#### The Aniline Blue---An Instructive Lesson.

It is an old maxim that "Fortune favors the brave." It might be appropriately added that it also favors the persevering. Many important discoveries have been made in consequence of the dogged perseverance of men, who, when they have asked from nature a revelation of her mysteries, would not accept a negative answer, until it would seem that almost on account of their very persistence they were rewarded by success. An interesting treatise on Aniline and its its Derivatives, from the pen of M Reimann, contains the following anecdote of the way in which the fugilive blue formerly considered as practically of no value, was rendered permanent It presents a marked contrast to an instance of good abilities wasted on account of unfixedness of purpose, which we give in another column:

"A dyer, like all others of his craft at that time, was busily occupied experimenting with the aniline dyes. Amongst other things, he tried a reaction described by M Lauth, viz. that of aldehyd on a sulphuric solution of aniline red. In this reaction, a substance is produced which gives to solu tions an extremely evanescent blue color. M. Lauth had given up all idea of utilizing this blue color in practice ; and M. Cherpin endeavored to fix the same color on silk or wool with similar want of success. His at empts, although fruitless, were incessantly renewed, exhausting his purse, but not his patience. One day, however, discouraged at the want of success attending some recent experiment on which he had founded great hopes, he was on the point of relinquishing the attempt at conquest over this fugitive blue, when the idea struck him to confide his troubles to an old friend, a photographer. 'A trouble shared is a trouble halved,' says the proverb. Cherpin proceeded to test this saying, and experienced the reward of his perseverance and his confidence in the consolations of friendship. He found his photographic friend, and confided to him the history of all his hopes, his experiments, and his fruitless results. 'Fix the blue?' said his friend. ' Is that, the only difficulty ? Why it's the easiest thing in the world! Have you tried hyposulphite of soda? 'Hyposulphite of soda? Mon Dieu, no! Do you think it will fis my color? 'Of course it will. Don't you know that hyposulphite of soda is the fixing agent par excellence, and that when we want to fix anything in photography, that is the substance we always employ.'

"Happy is he who possesses faith ! Cherpin tried hyposul phite or soda, and his joy and admiration of the chemical knowledge of his friend may be imagined when he saw his blue color metamorphosed into a splendid green, this time perfectly stable. It is scarcely necessary for us to add, that the mode of action of action of hyposulphice of soda in this case is entirely different from its photographic action, and that it would be quite impossible to predict the one by knowing the other.

" This apecdote contains a moral. It shows, in our opinion, not the result of chance, for that is common to all the world,-for where is the discovery to which chance has not more or less contributed ?-but it shows the power of will, the power of perseverance. Chance only favors two kinds of persons-those sufficiently instructed, or endowed with talents eminent enough to observe it, to seize it, and to profit by it; and those who, by patience, perseverance, and the power of their will, force it in time to become useful to them."

What a grand moral this ludicrous episode ought to convey to our students if they will only read it aright?

### Editorial Summary.

CHICAGO was visited July, 21st, by countless numbers of the sand-fly, an insectabout the size of the gallinippers which infest the Southern swamps. Their advent was sudden, and many of the saloons on the north and south sides were compelled to close up in order to prevent their ingress. Wherever a light was placed the flies gathered around it in millions, and covered the glass in the windows to as to render it almost an impossibility to see the gas jet. The street lamps were besieged, and in many instances the streets were as dark as if no gas were employed. The sidewalks were covered, and many were crushed to death beneath the feet of pedestrians. But still they increased, and about 10 30 o'clock they covered everything. They then commenced to disappear, and at two o'clock in the morning scarcely one was to be seen. This is about the usual time for their annual visit, but never before were so many seen at any one time at a particular point.

AN IRON MOUNTAIN IN WEST VIRGINIA.-The Pittsburgh

zens now are mostly of a very respectable class, though, like all the western towns, it has a full quota of run-shops and their patrons.

THE solvent power of glycerin upon several substances commonly used in medicine and the arts, is as follows: One part of sulphur requires 2,000 parts of glycerin ; iodine, 100 parts ; red iodide of mercury, 340 parts ; corrosive sublimate, 14 parts; sulphate of quinine, 48 parts; tannin, 6 parts; veratria, 96 parts; atropia, 50 parts; hydrochlorate of morphia, 19 parts; tartar emetic, 50 parts; iodide of sulphur, 60 parts ; iodide of potassium, 3 parts ; sulphide of potassium, 10 parts.

