

the Bessemer converter. The first trials, although they proved the possibility of converting old iron rails into steel in that manner, gave an unsatisfactory commercial result. It was found that the rails required to be heated to a white heat before being introduced into the converter, that no more than one third of such rails could be added to the proportion of two thirds of very graphitic pig iron, and, with all this, that there was a greater waste in the converter, and more "scull" in the ladle, than with pig iron. Messrs. Martin, on the contrary, are able to use a proportion up to two thirds of old rails to one third of pig iron; they can manage the fusing very completely, and without excessive waste, and with a moderate consumption of fuel, advantages which are all due to the Siemens furnace which they employ. Mr. Siemens has himself very recently patented an application of his furnace to the manufacture of iron and steel direct from the ore, and he has exhibited a model of such a furnace in Paris, to which is added a small piece of steel produced in that manner direct from the iron ore. The furnace is constructed somewhat similar in form to the Rachette furnace, viz., with two parallel sides sloping downward so as to form a kind of trough between them. The ore is charged at both sides on the top of the furnace, and slides down the inclined planes of the two sloping sides. At the bottom of the furnace the gases from the producer and the necessary supply of air are admitted, and produce an intense flame, the products of combustion rising upward through the masses of ore, which are acted upon in a similar manner to that in the blast furnace. With very pure manganese ores it is possible to manage the process so as to decarburize the newly produced iron immediately after it is made, or rather the heat can be made sufficient for melting a metal which contains less carbon than common cast iron as made in the blast furnace, and at a lower temperature. This metal is natural steel, or "raw" steel, and, made from ores of sufficient purity, may have all the qualities of the best cast steel. The specimen exhibited by Mr. Siemens, and made, we understand, at his Model Steel Works in Birmingham, where the first experiments with this new process have been carried out, is of very fair quality as far as can be judged from its general appearance and fracture. We have been informed that Mr. Siemens is now erecting a similar furnace at Barrow-in-Furness, intending to make steel from hematite ore direct, at the Barrow Steel Works. Mr. Siemens' new process, if successful and economical, would do away with blast furnaces, and all other processes for making and refining iron now in use, but it is too little advanced at this moment to allow of a judgment of the probability of its practical success, to say nothing about relative economies. Its practicability remains to be established; but if we consider how much the same inventors have already established, how difficult it was to believe in the success of the Siemens furnace itself when first brought out, and how completely they have succeeded in this respect, we may be justified in entertaining some hope that this new invention will ultimately prove equally successful, although at present it may appear very revolutionary and contrary to adopted notions.—*Engineering.*

**MEE'S HOSE COUPLING.**

The intention of the inventor in this device, is to make a tight coupling without the aid of a washer, or of the loose setting-up ring, or of any device for forcing the two parts of the coupling together in the line of their axes, in order to form a water-tight joint. This coupling does not depend upon the mechanical force exerted to close the joint, but the pressure of the water itself makes the joint tight.

