

ng, and discovering he has performed, from that juvenile essay of his on the textile fabrics of the ancients to the last line of his "Cosmos," which reminds us of Copernicus reading the last proof-sheet on his death-bed, shortly before his departure; or of Mozart, who, in his darkened room, directed with dying looks the singing of a portion of that requiem which he had in part composed, conscious that his ears would never hear its pealing sounds of resurrection. Let us, one and all, young and old, symbolize by the name of Humboldt the fact that, however untrue assuredly the saying is that genius is labor, it is true that the necessary co-efficient of genius and of any talent is incessant diligence. We are ordained not only to eat the bread of our mouth in the sweat of our brow, but to earn in the same way the nourishing bread of the mind. This is no world of trifling; it is a world of work; and Humboldt, like the Greeks whose intellectuality he loved to honor—whose Socrates loved to say: "Arduous are all noble things"—was a hard-working man—far harder-working than most of those who arrogate the name to themselves. He ceased to work, and to work hard, only when he laid himself down on that couch from which he rose no more.

I visited Humboldt at Potsdam in the year 1844, when he had reached, therefore, the age of seventy-five; for you know that he was born in that remarkable year of 1769, in which Cuvier was born, and Wellington, and Chateaubriand, and Napoleon—just ten years after Schiller, just twenty after Goethe. Humboldt told me at that time that he was engaged on a work which he intended to call "Cosmos."

I desire to show what interest he took in everything connected with progress. I have reason to believe that it was chiefly owing to him that the King of Prussia offered to me, not long after my visit, a chair to be created in the University of Berlin, exclusively dedicated to the Science and Art of Punishment, or to Poenology, as I had already called this branch. I had conversed with the monarch on the superiority of solitary confinement at labor over all the other prison systems, when he concluded the interview with these words: "I wish you would convince Mr. von Humboldt of your views. He does not entirely agree with them. I shall let him know that you will see him."

Humboldt and prison discipline sounded strange to my ears. I went, and found that he loved truth better than his own opinion or bias, and my suggestion that so comprehensive a university as that of Berlin, our common native city, ought to be honored with having the first chair of Poenology, for which it was high time to carve out a distinct branch, treating of the convict in all his phases after the act of conviction, was seized upon at once by his liberal mind.

Many of my young friends have asked me, as their teacher, and, indeed, many other friends have repeated the question—Was he not the greatest man of the century? I do not believe it is fit for man to seat himself on the bench in the chancery of humanity, and there to pronounce this one or that one the greatest man. If all men were counted together, each one of whom has been called in his turn the greatest of all, there would be a crowd of greatest men. Mortals ourselves, we should call no one the greatest. History is abstemious even in attributing simple greatness. But if it is an attribute of greatness to impress an indelible stamp on the collective mind of a race, and to give a new impulse to its intellect; if greatness, in part, consists in devising that which is good, large, and noble, and in perseveringly executing it by means which, in the hands of others, would have been insufficient, and against obstacles which would have been insurmountable to others; if it is great to graft new branches on the trees of science and culture, leading the sap to form henceforth choicer fruit; if the daring solitude of lofty thought and loyal adhesion to its own royalty is a constituent of greatness; if lucid common sense—the health and rectitude of our intelligence which avoids, in all direction, the Too-Much—is a requisite of greatness; if rare and varied gifts, such as mark distinction when singly granted, showered by Providence on one man—if this makes up or proves greatness, then indeed we may say, without presumption, that one of the great men has been our own.

That period has arrived to which Cressus alluded in the memorable exclamation, "Oh! Solon, Solon, Solon!" And we are now allowed to say that Humboldt was one of the most gifted, most fortunate, and most favored mortals—favored even with comeliness, with a brow so exquisitely chiseled that, irrespective of its being the symbol of lofty thought, is pleasant to look upon in his busts as a mere beautiful thing; favored even in his name, so easily uttered by all the nations which were destined to pronounce it.

When we pray not only for the kindly fruits of the earth, but also, as we ought to do, for the kindly fruits of the mind, let us always gratefully remember that He who gives all blessed things has given to our age and to all posterity such a man as Humboldt.

