Scientific American.

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 belt 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

"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 bagage 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 of 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 resistence—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 civilzed 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. Lemosy 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 £313,000,000, 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, talse 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

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 beliefin 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 ispronounced 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 tuns 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 saying 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 em-

ployees 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 Pontificial 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 deliy.

Editorial Summary.

DEATHS BY CHLOROFORM.—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 traveling 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 clizen 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 hight 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 visitants. 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 1 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 hight, 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 infull leaf and appear to be thriving under this singular treatment. The same thing has been successfully accomplished

THE BANK OF ENGLAND has 30,000,000 in gold coin now on hand, there bein no call fort, 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 amower, 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, theiron 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 scason 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 Ohiofruitgrower 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 thou-and 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 cubicyards, 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 the 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 ping is formed into a head, and both heads are impressed by the dies withany 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 aluminium 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 guapowder, 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 1,379.605 males find employment. Out of 531,435 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, theroad has transported 614,535 tuns, but this year it is estimated the traffic will amount to 150,000 tuns. 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 19,023 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.

I'r is calculated that 64,000 persons wear decorations of the Legiou of Honor. A great legion, but no remarkable honor.

Becent American and Loreign Latents.

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 scries of fire chambers at each side extending its whole length, with the smoke stacks at each and, 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. Belimere, 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 inventionrelates 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.

STEIPPING 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 forreapers 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 asit 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 controled 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 an improgement 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 yatfous useful purposes.

LAMP BURNER.- William Robinson, Funkville, Pa.- This invention relates to an improvement in the construction of lamp burners and consists in making the cone or deflector movable by raising and lowering it within the outer perforated frame or case of the burner, to set the top nearer or further from the top of the wick tube.

COATING IRON AND STEEL WITH CAST IRON.-James Rigg, Iowa Falls -This invention relates to a method of producing a hard surface on iron and steel, and it consists in coating the said metals with cast iron, there by producing a surface hard as the hardest steel, and which is susceptible of a high polish.

LATHE TOOL.-John C. Shackelton, Lawrence, Mass.-This invention relates to the manner in which a turning tool for lathes, in iron turning, is constructed and secured to the shank or tool holder, and it consists in forming the shank with a head in such a manner that the cutting tool is firmly secured to it and made adjustable by screws.

MOP WRINGER.-A. G. Starkweather, Burlington, Vt.-This invention has for its object to furnish a neat. simple, and cheap device by means of which mops may be wrung without its being necessary to take hold of the mop with the hands.

ANIMAL TRAP.-L. V. Badger, Chicago, Ill.-This invention has for its object to furnish an improved rat trap, simple in construction, not liable to to get out of order, and reliable in operation, and one which the rat, by escaping into the cage, will again set.

COTTON GIV.-A. Fessenden, Beaufort, S. C.-This invention relatesto a cotton gin of that class in which the cotton is taken from a stationary platform and is carried between two rollers, which are so close together that the seed cannot pass through between them. The invention consists in the device for hanging the lower roller and adjusting it in the proper position. Also, in connection therewith, in an adjustable feed platform. Finally, in the shape of a self-adjusting seed-clipper or knife, and in the manner of hanging the same, so that it will assist in separating the seed from the fibers before the cotton comes to the rollers.

SPRING-BED BOTTOM AND BEDSTEAD.—E. Kreighoff, Rochester, N. Y.—This invention relates to a flexible spring mattress or bed bottom, which is so ar ranged that it can be easily removed or replaced when desired. When to be as a bed bottom, the device is combined with a bedstead, which can also be easily taken to pieces, and to which it is secured in a novel and practical

WOOD SCREW.-H. A. Harvey, New York City.-The object of this inven tion is to construct the head of a gimlet-pointed wood screw of a globular or spheroidal form, and to provide for driving it without cuiting the ordinary nick across its face.