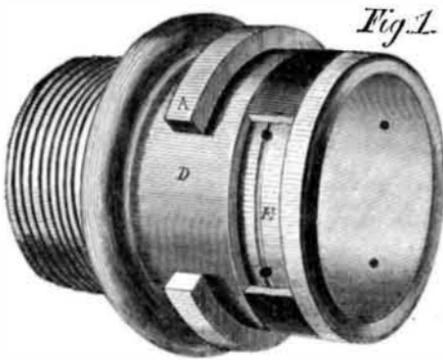


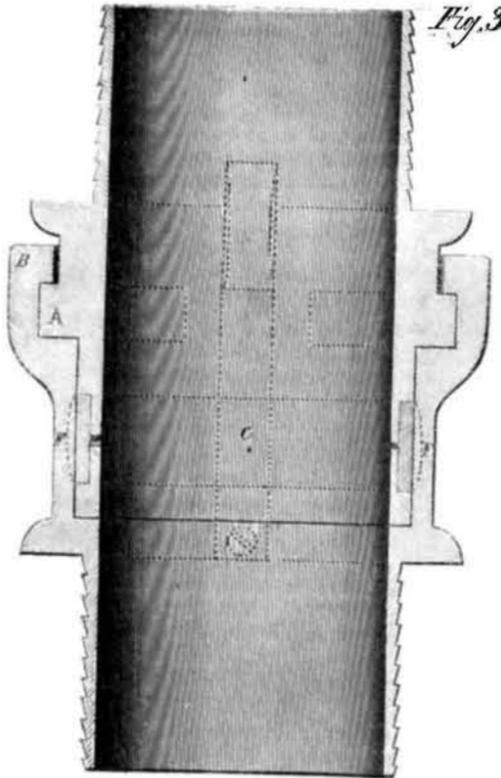
Fig. 2.



Fig. 1 represents one end of the coupling, formed where the eather or rubber is attached precisely like any other, but otherwise differing. It has a projecting ring, A, around the barrel part, a portion of which ring is cut away to receive

the hooks or snugs, B, Fig. 2, which pass by the ring, A, and, by a slight turn of one or the other part, securely lock the two lengths of hose or the two parts of the coupling together. This partial turning is, of itself, a sufficient lock to the parts, but to render "assurance doubly sure" a spring catch, C, is introduced which springs into the space, D, Fig. 1, between the parts of the ring, A, and prevents the parts from unlocking unless force is used to raise it from its seat.

Near the end of Fig. 1 is turned an annular groove in which is seated a rubber ring, or a ring of some elastic substance to



act as a packing. It will be noticed that a row of small holes is bored through from this annular recess to the inside of the coupling, the holes communicating on the outside with one another by a channel, E. Through these holes the water inside the hose or coupling finds its way, and its pressure forces out the elastic ring against the inner surface of the section shown in Fig. 2, making a perfectly water-tight joint. Fig. 3 is a longitudinal section, and will give a correct idea of the invention. It represents the parts, as connected, with a recess at F, which, if thought expedient, could be made to receive the extension of the flexible packing when the pressure is applied, although it is believed from numerous experiments this is not necessary.

A patent for this improved coupling was obtained by Barney Mee, May 7, 1867. It is manufactured by Mee & Jackson, Troy, N. Y. Applications for rights, etc., will be promptly attended to if addressed as above. It can be seen in this city in use at No. 99 Wooster street, on engine No. 13.

**Mechanical Uses of Castor Oil.**

We find in one of our exchanges the following remarks relative to the use of castor oil in the trades, more particularly its application to leather: It is much better to soften and to redeem old leather than any other oil known. When boots and shoes are greased with it, the oil will not at all interfere with the polishing afterward, as is the case with lard, olive, or any other oil. In Harrisburg, Pa, the old leather hose of some of the fire companies was greased with it, and found to become almost as soft and flexible as new leather. Leather belts for transmitting motion in machinery will usually last three to five years, according to the wear and tear they are exposed to; when greased with castor oil they will last ten years or more, as they always remain flexible and do not crack. Beside this advantage, castor oil will prevent slipping, so that a belt three inches wide, impregnated with it, will be equal to a belt four and a half inches without castor oil. It is necessary, however, to wait twenty-four hours, till the oil has disappeared from the surface and penetrated the leather, otherwise the freshly greased surface will cause slipping. The rats and other vermin detest anything impregnated with castor oil, and will not touch it;—another advantage.

**Geography of Plants.**

In an article on this subject by M. T. Lippincott, of New Jersey, the following rules were given, for determining the fitness of districts in the United States for the growth of certain varieties of wines.

Those places which have a summer temperature of 65.6°, a hot month of 70°, and a September of 60°, will ripen Delaware, Clinton, Perkins, Iona, Logan, Israella, with other hardy varieties. The temperature of their growing season corresponds to a mean of 65° and upward, and an aggregate of heat of about 8,000° Fah.

Those places which have a summer of 70°, a hot month of 72°, and a September of 63°, will ripen Concord, Hartford Prolific, Diana, Creveling, etc. Their season of growth corresponds to a mean of 67°, and an aggregate of 8,500°.

