NOTES ON FOREIGN INVENTIONS AND DISCOVERIES.

Armor Plates for Ships.—A patent has lately been obtained by J. Hughes of Newport, England, for constructing armor plates by rolling each with three or more ribs which are afterward cut in a lathe to form dovetail tongues and grooves. The plates are thus constructed to fit into one another when placed on a vessel, and keys are driven in to wedge the joints on the inner side. This improvement is intended to obviate the expensive mode of planing a tongue and cutting a groove the whole length of each plate (like those on the edges of pine planks), as was done with the iron-clad frigate *Warrior*.

C. W. Lancaster has also secured an English patent for rolling armor plates with flanges or ribs on the back part for the reception of bolts and rivets, to secure them to the framing without punching bolt holes through the plates. The top and bottom of the plates are recessed in such a manner that one fits into that immediately above and below it, and the flange on one plate through which the bolt is passed is protected by the plate next to it.

G. F. & J. Jones have also obtained a patent for constructing the plates of war vessels of such a character that they are to be fastened in the inside by bolts passing through flanges. The plates used are of the box form to clasp the ribs of the frame. The object of these plates is to obtain a perfect shot-proof vessel having its whole strength in the outside thereby saving the great expense of a heavy wood backing.

Glass Rollers and Pistons.—Rollers made of glass and applicable for glazing cotton and other cloth, are manufactured as follows by J. Chedgey, of London. A cylindrical iron mold of a diameter and length corresponding to the roller is provided. A piston constituting its bottom is fitted in this mold, and it has a rod extending upward and held in guides. The piston rod constitutes the core of the mold and a funnel is secured on the top. The piston is pushed nearly to the top of the mold before commencing to pour in the molten glass, and it is gradually depressed as the glass is poured in, until the whole cylinder is filled, and the roller is thus cast. It is stated that a perfectly sound casting of glass is obtained in this manner. The roller is then annealed in an oven, and afterward placed upon a spindle and turned in a lathe. It is polished by applying Venetian red powder to its surface with a concave piece of wood covered with felt.

Water-Proof Bricks.—Common bricks are very porous, and during northeast rain storms in the vicinity of New York, the moisture penetrates through eighteen-inch brick walls unless their surface is coated with paint or some other protective. Various modes have been proposed and tried to render bricks impervious to moisture, and the glazing of their surface by a vitreous coat of glass has been tried. Bricks thus made assuredly keep out water, but mortar will not adhere to them, hence they cannot form a strong wall. W. C. Foster, of Lambeth, England, has taken out a patent for making water-proof brick which is alleged to meet all desired requirements. In molding the bricks, a glazing material is placed in the middle of each, this vitrifies in the burning operation, and damp therefore cannot penetrate through them, while their surfaces preserve the adhesive properties of common bricks with mortar.

Telegraph Targets.—F. N. Gisborn of London, has applied the electric telegraph to targets for shooting at long ranges. The target is so constructed and connected with electric telegraphic apparatus that when a bullet strikes it, a signal placed near the marksmen points out the part exactly that has been struck, and at the same time the hits are also registered on paper, by the apparatus.

Double Electric Battery.—D. T. Fitzgerald, of London, places a block of zinc and a plate of copper separated a short distance from one another in the moist earth. This forms a constant voltaic couple, but the current is feeble. It is combined with any of the common telegraphic batteries in use, and a more uniform electric current is thus obtained.

Vegetable Silk.—A. C. Vautier of Paris, has taken out a patent for producing a fibrous material from the mulberry tree, resembling silk, without the agency of the silk worm. The fabric has been exhibited, but the process not described.

Steamship Compasses.—C. A. Ehrenberg, of Altona, Denmark, has invented a new compass to obviate local attraction on board of steam and iron ships, on which the masses of iron are so liable to disturb the action of the needle. This inventor employs a compound magnetic needle, composed of two short needles, connected together by a strip of copper, the needles being on opposite sides of the needle cap, and the north pole of the one being opposite to the south pole of the other. In addition to this compound needle for neutralizing the effect of local magnetism, the bowl of the compass is formed of copper and the bottom of it is covered with zinc. This arrangement is for the purpose of producing a feeble electric current by the moisture of the atmosphere acting upon the zinc in connection with the copper bowl, and thus isolate the needle from the attraction of the engine, or hull of the vessel by a counter electric current in the compass box itself. The compass is inclosed in a double wooden box, having a layer of gutta percha, placed between the two thicknesses of wood. Compasses thus made are stated not to be injuriously affected by local attraction.

RECENT AMERICAN INVENTIONS.

Ordnance.—This invention consists in a breech composed of a spherical piece of metal inserted into a hemispherical seat provided in the gun in the rear of its bore, and confined therein by means of a hollow screw, which is screwed into the rear of the gun behind it, said screw having its front end countersunk to fit and form a seat for the said spherical piece, and the said spherical piece having an opening centrally through it of sufficient size, and the internal caliber of the hollow screw being sufficient to permit the projectile and the cartridge to be inserted through them into the chamber of the gun, and the said spherical piece being furnished with means for turning it to bring its opening transverse to the bore, and thereby make it close the rear of the gun, and to bring it opposite the bore for loading at the breech. Invented by Charles Alger, of Hudson, N. Y.

