section, that of education, will comprise schemes of organization and appliances for instruction, maps, books, photographic apparatus, musical instruments, mathematical instruments, &c. Distinct classes in this section will be devoted to furniture of all kinds, including cutlery, bronzes, clocks, leather work and heating apparatus, and to textile fabrics of all kinds, including, strange to say, along with all manner of woven goods, portable weapons, hunting and shooting, travelling and camp equipage and toys.

The second section, that of industry, includes many varied classes, among which are the product of the mine and all appliances used therein; products of the forest, and of hunting and fishing, agricultural products not used as food, chemical and pharmaceutical products, pro-

cesses for bleaching drying, printing and dressing leather and skins; machinery in general and all apparatus used in cultivation and working of forests, in agriculture, chemistry, tanning, spinning and rope making, weaving and making of cloaks, furniture, paper, carriages, railway appliances, telegraphic apparatus and military appliances and apparatus. Under this section will also be placed in a separate group, all alimentary products of every possible kind.

The third section, navigation, will comprise vessels of all kinds, and apparatus for the saving of life, &c. Fishing vessels and all the varied apparatus used in fishing and fish culture, including statistics, &c., will be placed in a separate group, and a separate group of this class will be composed of statistics, commercial museums and exports to foreign nations.

The fourth section, electricity, will comprise all relating to the generation or use of the electric fluid, such as steam plant, electric piles, chemical batteries, cables, instruments of all kinds, and the appliances of electricity of every form practically illustrated.

The fifth section, agriculture, includes special classes of cattle, dogs, horses and asses, and flowers and small fruits, as well as regular classes for all domestic animals, fruits, seeds, trees and plants.

All foreign governments are requested to appoint commissioners to whom all applications or space may be sent, and who will have the discharging of all questions relating to flower space, but in the event of commissioners not being appointed, would be foreign exhibitors can correspond with the executive committee at Antwerp directly.—*Montreal Witness.*

STEAMERS FOR TIMBER CARRYING.

Steamers are an innovation in the wood trade, and are taking up the office of wood-built ships without being constructed for the purpose of carrying timber. It would not be wise to say they are so unsuitable that they will have to retire from this class of carrying, for they are running the old ships off the water one by one, and one who runs and reads can see they are the ships of the future. It is thus clear that we must admit their presence in the wood trade, and it is equally clear that some change must be effected in their construction to enable them to safely take in and discharge cargoes of timber.

The first entry of steamers in the trade was in connection with carrying deals, and for this they cannot even be termed suitable, as all the cargoes have to be hauled on to the deck, and lowered into the hatchways. In discharging, the deals are hung in chain or rope slings, and hauled high into the rigging, and lowered over the sides. This is, of course, done by steam, otherwise the working of wood as stowage for such vessels would be madness. The damage to goods from being handled in these slings is so great that we have seen charter-parties framed in which the use of chain slings was prohibited. We have also seen such prohibitions disregarded, and claims made for damages to goods by the chains breaking off the edges. It is being found in practice that chain slings are unsafe, for they are more liable to slip than slings of rope.

This question of handling goods in connection with steamers is one very patent to ship-owners, as in case of accident or death to any of the hands employed the penalties under the Employers' Liability Act are very serious. The effect of this may be seen in the sparing of chain slings, and the invariable introduction of new ropes to the loading and discharging of every cargo.

The difference between wood vessels and iron vessels, in regard to their suitability or unsuitability, lies in the fact that steamers have no bow ports through which the goods can be discharged after the holds are broken into. They are built on lines of speed, and the angles of the cutwaters are so acute that, independent of the policy or risk of constructing these costly vessels with portable bow-plates, they in a large measure are impracticable.

We must not overlook the fact that steam vessels trading to the Baltic are invariably built with a series of small portholes at their sides

immediately under the level of the decks. These are most useful in discharging sawn deals and boards on to quay or lighter, but they are no use for hewn or sawn timber.

It is to the point of hewn or sawn timber that we more especially direct our attention. The unsuitability of steamers for carrying these goods is noticeable under several headings. The first is that the holds are divided into "fore" and "aft" by the engine and boiler being placed amidships. Again the fore hold is invariably divided into two, the "forehold," or the "forecastlehold," and the "main hold." The effects of these divisions, even in large and long ships, are such that they render one or more of the holds too short for practically stowing timber of such long specification as we are in the habit of receiving from the pitch pine ports of the Southern states of America.

We write with a case before us of a large vessel which has brought a cargo of sawn timber from Pensacola. Her forehold was too short and too inconvenient to stow timber, and it had to be entirely filled with deals. Her aft hold was too short for the regular run of the cargo, and the shorter lengths had to be picked out to suit it. The main hold was reserved for the long lengths, and consequently the stowage was bad; deals were used when possible, but a lot of dead space was unavoidable. Here the whole of the timber had to be hauled over the bulwarks and the deck and lowered on down through the hatchway into the hold. The stowage of the wings, which comprised nearly two-thirds of the hold, was interfered with by iron columns or pillars, which supported the deck cut into by the hatchway. The stowage of the lower part was interfered with by a beam which crossed the vessel in a line with one end of the hatchway.