**The Cedars of Lebanon.**

Mr. Jessup, an American missionary, has recently discovered several extensive groves of cedars in Lebanon. Of these there are three of great extent in Southern Lebanon. This grove lately contained 10,000 trees, and had been purchased by a barbarous Sheikh, from the Turkish Government, for the purpose of trying to extract pitch from the wood. The experiment of course failed, and the Sheikh was ruined, but several thousand trees were destroyed in the attempt. One of the trees measured fifteen feet in diameter, and the forest is full of young trees, springing up with great vigor. He also found two small groves on the eastern slope of Lebanon, overlooking the Buka'a, above El Medek; and two other large groves containing many thousand trees, one above El Baruk, and another near Ma'asib, where the trees are very large and equal to any others; all are being destroyed for firewood.

**New Style of Photographs.**

The process is due to Mr. Charles Durand. Put into a small mortar a teaspoonful of kaolin, add thereto about a quarter of an ounce of sensitive collodio-chloride, and well stir with the pestle until it becomes a smooth paste. Add to this three fourths of an ounce more of the collodion, and again stir, and pour the whole into a bottle with one or two drops of castor oil. Well shake, and place it aside until the coarse particles have subsided.

Edge a piece of talc or glass for about a quarter of an inch all round with dilute albumen, afterwards coat with the kaolin collodion, and dry by gentle heat, when the talc or glass, if placed upon a piece of white paper, will have the appearance of alabaster.

If the film splits, it should have a trifle more castor oil in the collodion; but the best remedy is to choose a more powdery collodion.

If the film is upon glass, the progress of printing may be examined from the back; but if talc be the medium used, it may be turned back in the same manner as when printing upon paper.

Tone, fix, and wash in the same manner as with an ordinary collodio-chloride print upon opal glass, and mount in a frame or case, to protect the picture from being scratched. It must not be varnished.

After three years' trial, the film has been found not to crack or leave the talc or glass after the picture has been once finished.

Many pretty effects may be produced by putting different colored papers behind vignettes produced in this way, as whatever color is placed behind the picture gives a delicate tinge of that color to the picture.

I may add that I have tried oxide of zinc in place of kaolin, and that it also gives a good effect, but not better than the latter. There is another point worth naming. For those skilled in the use of powder colors, here is the most delightful surface which can possibly be worked on. The surface has a tooth which bites the color most perfectly, and the purity of the white gives a rare delicacy and brilliancy to the applied colors. By skillful manipulation and some knowledge of flesh painting, an effect resembling a highly-finished miniature can be obtained. A good print produced in this way on mica, and backed, to give warmth, with cream or buff-tinted paper, makes one of the prettiest, cheapest, and most easily produced portraits for a locket which can be desired.—*Philadelphia Photographer.*

**Editorial Summary.**

**TO REMOVE RUST.**—A lady writing from Vermont to the *Heart and Home* says that she accidentally discovered an easy way of removing rust from steel. She put a number of badly-rusted forks in a tumbler of kerosene oil, and after leaving them there some time, found that the rust had become so much loosened that it rubbed off readily. She says that she has since then used the oil to clean her knives and sewing machine. We suppose that many of our readers have already learned of the beneficial effects of oil on steel, but we give the correspondent's experience for the benefit of those who have never used it for such a purpose.

**WONDERS OF SCIENCE.**—Wonders of science never cease! Some years ago the opinion was expressed by a distinguished astronomer of Cambridge, England, that if the earth's atmosphere were but increased thirteen thousand yards in height, so as to have an increased power of retaining the warmth poured upon it from outer space, we might do without the sun altogether, so far as our heat supply is concerned. More recently, by means of an instrument called the galvanometer, used in connection with a refracting telescope, it has not only been proved that the stars actually give heat to the earth, but the comparative amount of heat received from different stars has been, as it were measured.

**DECAY OF IRON RAILINGS.**—Every one must have noticed the destructive combination of lead and iron, from railings being fixed in stone with the former metal. The reason for this is, that the oxygen of the atmosphere keeps up a galvanic action between the two metals. This waste may be prevented by substituting zinc for lead, in which case the galvanic influence would be inverted; the whole of its action would fall on the zinc; the one remaining uninjured, the other nearly so. Paint formed of the oxide of zinc, for the same reason preserves iron exposed to the atmosphere infinitely better than the ordinary paint composed of the oxide of lead.

A CORRESPONDENT from Plymouth, Mass., kindly refers us to an article supposed to be the one alluded to by several correspondents lately, deprecating the use of night soil. It is on page 103, Volume III. of the New Series of SCIENTIFIC AMERICAN. Referring to the article, we find it to be a short extract from an exchange on the use of artificial manure called *poudrette*, made from night soil, and was so credited. It was copied by some other journal and improperly credited to the SCIENTIFIC AMERICAN. Having got started in that way, it has gone the rounds.

