salt produced, might somewhat endanger its excellence. Under the present arrangement, boilers are paid $1 75 per day, and firemen $1. The wages of an engineer are $1 50 per day, and of common hands $1.

(This process was illustrated on page 97 of the current value of SCIENTIFIC AMERICAN.)

The total amount of fine salt manufactured in the Saginaw Valley up to the 1st of July of the current year was, nearly one hundred thousand barrels. At the present time, the number of blocks in actual operation is 22, with an aggregate of 1,187 kettles. Several of these blocks have started within a few days. There are, besides, four or five new blocks just ready to go into operation, to say nothing of the three blocks nearly completed for evaporation, by the Kanawha and Chapin process. If the 22 blocks now in operation succeed in maintaining the standard of productiveness established by the old ones, they are turning out daily 1,210 barrels, which, making an allowance for the check of winter amounts to 396,000 barrels or 1,980,000 bushels annually This is not a calculation of what the Saginaw works are expected to do; it is what they are doing at this moment; and shows a growth at the end of two years from the production of the first bushel of salt, equal to that attained by the Onondaga salt works in 1834, at the end of 38 years from the time the salt springs passed under the superintendence of the State. But it is not necessary to pause here. Within thirty days, or by September 1st, not less than four additional blocks would come into operation, raising the daily production to 1,300 barrels, and the annual production to 468,000 barrels or 2,340,000 bushels—a result only reached by the Onondaga salt works less than twenty-five years ago.

The only question which remains, and one upon which the predicted growth of the manufacture must depend, is that which respects the quality of Saginaw salt. There is no corner on which our predictions rest with greater security. The appearance of a pile of Saginaw salt is that of driven snow glistening in the morning sun. The grain is coarse, clean, and angular; the taste purely saline and unexceptionable, and the weight is 58½ lbs. to the measured bushel. Letters and documents are in the hands of the manufacturers proving that the acceptance of Saginaw salt is such that the market is literally clamorous for an adequate supply. It would occupy too much space to make many citations. The Mechanics' Institute, of Chicago, the New York State Agricultural Society, (at Elmira), and the Mechanics' Association, of Utica, have severally awarded the salt of the East Saginaw Company their highest testimonials. Harvey Williams, Esq., one of the oldest and most extensive fish packers on the lakes, certifies; "My experience and observation lead me to the opinion that the salt manufactured by your company is purer, stronger, safer, and more economical for fishermen than the Syracuse fine salt." He also names several other parties who have used the salt for fish packing with the same results. In Detroit, this salt is ranked equal to any, and is very often called for in preference to Syracuse salt. The annual statement of the trade and commerce of Toledo, says: "We are led to the conclusion that eventually all the beef, pork, &c., packed west of Lake Erie, will be laid down in Saginaw salt." Dow, Quirk & Co., of Chicago, think Saginaw Salt "superior to any that comes to this market." Large quantities of this salt are now sold in London, C. W., whence it is distributed through the province. St. Louis and Cincinnati also take large supplies, and the demand, at all these points, is far more than can be furnished.

THE Emperor Napoleon is continually adopting new methods of warfare, testing all the improvements that are brought to his notice, and introducing the best of them into his army. A recent letter from the camp at Chalons says that he is now instituting experiments to test a new plan for firing cannon by electricity. The advantage of this method is said to be that it insures perfect accuracy of aim, while the action is of course instantaneous.

TELEGRAPH POLES.—In all the new lines of the Electric and International Company in the south of England, Mr. Preece, resident engineer to the company, is putting up ten posts per mile, their average distances apart being therefore, 528 feet.

Correspondence

SAXONY—ITS MINING SCHOOLS AND METALLURGY.

FREIBERG, Saxony, August 11, 1862.