SPICE MILL.-H. W. Oliver. New Haven. Ct.-This invention relates to a new arrangement for keeping and grinding spices of various kinds, and the invention consists in combining and arranging a number of tubes or cylinders in such a manner that while the tubes severally contain different kinds of spices, either one may be ground separately from the rest.

MACHINERY FOR MAKING BUTT HINGES.—Adrian Rais, Waterbury, Ct. This invention relates to improvements in machinery for the manufacture of butt hinges, and consists in mechanism so constructed and arranged that the two match blanks of a hinge are conveyed by automatic devices from two feed boxes or hoppers to the dies for bending the knuckles, thence to the milling wheels or disks, and thence to a central point where the leaves of the two match blanks are joined or interlocked, when another auto matic device inserts the nail or rivet and the butt hinge is finished and dis charged.

WATER ELEVATOR.—Samuel C. Lewis, Woodbridge, Mich.—This invention has for its object to furnish an improved apparatus for drawing water from wells, cisterns, etc.

GATE.—Ehenezer Young, Camden Center, Mich.—This invention has for its object to furnish an improved gate so constructed and arranged that it may be raised and will remain suspended so as to swing over snow or other obstructions, and so that its forwardend may be lowered to rest upon the ground and hold the gate stationary in any position in which it may be placed.

AXES AND HATCHETS.—Daniel W. Callum, Laoni, Ill.—This invention relates to an improved form of ax, and consists in giving the edge a semicircular shape.

RAT TRAP.-George Irwin, Elizabethtown, Ky.-This invention has for its object to furnish an improved rat trap so constructed and arranged that the caught rat, by locking himselfin the inner apartment, will again set the trap.

WASHER AND WRINGER .- Wm. Bicknell, Hartford, Me.-This invention relates to a machine for washing and wringing clothes, and consists in the use of a tub in which a perforated reciprocating dasher is arranged, the removable cover of which is fluted on the under side, so that the clothes in the tub can be pressed between the dasher and the cover and are then submerged in water, and pressed again, until they are perfectly clean. They can then be wrung by pressing them between the dasher and the cover, and securing the former in place, gradually increasing the pressure until the water is removed from the clothes. The cover can be removed if desired, and can be used as a wash board.

WASHING MACHINE--Samuel Brackett, Port Huron, Mich.-This invention relates to a washing machine in which a flexible concave is so arranged in a box, around a revolving cylinder, that it can be closed completely around the said roller, thereby forming a cylinder of friction rollers around the clothes. The latter are secured upon the cylinder and revolve with the same within the flexible cylinder.

CARPET STRETCHER.-William W. Taylor, Newark, N. J .-- This invention has for its object to furnish an improved instrument by means of which a carpet may be stretched upon the floor and held in place while the nails are being applied.

TUG TRIMMER.-AlbertV. Hill, Limestone, N. Y.-This invention has for its object to furnish an improved instrument by means of which the edges of a tug may be conveniently, accurately, and quickly trimmed.

CLOTHES DRYER .-- Henry Gransden, Dubuque, Iowa .-- This invention con sists in arranging arms upon an upright pole, in such a manner that while the arms are securely attached to the pole, and the cord or rope upon which the clothes are hung are attached to the arms, the whole may be securely folded up.

PETROLEUM FILTER.-J. Henry Smith, Pittsburg, Pa .-- This invention re of filtering and purifying petroleum, and it ing it through filtering pans containing proper filtering materials.

CAR COUPLING.-James Depeu, Peekskill, N. Y .-- This invention relates to a self-operating car coupling, in which a link is used that is made in shape of a strong bar, having a head at each end. This head, when inserted in the coupling box, raises the hook-shaped front end of a pivoted bar, which as soon a the head has passed under the hooks, drops down over the head and locks the same between the inner end of the hook and a stop that is provided in the coupling box. For uncoupling the link, the front end of the hooked bar must be raised, which can be done in various ways.