The Isabella requires a summer of 72°, a hot month of 73°, and a September of 65°, and a mean during its growing season of 70°, and an aggregate of 10,000°, of heat, etc. etc.

The summer temperature of Buffalo, N. Y., is 68°; it has a hot month of 74° and a September of 62°; and it is said that

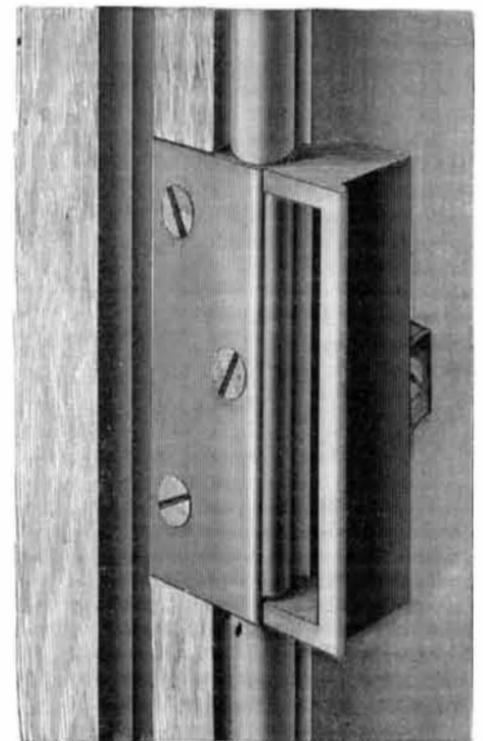
the temperature of places on the banks of the Niagara, north of the city, is from two to three degrees greater.

**Washing the Streets.**

To keep the streets of a great city clean is a problem which those who have thought the least about it are the most ready to solve. Those who understand it find their greatest difficulty in the cost. In the city of London, where every feasible scheme of street improvement may be tried, Mr. William Haywood, the engineer to the Commissioners, has been trying a series of experiments in "cleansing streets by washing"—a plan that seems very easy but is not very cheap—and has made a report from which the London *Journal of Gas Lighting* extracts the following reliable information. A portion of one of the principal thoroughfares was selected, 2,000 feet long, having a superficial area of carriage way of a little under 10,000 yards. Sixteen hydrants were fixed at a distance of 16 feet from each other. The first experiments were made in September last, and they were continued for a week at a time at different periods of the year; the weather, however, happened on each occasion to be tolerably fine. Ten men were employed with two jets, each morning for two hours and three quarters. Two men, who assisted in moving the hose, also swept the surface near the curbs while the water was playing, so as to save passengers from the annoyance of the jet being directed close to the foot-ways. The straw and refuse which would not go down the gullies was washed into the channels by the action of the water, and was then swept up and removed by scavengers. The quantity was scarcely a quarter of a load daily. The work was generally done between half-past two and six o'clock in the morning. The quantity of water consumed was about two gallons to each square yard. The streets were much cleaner than after ordinary scavenging, and this was most marked when rain came on after washing, for the surface did not become muddy until toward the end of the day, while the other streets of the city became muddy rapidly. On the whole, the comparison was greatly in favor of the surface cleansed by water. The cost of the machinery was £1175 per mile lineal; the cost of washing nearly 20s. for each washing, labor forming about half of that sum. There are about seven miles of thoroughfare in the city similar to those washed, and the annual cost of cleaning them by water would amount to £7932. These seven miles are leading thoroughfares. The cost of water at its present price would amount to £3282 per annum, and for the whole city, to £6000 per annum. But this is filtered water, of the same quality and price as that supplied to the breweries. Mr. Haywood suggests that the water should be obtained direct from the Thames, and if the washing system be adopted, the magnitude of the demand would justify some expense in pumping machinery for obtaining a cheaper supply. It would be objectionable to wash the streets in frosty weather, and in severe weather it would be impossible to use it; therefore the services of a staff of men, carts, and horses must be retained for emergencies. Pavements kept so clean will be more slippery during dry weather, and less slippery in damp greasy weather. The superior cleanliness will make the streets more noisy. Mr. Haywood thinks that the sewers would not be injured, and that the sewage about to be used for the reclamation of waste land would be improved by the admixture of street sweepings.