MESSRS. EDITORS:—Few who have not traveled in Europe can duly estimate the seclusion which 30 miles of mountain road entail upon a town. Here, for centuries, manufactures, agriculture and mining have been conducted by this community of a few thousand souls away from the main line of travel; and local habits of dress and deportment, style of furniture and living, have grown up to distinguish this people from their neighbors. No wonder, then, that the formal opening of the railroad hence to Dresden, 30 miles, which has taken place to-day, should have been made the occasion of a grand *fete*. The beauty of Dresden, as well as the mahogany-colored, brass-ornamented and brawny-armed peasant girls of the country, the yellow-liveried servants of his Majesty the King of Saxony, and the grey and dark green Tyrolese-uniformed students of the Thavandt Agricultural School, the miners of this great center of Saxony's mines, and the Erzgebirge mountaineers, all were here to share and increase the general joy. And now Saxony sends greeting to Pennsylvania—Freiberg to Pottsville, that here as well as there the treasures of our common mother may be placed upon the iron way, and without transshipment transported to the seaside for kindly exchange and common advantage. Pottsville—Freiberg—what a contrast! The one the growth of 30 years, the other a town in A. D. 1000. I passed to-day through the grand and elegantly sculptured portal of the Cathedral. The sculptures were executed A. D. 1185, and form a perfect gem of Architectural beauty, representing the figures of saints—but I forget; the *Scientific American* is not the organ of the Antiquarian Society. It deals with the great progressive present, and here where the most perfect methods of mining at great depths, especially the ores of lead and silver, are employed, and the most refined methods of extracting these metals from their ores, are pursued, the lover of applied sciencecan find as much of interest to him as can the antiquary. Nor is it necessary that he descend amid damp and darkness, and explore deep pits and narrow galleries, for the cabinet of the Bergacademie comprises the most complete set of models, beautifully contrasted and arranged on convenient tables, where, aided by the polite direction and description of the model master and his son, a few hours' examination will teach you more than weeks spent in groping under ground. Here are mining sections in wood exhibiting all the plans of shoring or of sustaining galleries. Models over 10 feet in hight, supplied with water by which the wheels revolve, and the whole process of draining and of extraction as practiced in Saxony, may be learned at a glance; the most recent and approved processes of crushing, washing and separating ores, and the best forms of furnaces for roasting, smelting and refining both the rich and the poor ores of Saxony and of other European States. What a treasure, say you, these would be in America. So thought I, and you will share the gratification with which I learned that the model-master was already engaged in making a set ordered for the United States? American enterprise not only directs the ordinary walks of commerce, it pervades our educational institutions. With the young men of America the proverb of Mahomet and the mountain is to be reversed; as they cannot come to the mines, the mines (in miniature) are to go to them! The institution which is to do its country this great favor is the Polytechnic College of Pennsylvania, located in Philadelphia. That school, which, in the thoroughness of its instruction in civil and in mechanical engineering, has earned for itself the reputation of being *l' Ecole Polytechnique* of America, is about to sustain an equal reputation as a school of mines. An institution which, in these times of general depression, has the purse and the nerve to obtain for its students the inestimable advantages which the study of these models will give them, deserves the thanks of the whole Union. Nearly six months will be required to complete the set, when they will be sent and placed in the cabinet of the College.

Nearly all the American news we get in the *Leipzig Zeitung* and other German papers, has unfortunately passed through that dirty part of London known as the *Times* office.

I go hence to the great Austrian manufacturing city of Brünn, which has taken so many medals at the present London Exhibition. SAXO-AMERICAN.

The Way Menhaden Oil is Made.

MESSRS. EDITORS:—Thinking that a description of the manufacture of menhaden oil, and some facts in relation thereto, would not be uninteresting to large numbers of your readers, I inclose the following which you can publish in your valuable paper if you think proper:—

In our bay (the Peconic) there are no less than six manufactories, consuming in the aggregate, about 2,000,000 fish weekly. The fish are caught in Gardiner's bay mostly, where they abound in great quantities. They are taken by what we call purse seines, and can be caught in any depth of water. The seine is made (as its name indicates) like an old-fashioned purse; after rowing around the fish the bottom is closed by a purse line and the fish are secure. There are four companies of fishermen from Rhode Island here at this time, having from four to five large boats apiece and from eight to nine men The fish are bought for $1 per thousand. These seines some days catch 150,000 each, which you see makes a paying business of it. The manufactories are nearly all on different plans. Some use large tanks in which the fish are placed and into which steam is forced. A portion of the oil is extracted, coming on the surface of the water and is skimmed off; the water is then drained off and the refuse is pressed by hydraulic presses or powerful levers. In another way of working, used by one manufactory, the fish are placed in a large iron cylinder similar to a boiler, and steam is let in at a given pressure while the cylinder is made to rotate by steam engine. The fish are steamed from 12 to 15 minutes then turned out and subjected to hydraulic pressure, which of course, extracts oil and water together. This runs off through pipes into tanks where the oil rises to the top and is taken off. There is a patent for this cylinder style, as it is called. The fish after being pressed are dried on large platforms (some of them covering half an acre of ground), and after being thoroughly dried the mass is ground into what is called fish guano, ranging in price from 25 to to 35 dollars per tun, and is considered an excellent fertilizer. These manufactories employ from 15 to 60 men each and consume an enormous quantity of fish. That it is a paying business I have no doubt, considering the amount invested which is considerable, the manufactories costing from 10,000 to 60,000 dollars each. I have not gone into the minutiæ of the business, but have written enough to show that we are a stirring people, and that if there is anything on land or sea which can be turned into money we are the ones to find it. WHITE HILL.

