

THE SCHOOLMASTER ABROAD—NEW DISCOVERY IN ENGINEERING.

A contributor to the *Evening Post*, of the 23d ult., gives a most lucid and graphic description of the great marine ram *Dunderberg*, now being built by W. H. Webb, Esq., of this city; and after detailing the construction of the hull, he describes the machinery with a power of expression, which throws all the science and skill of our Smiths, Copelands, Haswells, and other experienced engineers into the back ground. He says, "The engines are of six thousand horse power. The two cylinders are one hundred inches in diameter and three feet apart; the cylinders will be assisted by an independent air-pump." We deem it worthy of repetition:—"The two cylinders are three feet apart, and are to be assisted by an independent air pump." The schoolmaster is certainly abroad, in New York, among the steam rams.

Another modest adventurer in the field of science reports in the *Daily Times*, that the *Dictator's* engines are to be 100 inches diameter in the cylinder, and that they will drive a propeller 2½ feet diameter, the largest in the country, weighing some 39,000 pounds; adding further that this remarkable wheel "has four plates" and that "it is nearly ready to attach to the screw." One difficulty to be apprehended from the air-pump is, that being independent, it may some day, refuse its operation. Then what would become of the "two cylinders, each 100 inches in diameter, and placed three feet apart." We have seen these particulars copied in many of our exchanges, and felt pleased to think that our countrymen were not debarred the privilege of obtaining information respecting the details of the war vessels now building.

A WAY TO REDUCE WAGES.

If Satan, in his hatred of mankind, should set himself to devise the best mode of lowering the rate of wages, he could find no plan more effectual than that of inducing mobs to destroy labor-saving machinery.

Wealth is being constantly produced by labor, and the amount produced is in proportion to the quality and supply of the tools and machinery that the laborers have to work with. A man can produce something with his naked hands, more with the aid of an axe or hoe, more still with a horse and plow, and still more with a steam engine, or saw-mill.

When wealth is produced, it is divided between the laborer who does the work, and the man who owns the tools or machinery that the laborer works with—the capitalist; the laborer usually obtaining his portion in the form of wages. It is manifest, therefore, that when the product of wealth is small there will be but little to divide, and wages must be low.

We accordingly find that in all countries where but little labor-saving (or rather labor doing) machinery is used, wages are low. The price of labor in England and the United States has multiplied several fold since the invention of the steam engine, the spinning jenny, the cotton gin and the power loom. We have before us some carefully collected statistics of the rates of wages in England in 1642—at the time when the oppressions of Charles I were driving emigrants in such crowds to this country. An agricultural laborer received 18 cents per day, or if he had his food, 12 cents. A weaver had 8 cents, a watchman 8 cents and a carpenter 26 cents. At the present time, wages are even lower than these rates in all countries where labor-saving machinery is not employed.

In the division of the product, the interest of the laborer is adverse to that of the capitalist, but both are alike interested in having a large quantity to divide, and it is, therefore for the interest of both that all labor-saving machinery should be kept in active operation.

A Bad Practice.

We notice in some of our cotemporaries long lists of names of such citizens as are exempt by law from military duties; together with the particular reason why they are thus exempt. Now we may well know that war necessarily introduces a state of things which seems to be severe; simply because, as a people, we have hitherto been spared the horrors of war within our own borders. But we cannot justify nor sanction this system of publicly exposing to prurient

curiosity all the special ills to which infirm man is heir. Such a practice is a radically bad one, and well calculated to work irreparable mischief in many cases. We hope this publication will not be persisted in, unless there are better reasons for its continuance than we can now think of. If examining surgeons are honorable men, they will not countenance any attempt on the part of conscripts to shrink their responsibility to the nation in this pressing emergency.

MISCELLANEOUS SUMMARY.

IMMUTABILITY OF SPECIES.—The *Scottish Farmer* says:—"Those who have studied the natural history of living forms carefully, whether in the animal or vegetable kingdoms, are quite satisfied as to the truth of the axiom, that 'one species never passes into another species.' All the support which can be brought in favor of such changes having taken place, is merely traditional, and no more worthy of belief than the traditions descending from heathen mythology, such as that Lombardy poplars are the metamorphosed sisters of Phaeton; or that the garden white lily sprang from the youth Narcissus as he pined away for his own image; or that the Hyacinth sprang from the blood of a youth killed by Zephyrus with the blow of a quoit.