**DA CUNHA'S LOCK CATCH.**

Improvements in the form and style of articles in common use are not among those least valuable. Sometimes, indeed, an alteration which at first view appears to be quite superficial and trifling, is proved by use, if not by examination, to



be a radical improvement. Such, we conceive to be that represented in the engraving. It is a catch for ordinary door locks, those which are secured to the outside of the door, and differs from those ordinarily in use in being much stronger in construction, and much more securely attached. The common catch is held to the door jamb by two or more screws, the strain upon which tends continually to draw the screws from the wood.

This catch is of cast or malleable iron made with a project

ing lip to be let into the inside of the jamb, and held by screws, which, when the door is closed, are covered by its edge. On the back of the catch, is also another projection, through which one or more screws pass into the casing. These screws resist the shock of the spring bolt of the lock, and those on the inside of the jamb the strain upon the door itself, in a direction at right angles to their length. Thus it will be seen that the catch is secure against all chance of accidental displacement.

It was patented through the Scientific American Patent Agency May 21, 1867, by George W. Da Cunha, who may be addressed relative thereto at 311 West 36th street, New York City.

#### "Porter Spare that Trunk."

The Philadelphia *Ledger* says—and we know it is so—for we went traveling once, that at this season of the year the above is a daily and hourly request at the stations on all great lines of railway; but it is by far too often a vain request for down goes the trunk with a crash—the lock is broken and the contents of the unfortunate receptacle are scattered over the ground to the dismay of the owner and alarm of other travelers around, who are left to anticipate a similar mishap to their own baggage. If the sufferer be a lady, and, as happens every now and then, without a male escort, she is obliged to look helplessly at her dresses and articles of toilette rolled in the dust and dirt; and if gathered up and stowed away in the trunk by some good-natured person near, they are in a sorry plight. The porter or baggage man in place of apologizing for the mischief which he has carelessly done, will most likely be heard to growl and mutter words of insolence and defiance, as if he had only exercised one of his reserved rights. Baggage-masters and their assistants are often equally as reckless as the surly porter, of a decent regard for the property entrusted to their charge, as shown in the way in which they toss our trunks and other luggage, or throw them from one part of the car to another. Ladies are not the only sufferers by this abominable practice. It may be alleged that these cases are exceptional, and of rare occurrence. Most travelers will tell us, in reply, they are incidents witnessed on every long line of railroad, and especially in the summer months, when so many leave their homes in pursuit of health and pleasure. Very pleasant indeed to have one's trunk smashed and clothes spoiled! There seems to be a fixed determination, on the part of porters who carry luggage to steamboats and depots, and from them to hotels, to test the strength of trunks, and as far as in their power, snap the iron bands, to break off straps, which they seize held in place of the handles, and to wrench hasps and bolts of locks from their fastenings. There is an apparent trial to ascertain which has the greatest power of resistance—the trunk, or the pavement, or the platform, when the first is thrown down as if it were in the performance of some gymnastic feat for a wager. Is it not time that there should be a class of civilized trunk carriers—of men who understand that they should be careful of goods intrusted to their care.

#### New Base for Artificial Teeth.

Dr. G. F. J. Colburn, of Newark, N. J., has invented a substitute for rubber in dentistry, which promises to be of much value to the profession. It is in reality a cement of which the mineral asbestos is one of the ingredients. Asbestos is a very peculiar substance. It is exceedingly light, and so very fibrous in its nature that it may be spun and woven like cloth, in which condition it resists fire, water, and many of the acids with complete success. Taking advantage of these natural qualities Dr. Colburn has, by long study, discovered additional substances, which, when united, form an artificial base that possesses remarkable toughness, adherence, strength and lightness. The ease and freedom with which it can be molded is a strong recommendation. It can be readily applied to gold, platinum and other plates. We have seen some full sets of teeth on aluminum plates that were truly beautiful. This new base contains no ingredients injurious to the health of the mouth or system. It is not affected by acid secretions, is free from all taste, and is inodorous. We hope that its merits will be thoroughly tested. Patents have been allowed.