Greenport, L. I., Sept. 8, 1862,

A Practical Flying Machine.

MESSRS. EDITOIS:—I have invented and constructed a machine that rises or flies from its resting place by its own motive power. I put two clock springs on to the lower end of two shafts one within the other, and running in opposite directions. On the top of each shaft are long arms with screw wings, so arranged that when put in motion by the springs the machine rises up. At the eighth revolution the power of the springs are exhausted, consequently it is raised but a little way. But it shows the principle on which a steam engine may be made to travel in the air with or without a balloon.

This machine acts on the principle of a propeller, except that the propeller pushes, and this pulls, and the arms of this are longer that the spent air may not come against the machine. I have exhibited it to Mr. Joseph Sullivan, of Columbus, one of the most scientific men of Ohio, who says that it is the first inanimate thing that ever raised itself into the air by its own motive power without a balloon.

JEREMIAH RANDALL.

West Jefferson, Ohio, Sept. 5, 1862.

[Mr. Sullivan is in error, as a rocket rises by its own motive power, and we presume higher than your machine. Still, with your model you might make

some experiments which would be interesting. By measuring the power required to wind your spring, by weighing your machine, and observing to what hight it rises, you will let inventors know how much power an engine must have in proportion to its weight in order to raise itself by spiral wings. No steam or air engine yet constructed has this proportion of power. You can measure the power required to wind your springs by winding them with a weight and observing how far the weight descends. Wind a cord around the spring shaft and hang a light tin pail on the end of the cord. Then pour successive ounces of sand into the pail and measure the distance to which each ounce lowers the pail. Make these observations and send us the result.—Eds.

Spiral Fluted Nails and Bolts.

Messrs. Editors:—My attention has been called to a notice in your paper of 23d of August last, of "spiral fluted nails," said to be invented and recently patented to Mr. W. Wizzel, of Exeter, England, but which your article attributes to Mr. Samuel Pratts, of Boston, patented to him Oct. 25, 1853.

My only object is to call your attention in this connection to my patent of the 8th of January, 1842, for improvement in "cut and wrought spikes, bolts, nails and brass;" applicable to the smallest nail or largest bolt in a ship or other wooden structure; specimens of which, in great variety, were deposited in the Patent Office at the date of my patent which covers the whole principle, and I think fully settles the question of originality of the invention which seems to be disputed. As to the spikes and nails my invention dates back to the year 1829. The following is a copy of the claim as patented:—

Now, what I claim, &c., is the "screw form given to the angles of the body of the spikes, bolts, nails, &c., by twisting them in the manner herein set forth and described, or by any other means producing substantially the same results."

With a letter, dated April 18, 1842, I sent specimens and memoir, through the resident French minister (M. de Bascourt), to the Prince de Joinville, as peculiarly applicable to naval structures, and it is highly probable that our English cousins obtained the idea from this source.

In 1849 I received letters from gentlemen in high position here at the time, highly commending my invention; these letters were published with a long editorial and description in the *Washington Union* newspaper of August 18, 1847. At the same time specimens were exhibited by a friend to Messrs. Simonson & Co., and other large shipbuilders in New York.

The patent having expired without renewal and my official engagement having prevented the introduction of my invention, all pecuniary interest in it has ceased; but I am gratified that it now promises to benefit mankind at large, as I always felt confident it would some day, and this will be my only reward. I will mention before concluding that I now prefer twisting the iron cold, or to give the spiral form in the operation of drawing the bars.

W. T. Steiger.

Washington, Sept. 10, 1862.

Cannon of Large Caliber.

