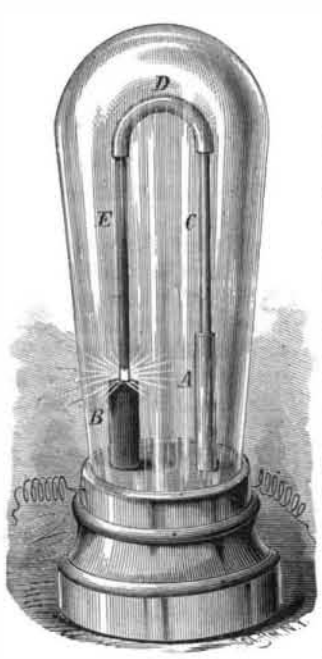
More Workmen Needed.

In none of the leading industries of the country is there such a demand for skilled workmen as with the pottery trade, in which the supply, from purely natural causes, is greatly short of the requirements. The pottery industry is of comparatively recent growth, as, though established a great many years ago, it was generally carried on in a small and desultory way, so that few skilled men were required, and few apprentices were inducted into the arts and mysteries of the guild. Within the past twenty years, however, the entire aspect of affairs has been changed. Potteries have multiplied with wonderful rapidity under our beneficent system of protection, and from supplying merely a tithe of the wares used, have now come to control nearly the whole business of the United States in this line. This growth, while almost phenomenal, has been perfectly healthy, and there is every indication now of continued and perhaps still greater prosperity in the future. But to make it so we need large additions to the number of our skilled artisans. All the workmen now here have all the work they want, and in some cases more than they want, at wages which are almost princely in comparison with those received by their fellow-craftsmen in Europe. No disposition is shown among master potters to cut them down, but, on the contrary, a personal interest seems to be taken in the workmen, and everything that could in reason be asked of the employer is, as a rule, done to secure the comfort and well-being of the employe.

To add to the need of further workmen, additions are being made to the plant of nearly every pottery in the country, while from every hand comes news of new ones projected and to be immediately erected. In this state of affairs the working potters of Europe may find a solution of their present difficulties in emigration. If better wages, better and cheaper food, and more comfortable homes have any attractions for them, the needed help may soon be expected from Great Britain, where wages are being further reduced and the time of working curtailed.—*American Pottery Reporter.*

AN ELECTRIC LAMP FOR AN ENGLISH SHILLING.

Blazoned in brilliant colors on a box cover in a show window not a long distance from this office is a representation of a miniature electric lamp, below which are these words, "Real Electric Light. Price 1*s.* This wonderful lamp will produce instantaneously an electric light of great steadiness and power. Its action being automatic, it requires no attention, and will burn for hours, costing a trifle only above gas. It is adjusted readily for immediate use, and is so simple that a child can work it." The box contains a little lamp like that shown in the engraving, and all that is said in regard to it is undoubtedly true, providing the lamp is furnished with a sufficiently strong and constant electric current; but to generate the required current cheaply and conveniently will probably trouble our youthful experimenters, as it has the older heads for a half century. In fact we think a battery capable of running the lamp for any considerable length of time can hardly be made for less than $25.



TOY ELECTRIC LAMP.

Directions are furnished for making a battery; but a little experience in this direction will soon make plain the unpleasant fact that a strong and steady current cannot easily be maintained by the use of batteries. It will be found that a great deal of electric energy will be required to maintain a single lamp, even a toy lamp. A boy with one of these lamps is in about as good a position, so far as the question of general electric lighting is concerned, as the most experienced in these matters.

The lamp costs 75 cents of our money, and any boy can make it. From the base project a brass tube, A, and a carbon cylinder, B. These are each provided with a wire which projects from the base to be connected with the electrodes of a battery. A wire, C, fits loosely in the brass tube, A, and a curved tube, D, is soldered to its upper end. A slender carbon pencil, E, is inserted in the curved tube, D, and rests upon the carbon cylinder, B. The whole is covered with a glass shade. When the current is allowed to pass through the lamp the light will appear at the juncture of the carbons, E B.

Twin-Cylinder Car.