A BLIND man in Chicago has invented a tin lunch box, with a receptacle for cold coffee inside of it, and the whole thing is only 4½ inches wide and 9 inches long. The box is so constructed that when empty it can be conveniently folded together, like a thin book, and carried in the pocket.

M. JANSSEN, in a letter dated from Darjeeling, Sikim, British India, 22d May last, says that the spectra of some stars, which are rather ruddy colored when not disclosing the presence of hydrogen, do positively disclose the presence of aqueous vapor.

THE month so far has brought us a series of accidents and casualties, by land and sea, which will make it memorable. The damage done by the recent gale in New England, and the Avondale disaster, are the two most remarkable occurrences of this kind, but the number of minor accidents has also been very numerous.

THE *American Horological Journal* says that rings with settings likely to be damaged by heat may be soldered without injury if the part liable to injury be buried in a piece of raw potato.

SALE OF MACHINERY.—We call the attention of our readers to the Auction Sale of machinery of the Spencer Repeating Rifle Co., advertised in another column. It is to be sold in Boston on the 28th of September.

THE loss of weight experienced by a rower through perspiration in a prolonged contest like that of the Harvards with the Oxforas is from four to eight pounds.

THE metal sodium is stated not to take fire on cold water, but this is incorrect. A small piece of the metal will not do so, but a piece the size of a nut will frequently ignite.

**MANUFACTURING, MINING, AND RAILROAD ITEMS.**

At Ottawa, Canada, there is great activity in the sawed lumber trade. Nearly 40,000,000 feet are now piled up at the mills there.

The nickel ore at the Litchfield, Conn., mines will be worked as soon as workmen arrive from Germany. A furnace capable of reducing ten tons of ore daily is just completed, and two others are building.

A dispatch from Central City, Colorado, states that the bullion shipments in the month of August amounted to \$225,000. One company sold 20 tons of gold ore for \$100 per ton, to be shipped to England.

A trial has lately been made of a "steam omnibus" in Edinburgh, Scotland, and the experiment, as far as can be judged by the details given, appears to have been successful. As to the construction of the new vehicle nothing as yet is said.

An Atchison, Kansas, telegram says that the contract for the Nemaha Valley Railroad has been let, and ten miles will be completed by February 15, 1870, and the road will be finished to Pawnee City in eighteen months. This is an outturn of the Quincy and Keosauqua road, and diverts the business of Southern Nebraska to Chicago instead of St. Louis.

The receipts of internal revenue for July and August, this year, were \$36,594,031.75, against \$30,890,028.62 same months last year—an increase of \$5,704,003.13. The receipts for the fiscal quarter ending September 30, 1868 were \$38,735,863.08, and it is estimated that for the corresponding quarter this year they will reach \$48,000,000.

It has recently been decided in this city that "Shipping articles" are invalid unless a five cent stamp is affixed for the signature of each sailor. The ground of the decision is, that the agreement is made between the master and each man individually, and that, therefore, one five cent stamp which was affixed to the articles under consideration, was insufficient.

The number of mechanics and laborers employed in the arsenal works on Rock Island at present is greater than ever before. They are classified as follows: Laborers, 300; stone-cutters and masons, 150; carpenters, 50; teamsters, 100; total number, 600. Until this month 700 was the largest number on the island. The August pay-roll will not fall short of \$100,000.

The freight on wines from San Francisco to Chicago has been reduced to \$150 per hundred pounds—one half of the old charge. It is said that this reduction was procured by the efforts of a committee of California wine-growers, who represented to the General Freight Agent of the Central Pacific Railroad that the previously charged rates had the effect of absolutely prohibiting trade in wines.

By the completion of the Western Pacific Railroad on Monday the cars travel continuously from the harbors of New York, Boston, and Philadelphia, to the harbor of San Francisco. Arrangements have been made for carrying through passengers and mails between Sacramento and San Francisco without transshipment inside of four hours. The earnings of the Central Pacific Railroad for August were \$572,000, showing a steady increase in passengers and freight.

Professor Hitchcock says that the legislature of New Hampshire has recently inaugurated an examination of the rocks and minerals of New Hampshire in a manner reflecting great credit upon them. During its progress the bounds of the new gold field have been carefully traced out, extending in a narrow belt from Bellows Falls northwardly along the Connecticut river into the dividing ridge between Canada and Maine. The principal New Hampshire gold mine is at Lyman. The vein is fourteen feet wide composed chiefly of quartz, containing galena, ankerite and pyrites.