A COMMUNICATION to the Royal Society gives an account of some observations upon the small comet discovered on the 13th of June by Winecke. The spectrum of this comet is resolved into three broad bright bands, corresponding to the spectrum of carbon in the combustion of olefant gas. From this it is not improbable that carbon will hereafter be determined to be a general constituent of cometary matter.

A WRITER in the London Quarterly Review urges the construction of the Euphrates Valley Railway by the British Government. It is probable that the demands of commerce will soon cause the construction of a railroad from the Caspian to the Indus valley by way of Muhad, Herat, and Candahar, that is to say a route through Russian territory and opening the way for Russian armies to India. Such a road, too, would compete with our Pacific Railroad for the commerce of Eastern Asia.

A METHOD of refining sugar has recently been submitted to the French Academy. It consists merely in adding milk of lime to the sirup, mixing intimately in quantities dependent on degree of impurity. The lime is afterward separated by a current of carbonic acid (passed as long as the liquid is alkaline). followed by boiling for a short time to decompose the resulting bicarbonate. The filtered and decantered liquid yields pure white sugar. The quantity of lime varies from four per cent. upward,

THE boxes in Boston post office have been provided with metallic doors and patent bank locks. The advantage of this innovation is that each box-holder can have access to his box at all times, and on any day. The lock is the property of the box-holder. and, on the box changing owners, the lock is removed, and a new and different one substituted.

ANILINE poisoning can be detected as follows: Macerate the contents of the stomach with water containing a little sulphuric acid, add an excess of solution of potassa, and distil; add a little sulphuric acid to the distillate and evaporate. If aniline is present, a purple or red margin will be formed at the top of solution where it touches the vessel

M. LARTET, at the last session of the Sociétés Savantes, presented an account of some human bones discovered by him in Dordogne. The bones of the limbs were of remarkable size and prodigious strength Three skulls were found also of great size. The age of these bones is judged to be equal to the mammoth, and they are considered to belong to the same geological period.

IT is estimated that fire in the woods, this season, has destroyed in the Ottawa District, standing pine lumber, to the value of \$4,000,000, and the woods are still burning. The boats on the Montreal route, it is said, are seriously detained by the smoke on the river.

•N the Erie Canal, a boat has been placed, which is propelled on a new principle. The propelling power is a wheel in the centre, fixed upon a frame which allows it to rise and fall according to the depth of water, and permits the circumference always to come in contact with the bottom of the canal. Satisfactory results are said to be obtained.

A RESIDENT of Martigny, Switzerland, has lately organized a considerable trade in ice at Lausanne. The ice from the glaciers having been sawn into regular cubes of small volume and perfect transparency, is placed in boxes and sent off by fast trains to various centres of population in France, and arrives with very little waste.

THE boundaries of the new territory of Wyoming are as follows: On the north is situated Montana; on the south, Colorado : on the east. Dakota and Nebraska: and on the west. meridians of longitude west from Washington, and the 41st Gazette savs: "We are informed by Hon. D. D. T. Farrensand 45th parallels of latitude.

NATURE was thoughtful in her arrangement of coal and iron. Generally, wherever she laid down a stratum of iron ore, she accompanied it with a layer of coal to smelt it.

THE largest sawmill in the world, but one, is at Clinton, Iowa, and when under full way employs 1,000 men. Its engine is of 900 horse power.

AMAN in East Thompson, Conn., is building two tenement houses, framed like ordinary buildings, but which are to be covered, sides and roof, with Manilla paper instead of boards.

APPLES carried from this country to China, packed in ice, sell at Hong Kong for \$2 a dozen, gold.

BEET sugar cultivation is a growing interest in the Western States. At Montgomery, Ill., a company has purchased this season 500 acres, on which they are raising beets for sugar.

NEW ELGIN, Ill, is a forest of pine and hirch, the trees 20 feet high, and "raised from the seed," where ten years ago was only a shrubless prairie.

THE Foreign Associateship of the French Academy of Sciences, vacant by the death of Sir David Brewster, has been filled it is reported, by the election of the eminent mathematician, Professor Krummer, of Berlin.

A PHYSICIAN of Illinois reports a case of blindness of the right eye completely cured by the extraction of the first bicuspid of the upper jaw. The tooth was carious, and its interior was filled with pus.

