

RECENT FOREIGN INVENTIONS AND DISCOVERIES.

Armor for Ships.—A patent has been taken out by F. Wrigley, Manchester, England, for making the armor for war ships of a cellular form. This armor is made by casting Bessemer metal in molds, then annealing the metal, to give it the quality of soft, homogeneous metal. The sides of the vessel are to be formed with ribs of T-iron, and the cellular armor is to be fitted on these ribs and held by them with cross keys, so as to avoid using bolts or other like fastenings. C. W. Eddy, of London, England, has secured a patent for applying a movable iron beak to a war vessel, by which she may be used as a steam ram, when required—the beak not to be used during times of peace, as it retards the speed of a vessel at sea. He also adapts the iron prow of his vessel to receive a shell for exploding it in the hull of an enemy's vessel.

Treating Hides to Make Leather.—A peculiar process has been patented by H. C. Jennings, London, England, for converting hides and skins into leather, without the use of common vegetable tanning substances. The hides are treated in the usual manner, at first, by fermenting, or liming, to remove the hair, after which they are well washed, and are then laid horizontally and evenly in a perforated frame, which holds about ten hides. This frame has a ring in it, for the purpose of enabling it to be easily lifted into and out of the vat. Each skin is separated by a wicket hurdle, to permit the free penetration of the liquor on all sides. The pits or vats for tanning are ranked No. 1 and No. 2. The first is charged with a solution of alum, to which is added two per cent each of sulphuric and hydrochloric acid. Vat No. 2 is charged with a solution of the carbonate of soda, to which is added five per cent of the tungstate of soda. The frames containing the hides are lowered into the vat No. 1, where they remain six hours; they are then lifted out and allowed to drip over the vat, then placed in vat No. 2, where they remain six hours. In this way the frames containing the hides are alternately steeped six hours in the two vats containing the acidulous and alkaline liquors, until the hides are saturated and their gelatine converted into leather—a fibrous, insoluble product. The hides are then steeped in a pure solution of the tungstate of soda for six hours, and afterward thoroughly washed in soap suds and rinsed in clean soft water. To give the skins thus treated the smell and color of common tanned leather, they may be lastly steeped in a liquor of oak bark for about twenty-four hours.

Treating Flax.—A patent has been obtained by J. Kane, of Templemoyle, Ireland, for removing the gummy matter in flax, by steeping it in caustic ammonia. The object of using this liquor, instead of steeping in warm water, by Watt's process, is simply to hasten the common fermenting operation, by which the fibrous part of flax is separated from the gummy portions.

A New Fibrous Material from the Hop Plant.—A vegetable material, resembling wool, has been obtained from the hop plant, and a patent applied for by R. A. Brooman, London, England. The plants are first dried, then crushed between rollers, and subsequently beat with stampers and revolving beaters, when the vegetable, woolly, fibrous material is separated, and may then be carded.

Optical and Illuminating Apparatus.—A peculiar apparatus, furnished with glass compartments, filled with transparent and colored fluids, for general illuminating purposes, and the production of effects similar to white and colored fire, has been patented by W. Clark, London, England. The compartments of glass are hollow, globular spaces, containing liquids producing the necessary refraction. The light is transmitted through these fluids, and thus they produce varied and novel effects for public entertainments.

The Corliss Steam Engine Company, of Providence, R. I., have done a fair amount of work during the past year, notwithstanding the dullness of trade. Among the large engines recently put up by them in neighboring cities are a pair of 900 horse power for the Naumkeag Steam Mills, Salem; one each of 450-horse power for the Wamsutta Mills, New Bedford, Atlantic Mills, Lawrence, and Lowell Bleachery and Dye Works, Lowell.

American Enterprise and British Jealousy.

We copy the following from *Lloyd's Weekly London Newspaper*. It is a sensible discussion of Mr. Train's city railway project, and quite complimentary to American enterprise:—

There is a conservative principle in all English thought and action, which is occasionally a very important and useful element in our national character. But like many of the best things, it has its abuses, and unhappily these are not few in number, or small in dimensions. A steady and deep-rooted respect for the actual frequently prevents us from attaining the possible, because, with a morbid timidity and foolish suspicion, we fancy that all change must necessarily be bad. Hence, any reform of a social kind, calculated, perhaps, to largely increase the convenience and comfort of those whom it affects, will be regarded with as much distrust and dislike as if it was a perilous innovation in politics, fraught with the darkest and most insidious designs against the throne, the altar and the House of Peers.

To some such sacred British prejudice must be owing the large amount of disfavor in which Mr. Train's attempts to facilitate the traffic of some of our larger thoroughfares have been held. Rival omnibuses have courted collision and concussion with them. Audacious cab drivers have drawn their lumbering four wheelers across the line to obstruct the Yankee omnibus, at great risk to their own persons and their employers' property. And at last a jury in Surrey have found that Mr. Train is guilty, in complicity with various members of the vestry of St. Mary, Lambeth, of having created a nuisance by laying down his tramway upon the Westminster-bridge road. By an arrangement quite incomprehensible to any but a well-trained legal mind, a verdict is entered against Mr. Train, but not against the vestry. Certain points of law are reversed, but surely these points of law would as much protect Mr. Train as they would the vestrymen. But a jury has found that the tramway is a nuisance, and it is to be speedily removed.