The British Consul at Chee-foo, China, reports that the wild silk worm is bred in large quantities by the country people of Shan-tung, and a great deal of wild silk is produced annually in the central part of the province, and in the vicinity of Tsi-nan-foo. The silk cloth made from this wild silk is used by the Chinese for summer clothing, is very strong, and wears extremely well. It is thought probable that the wild silk worm may be acclimatized in Europe, and attention has been drawn to it both in Italy and France. Chee-foo can furnish the eggs of both the wild and the domestic silkworms.

Feathers of ostriches and other birds, though naturally black, or dark gray colored, may be bleached by the following process newly discovered by M. Deflot. The feathers are placed for three or four hours in a tepid, dilute solution of bichromate of potassa, to which some nitric acid has been cautiously added. The feathers will then be found to present a greenish hue, owing to the oxide of chromium precipitated on the substance, and to remove this the feathers are placed in a dilute solution of sulphurous acid in water, whereby the feathers become perfectly white and bleached. Care is to be taken that the solution of bichromate be not made too strong; and that not too much acid be used, which would cause an irremovable yellow color.

**Mechanical Engravings,**

Such as embellish the SCIENTIFIC AMERICAN, are generally superior to those of any similar publication, either in this country or in Europe. They are executed by our own artists, who have had long experience in this branch of art, and who work exclusively for us. There is one pertinent fact in connection with the preparation and publication of an illustration in our columns, that needs to be better understood by inventors and manufacturers who often pursue a short-sighted policy in bringing their improvements to public notice. They go to a large expense in printing and circulating handbills, which few care either to read or preserve. Now, we undertake to say, that the cost of a first-class engraving, done by our own artists and printed in one issue of the SCIENTIFIC AMERICAN, will amount to less than one-half the sum that would have to be expended on a poorer illustration, printed in the same number of circulars, and on a sheet of paper in size equal to one page of our journal. A printed handbill has no permanent value. Thousands of volumes of the SCIENTIFIC AMERICAN are rebound and preserved for future reference—beside, we estimate that every issue of our paper is read by no fewer than one hundred thousand persons. Parties who desire to have their inventions illustrated can address the undersigned, who are also prepared to send artists to make sketches of manufacturing establishments, with a view to their publication in the SCIENTIFIC AMERICAN. For particulars address  
MILN & CO.,  
37 Park Row, New York.

## Facts for the Ladies.

I have used my Wheeler & Wilson Sewing Machine ten years without repairs, not only for family sewing, but for all the stitching I could get to do, from the heaviest beaver to the finest muslin. In six months I made alone on the machine twenty-five coats, seven vests, ten pairs of pants twenty-four shirts, and a number of cloaks, etc. MISS L. HARRIS, North East, Pa.

## 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 information from us; besides, as sometimes happens, we may prefer to address correspondents by mail.

**SPECIAL NOTE.**—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at \$100 a line, under the head of "Business and Personal."

All references to back numbers should be by volume and page.

**T. E. K., of La.**—Timber may be rapidly seasoned by steaming, but it is unnecessary to do it under enormous pressure; in fact, high pressure, and, consequently, high temperature, are injurious to the wood. Sufficient vent should be allowed to keep the steam down to 212 degrees, which is hot enough. The steaming is carried far enough when the sap has been converted into steam and driven out of the wood. A few days exposure to the air after taking the timber from the steam box will render the wood fit to work. If the operation is performed according to these directions the steaming box need not be very strong; it should, however, be tight enough to hold the steam, which should, at least the greater part of it, escape as steam, not as water through the vent.

**W. D., of N. Y.**—The first complete electric telegraph of which we have any knowledge, was established in the year 1798, between Madrid and Aranguez, in Spain, by an electrician named Betancourt. This was, however, not at all on the principle of the modern telegraph, as electro-magnetism was not discovered till 1819. Wheatstone's telegraph was patented in England in June, 1837, and Morse filed his first caveat in October of the same year. To Morse is undoubtedly due, however, the credit of inventing a telegraphic alphabet which has ever since been universally used.

**J. H., of N. Y.**—To japan castings, clean them well from the sand, either in a "tumbler" or by other convenient means, then dip them in or paint them over with good boiled linseed oil. When the oil has become moderately dry, put them in an oven and heat them to such a temperature as will turn the oil black without burning. The stove should not be too hot at first, and the heat should be raised gradually to avoid blistering. The slower the change in the oil is effected the better will be the result. The castings, if smooth at first, will receive a fine black and polished surface by this method.