#### Agricultural.

There are 23 applicants for the position of Commissioner of Agriculture, made vacant by the death of the Hon. I. Newton, viz.: Norton S. Townshend of Ohio; John A. Warder of Cincinnati; Thomas Brown of Ohio; Col. Capron of Illinois; the Hon. John B. Clark of Missouri; the Hon. James Birney of Michigan; the Hon. L. Chandler Ball of New York; F. M. Blair of Washington, D. C.; William H. Ludlow of New York; Oliver H. Kelly of Minnesota; A. S. Paddock of Nebraska; the Hon. James R. Hubbell of Ohio; Isaac Newton, jr., of Pennsylvania; Thomas P. Robb and Solsom Dorsett of Illinois; E. C. Wilson of Pennsylvania; R. J. Powell, John H. Klippart of Ohio; the Hon. Frederick Holbrook of Vermont; James S. Grinnell of Massachusetts; William H. Russell of Washington; the Hon. W. T. Lemoys of Virginia, and the Hon. E. H. Hyde of Connecticut.

#### BUSINESS AND MANUFACTURING ITEMS.

The capital invested in agriculture in England amounts to £3,311,000,000, returning a profit of 13 per cent.; the capital invested in manufactures is £213,000,000, and the annual profit is 120 per cent.

The French ladies spend 8,000,000 francs per year for corsets, 15,000,000 for gloves, and 10,000,000 for bonnets. False diamonds cost them 1,800,000 francs, false teeth 1,500,000, glass eyes 84,000, masquerade dresses 730,000, perfumery and cosmetics 22,000,000, fans 5,000,000, artificial flowers 28,000,000.

The directors of a railroad in New Jersey are said to have offered to parties who will build on the line of their road, a free pass over it from three to five years.

Since the year 1861, there have been sunk in the United States 7,930 oil wells, yielding a total product of about 11,640,670 barrels of crude petroleum.

The universal belief in abundant crops this year, has brought a class of speculators into the field who have bought up all the grain bags in market, much to the disgust of the farmers. The market for reapers and mowers has also become quite active in preparation for reaping the new crop.

The works of the Boston Belting Company, at Roxbury, Mass., the largest establishment of the kind in the country, covers five acres of land and constantly employ 150 hands. Packing for machinery, engine hose, and tubing, are among its products. The consumption of stock at the present dull season reaches \$75,000 per month.

Watch chains are now made by machinery by the pioneer firm in this line in New England—Sackett, Davis & Co., of R. I. The machine is their own invention, and is pronounced one of the most ingenious and elaborate pieces of work ever devised. By means of it bar gold is transformed rapidly and without noise into the most delicate, or substantial fob and vest patterns of chains.

In the exportation of coal, Erie, Pa., ranks second in the United States. Over 250,000 tons was shipped from this port during the year ending Jan 1st, 1867. The bituminous coal is taken to ports on the upper lakes; principally to Chicago. The return freights are made up from Lake Superior copper.

The projected railroad from Atlanta, Ga., to Decatur, Ala., when completed, will effect a saving of more than 100 miles in the distance traveled between Memphis and Charleston.

The Chicago tunnel cleared forty-six thousand dollars for the contractors. The project of a great park at Chicago was defeated at the recent election.

Sargent & Co., of New Haven, have the largest hardware manufactory in the country, employing 800 hands, and turning out 4000 different kind of articles, valued at from \$4,000,000 to \$7,000,000 per year.

English authorities estimate the proportion of passengers killed in Great Britain by railway accidents, as only one in four millions; the number of employees killed is very much larger than that of passengers.

The American Steel Company will soon erect works at East Bridgeport, for the manufacture of cast steel.

A company of capitalists are about building an extensive mill at Paterson, N. J., for the manufacture of nails.