#### MANUFACTURING, MINING, AND RAILBOAD ITEMS.

The Working People. - The Labor Exchange, at Castle Garden, N. Y. makes the following report of the first twelve working days of July ; Ap. plicants for employment, 1.804; consisting of males, 1.182; females, 622; orders, for employes, 2,012 ; males. 1,390 ; females, 622 ; persons employed. 1.804; males, 1,182; femiles, 622. Among these were 41 families comprising 134 persons. Average number of orders each day, 168; average number of applications for employment, 150; average rate of monthly wages paid to the males, \$25; average rate of monthly wages paid to females, \$9. Classification of the applicants : Males, mechanics, 129; agriculturists, 1 053; females, skilled labor, 24; unskilled labor. 598. Males able to read and write, 877; notable, 305; femalesable to read and write, 456; not able, 166.

A distinguished experimental chemist of Paris announces that he has taken advantage of the property possessed by fluoride of calcium (common fluor spar) of dissolving alumina at a high temperature to obtain magnificent crystals of corundam (sapphire, rubies, &c.) He promises shortly to give a full account of the experiment.

The roof the Metropolitan station, now being erected for the Midland Railway at King's Cross, Loudon, is to ordinary roots what the Great Eastern was to ordinary yessels. Its span is 210 feet, and the hight of the central portion of the arch from the level of the rails is 99 feet. It covers eleven lines of rails and four acres of cellars.

The statistics of cigar manufacture show that Great Britain and her colonies and the United States consume half the crop of the world, and that Cuba produces one-third of the whole supply of the world.

The descent of the Union Pacific railroad from the Black  ${\rm Hillst}_{\Theta}$  Laramie Plains, is every way sensational. The grade is 90 feet to the mile, so winding that 24miles are traveled to reach a point 12 miles distant, and Medicine Bos Mountain, capped even in the summer time with snow, appears at thoright of the traveler one minute, and at the lefe a minute later.

The Winsted Hoe Company which was employed wholly in the manufacture of hoes for southern plantations, has shut up shop for want of orders. The seythe factories of the same place have also a dull season, a circumstance with which the mowing machines may have much to do.

The Pacific slope intends to provide itself with iron. San Francisco has built a rolling mill, and Oregon has sent down 1,000 tuns of pig iron to start with.

The patent on Hoe's rotary presses (xpired on Friday, 24th July. An application for its extension for seven years was not acted upon by Congress owing to the lateness of the time at which it was introduced.

## Recent American and Koreign Latenia.

Dear the beautiff to estati volutit week is twice of word of the same or ord visit home and foreign patents.

BUILDING MATERIAL - Thomas J. Lowry, Conncantville, Pa.- The nature of my invention relates to improvements in the composition of matter for forming building material and in molds for forming the same.

LEVELS -- Wm. P. Cutter, Chelsea, Mass.-This invention consists is an ordinary stock of wood which is provided with a circular metallic ring made in two parts and juserted within a central circular opening on the said stock within the said ring a weighted pendulum is suspended upon a central axis and provided with arms which swing between cross arms of the ring, and always maintaining a verticle position no matter what position the stock may be in.

INDICATOR FOR BOILERS -Robert Berryman, Philadelphia, Pa.-This invention relates to a new indicator, which is to be attached to steam boilers, and its object is to produce a perfect safety guard against all accidents that may arise from having too much or too little water or too high or too low a pressure of steam in the boiler.

DEVICE FOR HOLDING TOOLS AGAINST GRINDSTONES .- Edwin Fernald. Montana, Idaho, and Utah. It lies between the 27th and 34th | Turner, Me.-This invention relates to a device by which tools having a long cutting edge, can be held against grundstones, and can be sharpened; the device being so arranged that the bevel formed n the tool will be entirely uniform, and that its edge will beground perfectly straight.

worth, State senator from Upshur county, West Virginia, that an iron mountain exists in the upper portion of that county, of greater extent and purity than any other known body of iron in the world, not excepting the famous iron montain of Missouri; and that under this vast body of iron there is a vein of bituminous coal, measuring on the face, where the Buchanan river cuts through, twenty-five feet in thickness. He declares this ore to be so pure that a blacksmith took a piece and torged a horse-shoe from it. This deposit is up the west branch of the Monongahela river, and can be reached from this city by a railway not exceeding one hundred and fitty miles in length."