**L. B., of Ohio.**—You do not inform us whether you wish to construct your cistern above or below ground. If above ground, a wooden cistern made of good pine answers a good purpose; if below, brick laid in good hydraulic cement, and smoothly plastered with the same on the inside, answers a good purpose. Of all the filters we have tried, we like the working of none better than that of gravel and charcoal, effected by passing the water through two casks, one filled with fine gravel and the other with coarse charcoal powder.

**T. B. McC., of Del.**—The mineral you send is a poor specimen of graphite, or plumbago. It is composed chiefly of carbon, with which impurities, consisting of earthy matters, are mixed. Plumbago is principally used in the manufacture of crucibles and lead pencils, also for electro-plating, polishing stoves, castings, etc. The refining and preparing of the article for use is attended with considerable labor.

**R. C., of Del.**—We do not wish to open our columns to the discussion you propose.

**J. B. C., of Mich.**—You can set two 60-horsepower boilers to run with a single furnace and grate, but the plan would not, in our opinion, be economical. To blow off one of two boilers thus set while the fire was maintained to keep up steam in the other, would be likely to lead to overheating the boiler. We advise building a separate furnace for each. This can easily be done so as to have the boilers stand side by side as you desire.

**A. H. S., of Hayti.**—The action of the sour cane juice upon iron pipes in scaling them, is a difficulty met with on all plantations. An old plantation engineer informs us that he used, when in Cuba, to scale the pipes by letting cold water into them while hot. We do not know that this would answer with you. Should it fail we are not aware of anything better than the old practice.

**R. W. of Pa.**—The depth of the artesian well of Grenelle, at Paris, is 1,791 feet. Respecting the water, it was ascertained that it does not contain the least trace of air, and was for that reason considered unfit for use. To obviate this defect the water descends from the top of a tower in innumerable threads, which exposes it to the air.

**S. C., of Colorado.**—Malachite is brought chiefly from a single mine in the Ural Mountains in Russia, and indicates the near presence of copper. Its value is estimated in weight at about one fourth that of silver. It is not at all probable that you have found malachite in your section.

**H. T., of Mich.**—So far as we are aware, the Norwegian cooking apparatus is not made in this country. It is sold in England to some extent, and appears to be a useful apparatus for the purpose.

**E. H. S., of Mass.**—Will forcing a cold blast into a chimney above the fire box increase the draft to the same extent and aid in combustion as much as though forced directly into the fire box below the fuel?—Answer, No.

**W. P., of Oregon.**—Patents have been obtained for sheep-shearing machines, but we are not aware that any of them have yet come into use. The field appears still to be open.

**S. A. K., of Ohio.**—We know of no cement that is generally and economically applicable to all cases where iron and stone are to be united.

## Business and Personal.

The Charge for Insertion under this head is One Dollar a Line. If the Notices exceed Four Lines, One Dollar and a Half per line will be charged.

Send or Agents' Circular—Hinkley Knitting Machine Co., 176 Broadway.

We desire to contract with patentees and capitalists for the manufacture of any useful and saleable machinery. Will share profits as part compensation. Our facilities for casting and finishing are unsurpassed. Address Stevenson & Sears, Machinists, Upper Sandusky, Ohio.

All Steam Engine Manufacturers send circular and price list to W. A. Helms, Shady Hill, Tenn.

Cockle dealers and consumers address, with price, Andrews & Godfrey, Greenville, Tenn.

Manufacturers of small brass articles, such as tape lines, etc., etc., please send their address to G. H. Dean, 14 Catharine st., New York.

Wanted—A contract for the manufacture of specialties, either hardware or tools. C. N. Trump, Machinist, Portchester, N. Y.

Man'rs of grain-cleaning machinery and others can have sheet zinc perforated at 2c. per sq. ft. R. Aitchison & Co., 845 State st., Chicago.

The great scarcity of water in our large cities is mainly caused by the enormous quantity wasted, which can be prevented by using the Boston safety Faucet (self-closing), the saving of water in one building in this city being over 200,000 gallons in three months. For sale by Joseph Zane & Co., 81 Southbury st., Boston, Mass.

Bartlett's Needle Factory Depot 569 Broadway, New York.

To Inventors.—Garrison's Model and Exchange Rooms, for exhibition of models and sale of rights, No. 5 Arcade Court, Chicago, Ill. We advertise new inventions extensively.

Wanted—To communicate with any party who has a practical knowledge of building and running a powder mill. Address "W," P. O. Box 5,692, New York city.