The Prosser twin-cylinder car is a Chicago invention, by which it is claimed wheat can be transported from the West to Eastern markets at a cost of two cents per bushel. This car consists of four large cylinders of thick sheet iron, 8½ feet long and 6 feet in diameter on the inside. The cylinders are hooped with tires having flanges to suit the gauge of the railroad they may be running on. These cylinders are held together by a frame. Each of these contains 250 bushels of wheat, making the capacity of the car 1,000 bushels. The cylinders are loaded from the top. The frame holding the cylinders together two by two is so arranged as to permit a compound lateral and vertical movement, thus relieving them from a strain that would be inevitable from their direct connection with the frames in the ordinary car. An aperture in the center of each end of the cylinder admits air into the interior, which is expelled through a number of minute holes in the periphery, keeping a constant current of air circulating through the wheat while the car is in motion.

The load in the Prosser car is *not* supported on axles. It rests *directly on the track.* The cylinder revolves with the wheel. The load rotates in harmony with the wheel, and its center of motion and rotation corresponds with that of the wheel; consequently there is an immense saving of the power required to draw the car. As the diameter of the car wheel is about three times that of the ordinary car wheel, it is a necessary deduction that, if the weight of the Prosser car and load were equal to the ordinary car and load, an engine could draw three times as many of the former as it could of the latter, leaving the additional advantage of the load's resting directly on the track entirely out of the question.

The new car, while not occupying more space upon the track than the ordinary car, and though much lighter than the latter, has a capacity of 1,000 bushels, while the capacity of the ordinary car is about 350. An additional advantage claimed is, that through the holes in the ends of the cylinders, and the minute holes in their peripheries, a current of air is forced through the wheat in the cylinder, carrying off the heat and vapor developed by the action of the grain, drying and cooling it, and raising its quality.

Opening of the Exhibition at Sydney, Australia.

The ceremony of opening the Sydney International Exhibition was performed on the 17th of September, in beautiful weather, by Lord Augustus Loftus, the Governor of New South Wales. The day was observed as a public holiday, and the streets were densely crowded by the townspeople and visitors from all parts.

The proceedings began with a procession of the public bodies, who were followed by Lord Augustus Loftus, the Marquis of Normanby, Governor of Victoria; Sir W F. D. Jervois, Governor of South Australia; Mr. Weld, Governor of Tasmania, with their respective staffs; the Colonial Ministers, and the military, naval, and civic authorities. The procession paraded the principal streets and reached the Exhibition at noon, where Lord Loftus performed the ceremony of unveiling the statue of Queen Victoria amid great enthusiasm. His Excellency then proceeded to the dais, which was surrounded by a brilliant assemblage, consisting of the commissioners of the foreign countries and of the Australian and other colonies which have sent exhibits to Sydney, the colonial members of Parliament, the clergy, judges, and others. The whole spectacle was of a most imposing character. After the choir had performed an inaugural cantata, the Sydney Commissioners presented an address to Lord Augustus Loftus, asking him to declare the Exhibition open. His Lordship, in replying to the address, congratulated the colony upon the success of its efforts to gather together in its capital a representation of the arts, and of the achievements of the industrial forces of the entire globe. The event, he said, was an epoch in Australian progress. After welcoming in appropriate terms the various foreign and colonial representatives, the Governor formally declared the Exhibition open. The announcement was received with the firing of salutes; and the choir sang the National Anthem.

The Colonial Governors were then conducted through all the courts of the Exhibition, and were introduced to the several foreign commissioners, who awaited their approach in the sections devoted to the exhibits of their respective countries. The whole ceremony was universally considered a great success. The concourse of people was immense. The main building, which is styled the Garden Palace, is much admired. The exhibits represent the products of England, almost all foreign countries, and the Australian and other colonies.

There is a gigantic display of agricultural implements. The machinery-in-motion department is on a great scale, and there is every reason to believe that this department will be of great interest and practical use. The pottery and glass section is very good and extensive. There are 800 British industrial exhibitions and 513 fine art entries, including photographs. Germany has 695 entries, including 108 fine art; Austria, 170; France, 350 industrial and 168 fine art; Belgium, 236 industrial and 50 paintings; America has 150 industrial collections. Among the best filled sections are railway apparatus and material, steel and cutlery from Sheffield, guns and miscellaneous manufactures from Birmingham, Manchester goods, sewing cottons, cloths, hats, India-rubber manufactures, chemicals, preserved foods, lamps and stoves, paper and stationery.

Some Modern Explosives.

At the late examination of the torpedo class at Newport the Board of Examiners spent some time in the building devoted to explosives. The reporter thought the interior appearance of the place was decidedly uncanny.