Messrs. Editors:—Many people suppose cannon of large caliber are comparatively of recent origin. This is an error. The 22-inch gun (of Constantinople), mentioned in No. 10 of the Scientific American, and also those 28-inch ones of the Dardanelles, were made many years ago. But none of these are "the largest in the world," as stated by your correspondent. The great gun of the Kremlin, in Moscow, is a trifle larger than either of them, being of 36-inch caliber, 18 feet long, and weighing 97,500 pounds. An inscription on this small pistol shows it was made at Moscow, by Andrew Tchoff, in the year 7094, which corresponds with the year 1586 of the Christian era. Here is a gun weighing almost five tuns, and made 276 years ago! M. M.

Grand Rapids, Mich., Sept. 10, 1862.

A 10-inch shell made of homogeneous metal, and filled with molten pig iron, was lately fired at a 4½-inch iron plate in England, at 100 yards distance, and made an indent two inches deep. The charge of powder was only nine pounds.

Egyptian Steam Irrigation and Cultivation.

About twenty years ago Ibrahim Pasha erected a steam engine of 100-horse power to take the place of 500 wheels which supplied water from the Nile to market gardens in the neighborhood of Boulac. When the natives saw the machinery put together, and were told its object, they pronounced the governor mad, but when they saw the huge machine belching out columns of water, they at once said the Franks had brought a devil, to empty the Nile.

Such is the fertilizing power of the Nile water, that when the Cornish engine just mentioned was erected, 700 or 800 acres of land were brought under cultivation in the immediate vicinty of Cairo, by means of leveling a number of sandhills, and mounds of accumulated rubbish, probably the sites of some former towns or villages. These are now covered with market gardens and sugar fields; the latter are chiefly for the consumption of the Cairenes, and when in season, one rarely encounters an Arab on the road who is not engaged in chewing and sucking the sugar cane; vendors, squatted on the ground, sell it in every part of the town at the rate of one and two canes a penny.

The division of this land into fields and gardens is effected by planting rows of prickly pears, which grow so rapidly and in such a stalwart manner, as soon to defy entrance, except by the legitimate gateways, in addition to forming a secure fence. The fruit, which they bear in abundance, is also sold in the streets and markets of Cairo. In order to form a fruit garden in Egypt it is necessary to choose a site above the highest water mark of the Nile, or to raise the ground above that level, to avoid the water from overflowing, or filtration forcing its way in and lying about the roots of the fruit trees, an evil fatal to many, especially to orange trees. The management of the date palm, the citron tribe, vine, fig, melons and water melons, forms the chief occupation of the Arab fruit gardener.

The date palm is cultivated from one end of Egypt to the other, and forms a source of great revenue to the Government; it also furnishes abundance of nutritious food for the people, at the moment when gathered ripe from the trees, and afterward in a pressed and dried state. From Cairo upward, the dates are of superior quality compared with those of Lower Egypt; each tree pays a tax of an Egyptian piastre (about six cents) to the revenue, and produces to its owner in good seasons about a dollar in the shape of fruit, and fiber for rope making; the lower leaves are also used for making crates, seats and bedsteads. The male and female palm are both grown; it is always necessary to have several of the former in every grove and clump of female trees. They are generally planted in the form of suckers, which are produced in abundance at the foot of the old trees; where they have neglected to plant male trees, or probably where the latter have died, the growers are obliged to cut spathes of the male blooms and tie them in the trees near the female flowers, leaving the pollen, which is produced in abundance, to be scattered by the wind.

Tribute to American Reaping Machines and Inventive Genius.

The *Mark Lane Express*, the highest authority on agricultural subjects in England, pays a high compliment to American reaping machines, and the benefits they have conferred upon British farmers. It says:—

Mr. McCormick, of Chicago, Illinois, has laid the world under new obligations. No one can pretend to be insensible to the economic benefits which have been conferred upon the farmers of this country by the introduction of the reaping machine, which was the wonder of the Exhibition of 1851. Entrusted to the prudent and energetic agency of Messrs. Burgess and Key, it has played an important part in the salvation of our harvests, when otherwise they must have suffered to a considerable extent on account of the westward movement of our rural population. It was, in fact, the first machine in England which settled the question, in the farmer's eyes, between the mechanical and the manual process of corn cutting. When we say that from the Brentwood Works so many as 3,000 reapers have already been supplied to the farmers of the United Kingdom, each capable of cutting down from twelve to fifteen acres a day, that hundreds of men are laying low the golden harvests, and conserving the fruit of man's toil in the fields of France, Russia, Spain, Germany, Italy and Belgium, and that, further, the inventor within the last twenty years has supplied—but without the screw platform, which is not required in that country—40,000 machines to secure the grain crops of the world, some slight idea will be gained of the benefits which may be conferred upon his fellow men by one persevering thinker.