Slide Valve.—This invention consists, first, in arranging one or more parallel motions in combination with a slide valve in such a manner that the pressure of the steam is counteracted by the parallel motion or motions and the valve sustained in the proper place, and the said valve moves equally free and easy when subjected to the pressure of the steam, as it does when the steam is shut off; second, in the employment of a valve with corrugated elastic sides and ends, or with an elastic back, in combination with an oblong bearing of the pivot, which secures the valve to the parallel motion in such a manner that said valve, when acted upon by the steam is forced down upon its seat with a certain yielding pressure, determined by the elasticity of its sides before the pressure of the steam is counteracted by the parallel motion, and that a jumping of the valve or leaping of the steam is prevented; third, in arranging the frame which supports the parallel motion in combination with an elastic diaphragm or piston in such a manner that by the action of the steam on the under side of the diaphragm or piston the pressure of the steam on the back of the valve is partially counteracted and the pressure on the back of the valve is diminished; fourth, in the arrangement of a bell crank lever, or its equivalent, in combination with the frame supporting the parallel motion, in such a manner that said frame, together with the valve, can be raised clear off its seat and that when the motion of the valve continues after the steam has been shut off the cutting of the face of the valve is prevented. Patented by Andrew Buchanan, of Jersey City, N. J.

Escapement.—This invention consists in an escapement composed of a simple crank or eccentric wrist pin, which derives a revolving motion by its attachment to the ordinary escape wheel spindle or to any suitable rotating spindle, geared with the clock movement, and which works within a slot in the pendulum rod, as explained, such escapement dispensing with the escape wheel and the verge and its appendages, and being cheaper, more durable, less likely to get out of order, and requiring less power to run it than the verge and wheel escapement. It also consists in so applying the stud from which the above mentioned slotted pendulum is suspended, in combination with the crank pin or eccentric wrist, as to make the said stud self-adjusting, for the purpose of bringing the pendulum always in beat, thereby enabling the most inexperienced person to set up a pendulum clock without difficulty. The above invention is due to William Hart, of Mayville, Wis.

Friction Clutch.—The object of this invention is to make a clutch for connecting and disconnecting machinery, which shall hold and connect by friction alone, and act to form the friction connection by centrifugal force alone. It consists in the employment of sector friction brakes which make friction against the rim or inner periphery of a pulley attached to and turning with the shaft, the said friction brakes being connected with another wheel turning freely on the said shaft in combination with the inclined planes of a trifurcated sleeve. The patentee is Rensselaer Reynolds, of Stockport, N. Y.

School Desk and Seat.—This invention, patented by Wm. H. Joeckel, of New York city, relates to an improvement in desks and seates which are combined or connected together, and has for its object the adjustment of the desks and seats in such a manner that they may be made to suit children of different ages. By a very simple movement or adjustment the seats may also be so disposed as to be placed out of the way and admit of the children or persons readily passing between them and the desks, or for the purpose of occupying the latter.

Folding Bedstead.—F. C. Payne, of New York city, has secured a patent for a bedstead which, when not required for use, may be folded up within a very small compass with the mattress upon it; when folded the bedstead also forms a box or receptacle for all necessary bed clothing. The invention consists in having the bedstead formed of three parts connected together by joints or hinges, and arranged in such a manner that one part may be folded with the mattress over the head portion of the bedstead, and another part folded underneath the head portion, whereby the desired end is attained. This device is not only admirably adapted for camp or army use, but will also prove to be a great acquisition for families not having spacious apartments, and there are many thus necessarily situated in cities with whom economy in space is a desideratum.

Bonnet.—This invention consists in a bonnet, cap or other head covering, the body of which is made of two or more thicknesses of muslin, or other woolen fabric, united by some adhesive and stiffening substance, and shaped and formed into a series of raised stripes by means of suitable dies, in such a manner that the sewing together of said strips is obviated, and that such bonnet, cap or head covering is a perfect imitation of the ordinary bonnets or caps made by sewing together a large number of narrow braids of straw or embossed stripes of muslin. The merits of this invention are due to S. A. Blake, of New York city.

Facts about Cotton.

The stock of cotton at Liverpool December first was only sixty-seven thousand bales less than at the same date in 1860, and the stock in England was undoubtedly much larger than it was a year ago, it being well known that the manufacturers have laid in unusually heavy supplies. The English trade returns for the month of October are just published, and they show the following results as to the imports of cotton:—

In 1860	267,367 cwts.
In 1861	487,436 cwts.

Of these imports, the East Indies furnished 467,578 cwts. against 115,504 cwts. last year. Thus true is it, that India, as the Englishmen are in the habit of saying, "always furnishes whatever is wanted of her."

Whenever and however the civil war in this country may end, matters have already gone so far, that the cotton monopoly of the South is ended forever. If peace is made to-morrow the old cotton productiveness of the South cannot be restored in season to prevent the firm establishment of the cotton culture in so many quarters of the globe, as to destroy the control of this staple, which the slave holders once enjoyed, and by a tenure which was proof against everything but their own suicidal folly.

A HOUSE recently fell down in High street, Edinburgh, killing thirty-five persons.