BURGLAR ALARM GUN.-John Wilson, Anderson Court House, S. C.-This invention relates to a burglar alarm that consists of a swiveled horizontal gun barrel, so arranged on a frame that the said barrel can revolve on its vertical support. Suitable stops are arranged around the barrel, which are connected with wires that are spread across the room in which the apparatus stands, so that when a burglar or other party not acquainted with the ar rangement of the wires, comes in contact with one of the same, the stop which holds the shait will be released, and the gun will swing around and strike against a stop, and point towards the direction in which the wire is stretched, whereby it will be discharged.

SPRING BEDS, SEATS, AND COUCHES .- DwightBabcock, Seneca Falls, N. Y This invention relates to a new manner of securing the upper slat of a spring bed bottom, seat, or couch to the spiral springs, and consists in the use of a ribbon which is laid across the slats, above a row of springs, and which is passed under the upper winding of each spring, thereby connecting and securely uniting the slats to the springs without the use of other fastenings or

APPARATUS FOR DRYING LUMBER .- Richard P. Johnson, Wabash Ind .-This invention relates to an apparatus wherein woo of any description whether sawed or split into lumber or not, may be steamed and dried, so as to be thoroughly seasoned.

LATHE FOR TURNING WAGON AXLES.-J. E. Cromwell, Jackson, Mich. This invention relates to a machine for turning wagon axles, or the arms of axles that run in the wheel, and consists in the combination of saws and cutters that work in conjunction with each other in forming and giving the propershape to the arm of the axle. It also consists in the novel arrange ment of the feed works, which operate against a pattern which is duplicated by the machine in the most accurate and precise manner.

CREAM STRAINER.-George J. Bennett, Homer, N. Y .-- This invention relates to a cream strainer, which consists of a cylindrical vessel with concave oottom, in which a seive or strainer is secured in such a manner that it can be easily removed or put on. A disk, having inclined wings similar to those of a screw propeller, is suspended directly above the strainer from a vertical shaft, and forces the cream through the meshes of the strainer when the shaft is revolved by a crank or other suitable device. Below the strainer is secured to the bottom of the vessel an inverted funnel, which protects the strainer and directs the flow of the cream after the same has been forced

Door Holder -- Edmund Huddart, Prairie du Sac, Wis, -- This invention consists in the construction and arrangement of parts of a door holder, in such a manner that one portion being attached to a door and the other part to the wall, the door may be held open, and in one position by friction.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters must, in all cases, sign their names. We have a right to know those who seek in formation from us; besides, as sometimes happens, we may prefer to address the correspondent by mail.

SPECIAL NOTE.—This column is designed for the general interest and in struction of our readers, not for gratuitous replies to questions of a purel business or personal nature. We will publish such inquiries, however when paid for as advertisemets at 50 cents a line, under the head of "Business and Personal".

J. N. H., of Pa.-We think you will find pitch to be a suitable cement for your aquarium having the ground as a bottom, and sides of wood.

W. J. A., of Pa., suggests that instead of graduating the arcs of surveying and mathematical instruments on a flat surface, that the degrees minutes and seconds be determined by a train of gearing which shall be set in operation by the movable part of the instrument. The reading may be exhibited on a dial plate resembling a clock face or other-

J. C. G., of Kansas.—You can procure Smee's and Napier's Electro-Metalurgy of J. Wiley and Son of this city. The cost of Smee's battery of a size suitable for electro-metallurgy, is about \$5 per cup. You can procure an outfit of apparatus and materials of Butler & Smith, Broome street, this city.

F. H., of C. W.—Magnetic iron ore is found in great abundance in America. But specimens which have strong polarity are quite rare. Artificial magnets are easily made of greater power than natural magnets, and the latter (loadstones), are now only objects of curiosity for a museum or a mineralogical cabinet. For information on magnetism onsult Ganot's or Silliman's Physics.