The editor of the *Scranton (Pa.) Republican* says:—"We saw a curious embellishment the other day—a five-dollar bill on the Pottsville Bank, which contains, in one corner, a vignette of James Buchanan. Some loyal person had bunged his eyes with red ink, drawn a gallows above his head, from which a rope was suspended, that went round his neck, and then branded his forehead with the word 'Judas.' This is but one of hundreds. The bank has had to call in all its issues with that portrait on it; so unmistakable are the manifestations of popular indignation against the man who might, had he had the will or the pluck, have nipped this rebellion in the bud, as Jackson did before him."

SPEED OF CARRIER PIGEONS.—It appears from a trial lately made at Bourges, that carrier pigeons can still compete in speed with railways. Last week one hundred and forty five pigeons were liberated at Bourges at five o'clock in the morning, to decide a wager. The first prize was gained by a pigeon which arrived at his pigeon-house at Verviers, at fifty four minutes past twelve. The last arrival was at eleven minutes past one. Thus, in less than nine hours, these birds performed a distance of one hundred and fifty leagues, or three hundred and seventy five miles—a speed which no French railway can equal.

COMPRESSED BREAD.—To replace the indigestible hard biscuit used in the French army and navy, a preparation of compressed bread has been introduced. Small loaves, baked in tins, are thoroughly dried, and then pressed into cakes (four inches square and three quarters of an inch thick) by a machine, invented and patented by M. Marinoni, of Paris. The cakes recover their original dimensions when put into water.

[We should think "hard tack" was tough enough, in all conscience, without compressing bread.—Eds.]

GHOSTS.—Ghosts are now produced in London as easily as the figures from a magic lantern. In one of the theatres recently a ludicrous contrepèts took place. The spectral illusion is produced by throwing a strong light on an object below the stage level, from whence the reflection is thrown up through a trap-door—a large plate of glass with all the appearance but none of the solidity of life. One of the scene shifters got in the way of the light recently, and was presented to the audience in the act of drinking a pint of beer, with his shirt sleeves rolled up.

CROPS IN EUROPE.—All the intelligence recently received in regard to the crops is favorable. The *European Times* says that from all parts of the United Kingdom—east, west, north and south—the crop accounts are most encouraging; and in the south of England the harvest has been unusually early, as well as productive. The cereal and the potato crops are all good, and from Ireland the most cheerful accounts come. Nevertheless it would hardly be safe to assume that it will not be necessary to import pretty largely from the United States.

THE Paris correspondent of the London *Morning Post* has found, on inspection, that most of the novels in the library of Mr. Merridew, the English bookseller at Boulogne, have been re-edited by fair readers. Marginal notes abound, from Sir Walter Scott's serious romances, down to the "Woman in White" of our own day. *Vanity Fair* has been elaborately corrected by female critics. Wherever the author has made any reflection on "lovely women," a fair hand has written: "No, Mr. Thackeray, you are wrong; you do not know the female heart;" or, "A good man could not have written this."

TO PICKLE ONIONS.—Peel the onion, cut it into rings, and spread it upon a dish; then lightly sprinkle it with salt; in about half an hour pour off the watery brine, and put the onion into a jar. Now pour on scalding vinegar enough to cover the pickle made. Boil up with every pint of vinegar, before it is used, half an ounce each of whole black pepper and allspice, and a quarter of an ounce each of cloves and ginger. Keep the jar on the oven for one or two days, then tie down with a piece of glazed muslin. In a month or so it is fit for use.

THE DRAFT is progressing in New York, under the majesty of the law, and in the presence of a legion of brave men, who have fought under the old flag with splendid heroism. These veterans bearing the honorable scars of many a well fought field, are receiving every attention from the law-abiding citizens of the metropolis. The horrors of the July mob haunt us no longer, and all feel a sense of security in the presence of the brave defenders of the country and Government.