In the southeast corner of the Territory of Wyoming is situsted Cheyenne. This, the "Magic City," was laid out by General Dodge, on the 20th and 21st of July. 1867. In one short year it has gained a resident population of over five thousand, having had, perhaps, in the flourishing times of gemblers, roughs, and prostitutes, as many more. The citi- past year, at \$17,000,000.

No doubt the cheese factories of the country add much to the cheese product in the market; neither is there any doubt that the quality of the article decreases as the quantity increases. The rich productions which once made Goshen and Herkimer county famous, are now buried beneath the leathery and tasteless productions of the cheese factorics.

THE parallel rod of the first locomotive run over the Boston and Providence road in 1834 is preserved in the Company's workshop at Boston. The parallel rods of their engines now in use weigh 249 pounds.

A NEW tunnel under the Thames is contemplated, at a point near the Tower of London, to be lined with blue brick and iron, and with hydraulic lifts at the ends to raise a carriage and ten passengers.

THE Reporter estimates the shoe business at Lynn, for the

CARRIAGE.-Job Whitehead, Ames Station, Iowa.-This invention consists in the arrangement upon the frame-work of the body or box of a carriage of one or more coiled springs which may be wound up with a crank and arranged to transmit motion to the axle of the hind wheels and belts,

OINTMENT FOR VETERINARY FRACTICE .- Richard Jones, New York city.-This invention and discovery relates to a composition designed for healing purposes in the treatment of horses. catile, and other domestic animals, and which may also be used with good effect upon the human body for the cure of wounds, bruses, and for other purposes.

WATER WHEEL.-LaFayette Lyons, Bennington. Vt.-This invention consists of a houzontal wheel provided with vertical curved puckets against which the water flows in a right angled direction and is discharged through two or more openings in the cover into a circular chamber of thediameter of the wheel, from which lateral tubes convey it away out of the chamber through the curb which supplies the water to the wheel.

DUMPING CAR-Philander Daniels, Jackson, Mich.-This investion consists in the arrangement on the platform of a car, of a dumping bed fixed on wheels and provided with racks and pinions, whereby the operator by turn ing a crank may move the said bed over the edge of the car until it will dump by the action of momentum and gravitation, the said bed being provided with staples which are caught by hooks suitably placed at the edges of the car and to hold it as on a pivot to be restored to a level position by the oper ator previous to being returned by the racks or pinions to its normal position on the car.

Hoor SKIRT.-Louis Fellheimer, New York city.-This invention relates to the manufacture of hoop skirts and particularly to the nucthod of fastening the tape to the steel spring, and it consists in passing the steel spring transversly through one cyclet and then elmebing or passing down the inner end of the cyclet on to the steel.

BOLT TRIMMER.—Henry Howe, Oneonta, N. Y.—Thisinvention relates to a new device for trimming bolts, rivets and other suitable articles, and consists of a cutter sliding within the lower part of a slotted plate, so that its bottom is flush with the under slide of the plate. Reciprocating motion is imparted by means of an oscillating cam, working on the said plate, and by means of a spring catch projecting from the rear end of the cutter. The cutter is supported in the plate by having beveled edges which rest upon the similarshaped inner edges of the slot in the plate. The cutting edge of the tool and the corresponding abutting edge of the plate are set diagonal, so that a drawing cut is produced on a reciprocating cutter.

Lock.-John G. Spathlef, Sandusky, Obio.-This invention relates to certain improvements which are applicable to door locks, safelocks, trunk locks, spring locks, pad locks, and all other kinds of locks.

Wood SAWING MAGHINE.—Henry A. Daniels, Thomaston, Conn.—This invention consists in arranging the bearings of the crank shaft in the same slide to which the swinging saw frame is pivoted, so that the distance beween the working and swinging centers cannot be varied. The invention alsoconsists in the use of a reciprocating block, which turns loose on the wrist pin of the crank and which slides between two parallel bars thatform part of the swinging frame.

COFFEE ROASTER.—Freiderich Max Bode, Vienna, Austria.—This invention relates to a new coffee roaster, which consists of a spherical shell hung in a semispherical lacket, its one axis being hollow and serving as a filing and discharge opening. The shell can be revolved by means of a handle attached to the cover of the aforesaid hollow axis, which cover can be removed to allow the filing in and discharge of the coffee.