H. T. B., of Iowa.—" What is the best way to melt indiarubber, also where can I procure some of the pure gum?" India-rubber may be melted in a metallic or earthen vessel, and the care to be taken is that the heat be applied gradually and slowly It melts at about 248°. On cooling, however, it does not resume its original condition but remains in a semi-fluid adhesive state. Raw rubber can be procured at any of the rubber factories, and at some of the rubber stores in this city.

E. P., of Pa-"The papers say that if his invention is per fected, it will revolutionize all previous systems." There's the rub, the success of the project depends upon its perfection. If our dreams were realities we might all be kings. We know nothing of the invention to which you allude.

N. K. S., of Vt.-For japanning, use the best quality of copal varnish.

A. T., of N. Y., is arguing with a friend who contends that the earth is not round like a ball but flat like a mill stone. A. T. secms to have been handled roughly and appeals to us for assistance. It is a pretty quarrel as it stands and we prefer not to interfere. But as some encouragement to hold on, we remind him that at last the truth is apt to

R. N. D., of O.—Chalk has not yet been found in America. It is imported from England, mostly as ballast.

R G. D., of Mo.—Carbolic acid is now extensively used here as a disinfectant, and is approved by the board of health and by the medical profession

R. V. W., of R. I.—Alkali is an essential ingredient of soap, and wethink, you are wasting your time in looking for a substitute for

E. W. N., of Mass.—We recommend you to get "The Draftsman's Book," published by H. C. Baird. 406 Walnut street, Philadelphia. You should procure other books in proportion to your means and to the extent you desire to pursue the subject.

T. L., of Mo.—The pressure on the pipe leading water from the pump into a boiler is greater than the pressure in the boiler. Otherwise no water would pass through into the boiler.

W. P. M., of Ill.—"We have a saw mill here (Ullin) owned by J. Bell which sawed on the 26th of June 42 poplar logs making 40.807 feet, square face, parallel inch boards by one double circular saw in 10 hours and 8 minutes." Mr. Bell appears to be the "top sawyer" of the Continent.

J. H. McC., of Ill., sends a recipe for a cement which he finds useful for vulcanized rubber or "anything else." Take best glue 4 oz., isinglass, 2 oz. and dissolve in mild ale, in a glue kettle, to the sistency of thin glue. Then stir in half oz., well boiled linseed oil. When cold it resembles india-rubber. It may be preserved in the form of cases. When used it is to be dissolved in a suitable quantity of oil. It is an excellent cement for leather earthen ware, etc.

J. R., of N. Y., made a solution of chloride of silver in cyanide of potassium towhich be added whiting. The mixture was put into twobottles, when shortly in one bottle it became reddish, while in the other it was not changed. The case is not extraordinary. Cyanide of potassium is a very powerful solvent of organic and metallic compounds, and the foreign matter to produce the color was introduced by some accident such as a dirty bottle or cork, etc.

J. B., of Iowa.—It is very doubtful if any of the processes of preserving wood by means of metallic salts are practicable for shingles in this country. The creosoting process (treatment with dead oil or coal tar) is however, economical and cheap. The strongest objection to it is that the wood is rendered more combustible.

D. S. C. of Mo.—A practical lithographer of this city says he is unable to give an opinion of the value of lithographic stone except an actual trial, and the sample you send is too small for the purpose. The appearance of the sample is favorable.

F. G. S., of Mass.-Your plan of measuring the curvature of the earth is correct and ingenious. The angle formed by plumb lines erected at the short distances from each other is so small that it cannot be determined with desirable accuracy.

A. G. C., of N. Y.—We are not aware that an ink is on sale, which fades completely in a short time after it has been used in Writing with. It would not be very difficult, however to make such an ink.