The loading and discharging of this, the best hold in the vessel, was one long struggle with difficulties, and the dangers connected with it were such as to make one wonder where men could be found to risk their lives for their daily bread in such a calling.

The process is to work the logs free in the hold, to clip them with hooks about one-sixth from the end, and in this state to hoist them into the rigging until the lower ends are clear of the deck. This being done the ends are carried over the bulwarks, and the balks are lowered across the deck, the hooks are then moved to the ends of the logs, and they are tilted up until they shoot like darts into the dock, making long dives into the water, and coming to the surface at some distance from the ship.

You cannot look on this work without coming to the conclusion that it is both costly and dangerous, and endorsing the remark of an expert of fifty years' experience amongst baltic timber, which was "something different to this will have to be done if steamers are to carry baltic timber; the steamers will have to be built for the purpose."—*Timber Trades Journal.*

SAW MILL WASTE.

A correspondent of *The Industrial Journal*, Bangor, Me., writes from Waterville: "The Lockwood Company, proprietors of the cotton mills at Waterville, are on the track of the saw mill owners located on the river at Fairfield and Skowegan, seeking to restrain them from depositing their debris in the river.

In the spring of 1876, soon after the first cotton mill at Waterville started up, the slabs, edgings, shingle waste and other debris from the lumber mills above came down upon them in such quantities as to obstruct the flow of water through the raceway and canal, and also gathered on the rocks to such an extent that it was impossible to rake it off, fast enough to let sufficient water through to run the wheels. The following winter the legislature was asked to pass a law prohibiting the throwing of such refuse into the Kennebec and its tributaries. The law was not passed that year, but was passed by the legislature of 1878. Some little attention was paid to it, but it was not until three years ago, when the pulp mill at Fairfield was built, that much of the waste was kept out of the river, and then only the slabs and board edgings, which were valuable for wood and to grind into pulp.

Meantime the Lockwood Company continued to experience great damage and expense, and tried often to secure the desired end by friendly negotiations. One year ago the treasurer met the Fairfield mill owners, and they promised that the nuisance should cease at once. This year the trouble came in a still more aggravated form than ever before, causing the mills to shut down for several days, thus occasioning great loss in production, and expense to the company as well as loss of wages to the help. An application was then made for an injunction, and Judge Peters came here to hear the parties on both sides. Hon. E. F. Webb appeared for the Lockwood Company, and S. S. Brown, Esq., and Col. J. W. Spaulding for the saw mill owners. Acting upon the advice of the judge, it was agreed between the parties, since the May term of the law court is so near at hand, to the evidence before a commissioner and have it reported to the full court at Augusta, when the chief justice will grant a temporary injunction, provided the facts in the case warrant it, pending the consideration of the question of a permanent injunction by the full court. R. B. Dunn, Esq., president of the Lockwood Company, and J. W. Danielson, treasurer, have already given their depositions, from which it appears that the damage has been from \$40,000 to \$50,000 to the company, besides a like sum to the help. The company employs 1,100 hands, and the monthly pay rolls is \$25,000. The result of this case will be watched with deep interest, for it is reasonably sure that no more cotton mills will be built in Waterville if this nuisance is to continue."

SHADE TREES ON THE FARM.

A few well-formed trees along the fence rows, and even scattered here and there in the open fields, add greatly to the appearance and value of a farm. Cattle, sheep, and other farm animals, suffer greatly from the hot sun when confined in a shadeless pasture in midsummer. They will seek the slight protection from the boiling sun a fence may afford, or stand huddled together for hours, with their heads shaded by each other, in a most unhealthy manner. Animals thus exposed do not give the best returns to the owners, and for this reason, if not for comfort's sake, they should be provided with shade. Some farmers object to trees in the pasture, because their shade is too inviting, and keeps the live stock from feeding. Farm animals need not graze all the time, and with good pasturage, can get all the graz they need in the cool portions of the day, between which they should have refreshing shade for chewing the cud of contentment. Men are not the only creatures that may be sun-struck; cows unduly exposed to heat, frequently become sick, quickly fall off in milk, and may require weeks of expensive nursing to bring them back to good health. Trees are an obstruction to the cultivation of a field, and occupy the soil for several feet around them, to the exclusion of grain and other crops, and therefore it is best to plant most of the trees along the line of boundary fences. The tired laborer is thankful for a few minutes of shade and rest, and doubtless will do more work by taking an occasional "breathing spell" under a tree. A tree in midfield may be a chestnut or hickory, and make good returns for the space it occupies in nuts, as well as refreshing shade. In many fields there is a low place with a spring or small running stream and is well fitted for a small group of trees. In short any part of a field not suited for cultivation, may profitably grow a few trees, thus affording a retreat for the live-stock from the midday sun and driving storms. If the pasture has no shade trees, it will pay to provide a temporary shelter. Four strong posts with forks at the top, may support two poles; across these lay smaller poles for rafters. The top may be covered with straw, swale hay, or, if more convenient, brush may be cut and laid upon the skeleton roof.—*American Agriculturist.*

The furniture interest in the United States is enormous. Three years ago it amounted in New York to 300 factories and a product of nearly \$10,000,000. Cincinnati had 119 factories with a product of \$4,500,000. Chicago turned out above \$5,000,000; Philadelphia, \$5,000,000, and Boston, \$4,000,000.