The Boston and Worcester railroad, on one day during the recent visit of the President to the former city, carried more than 21,000 passengers, the largest number ever transported over the road in a single day. Not one of these was injured, nor was there an engine or car off the track. The superintendent of the road has issued an order thanking his employees for their care, fidelity and attention on this occasion.

A road locomotive was successfully tried in the streets of Rome, recently, the experiment being made under the direction of the artillery officers of the Pontifical staff.

At St. Anthony's Falls, Minn., there are six mills, each of which turn out 6,000,000 to 12,000,000 feet long lumber, per year. Last year 30,000,000 shingles were manufactured in this vicinity. The flour mills at this point have a capacity of 3,000 barrels daily.

#### Editorial Summary.

**DEATHS BY CHLOROPFORM.**—As early as 1859 Barrier de Lyon ascertained that there had been over two hundred recorded deaths from the administration of chloroform as an anesthetic. In the next five years, Diday reported twenty-one registered cases, and at least as many unregistered, in England alone. Some cases, like that at Bellevue Hospital last winter, could not be attributed to any impurity of the article or imperfection in the administration. Canter remarked that half his chloroformized frogs died, and hardly any of his etherized ones. Unlike ether, the action of chloroform continues after its application is stopped.

**GIGANTIC omnibuses**, on a new model, have been constructed in Paris, specially for horse races and other out-door sights. They are so contrived that upward of fifty persons can be seated on the roof, and they constitute a kind of travelling grand stand.

**CALIFORNIA MARBLE.**—A pure white marble of a superior polish, and rivaling the finest Italian, has been discovered near Colfax, Cal., and only two miles from the Pacific Railroad.

**A LOVER OF POTATOES.**—A wealthy citizen of Berlin has applied to the municipality of that town for a site on which to erect a statue to Francis Drake, as the introducer of the potato into Europe, and offers to subscribe \$11,270 toward it.

**SALMON IN AUSTRALIA.**—The latest experiment in pisciculture has been the raising of the salmon in the river Derwent. Three years since the first batch of salmon ova arrived on those shores, having been transported sixteen thousand miles on ice. After this protracted journey the fish hatched from the ova, were turned out into the river, and now the inhabitants are rejoicing over a fine run of veritable salmon.

**A MONSTER CHERRY TREE** now growing in Reading township, Ohio, has attained the height of 80 feet, and is four feet one inch in diameter. It is of the "black heart" variety, and the seed was brought from Berks County, Pa., in the year 1817.

**PARISIAN PINE APPLES** are made by saturating turrips with a sirup which the confectioners know very well how to manufacture. The resulting fruit is said to be delicious, and is quite popular among the Exposition visitors. In this city, a few days since, it was testified in court that the jellies sold as made from strawberry, pineapple, and other fruits were all formed out of apple jelly, colored and flavored with essences to suit the name.

**SWITZERLAND** has 3,500,000 inhabitants and 345 scientific and literary publications, while France, with ten times the population, has but about 500 journals and magazines. The solution of this is in the fact that in Switzerland the people all receive some education, and consequently can read, and take the papers, while in France less than one half can read.

**TRANSPLANTING FULL-GROWN TREES.**—Thirty beautiful elms fully forty feet in height, were removed from their native forests, and replanted in front of the site of Congress Hall at Saratoga, to take the place of the trees destroyed by fire. They are now in full leaf and appear to be thriving under this singular treatment. The same thing has been successfully accomplished in Scotland, also in Paris.

**THE BANK OF ENGLAND** has 30,000,000 in gold coin now on hand, there being no call for it, notwithstanding the low rate of interest. This is owing to dullness in business, and the falling off in the foreign trade, which has been ten per cent since September last.