J.Mc., of Ct., R.A. D., of Wis., page 7 says, people out there claim that a raft of lumber will travel faster than the current, etc. I know the people who say so, are right. The surface of a running stream is an inclined plane, and heavy bodies floating on its surface slide down the incline, and the heavier of two rafts will dri-t the faster. I am an old boatman and raftsman." The most rapid part of the current is generally in the middle of the stream, and if the raft be in it, the raft will travelfaster than the current at its side. Also it often happens that the current is a little swifter just below the surface, and for this reason a heavy body might float more rapidly than one which did not sink below the surface

W. P., of N. Y., has been told that a perfect sphere when elevated high in the air appears to the eye an oblate spheroid, and that the balls to be placed on steeples, etc., are consequently made of a prolate form to compensate for the optical illusion. . . Mercury is a solvent for brass, and hence when rubbed on a brass wire, the wire becomes brittle. Observe how alump of sugar becomes softer when wetted.

S. L. G. F., of Mass.—The sterility of land in a well watered tropical region is generally due to the impregnation of the soil with sulphate of copper or iron. . . . Coal is always associated with certain geological strata which are so disposed that they form a basin for the coal deposit. A knowledge of these facts is very important in making explorations for coal. . . . Micais injurious to fire clay, and you will failto make the best quality of fine bricks.

T. H. W., of N. Y.—For a given head and supply of water the larger the water wheel the better.

Business and Lersonal.

The charge for insertion under this head is 50 cents a line.

Machines for Rossing Oak Tan Bark. Send maker's address with description and price to Hamilton & Cunningham, Nashville, Tenn. Manufacturers of Galvanized Wire Cloth and Hoop Iron, please send address to Box 60, Georgetown, D. C.

M. R. S., of Mo. The crystals of a metallic appearance in the mineral you have sent are sulphide of iron.

A. B. is informed that Olmsted's Spring-top Oilers are superior to any other in the market. Sold everywhere.

Wanted-A purchaser of my patent-right clothes bars and wardrobe hookfor the New England States, the best of the kind ever made. Address M. D. Hotchkiss, Sheboygan Falls, Wis.

Wanted—Circulars and terms of manufacturers and dealers in sewing machines. Circulars and terms of dealers in useful inventions and novelties. Address of parties who manufacture small patent articles. W. Clare Anderson, Agent, St Louis, Mo.

Manufacturers of Peat Charcoal send their address to C. Browning, Rush Run, Ohio.

Wanted—Address of Toy Manufacturers. Address Lock Box 28, Des Moines, Iowa.

Wanted-Best Clover Seed Gatherer. Manufacturers send circular and price list to Gillespic, Watkins & Co., Chattanooga, Kamilton county, East Tennessee.

EXTENSION NOTICES

Ephraim L. Pratt, of Boston, Mass., having petitioned for the extension of a patent granted to him the 4th day of October, 1853, for an improvement in machines for paring apples, for seven years from he expiration of said patent, which takes place on the 4th day of October, 1867, it is ordered that the said petition be heard at the Patent Office on Monday, the 16th day of September next.

Harvey Lull, of Hoboken, N. J., having petitioned for the extension of a patent granted to him the 31st day of January, 1854, and antedated January 2. 1854, for an improvement in shutter hinges, for seven years from the expiration of said patent, which takesplace on the 2d day of January, 1868, it is dered that the said petition be heard at the Patent Office on Monday, the 16th day of September next.

Joshua Gibbs, of Canton, Ohio, having petitioned for the extension of a patent granted to him the 4th day of October, 1853, for an improvement in machine for grinding plow castings, for seven years from the expiration of said patent, which takes place on the 4th day of October. 1867, A is ordered that the said petition be heard at the Patent office on Monday, the 16th day of September next,

PATENT OFFICE DECISIONS .-- WHAT CONSTITUTES A PATENTABLE CONBINATION.

PATENTABLE CONBINATION.

Elisha Foote for the Board of Appeals.