CARRIAGE CLIP.—Thomas McCreary, Matteawan, N. Y.—This invention relates to a new device for connecting the shaft of a carriage with the front axle of the same by means of a pivot which will not rattle, which cannot easily get our of order, and which can be readily removed to allow the shaft to be taken off. The invention consists in s curing the pivot to the end of the shaft and not to the clip, as usual, and in then hanging it loose in the cars of the lip and in locking it to the same by means of a sping catch.

SEWING MACHINE-Stephen French, Orange, Mass.—This invention relates to a new shuttle sewing machine, and consists in so combining with each other an oscillating shuttle driver, a double can feed motion, and a slotted plate for moving the needle up and down; that in one machine the main advantages of many different kinds of sewing machines are contained whereby a complete and satisfactory operation, as well as great simplicity of construction can be obtained.

HAND PUNCH.-J.D. Higgins, Greenville, Conu.-This invention consists in arranging a shding tubular punch in an arm that is parallel with, and projects from the lower jaw, and in holding the punch bymeans of a spring constantly against the upper or pressing jaw. When the punch is to be used it is by the upper jaw forced toward the lower one, but is at the same time always guided in the aforesaid arm so as to remain perpendicular to the tace of the lower jaw.

MACHINE FOR DRIVING FENCE POSTS.—Isaac J. Parker, Buff de Grove, Iowa.—This invention relates to a machine for driving fence posts and is designed to be placed upon a wagon or any suitable frame mounted on wheels; the device being constructed in such a manner that it may be operated while on the wagon and, drawn from place to place where the posts are to be driven.

SWITCH LOCK.-John V. Chamberlain, Cincinnati, Ohio.-This invention relates to a lock for railroads witches, and it consists in a novel construction and arrangement of parts, whereby the lock is rendered self-locking and a very simple and durable lock obtained; all springs and small parts which are liable to get out of repair being avoided.

LIQUID MEASURE.—Ward Sprague, Sandy Creck, N. Y.—This invention is designed to obviate the difficulty attending the measuring in cold weather of thick viscid liquids, such for instancess molasses, sirups, etc., etc.; and to this end the invention consists in constructing the measure with double walls with a space allowed between to receive water or other suitable fluid, while, by placing the measure on a stove it is kept warm and whenever the measure is used the heat radiated from the walls of the measure will render the contents of the same sufficiently fluid to flow readily.

FLATTENING AND BENDING RODS FOR CHAIN LINKS.—Peter Hendricks, Trenton, N.Y.—This invention relates to a machine for flattening and bending rods for the manufacture of links for chains such as are used more especially for mining purposes. The invention consists in a peculiar construction and arrangement of parts whereby the two different sized links required for the manufacture of each chain may have the rods of which they are formed, flattened and bent on one and the same machine.

CENTERING LATHE.—Benjamin F. Bee, Harwick, Mass.—This inventiou relates to a new centering lathe designed for centering articles, that is, adjusting their ends centrally in line with the bit of the lathe so that the article maybe drilled centrally or leave center holes made properly in their ends in order that they may be fitted centrally in a turning lathe.

AUGER FOU.-H. D. Pennoyer, Athens, N. Y.-This invention relates to an improvement in augers, and it consists in providing a top piece to fit on the upper end of the auger shank and receive the handle, said top-piece being composed of two parts and provided respectively with pawls and a ratchet, whereby the auger may be turned and boles bored in close proximity to [any vertical fixtures where an ordinary fixed handle cannot be turned, and at the same time admit of the handle being adjusted and turned as usual in places where there is room to allow it.

SULKY PLOW.—Benj. Slusser Sidney, Ohio.—The object of this invention is to simplify the construction of sulky plows so as greatly to reduce their cost, while yet enabling them to be capable of easy operation, of ready adjustment, and of yielding to immovable obstaeles without breaking.

LOW-WATER INDIGATOR.-T. G. Elswald, Providence, R. I.-The object of this invention is to furnish a neat and convenient instrument, which, being autached to the head of a steam boiler, will enable the engineer at any time to try the condition of the water in the boller, and will, of itself, sound an alarm whistle when the water gets too low for safety.

COMBINED LOW-WATER INDICATOR AND TRY COCK.-T. G. Eiswald, Provi

COMBINED WINDOW AND BLIND FASTENING. – Wm. L. Barnes. Irvington, N. Y. – This invention consists in a device by which the blind and sash of a window can securely be fastened on the inside by combining the two fastcnings.