Send for a circular on the uses of Soluble Glass, or Silicates of Soda and Potash, fire and water-proof. Manufactured by L. & J. W. Feuchtwanger, Chemists and Drug Importers, 55 Cedar st., New York.

If you want the real oak-tanned leather-belt, C. W. Army manufactures it. See advertisement.

Peck's patent drop press. For circulars, address the sole manufacturers, Milo Peck & Co., New Haven, Ct.

Excelsior Turbine Water Wheel.—The patentee of this superior wheel desires to enter into arrangements with millwrights and manufacturers with a view to having them manufacture and sell the cheapest, most durable, and powerful wheel used in this country. Full particulars given by circular. Address Isaac S. Roland, Reading, Pa.

Minn. State Fair.—To Advertisers. Send for Circular to Post, Rochester, Minnesota.

S. S. Pollard's celebrated Mill Picks, 137 Raymond st., Brooklyn.

Chas. P. Williams, No. 327 Walnut st., Philadelphia, Analytical and Consulting Chemist, and Metallurgist.

Materials for all Mechanics and Manufacturers, mineral substances, drugs, chemicals, acids, ores, etc., for sale by L. & J. W. Feuchtwanger, Chemists, Drug, and Mineral Importers, 55 Cedar st., New York. Postoffice Box 3616. Analyses made at short notice.

Ulster Bar Iron, all sizes, rounds, squares, flats, ovals, and half-ovals, for machinery and manufacturing purposes, in lots to suit purchasers. Ecleston Brothers & Co., 166 South st., New York.

Mill-stone dressing diamond machine, simple, effective, durable. Also, Glazier's diamonds. John Dickinson, 64 Nassau st., New York.

Leschot's Patent Diamond-pointed Steam Drills save, on the average, fifty per cent of the cost of rock drilling. Manufactured only by Severance & Holt, 16 Wall st., New York.

For solid wrought-iron beams, etc., see advertisement. Address Union Iron Mills, Pittsburgh, Pa., for lithograph, etc.

Machinists, boiler makers, tanners, and workers of sheet metals read advertisement of the Parker Power Presses.

Diamond carbon, formed into wedge or other shapes for pointing and cutting tools or cutters for drilling and working stone, etc. Send stamp for circular. John Dickinson, 64 Nassau st., New York.

The "Compound" Wrought-Iron Grate Bar is the best and cheapest. Send for circular. Handel, Moore & Co., 12 Pine street. Postoffice Box 5,669.

For sale by State or County the Patent Right for the best Cultivator in use. For terms address Isaiah Henton, Shelbyville, Ill.

Hackle, Gill Pins, etc., at Bartlett's, 569 Broadway, New York.

## Recent American and Foreign Patents.

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

**CHURN.**—Miles Fisk, Adrian, Mich.—This invention relates to an improvement in churns, and has for its object to provide a dasher which shall, by one simple movement, throw the cream in different directions, the current produced by one set of radial wings being brought in conflict with the one next above, and so on successively.

**CLOTHES RACK.**—Andrew Harbison, New Castle, Pa.—The object of this invention is to provide for public use a neat, simple, cheap, and convenient clothes rack, so constructed and operating that it can be opened or expanded into different shapes to adapt it to different positions in the room, such as standing in a corner, near the stove, in an open room, etc.

**ANIMAL TRAP.**—C. Polley, Shelbyville, Tenn.—The object of this invention is to provide for public use a simple, cheap, convenient, and effective trap which, being set near the holes of burrowing animals, will destroy them with certainty.

**PARLOR STOVE.**—John H. Goodfellow, Troy, N. Y.—This invention relates to that class of coal stoves in which the gas is consumed by the introduction of external air.

**PLOW.**—W. F. Pagett, Springfield, Ohio.—In this invention the plow is constructed in a peculiar manner, and so attached to the standard and beam that it can readily and easily be detached and removed, and a simple cultivator tooth, scraper, shovel, or other form of plow, be attached and used in its place.

**COTTON AND HAY PRESS.**—J. J. Hines, Evergreen, Ala.—This invention is an improvement upon those presses in which toggle joint levers are employed to raise and lower the platen; and it consists in a novel and simple application of such levers in combination with the means for actuating them.

**SEEDING MACHINE.**—D. C. and G. W. Van Brunt and H. Barber, Horicon, Wis.—In this invention the construction of the frame is greatly simplified and better adapted for its purpose, and a novel method of holding the teeth is employed, whereby they retain their proper position when working in tillable soil, but yield to immovable obstacles.