Now, we do not like to attribute motives to a jury but we fear that the members of this particular one treated Mr. Train just as any other metropolitan or suburban jury would have treated him. There exists among a vast number of people a strong feeling against this attempt to relieve our overcrowded thoroughfares, because the scheme is new; because it interferes with the interest of the present omnibus proprietors; and because it is the scheme and venture of an American, and not an article of home invention. Mr. Train has, we fear, to thank himself for much of this opposition. We are a steady-going, sober-minded people, and we like business done in a business-like way. Any noisy attempt to recommend a project, however admirable, is sure to imperil or defeat its success. Hence, breakfasts and banquets, bands of music, verbose oratory with its usual accessories of song and toasts, were in vain had recourse to by this transatlantic speculator. But Mr. Train, not contented with lavishing turtle and champagne in connection with this scheme, began to make himself prominent as the champion of the North v. South in the great American quarrel. He would not at first tolerate the neutrality to which, as a government and a people, we have so wisely adhered. All this was not calculated to make him popular, or to keep his tramway in good repute.

We regret all this. We cannot see why this method of locomotion, which has succeeded so well in Paris and in New York, should fail in London. The vehicles are large, roomy, comfortable, move pleasantly and easily, and the entrance and exit are very different from the rush or the occasional tumble out of our own clumsy, ill-constructed, noisy and incommensurable omnibuses. Great things were to have been done by the French company who gathered under their comprehensive care all our vehicles. Have they in any way improved them? Have they even painted them? Are they not, from their noise and their ugliness, a scandal and an eyesore in our streets? And yet, when something like a feasible plan of improving our London locomotion is attempted, because it is not carried out in the discreetest manner, and because it slightly interferes with vested interests, we indict its promotor and vote it a nuisance. And so we are left for the present without hope of any reformation of a crying evil.

The following, taken from the *London Mechanics'*

Magazine, is on the same subject. It will be seen that this journal and *Lloyd's Newspaper* take the same views in regard to the treatment of Mr. Train:—

We have frequently had occasion to call attention to the tramways recently put down, in some of the streets of London, by Mr. Train. We have regarded them as public benefits, and such, we believe, is the opinion of a vast majority of the inhabitants of the metropolis. But Mr. Train has been singularly unfortunate; in fact he has not had fair play. He has not been permitted to carry out his plans and extend the benefits his plans would confer on society. At Bayswater he was defeated by an aristocratic clique. In Victoria street he was the victim of local prejudice, and in Kennington road he has been checkmated by an obstinate and impatient jury. Being present at the trial at Kingston, we can speak from practical knowledge. Mr. Train and several of the Lambeth vestrymen were indicted for causing a nuisance by the Lambeth tramway. Several witnesses were examined for the prosecution, and before a single witness was called, or a single word was said on behalf of the defendants, the jury interrupted the trial and said they were perfectly satisfied the defendants were guilty. Possibly they might have come to the same conclusion had they heard what could have been said on the other side; but the very least they could have done was to have let the trial take its ordinary course, and decide according to the evidence. But they exhibited an indecent haste. "Strike but hear," is a motto as old as the hills. The Kingston jury were determined to strike without hearing; and if one of their number is to be believed, they made up their mind before they came into court. If so, they were untrue to their oaths, wherein they undertook to decide, not in obedience to preconceived notions, but according to the evidence. We are surprised at the unusual and unfair course taken by the jury, and we are equally surprised at the judge permitting such a farce to be enacted in a British court of law. The counsel for the defendants stated that they were prepared to submit overwhelming evidence to prove that the Lambeth tramway was almost universally appreciated, and that thousands every week participated in the benefits it conferred; and that instead of being a nuisance it was a public convenience. But the jury were deaf to every thing but their own prejudices and one-sided opinion. Hence justice miscarried in their hands. We hope, for the sake of fair play and the character of Englishmen, that the defendants will have the right of appeal to a higher court.

Government Submarine Vessel.

The launch of the little submarine vessel at Messrs. Neafe & Levy's Works, Kensington, took place, contrary to first arrangements, on Wednesday, April 30th, between four and five o'clock. Ropes were fastened around her as she lay on the wharf, and she was then raised by means of shears, and lowered easily into the water. No one was within her, but Mr. Levy, one of the firm which constructed her, stood upon the top during the launch.

When fairly in the water she lay half submerged, her iron guards being almost level with the surface. Two men went into the interior and tried the effect of the oars or paddles. Although but two or three were moved at once, the vessel obeyed them readily, and when the whole sixteen or eighteen are put in motion, it is believed that she can be propelled with considerable velocity. She will be entirely submerged, when necessary, by means of lead or other ballasting; and it is believed that, when this is accomplished, a very slight variation in weight will suffice to lower her to the bottom or to raise her to the surface. When entirely submerged, the glazed aperture in her roof will keep her lighted.

The present position in which she lies will be her natural one; she will only be sunk when necessary to conceal her operations. With her gothic arched back, and conical bow, she looks not unlike a big sturgeon.—*Philadelphia Inquirer*.

When steam is superheated to about 100° above the temperature of common steam no difficulty is experienced in the lubricating of pistons, and a saving of about 25 per cent of fuel is effected, if the steam is worked expansively.

Thin and narrow magnets are more powerful than those which are broad and thick.