**SHEEP-SHEARING BY WIND.**—A man in Wisconsin has a patent sheep-shearing machine which operates just like a reaper or mower, and mows a swath of wool an inch and a half wide. The motion is got by means of a little wind engine in the handle, which is to be driven by a force pump or bellows forcing wind into it by a flexible tube.—*Beaver Dam (Wis.) Citizen.*

**A NEW method** of vitrifying the surface of iron has recently been introduced in Paris. Instead of covering the surface of the iron according to the usual method with a very fusible glass in powder and then bringing the iron to a red heat, the materials of the glass are laid upon the iron, which is heated until perfect vitrification takes place. The consequence is that the iron becomes oxydized, and combining with the silicic acid, the iron and glass form one substance. The coating may be as thick as desired, but it is found in practice that a thick coat of glass soon breaks away, while a thin one lasts for a long time. The method is being applied or tried upon armor plates for ships.

**THE STRAWBERRY** growers of Vineland, N. J., during the season just ended raised nearly 278,000 quarts of strawberries, valued at \$38,000. Of these, 68,000 quarts were consumed or canned at home, and the balance were shipped to Philadelphia, New York, and other points. . . An Ohio fruit grower succeeded this year in raising one bushel, three pecks, and three quarts of strawberries from a square rod of ground.

**A ROOM FULL OF GOLD.**—Pure gold is nineteen times as heavy as water, and as a cubic foot of the latter weighs a thousand ounces avoirdupois, the same dimension of gold would weigh 19,000 ounces, valued at somewhat more than eighteen dollars per ounce, or the whole would be worth a little more than a third of a million dollars. The amount of the precious metal now existing is estimated at \$5,950,000,000, in value. If now this was melted, the resulting mass would have nearly 660 cubic yards, and might be placed in a room five yards high, eight yards wide and sixteen yards long.

**SOME beef** which was deposited in tins beneath a heap of stones in Spitzbergen, by Capt. Parry, in 1827, was recently discovered, and a portion was cooked and eaten at a supper in Stockholm, after being preserved for forty years.

**MINERS' LAMPS.**—Notwithstanding that every English miner who is detected in unlocking his safety lamp is liable by law to three months' imprisonment, the offense is committed with impunity by means of false keys. A simple plan has been invented by a manufacturer of these lamps, for sealing them without using any lock. When the staple has been put down over the eye, a small leaden pin is inserted in the latter, then being placed under a horizontal press fitted with two dies, the shank of the plug is formed into a head, and both heads are impressed by the dies with any lettering or device.

**PARISIANS** are fond of confectionery. According to the Chamber of Commerce about eleven millions of francs were spent in bon bons last year.

**DEVILLE** has lately made the observation that the addition of a little zinc amalgam to ordinary solder makes it applicable at low temperatures to aluminum bronze, cast iron, and also, no doubt, to other work in which quicksilver would not be objectionable.

**THE SEVENTEEN-YEAR LOCUSTS** have made their appearance over a belt of country, just northwest of Wilkesboro, N. C., extending far northeast and southwest, and being from thirty-five to forty miles broad. It is a singular confirmation of the claims of these insects to their popular name, that this identical stretch of country was visited by them in 1850 and not since.

**FRANCE** realizes over seven million dollars annually from the door and window tax, and on forests and fisheries more than eight millions; and from the sale of gunpowder, about two and a quarter millions. The sum of over forty-five millions dollars accrues from the sale of tobacco alone. For the administration and collection of the revenue she actually pays nearly forty million dollars.

**FEMALE LABOR.**—In Italy about one third of the whole number of laborers engaged in agricultural pursuits are women. In her manufactories 1,692,740 females and 1,379,695 males find employment. Out of 531,453 artists, nearly one fourth are women. There are 257,407 female landed proprietors there, and 313,497 maid servants. In France nearly one half the labor of almost all kinds is performed by females.

**THE PANAMA RAILWAY.**—Since the construction of this road across the Isthmus it has carried nearly 400,000 passengers and \$675,000,000 of treasure, the latter from the Pacific to the Atlantic side of the Isthmus. The silver shipments over the road are gradually declining, and most of the silver transported is shipped to the Isthmus from the Pacific coast of South America. Of freight, the road has transported 614,535 tons, but this year it is estimated the traffic will amount to 150,000 tons. America now controls the road, which runs through the territory of New Granada, but England is making great exertions to get possession of it.