**WAGON BRAKE.**—John Luicke, Griffin's Corners, N. Y.—This invention relates to a new wagon brake, which is so arranged that the driver can, when he applies the brake, let go the lever without thereby releasing the brake.

**MORDANT FOR DYEING AND PRINTING.**—F. S. Dumont, New York city.—This invention relates to a new mordant for all kinds of dyeing and printing processes, which is made from the serum of the blood.

**MODE OF FASTENING ARTIFICIAL TEETH.**—E. C. Stone, Galesburg, Ill.—This invention relates to a new and useful improvement in the method of fastening artificial teeth to the plate when metal and rubber or vulcanite are used in combination; and consists in the use of staples passing through the plate and fastened without soldering.

**EDGING TOOL.**—O. W. Morley, Tarrytown, N. Y.—This invention relates to new and useful improvements in tools for "edging" or "scaring" leather in the process of making harness, and for similar purposes, whereby accuracy in the width and depth of cut, as well as a great saving of time, is secured.

**TABLE.**—A. Belchambers, Ripley, Ohio.—This invention relates to a new and useful improvement in tables with folding leaves, and consists in the mechanical arrangement for supporting the leaf.

**EXTENSION TABLE.**—Charles P. Lentz, Poughkeepsie, N. Y.—This invention relates to new and useful improvements in extension tables, whereby that description of table is greatly simplified.

**CULTIVATOR.**—Job McNamee Baker, Fayetteville, Texas.—This invention relates to new and useful improvements in machines for planting and cultivating the soil, and consists in such a construction and arrangement of parts that the machine is adapted to all the purposes for which planting cultivating, and rigging machines are usually employed.

**SOFA BEDSTEAD.**—Adam Schwaab, New York city.—This invention consists of an arrangement, whereby the upholstered part of the back may be swung forward out of the frame, on hinged arms, and arranged alongside and in the same horizontal plane with the seat, to form a bed.

**VEGETABLE CUTTER.**—R. Hemenway, New Cassel, Wis.—This invention consists in the application, on a suitable bench, and between the table thereof, and a hopper above the table having transverse fixed knives across a passage through it, of a slide provided with a lateral two-edged knife cutting both ways, and a series of knives below the said double-edged cutter which receive the slices therefrom, cutting them into smaller pieces which are again cut by the fixed knives in the table below; the said slide is arranged to be worked either by one or two persons.

**PLOW.**—A. C. Judson, Grand Rapids, Ohio.—This invention relates to improvements in plows, and has for its object to provide a detachable cutter at the junction of the mold board and landside to facilitate removal for sharpening, also to provide an improved construction of beam-wheel attachment and drawing attachments.

**WINDOW AND OTHER BLINDS.**—Stephen Hebron, Buffalo, N. Y.—This invention relates to improvements in blinds for windows, doors, etc., whether for outside or inside use, and consists in an improved construction of the same for the adaptation thereto of mosquito bars.

**LIFTING FLATS IN SELF-STRIPPING CARDING MACHINE.**—Benjamin Dobson and W. Slater, Bolton, England.—This invention consists in lifting the top flats by a bowl on the lifting wheel, acting on a curved surface on the slides, which are drawn down by springs as soon as the bowls have passed. By this means the top flats are rapidly raised and lowered again into their proper working place, and thereby better work is produced and time saved. Another part of this invention consists in the application of a ratchet wheel to the cross-driving shaft, and a catch to the radial arm, to prevent the said shaft from moving in the wrong direction.

**COKE WHEELS AND CROSSINGS FOR RAILWAYS.**—Hugh Baines, Lancaster, England.—This invention consists in forming car wheels with more than one tread so as to adapt them to tracks of different gages and in providing crossings adapted thereto.

**STEAM GENERATOR.**—James Stuart, San Francisco, Cal.—The object of this invention is to provide an improved arrangement for marine steam generating boilers, calculated to make a better application of the heat and to afford better facilities for working within the boiler, for repairing, etc.

**WASHBOARD.**—Wm. Bellus and C. Bowers, Fredonia, Ohio.—This invention consists in forming the metallic rubbing surfaces by placing a sheet of zinc, or other suitable metal, on a wood base and driving large round headed tacks through the same into the board, so that the round or oval heads, together with the sheet metal plate, form the rubbing surfaces.