We are not much in the habit, it is true, of considering ourselves under any obligation to those who are supposed to have made "a good thing" of their inventions. But inasmuch as inventors have been known to be actuated by high spirit and a desire to promote their country's progress, it may be that we shall come to look at these matters in a different light, and regard some of them as highly as those who, by virtue of large gifts, obtain exclusive possession of the cognomen "philanthropic." If it is true that we can never remunerate an inventor for his idea, because in its vast influence upon the world it is not possible to estimate its value, and that we can only remunerate him for his labor in perfecting the machine, and superintending the work of others in the reproduction of it, it is pretty clear that the world is laid under an obligation to the extent of the value of the idea, whatever that may be. We rise in the scale of civilization as we become masters of the circumstances in which we are placed, as we become superior to the elements around us.

Appetite and Food of Esquimaux.

The gastronomic capabilities of the Esquimaux and other Northern races and their fondness for fatty food, are exhibited in a sufficiently strong light in the following statements:—

Captain Parry weighed and presented to an Esquimaux lad the following articles:—

	lb.	oz.
Frozen seahorse flesh	4	4
Wild seahorse flesh	4	4
Bread and bread dust	1	12
Rich Gravy soup	1	4
Water	10	0
Strong grog	1 tumbler	
Raw spirits	3 wine glasses.	

This large quantity of food, which the lad did not consider excessive, was consumed by him within twenty-four hours. According to Captain Cochrane a reindeer suffices but for one repast to three Yakutis, and five of them will devour at a sitting a calf weighing 200 lbs. Mr. Hooper, one of the officers of the *Plover*, in his narrative of their residence on the shores of Arctic America, states that "one of the ladies who visited them was presented, as a jest, with a small tallow candle, called a purser's dip. It was, notwithstanding, a very pleasant joke to the damsel, who deliberately munched it up with evident relish, and finally drew the wick between her set teeth to clean off any remaining morsels of fat."