**SINCE 1837** there have been established throughout the world 160,000 miles of telegraph lines, comprising 400,000 miles of wire, and working through nearly 14,000 stations. The total length of submarine cables laid is 19,923 miles. The price of telegraphing is higher in the United States than in England.

**THE CONTINENTAL HOTEL** at Long Branch, is 700 feet long. A continuous piazza fronting the ocean extends its whole length.

It is calculated that 64,000 persons wear decorations of the Legion of Honor. A great legion, but no remarkable honor.

#### Recent American and Foreign Patents.

*Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.*

**BRICK KILN.**—Andrew S. McBride, St. Louis, Mo.—This invention relates to a new and improved brick kiln, so constructed that either coal or wood may be used as a fuel, and by it a great saving in fuel is effected and the bricks burned in much less time than hitherto. The invention consists in having the kiln constructed with a series of fire chambers at each side extending its whole length, with the smoke stacks at each end, and having the top of the kiln constructed of a series of dampers or adjustable slats, whereby the advantages above described are obtained.

**GANG PLOW.**—Robert R. Graves, Montgomery, Ala. Patented July 9th, 1867.—In this invention the dip of the plow is regulated, and means are provided by which upon encountering an obstacle the plow may be withdrawn without backing the team.

**BROOM HEAD.**—Lewis Allen, Berkley Springs, West Va. Patent dated July 9th.—The socket of the broom head is made of leather, pierced for the passage of the sewing twine and with a confining band, also pierced and retained on the socket by grooves in the latter.

**SAWING MACHINE.**—James R. Logan, Bellmore, Ind.—This invention relates to a cross-cut sawing machine and consists in a peculiar construction of the carriage on which the machine is mounted, whereby the frame of the machine may be retained in a horizontal position when placed on uneven or inclined ground. The improvement also consists in a modification of the construction of the standard or support to which the saw bar is attached when sawing felled timber; and, further, in the employment or use of a peculiar saw guide.

**STEERING APPARATUS.**—Thomas W. Murray, New York City.—This invention relates to a steering apparatus to be applied to the head of the rudder post of a vessel, whereby a very compact, simple and powerful mechanism is obtained for the purpose.

**STRIPPING HIDES FROM BEEVES AND OTHER ANIMALS.**—Christopher Brühl, Greenpoint, N. Y.—This invention relates to a useful machine for stripping hides from beeves and other animals, it being designed to supersede the manual prosecution of such work which is now clumsily practised at a considerable expenditure of time and labor.

**RAKING ATTACHMENT FOR REAPERS.**—John C. Hall, Monroe, Wis.—This invention has for its object to furnish an improved self-raking attachment for reapers which shall be so constructed and arranged as to imitate the natural movements in raking the grain from the reaper by hand.

**MANUFACTURE OF BONE HANDLES FOR PARASOLS, CANES, ETC.**—Joseph Harvey, Philadelphia, Pa.—Bone has long been used as a material for the manufacture of parasol, umbrella, and other handles, but it is not employed as extensively as would be, provided sufficient stock could be obtained of proper size. This invention is to obviate this difficulty; it consists in constructing a bone handle of pieces connected together in a novel and very secure manner which will admit of a handle of the largest required size being made for various articles, including those enumerated.

**GOVERNOR AND STOP MOTION.**—F. J. Nutz and Philip Estes, Leavenworth Kansas.—This invention consists in an arrangement whereby the ordinary centrifugal governor is controlled in its action and assisted to perform its proper functions as a regulator of motion, and also in a device for instantly closing the valve and stopping the engine in case of accident.

**LADDER.**—Benjamin F. Turner, Bridgeton, N. J.—This invention relates to an improvement in ladders, for connecting several short lengths of separate ladders, in such manner that they may be readily and safely extended to be used as one long ladder, for a high elevation, or may be doubled upon each other to be used as a scaffold, or as a stage ladder, and thus be employed for various useful purposes.