**TWEEDER.**—J. W. Barron, Hillsborough, Ill.—This invention relates to improvements in tweeders, and has for its object to provide an arrangement to simplify the labor of removing the slag and ciner from the fire, and for stirring the fire to enliven it, as is required, and which is now commonly done with a hand poker at considerable labor. The invention also comprises a weighted valve arrangement for opening, in case of explosion of gas in the air chamber to prevent damage to the same.

**MULEY SAW MILL.**—R. F. Wolcott, Claremont, N. H.—This invention relates to improvements in muley saw mills, and has for its object to provide an improved arrangement of the guides for the cross heads, to give the saw a forward oscillatory movement at the same time that the downward cutting action takes place; also, certain improvements in the adjustable guides for the sides of the saw; also, certain improvements in the "gigging" back and feeding devices, and, also, certain improvements in the friction feed apparatus calculated to facilitate the regulation of the friction.

**CAR BODY ELEVATOR.**—Reuben Wells, Jeffersonville, Ind.—This invention relates to an improved apparatus for elevating car bodies off the trucks for transferring them from one truck to another, as a means of transferring freight to roads of different gages, instead of unloading it from the cars of one road to those of another, the bodies being adapted to trucks of various gages; and tracks of various gages are placed over the apparatus, so that a car of one gage may be run upon the apparatus and have the body lifted off and suspended, until the truck may be run away and truck of another gage run under the body and the latter lowered upon it. The apparatus consists of elevating tables, preferably four in number, suitably adjusted to take under the four corners of the trucks, and resting upon four levers having fixed rests at one end, with their moving ends converging upon the vertical moving table of a hydraulic elevator, located centrally between the first-mentioned elevating tables, by which the latter are elevated or depressed to raise or lower the car bodies.

**HAND TRUCK.**—B. W. Tutill, Oregon City, Oregon.—The object of this invention is to construct the frame-work of hand trucks of metal tubes, preferably of gas tubing, to be joined together in a cheap, simple, and inexpensive way, by which they can be readily made tight and taken apart for repairs.

**MILL STONE DRIVERS.**—D. B. Ritter, Glasgow, Ky.—The object of this invention is to provide improvements in the drivers used on the mill stone, spindles for imparting rotary motion, whereby they are adapted for applying the power more evenly on both sides of the spindle than can be done by the driver as now arranged.

**CHEESE PRESSING APPARATUS.**—James L. Sprague, Hormon, N. Y.—This invention relates to improvements in cheese hoops, and the followers for the same, and in the arrangement for connecting the screws of cheese presses with the followers.

**PROPELLING WHEELS.**—James S. Cunningham, New York city.—This invention consists in an improved arrangement of the buckets for governing their position while dipping and escaping from the water, and also for holding them against the resistance of the water.

**WATER ELEVATOR.**—D. A. Dunham, Pilatka, Fla.—This invention relates to improvements in devices used for raising or injecting water by a jet of steam, the object of which is to provide a more simple device than any now in use, and adapted for drawing water from the bottom of the vessels containing it, and it consists in a peculiar arrangement of steam and water conducting pipes with throat and water-receiving passage.

**MILK HOUSE.**—Fritz Schaller, Mattoon, Ill.—This invention consists in an arrangement, on a brick or stone base, of A-shaped sides and vertical ends, the sides being hinged at the base to swing open in a vertical plane, and the triangular ends being divided at the center and hinged to swing horizontally; the walls are made double, with spaces between, and provided with ventilating passages.

**CYLINDRICAL HULLING MILL.**—Charles S. Bailey, New York city.—This invention has for its object to furnish a simple, convenient, and effective hulling mill, designed especially for hulling cotton seed, but equally applicable to hulling other seeds, and which, while doing its work thoroughly, shall be so constructed that the knives may be easily, quickly, and conveniently taken out and adjusted.

**DITCHING MACHINE.**—James S. Anderson and James B. Cooley, Clark's Hill, Ind.—This invention has for its object to furnish a simple, convenient, and effective ditching machine, which shall be so constructed and arranged that it may be easily adjusted to cut a straight ditch for laying tiles, or a tapering open ditch, as may be desired.

**PLOW.**—Moses Tessler, Cairo, Ill.—This invention has for its object to improve the construction of plows, so as to make them more convenient, effective and durable, enabling them to be readily adjusted to run at a greater or less depth in the ground or to cut a wider or narrower furrow.

**PLOW.**—Henry Nolte, Lincoln, Ill.—This invention has for its object to furnish an improved plow, simple in construction, and effective in operation, for plowing and cultivating plants planted in rows, when of such a character or size as to require to have the soil turned about the said plants