

RECENT FOREIGN INVENTIONS.

New Material Applied to the Arts.—A very remarkable material brought from Southern Africa and on exhibition in London has attracted considerable attention, and has been patented by its discoverer, Thomas G. Ghislin. It is obtained from several marine plants, but principally from the *laminaria buccinalis* which grows in deep sea water, and abounds on the coasts of the Cape of Good Hope. It grows rapidly in large bunches rising from one root. The stalks springing from the parent stem are tubular and increase from half an inch in diameter to three inches, and they are about 18 inches long. As it grows in deep water, all the specimens obtained have been washed on shore, and it is sometimes found piled up in great heaps. It resembles horn in its exterior formation. The outer coating is of a dark color, and when it is removed from the water and becomes dry its similarity of appearance to horn is remarkable. When fresh it is thick and fleshy, but when it is dried it becomes compact and its surface looks like a beautifully-grained deer's horn. After it becomes dry and hard it can be rendered soft again by steeping in water, and in this condition it may be stretched and formed into various shapes. When dry it can also be reduced to powder, then made plastic by soaking in water, and in this condition it may be struck into almost any shape in a die press. It comes out of the molds like articles formed of gutta percha. Picture frames, inlaid work, umbrella handles and gentlemen's walking canes made of it are in the London Exhibition. The inventor, Mr. Ghislin, prepares the plant by cleaning it first with weak caustic alkali and then with dilute sulphuric acid, after which it is washed, and before it is quite dry it may be pressed into sheets or any other form. It then may be rendered very hard by steeping it in a hot solution of alum after which it is removed to a hot room where it is dried, and retains its shape afterward. Reduced to powder it may also be mixed with various substances, like india rubber, and molded into a great variety of articles. When it is bleached by treating it first with a warm alkaline solution, and afterward with sulphurous acid gas, it resembles ivory and may be used as a substitute for that material. The discovery of the properties of this substance and its various applications, are important contributions to science and art. The specification of the patent is published in *Newton's London Journal of Arts* for August.

New Hemostatic and Antiseptic Agents for Wounds.—A patent has been obtained by Pierre A. F. Boboëuf, of Paris, for the preparation and application of new hemostatic and antiseptic agents of alkaline phenates and salts made from mineral and essential oils soluble in caustic potash or soda. They are prepared by taking coal oil or petroleum and stirring it cold in about one-sixth of its weight of caustic soda. It is then allowed to settle for about twelve hours, when it separates into two different layers, the lower one being the phenate of soda. The patentee denominates as phenates the compounds formed by a combination of any of the acid oils with alkali. The phenate of soda formed as described is run off by a tap in the bottom of the vessel in which it is formed. The top layer of the oil in the vessel is neutral and limpid. The phenate thus obtained should not mark more than 16° or 17° Baume, and water is added to reduce it to 5° for use. Phenates thus obtained, are applied to wounds to stop hemorrhage as follows:—If the wound has been produced by a cutting instrument, several folds of a surgeon's compress are dipped into the liquid and applied to the wound. "It neither causes pain nor irritation" says the inventor. The compress is pressed upon the wound and the phenate freely applied upon the outside with a rag. A second compress is then applied, and sometimes four are required, but seldom more. The phenate coagulates the albumen of the blood and stops its further issue. If the hemorrhage is caused by a bayonet or bullet, the phenate solution is injected two or three times into the wound, then the opening is filled with lint soaked in the solution. After the bleeding has been stopped for three hours, all the compresses placed over the first one may be removed, as the blood with which they are impregnated becomes very hard. But, should they adhere tenaciously, they need not be removed for two or three days. The superiority of

these phenates for wounds is stated to be due, not only to the property which they possess of coagulating the blood, like the perchloride of iron, but also because of their rendering the edges of the wound insensible, and causing the injured tissues to contract by acting upon them in a similar manner to tannic acid. Such phenates may also be converted into dry powder by evaporation, and applied to wounds on moistened cloth.

Composition for Protecting Iron Ships.—Wm. J. Hay, of Southsea, England, has taken out a patent for a paint formed of the protoxide of copper ground in linseed oil, and boiled in it until it is reduced to a suboxide. A quick drying, cupreous oil is thus formed. This paint may be thinned for application with naphtha or turpentine. Before it is applied, the iron vessel should first receive two non-conducting coats of red or white lead, or asphalt varnish, and when dry the copper oxide paint is put on the top in two successive coats. This paint, it is said, protects the hulls of iron vessels from the sea animalcules adhering to them, and if applied to wooden vessels or wood exposed to the ravages of the sea worm, it is said to be a protective for these also.

Galvanized Iron for Armor-Plated Ships.

At a recent meeting of the Manchester Literary and Philosophical Society, Dr. Calvert read a paper on the employment of galvanized iron for armor plated ships. He said: Many gentlemen present are doubtless acquainted with the fact that he had been for some time past engaged in ascertaining the chemical composition of various woods employed and susceptible of being employed in the navy. On a recent visit to one of the dockyards he found that while the armor plates were fired against a layer of teak, the ribs of the ship were of oak, and that the iron bolts which were to fasten the plates were to pass through the oak ribs. It occurred to him that the inconvenience which would probably result from the action of the oak upon the iron might be obviated by substituting galvanized iron bolts for those now in use, and he therefore instituted a series of experiments, the results of which he had great pleasure in laying before the meeting.

