Locking-up Forms of Types.

The following improvements in printers' chases have been recently patented by Mr. Robert Ward, of Newcastle-on-Tyne. The invention has for its object improvements in locking-up or fastening forms of type or other printing surfaces. For these purposes, in place of employing loose wooden wedges acting on side-sticks or foot-sticks, as heretofore, a long wedge of any suitable material, by preference in one piece, but this is not essential, is placed between two foot-sticks or two side-sticks, and such wedge is set up by a screw, which is formed with a head having holes therein by which it can be readily turned whilst in the chase in which the "form" of type or printing surfaces is required to be locked-up or fastened. The head or outer end of the screw rests against a block, whilst the screw itself enters a female screw formed in the larger end of the wedge: hence, when the screw is turned, it will force the wedge more and more in between the two foot-sticks so as to cause them to separate, and thus lock-up or fasten the "form" in the chase.

Prussian Order of Merit.

The King of Prussia' who lately conferred his Order of Merit in Science and Arts upon Sir Charles Lyell, on account of his volume on "The Antiquity of Man," has lately appointed the Rev. Edward Hincks, D. D., Rector of Killyleah in the north of Ireland, a Chevalier of the same Order. Dr. Hincks is son of the late Rev. Dr. Thomas Dix Hincks, formerly Professor of Hebrew in the Belfast Institution, and is brother of the Hon. Francis Hincks, formerly Premier of Canada, lately Governor-General of the Windward Islands, and now Governor of British Guinea. He is uncle of Mr. William Hincks, one of the Congressional Reporters at Washington. Dr. Edward Hincks, formerly a Fellow of Trinity College, Dublin, is one of the most profound Oriental scholars in Europe. The Prussian Order of Merit consists of only thirty Germans and thirty foreigners, selected for their superior acquirements.

Exports of Petroleum from New York.

Up to 26th Sept. the total exports of petroleum were 14,528,022 galls. The quantity for the corresponding period of last year being 4,233,488 galls.

Greek Fire—Shell and Shot.

The statements which have been published respecting some incendiary shells stated to have been thrown into Charleston by General Gillmore, seem to have set the whole country in a blaze of excitement. According to a very common mode of romancing adopted by letter-writers these shells have been denominated "Greek Fire;" but there is no resemblance whatever between them and the genuine Greek Fire of ancient times. It is related that the former was discovered in 660, by a Greek engineer named Callinacus, who in that year destroyed a large fleet of Saracen vessels with it; and it afterwards became a terror to the whole Mahommedan races. It is described to have consisted of resin, saltpetre, sulphur, pitch and camphor, mixed with turpentine, and made into balls with flax. It was ignited, then fired from arrows, or thrown by javelins on board of the Saracen vessels, when they were engaged with the Greeks in the hand to hand contests of those days. The compound was very inflammable, but its chief danger consisted in being capable of burning in water. Tradition conveys exaggerated ideas respecting its destructive effects. It would not produce much fear, nor very formidable results, on board of modern war vessels. The incendiary shells now called Greek Fire were first brought to public notice during the Crimean war, by J. Macintosh, who made experiments with them at Shoeburyness, England, and set inflammable materials on fire at a distance of 800 yards. A patent was secured for the invention in 1855, and the composition is described in the specification as follows:—"I fill diaphragm shells with naptha, mixed with phosphorus and bisulphide of carbon, having a bursting charge sufficient to open the shell. When fired, the bursting of these shells scatters the contents in all directions, and the shower of inflammable material falling among troops ignites spontaneously, causing their immediate disorganization. Fired into shipping, these shells bursting on the deck below, scatter the inflammable material, and the spontaneous combustion which results causes injury to the crew, who are driven overboard, and the vessel itself is speedily consumed. Fired into harbors, dockyards and towns, the result is alike destructive and decisive."

A little volume forwarded to us by Captain J. Norton, from Rosherville, England, 1860, contains the following description of his incendiary shell for infantry:—"A leaden rifle shell is first nearly filled with bisulphide of carbon, then small bits of phosphorus are dropped into it, and the mouth of the shell is then closed with a cork projecting like that of a bottle. A leaden shell thus charged and adapted to the military rifle, will continue to burn for ten minutes, with an intense flame which cannot be extinguished with water." Such are the descriptions of the modern incendiary shells called by some persons "Greek Fire." As phosphorus was unknown to the ancient Greeks, of course it is sheer nonsense to credit them with the invention of this fire. Thus far, such incendiary shells seem to have produced but little mischief. An officer of the United States artillery lately informed us that he had made experiments and found them of no utility, owing to the inflammable liquid being so much scattered when the shells burst. He believed that if a considerable quantity of the inflammable liquid could be held together and thrown into one place it would prove destructive, but this could not be effected with any of the incendiary shells which he had tried. For producing destructive results by setting wooden vessels, buildings, and other combustible materials on fire, red-hot shot is more to be depended upon than liquid fire-shells. The modern method of producing such shot, is to fill shells with molten iron, then fire them from the guns. A small cupola has been put up on one of the English iron-clads for melting pig iron, thus to fill shells; but against armor-clad vessels of course such shot would be useless, as they would spatter against iron plates like balls of clay.—*Scientific American.*