An effort is making in California for the cultivation of tea. Mr. H. B. Sonntag, at the Mission, a short distance from San Francisco, has one thousand thrifty-looking plants of this year's growth, from seed procured by a gentleman in China. As tea plants must be four years old before the leaves are suitable for picking, some time must elapse before the success of the experiment of growing tea in California can be determined.

NEW KIND OF FARMING MACHINE WANTED.—A correspondent of one of our agricultural papers writes to the editor, saying that there is a want existing among farmers for a mill to crush boiled roots, such as turnips, potatoes and other kinds, so that they will be fit for cattle to eat. Such an apparatus as this may be easily and cheaply made, and we dare say some inventor will take the hint and act on it.

The climate of the Northern States is certainly one of the most curious features of the country. On the 25th instant the thermometer ranged between 88 and 90 degrees; twelve hours thereafter it had fallen nearly 30 degrees. In the first instance few localities were cool enough for comfort; in the second, overcoats were endurable and fires not all disagreeable. Truly, the weather is fickle and uncertain enough, and extremely trying to frail constitutions.

DESTRUCTION OF A SUPPLY STEAMER.—A steamer loaded with ammunition was recently blown up at Vicksburgh by the carelessness of those in charge. A negro was carrying a percussion shell on board, when he let it fall, and an immediate explosion ensued; fire was communicated to the remainder of the ammunition, and it also exploded and blew the boat to atoms, killing some 156 men. The utmost recklessness is visible in handling munitions of war.

WORLD'S FAIR FOR 1867, IN PARIS.—An *Exposition Universelle* will be held in Paris, from the first of May till the last of September, 1867, open to all the world. It is expected to excel in magnificence any that has yet been held in France or England.

EXTRAORDINARY as it may appear, says an exchange, a piece of brown paper folded and placed between the upper lip and the gum will stop bleeding of the nose. Try it.

It is said that if the mouth of a brick oven be stopped with a bundle of wet straw, the bread baked therein will have a beautiful gold-colored crust, which renders it extremely appetizing.

The U. S. brig *Bainbridge* was recently lost at sea with all on board except one colored man, who, after drifting about in an open boat some time, was picked up by a passing vessel.

Improved Boot Crimper.

The subjoined engravings represent a new and improved boot crimping machine lately invented, the novelty of which consists in a movable crimping plate, combined with pressure plates, in such a manner that both may receive a motion in opposite directions, whereby the operations are much facilitated.

The machine consists of the pressure plates, A, fastened to the frame, B, by a joint, C, on which they work easily; between these plates the crimping plate, D, works through the agency of the lever. Upon the upper part of the plate, D, will be seen a clamping device, F, which holds the boot front; and in the side of the pressure plates there is fitted a strong screw, worked by the handle, G. When the front to be crimped is placed on the plate devoted to that purpose, the handle of the lever, E, is brought down, when the double action of the same, through the links, H, and the toe, I, causes both parts to approach each other, as before mentioned; there are also two small set screws at the bottom of the pressure plate, by which the width of the same can be quickly and easily adjusted.

These combinations, it is claimed, will effect the crimping of a boot front more expeditiously than by any other machine now in use. The apparatus is very conveniently arranged, being especially adapted to the purpose for which it is designed; it is simple and strong, and, we think, will prove a success.