Ranged on a table were a hundred or more samples of the various explosives, as well as of their innocent ingredients—nitroglycerine of all ages, dynamite, fulminates carefully kept under water, picric powder, guncotton, and gunpowder—in many forms. The picrates of various substances shown were made at the station by Professor Hill and Lieutenant Commander Elmer, a student in the last class, and present a show of brilliant shades of color. The picric powder is comparatively of recent date, and is intended to replace gunpowder in torpedoes. Professor Hill, who established its proportions and made it at the powder mill, thinks it fully as safe as gunpowder, not so easily affected by moisture, and of more than double force. It is composed of picrate of ammonium, potassium nitrate, and charcoal, and looks like coarse green tea.

Professor Hill conducted the examination. One of the most startling points of this programme was the free and easy manner in which the experts handled these wicked explosives. They were hammered, burned up, and let fall without an explosion, seeming to be perfectly harmless when properly made, until the proper means of firing was used, and then they go off with sudden and terrific violence. In fact, gunpowder was proved to be an infant in comparison, nitroglycerine being thirteen times stronger and exploding perfectly in water, the water pressure rather packing it and increasing its power. The explosive gelatine was shown to be a queer looking mess, in cakes about one inch in thickness, and appeared like innocent calves' foot jelly or soft glue. This was handled with perfect safety, is difficult to explode, and when set fire to it will burn up. A piece laid on a moderately hot stove will fizzle away like a slice of bacon. To explode it, a large fuse of fulminate of mercury was required. This was confined. A lump that had been blown to pieces by a weak fuse without exploding was simply shattered. When properly fired its force was enormous. The camphorated gelatine was shown to be particularly safe. It keeps well in a warm temperature, thus giving it an advantage over dynamite, which exudes in warm climates. This gelatine was made by adding to nitroglycerine a small percentage of camphor and photographer's guncotton, previously dissolved in alcohol and ether. The whole is gently heated, when it becomes a pasty yellow cake, with a strong smell of camphor.

ON A RESONANT TUNING FORK.

TH. A. EDISON.

For the purpose of rendering audible the sounds produced by tuning forks they are generally mounted upon resonant boxes, containing a column of air whose vibrating period is the same as that of the fork. I have devised a modification, in which the box is dispensed with, the resonant chamber being formed by the prongs themselves. To make the fork, a thick bell metal tube has one end closed, a slit is sawed through the center of the tube nearly to the closed end. This divides the tube and gives two vibratory prongs. To bring the prongs in unison with the column of air between them the tube is put in a lathe and turned thinner until unison is attained, whereupon the sound is powerfully re-enforced.

Edison's Tuning Fork.

Crocodile Oil.

Mr. Purcell, of Agra, states that, if it were found of any commercial value, he could obtain a large quantity of crocodile oil. Dr. Kanny Loll Dey Bahadoor, Calcutta, states that, on examination, crocodile oil contains a larger proportion of solid fat than either neat's foot, or cod liver, or any other fish oil. It solidifies at the melting point of ice, while neat's foot oil only slightly thickens, and the others scarcely thicken. He also tried the softening quality of the various animal oils on leather, and, on comparison, found that leather treated with crocodile oil remained much stiffer than that treated with other animal oils. Still, it may be worth testing by manufacturers.

Sea Water Gargle in Chronic Catarrh.

Professor Mosler, of Greifswald, says, in the *Berlin. Klinische Wochenschrift,* that he has for some years most successfully treated patients with chronic catarrh of the throat by gargling with sea water. Special rooms for gargling have been erected on the sea shore in some watering places, according to his directions. It is, however, essential that the patients should be given special directions how to gargle. As the affection is generally located in the naso-pharyngeal space, it is necessary that part of the water should come in contact with the nasal cavity. In order to attain this, the gargling movements must be combined with movements of deglutition. A marked improvement in the state of the patient follows as soon as the latter has acquired this particular art of gargling.

Business of the Patent Office.

A report of the Commissioner of Patents, just issued, shows that during the twelve months ended June 30 last, 19,300 applications for patents were received and 2,674 caveats filed, 12,471 patents issued, 1,547 trade marks and labels registered, and 828 patents granted but withheld for payment of final fees. The total receipts of the office were $703,146, being $154,495 in excess of its total expenditures.