IMPROVEMENT IN FEEDING MYLLSTONES.—The apparatus which the applicant claims to have improved is attached to grinding mills, and operates between the bonner or feed and the eve of the mill stone to blow out dirt and other immurities from the grain on its passage from the former to the latter. The applicant has changed the general structure of the apparatus, for which he claims many advantages, and has also added to it a new feature—that he claims many advantages, and has also added to it a new feature—that of separating and saving the light grain, cheat, and cock's, which before was blown off with the dirt. The first claim is for the separator, constructed and operating anhistantially in the manner described, and applied in the relation to the feeder and the eve of the stone, substantially as shown.

The reasons assigned by the Examiner for rejecting this claim are, that the combination claimed is not a valid one; that the "apparator and feeder neef rim senarate and distinct offices; and are not co-active in a legal sense;" that "if the action of the feeder demended upon the separator, or the separator non the feeder, for a common result, such a condition of circumstances would change the action of the office, but the two devices act in succession and not together, and the two clauses of claim cannot be c unsidered as in connection with the feed devices of a grinding mill."

We do not agree with the Examiner in respect to these grounds on which he has rejected the application. We so not reward travesserial that the several parts of a new combination shall act simultaneously, or that one part shall be dependent for its act on upon another. But, on the contrary, we hold that it is no objection that the separator and feeder verform separator or the senarator upon the feeder, and that the two devices act in succession and not together.

In the card-making machine, for example, one part draws the wire into the machine, another runs it off. another heads

and distinct offices; that the feeder does not depend upon the separator or the separator upon the feeder, and that the two devices act in succession and not together.

In the card-making machine, for example, one part draws the wire into the machine, another curs it off, another bends it into proper shape, another nunches the leather, another moves the carriage, etc. The whole is a combination of insurpassed ingenuity. It was no objection to the parent that the different narts operated in succession and not together, and that one performed its offices without aid or dependence on the rest. It was enough that all contributed to a common result. In the present case, so long as the feeder and separator contribute to the purpose intended—the manufacture of flour—it matters not in what way they act, whether together or in succession, or whether dependently or independently.

There is no peculiarity in patent laws relating to combinations. Claims for them should be examined upon the same principles that apply to other inventions. In all there must be found invention and new and useful results. Mere aggregations of parts without invention to combine them—substitutions of merely equivalent devices for others—mechanical changes merely and variations of form, proportions, or arrangements, without new and inverved results, do not constitute patentable combinations. It has been said that the several parts must be co-active—that means that the addition of something that is useless or does not co-operate in producing an improved result, will not be pate 'table.

But when invention has been broughtinto exercise to add a new feature to a machine, or to produce old results in a hetter or cheaper manner, we are not aware that after that will be produced the new results obtained.

The Examiner's decision is consequently overruled.

manner in which the several partial partial obtained.

The Examiner's decision is consequently overruled.

Inventions Patented in England by Americans. [Condensed from the "Journal of the Commissioners of Patents."]

PROVISIONAL PROTECTION FOR SIX MONTHS.

1,335.—Self-aoring and Ventilating Feed Bag for Hobses.—Nathania Klight, Auburn, Me. May 11, 1867.

1,440.—BILLIARD TABLE.—Hugh W. Collender, New York City. May

1,475.—Truss.—Wm. Pomeroy, New York City. May 18, 1867. 1.491.--Instrument for Sharpening Cutlery.--James Meyer, New York

City. May 20, 1867, 1,499.—REAPING AND MOWING MACHINES.—Walter A. Wood, Hoosic Falls N. Y. May 20, 1867.

1,547.—STEAM GENERATOR—Richard J. Nunn, Savannah, Ga. May 24, 186

1.551.—Embroidering Apparatus for Sewing Machines.—Louis Morris New York City. May24, 1867.

 $1\,697.-Propeller for Steamships and Other Vessels.-Henry Rolle Boston, Mass <math display="inline">\,$ June 8, 1867.

1,717.—APPARATUS FOR ELEVATING, WEIGHING, AND MOVING GRAIN.—Stephen W. Wood, Cornwall, N. Y. June 11, 1867.