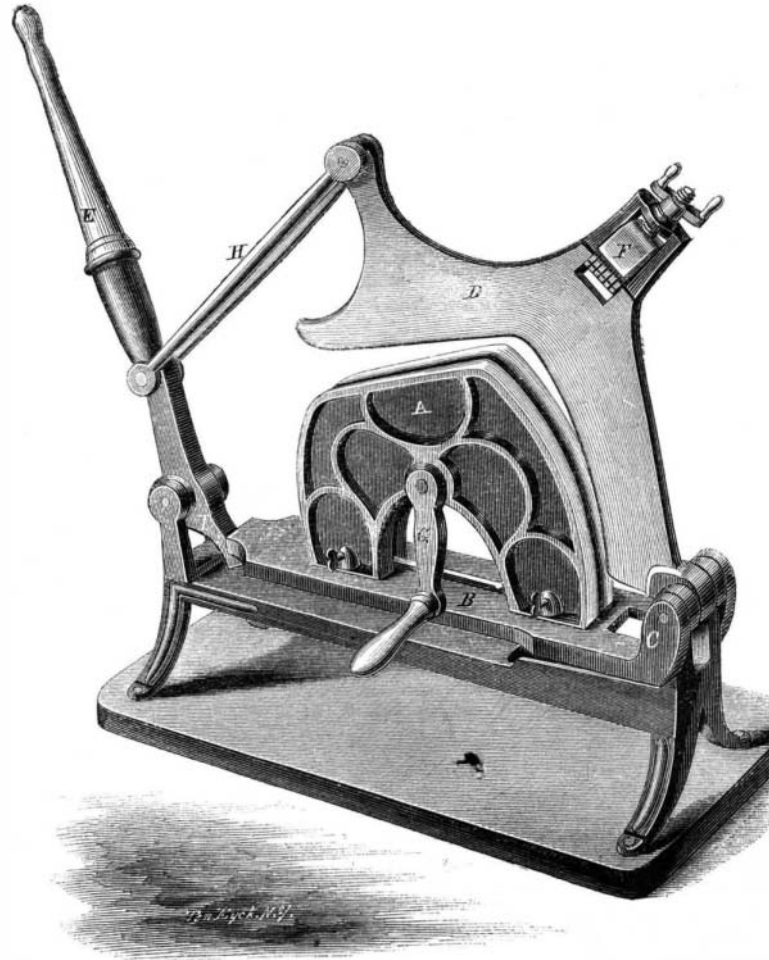
An application for a patent is now pending through the Scientific American Patent Agency, by Thomas Madgett. Further information may be had by addressing George Parr, assignee, Buffalo, N. Y.

DISCOVERIES AND INVENTIONS ABROAD.

Red Coal Tar Color.—A patent has been taken out by Wm. Spence, of Manchester, England, for making a red coloring agent from phenic or carbolic acid, obtained from coal tar as follows:—About 23 lb. of phenic or carbolic acid; from about 10 to 20 lb. of oxalic acid; and from about 7 to 14 lb. of sulphuric acid. This mixture is heated until the coloring matter is formed of the requisite color and consistence. When this operation is considered to be finished, the matter is washed with boiling water, in order to remove the excess of acid. It is then in the state of a light pitch, and with a green shade of cantharides. It may be dried and reduced to powder. To prepare it for dyeing, the inventor takes about 2½ lbs. of this and 5½ lbs. of common ammonia; places them in a closed metallic vessel, then heats to a temperature of about 270° Fah., for about three hours. This is allowed to cool, and then the vessel is opened. The matter originally introduced therein becomes completely dissolved in the ammonia, yielding a liquor rather thick, and possessed of considerable coloring matter. This liquor when heated by acids furnishes a deep red precipitate, which is a fast coloring matter, capable of dyeing silk, wool, and other textile materials red. The matter thus prepared is called "peonine," and is applicable to dyeing and printing generally.

Blue Color.—Mr. Spence also produces a blue color from the peonine thus obtained, as follows:—To 5 lbs. of peonine, 6 lbs. of aniline are added, and the mixture is heated to a temperature near the boiling point, which heating is maintained for some hours, until the material is completely transformed. The result thence obtained is a blue coloring matter, which

is purified by successive washings; first, with boiling water acidulated with sulphuric, hydrochloric, or other acids; secondly, with heated coal oil; and thirdly, with a dilute solution of caustic soda, potash, or other alkalis. The matter thus obtained is passed into acidulated boiling water, then dried. It is then in a state of powder, with golden shades, soluble in alcohol, methyle, and other spirits, and the solutions of which may be used directly for dye-



MADGETT'S PATENT BOOT CRIMPER.

ing and printing. The coloring matter thus obtained is called "azuline," and is applicable to dyeing and printing generally.