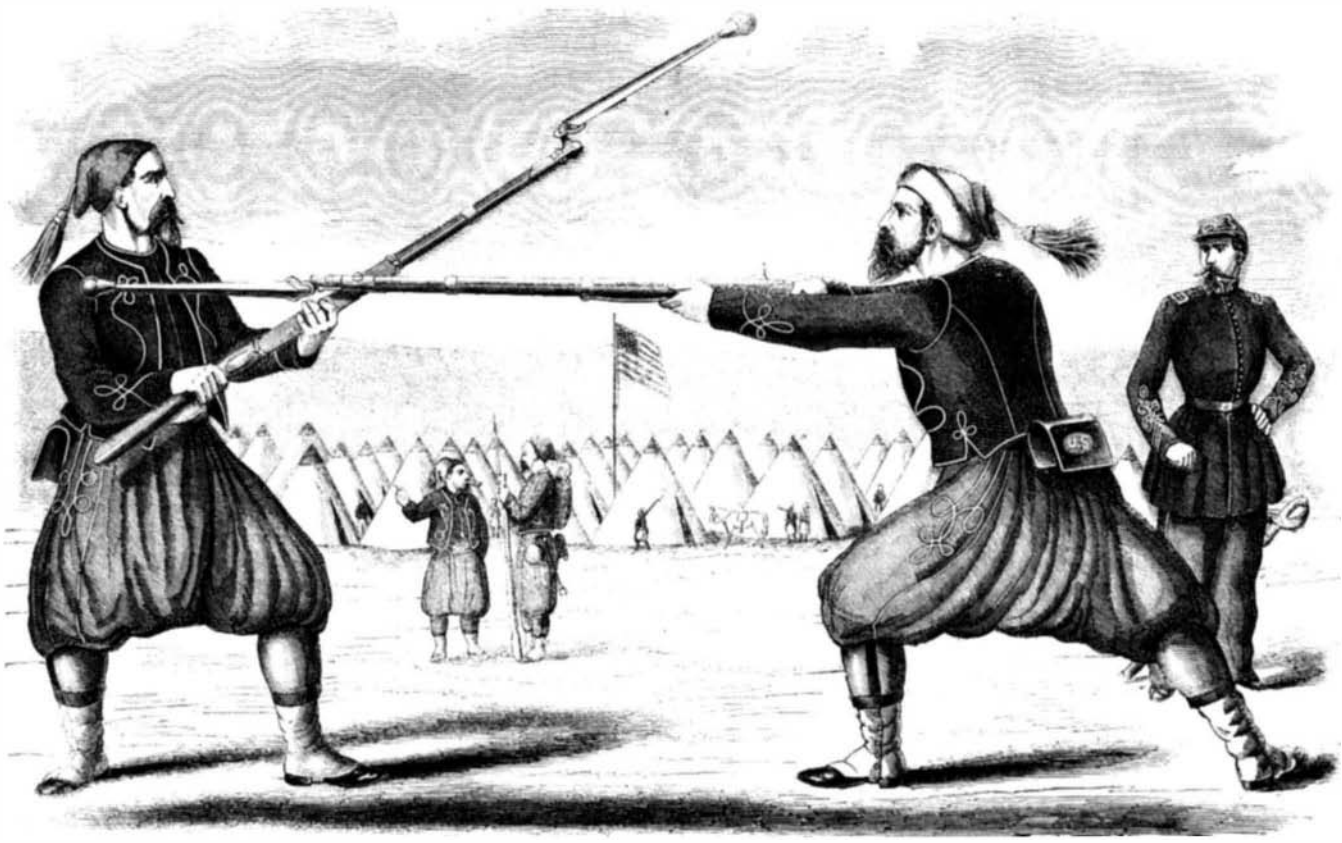
On this subject the late Dr. Kane, the Arctic explorer, said:—"Our journeys have taught us the wisdom of the Esquimaux appetite, and there are few among us who do not relish a slice of raw blubber, or a chunk of frozen Walrus beef. The liver of a walrus, eaten with little slices of his fat—of a verity it is a delicious morsel. Fire would seem to spoil the curt, pithy expression of vitality which belongs to its cooked juices. I wonder that raw beef is not eaten at home. Deprived of extraneous fiber, it is neither indigestible nor difficult to masticate. With acids and condiments, it makes a salad which an educated palate cannot help relishing; and as a powerful and condensed heat-making and anti-scorbutic food, it has no rival. I make this last broad assertion after carefully considering its truth. The natives of South Greenland prepare themselves for a long journey, by a course of frozen seal. At Upper Navik they do the same with the narwhal, which is thought more heat making than the seal; while the bear to use their own expression, is 'stronger travel than all.' In Smith's Sound, where the use of raw meat seems almost inevitable from the modes of living of the people, walrus holds the first rank. Certainly this pachyderm (*Cetacean?*) whose finely-condensed tissue and delicately-permeating fat (oh! call it not blubber) assimilate it to the ox, is beyond all others, and is the best *fuel* a man can swallow."

A solution containing silica and alumina in solution, hardens soft stone, and renders it very durable.

Improved Bayonet Guard.

"The bayonet is the queen of weapons," is a maxim of many renowned conquerors. These sharp points of steel, if firmly held in rank, will turn back the bravest cavalry, and on these all commanders rely for the preservation of their artillery. The skillful handling of the bayonet, therefore, is one of the most important arts for the soldier to learn, and in military schools a great deal of attention is devoted to teaching it. At West Point the cadets are taught to fence with india-rubber bayonets at the ends of their muskets, and the rapid and furious manner in which they thrust the points into each other's faces and against all parts of their bodies is perfectly terrific. soldier trained to its use will handle his arm in battle with greater ease. The expense of adding this guard to the ordinary scabbard is very trifling, and we are told that many officers of high rank have recommended its adoption in the army. It is also especially adapted to the use of militia regiments that are drilling in the evening.

A patent for the principal features of this invention was granted through the Scientific American Patent Agency, Aug. 5, 1862, and application for a patent on some further improvements embraced in this illustration has been made. The invention has been assigned to the inventor jointly with Wm. B. Welsh and Frederick Stallman, and further information in relation to it may be obtained by addressing Ernst, Welch & Co., York, Pa., Box 251.



ERNST'S BAYONET GUARD.