The first series of experiments consisted in having driven through large pieces of oak, bolts and screws of iron and galvanized iron, prepared by his friends, Messrs. Richard Johnson & Brother, of Dale street, Manchester, which were then immersed in salt and sea water for the last three months. The results clearly showed, first, that the friction did not remove the zinc from the galvanized iron; secondly, that the oak and galvanized bolts were unchanged; whilst in the case of the iron bolts, they were much rusted, and the pieces of oak had become quite black by the formation of tannate and gallate of peroxide of iron. During the experiments the waters were changed every week, and those containing the galvanized iron appeared unchanged, whilst in the case of the iron, they had a dark blue-black appearance, owing to the formation of gallate and tannate of iron.

In order to ascertain the comparative action of soft and salt water upon iron and galvanized iron when in contact with oak under identical circumstances, he made the following series of experiments:—

Plates of galvanized iron having 18 inches of surface, lost during three months the following weights:—

	SOFT WATER.	SEA WATER.
Plate No. 1.....	0.10 grains	-----
Plate No. 2.....	0.11 grains	-----
Plate No. 3.....	0.095 grains.	-----
Plate No. 4.....	0.090 grains.	-----
Similar plates of iron lost during the same time:—		
	SOFT WATER.	SEA WATER.
Plate No. 1.....	1.23 grains	-----
Plate No. 2.....	1.52 grains	-----
Plate No. 3.....	2.40 grains.	-----
Plate No. 4.....	2.38 grains.	-----

There can therefore be no doubt that galvanized iron offers great advantages, the action of water on it being less than a tenth of the same action on ordinary iron. As there is no doubt that iron when galvanized is in the most favorable electrical condition to resist the action of oxygen, being in an electro-negative condition, it follows that in all probability the use of galvanized iron would be very advantageous in armor-plated and other iron ships. The author hoped that Government and other large ship-builders would avail themselves of this suggestion, and make experiments on a large scale to verify the results he had obtained.

RECENT AMERICAN INVENTIONS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week. The claims may be found in the official list:—

Knitting Machinery.—This invention relates in part to a substitute for the beaters, or as they are sometimes termed, pressers, employed in those knitting machines in which several needles are knitted upon at once with separate yarns, to operate between the needles for the purpose of holding the work to its proper place thereon, while the stitches are being formed, either by the movements of the needles themselves, or by what are termed stitch hooks. The beaters or pressers above mentioned have a complicated movement which requires complicated mechanism to effect it, and the object of this improvement is to effect the same result by a simpler movement and less complicated mechanism, and to this end it consists in substituting for the said beaters or pressers a pad of india rubber, or other moderately soft or yielding substance, so applied and having such a movement as to operate in combination with the needle ring or needle bar and the needles. Another part of the invention consists in a new and improved stop motion to throw the driving pulley out of gear, or otherwise disengage the machine from the driving apparatus whenever one of the yarns breaks or gives out. The inventor is James G. Wilson, of New York city.

Repeating Firearms.—This invention relates to the supplying of cartridges to the barrel through the breech from a magazine in the stock, by means of an endless chain working in the magazine. There is used in combination with such a magazine and endless chain, a movable breech pin, whose opening and closing movement is directly backward and forward toward and from the barrel; and the invention consists in certain means in combination with such a breech, for the purpose of giving the said chain the necessary movement, and conveying the cartridges from the belt into the chamber of the barrel. It also consists in the employment in combination with the magazine in which the endless chain feeder works, of a second cartridge magazine arranged side by side with the first one, and separated therefrom by a partition which is movable for the purpose of transferring its cartridges into the first one when that has been emptied, whereby provision is made for carrying in the stock, nearly twice the number of cartridges that could be carried in the single magazine. The inventor is J. Q. A. Scott, of Pittsburgh, Pa.

Instrument for Sounding.—This invention consists of certain improvements in that class of instruments used for sounding or as a log, in which a helix or screw propeller is made to revolve by the action of the water upon the threads or blades of the propeller, the number of revolutions of said propeller being registered by a combination of endless screws and wheels, to which motion is imparted by the revolutions of the propeller, and which are provided with suitable indices to work the number of revolutions of the registering wheels. The invention consists in the combination of the rising and falling blades with a framework and registering mechanism, in such a manner, that the whole weight of the lead, and the strain of the line is sustained by the framework, and not by the axis upon which the blades revolve, said framework being composed of thin arched ribs which protect the blades and the wheel work from injury; it consists further in certain improvements of the registering mechanism, the object being to reduce the same to the smallest possible compass, at the same time increasing its capacity and facilitating its operation. The inventor is W. P. Trowbridge, of New York city.

Preparation of Tobacco Leaves.—The object of this invention is to prepare the stalks of tobacco leaves, so that they can be used with the leaves for fillers of cigars, no stripping being required. The invention consists in passing the leaves of tobacco through between rollers, arranged so as to act on and compress the stalks without touching or injuring the leaf itself, thereby flattening said stalks, and rendering the same fit to be used with the rest of the leaf for fillers of cigars. The inventor is Henry Walter, Sen., of Elizabeth City, N. J.