Coating Iron and Steel with Copper.—A patent has been secured by W. & H. Bowser, of Glasgow, for coating iron and steel in plates or bars, with copper or brass, as follows:—A reverberatory furnace for heating the iron or steel is provided, and a coating chamber is used in close communication with the furnace. The iron, or steel having its surface cleaned, is raised to a welding heat in the reverberatory furnace; it is then moved to the coating chamber, where the copper is applied to its surface, in the form of grains, or in sheets. The heat of the iron or steel melts the copper on its surface, and the two metals thus become united, the copper forming a thick coating. It is stated that when these operations are performed skillfully, the coating metal becomes so intimately and firmly united to the more oxidizable metal, that it may be reheated, rolled, and hammered without the metals becoming separated.

Rifle Telescopes.—The English have borrowed the use of the telescope for rifles from America, and they are now making some of their target rifles with telescopes, almost similar to those which have been used here for over twenty years. A patent has been taken out by D. Davidson, of Edinburgh, for an improvement on such telescopes. The field bar of his telescope is furnished with two slides, moving at right angles to each other, each slide carrying a cross hair, or line; one of such slides being horizontal and the other vertical, both worked by screws for adjusting them. The horizontal line is for minute adjustment of the telescope in elevation; the vertical line is for allowance for side wind, and the point of intersection by these two hair lines is the sight, which is thus most conveniently adjusted. Fixed hair lines are used in some of the American rifles.

The telescope of Mr. Davidson is also capable of being elevated or depressed, by a joint at the eye-piece, and it is applied at the side of the barrel, instead of the top, as in American rifles.

The Hoosac Tunnel.

The great tunnel through the Hoosac mountain, which has been suspended for some time, is not to be given up. The *Commercial Bulletin* says respecting it:

"Under the act passed by the last Legislature, and the deed of surrender and conveyance to the State executed by the Troy & Greenfield Railroad Company, preparations are being made for the speedy prosecution of this important enterprise—this time we trust to its final completion. Workmen and machinery are being got in readiness for the purpose: an agent has been dispatched to Europe for models of an excavating apparatus (such, we believe, as is now in use in the great Alpine tunnel under Mont Cenis), and it is understood the best engineering skill to be had, here or elsewhere, will be put in requisition when the work is resumed. In regard to the work which has already been done outside the tunnel, the State Commissioners report that the line, as now located, is essentially a contractor's line, in which everything has apparently been sacrificed to save present outlay. All this will ultimately have to be changed, they say, and thus involve the necessity of doing much of the work over again.

"If the people of Massachusetts are to foot the bills for seven and a half or eight years more labor upon this 'big bore,' at an estimated cost of \$5,719,330, they will require it to be done in a thorough manner, so that it may prove a real acquisition to the interests of commerce, and

stand as a monument of American engineering skill. This can only be done by discarding the contract system as far as practicable, and by having the work executed under the immediate supervision of State agents."

Sleep.

Death from old age has been compared to falling asleep, never to awaken again in this world; and hence the transition is easy to a lucid consideration of the phenomena of sleep, "nature's soft nurse," so necessary to our existence. Death or madness must be the result of a long continued absence of this great restorer: so felt and said Byron in his last illness. Sir Benjamin Brodie mentions the case of a gentleman who, from intense anxiety, passed six entire days without sleep. At the end of this time he became affected with illusions of such a nature that it was necessary to place him in confinement. After some time he recovered perfectly. He had never shown any signs of mental derangement before, nor had any one of his family, and he has never been similarly affected since. Those who have been subjected to cruel tortures have declared that the most intolerable was the deprivation of sleep; and as this was one of the modes of treating the unhappy old women who fell into the hands of the witch-finders, it may account for some of their illusions, and the crazy confessions they made. The sick-nurse frequently has recourse to stimulants, which indeed remove for a time the uneasiness and languor occasioned by the want of sleep. But the temporary relief is dearly purchased, and those who have recourse to alcohol on such occasions, should know that it does not create nervous power, but only enables the recipients to use up that which is left, leaving them in more need of rest than ever, when the stimulus has ceased to act.