John G. Ernst, of York, Pa., has invented a guard to be attached to the end of an ordinary bayonet scabbard, so that the teaching of the bayonet exercise may be continued, as a part of the regular drill while the soldiers are in camp, without any danger to their persons. It consists simply of an india-rubber ball attached to the end of the scabbard and of a device for fastening the scabbard securely to the bayonet, so that there will be no danger of the scabbard being thrown off in the exercise.

The invention is illustrated in the annexed engravings. The scabbard, *a*, of the bayonet (see Fig. 2) is enlarged at the point to receive a hollow ball of india rubber, *b*, which coming in contact with the face or person will inflict no injury. The scabbard is secured to the bayonet by a metallic ring, *c*, which is attached to the scabbard by an elastic band, and is made of such form that it will not pass around the shoulder of the bayonet unless it is drawn downward to where its wide part may pass around the shoulder. Intelligent manipulation is thus required to remove the scabbard, and there is no danger of its flying off accidentally. The scabbard is attached to the soldier's belt by the flat hook, *d*, which fits into a metal loop secured to the belt for this purpose.

By having these guards attached to the ends of the bayonet scabbards all the soldiers may be regularly practiced in bayonet fencing without danger to their eyes or bodies. In fencing with india-rubber bayonets the arm is lighter than in service, and the muscles are, consequently, trained and developed to a less degree of strength than is required in battle, but with this guard the weapon is a few ounces heavier than it is with the bayonet naked, and the

Fig. 2

Manufacture of Alcohol from Coal Gas.

The following caustic remarks are from the *Chemical News*:—

The daily and weekly press, whose scientific paragraphs at this season of the year are more calculated to astonish than instruct the public, have lately contained announcements of a discovery to the above effect, at St. Quentin, by a young chemist named Cotelle. The paragraph goes on to state that a Joint Stock Company, with a capital of 400,000 francs, has been formed to carry out the patent. The inventor announces that he can sell his alcohol at 25 francs the hectolitre, while the most inferior spirit produced from other articles is selling for 75 francs the hectolitre. This, like many other chemical patents, is utterly impracticable on the large scale. M. Cotelle has read that M. Berthelot, some years ago, succeeded in transforming olefiant gas into alcohol by the intervention of sulphuric acid, and has jumped to the conclusion that as coal gas contains a considerable quantity of olefiant gas, he has only to shake it up with sulphuric acid to produce alcohol as he likes. We have seen M. Cotelle's patent; in it he claims to produce alcohol of good flavor by means of purified lighting gas passing over (*traversant*) liquid sulphuric acid, or by bringing it in contact with the acid in vapor (*avec l'acide en vapeur*). Our readers who know the long and tedious operation by which even a minute trace of alcohol can be produced in this way, will not envy the shareholders who have subscribed with such wonderful rapidity.

To make Superior Hospital Lint.

A very rapid method of making superior lint for wounds may be easily put into operation by a carding machine. Take any cylinder from six to ten inches in diameter, covered with common card clothing; lay an old card "doffer or lickerin" on the "strippers" of a wooden card; place it on a "grinder" frame, or even upon the centers of a common lathe, where a velocity of 600 or 800 revolutions per minute can be obtained; then take old table covers, napkins, sheets, &c., or any old linen rags; and apply one end to the cylinder, holding fast with one hand to the other end; with the other hand press the goods on to the cylinder, guarding this hand by fastening a piece of belt leather to the palm, allowing the end of the same to project one-half an inch beyond the finger tips. Do not allow the cloth to lie upon the cylinder too far, as it will only tear the cloth or make a poor quality. One person, by this process, can produce more lint, and of a superior quality, than 5,000 can, by scraping in the ordinary way, in the same time.

CONGELATION OF WATER.—Dr. Robinet has addressed a curious communication on the congelation of water to the Academy of Medicine. It is well known that the blocks of ice formed in the sea yield fresh water by liquefaction. When sea water or any saline dissolution is congealed the pure water is separated in the form of ice, and there remains a concentrated watery solution of the saline matter. It is thus salt is economically obtained in the north of Europe. To increase the alcoholic strength of wine it may be subjected to artificial cold, whereby the water alone which it contains is congealed and the wine becomes richer in alcohol. By operating in a similar manner on potable water Dr. Robinet has found that it loses nearly all its salts, whether soluble or not. The waters of the lake of the Bois de Boulogne having been subjected to the operation, the small quantity of calcareous and magnesian salts they contained were eliminated. The purity of the water is such that it may be used in many cases instead of distilled water