OIL CUP.—Sylvester Charaley, Portage City, Wis.—This invention consists in so arranging a valve in an oil cup that it can be raised by the motion of the part to which the cup is attached and closed by its own gravity, so that the discharge of the oil will depend upon the rapidity of the motion up and down.

EXTENSION LADDER.-Jobn A. Smith, Lacon, III.-This invention has for its object to furnish an improved extension ladder, designed especially for thremen, painters, and tinners' use, but which shall be equally applicable for other uses, which shall be simple in construction, easily adjusted, extended. and moved from place to place.

Door Mar.-Wm. Young, Franklin, Mass.-This invention has for its object to turnish a simple, cheap, and serviceable door mat, which may be made single or double, large or small, in one piece or in sections, and which, when worn, maybe refilled with little trouble and at triflug expense.

EVAPORATOR.-N. Evinger, Terre Haute, Ind.-This invention has for its object to furnish an improved apparatus for evaporating cane or other saccharine juice for the manufacture of molasses and sugar.

TRACK CLEARER.—John Callaghan, St. Louis, Mo.—This invention has for its object to furnish an improved device for attachment to street railroad cars, by means of which the cars may be made to clear the track for themselves.

TABLECUTLERT.—Wm. Clayton, Bristol, Conn.—This invention relates to a new manner of attaching the bolsters to the shanks and handles of knives and forks, and consists in attaching a wronght or cast metal holster to the shank and handle by means of Babbet or other metal, cast around the lower part of the bolster. The shank is perforated, and the upper edges of the scalesor handle are recessed, as well as the lower edge of the bolster, so that a slot is formed through handle, bolster, and shank, through which the metal is cast; its two parts being thereby connected to lock the two parts of the bolster firmly together, and to the handle.

'TANNERS' HOOK.—James Hoffman, Belvidere, N. J.—This invention has tor its object to turnish an improved hook for tanners' use in handling hides in the vat, which shall be so constructed and array god as to handle the hides withoutin juring their grain.

APPARATUS FOR CLARIFYING CANE JUICE.-Wm. Dill, Houma, La.-The object of this invention is to provide a simple and effective apparatus for straining and clarifying cane juice.

CRAYON HOLDER.—Rufus Wright. Brooklyn, N. Y.—This invention relates to improvements in the cases or holders for crayons which are need in drawing by artists, and in schools and institutions of learning for demonstrating problems on the blackboard.

GIB AND SELF-OILER.—Cyrus B. White, Port Richmond, N. Y.—This invention relates to an improvement in self-labricating glbsfor steam engines, and is an improvement on a device for that purpose patented by Wm. A. Deron, Nov. 19,1867. The object of the invention is to avoid the waste of oil caused by the motion of the cross head, and while effecting this end to obtain a perfect or reliable bearing at all times of the iriction roller against the Ruidc.

BACK-BAND HOOK.-Charles Wack, Evansville, Ind.-This invention relates to harnesses used on horses for plowing and other parposes, and consists in forming the hook in such a manner that the chain which it supports is securcly kept in place when in use.

COEN SHELLEE.—A. C. Mills, Oaktown, Ind.—This invention has for its object to turnish a simple, convenient, and effective instrument for shelling corn, and which shall at the same time be durable and cheap.

BOOTS AND SHORS.—William Smith, Whitehall, Bridesburg, Pa.—This invention consists in inserting in the sole of a boot or shoe strinsof wood, metal, or other suitable material, in such a manner as to preserve the sole from wear, and to admit of said material being readily withdrawn or detached from the sole when, from wear or othercauses, it becomes necessary to have rew ones attached. The object of the invention is to protect the sole of the boot or shoe from wearby a means which will not disfigure the sume or be at all conspicnous even when applied to lightor "dress" boots and shoes.

SMUT MACHINE.—E. McLane, Young America, III.—This invention relates to a machine for depriving grain of smut and other impurities, and it consists in a securing device of peculiar construction and a uovel arrangement of a suction blast, whereby a very powerful and efficient blast is obtained without wasting or blowing away the grain, and the grain secured in the most thorough manner by a very compact device.

MACHINE FOR DRESSING SLATE FRAMES.-W. F. Mosser, Allentown, Pa.-This invention has for its object to so improve the construction of slateframe muchines that each slate may be automatically fed from a pile, have their eorners rounded off and their edges dressed, and may then be fed cornerwise to the revolving planers by which both sides of the frame are dressed, so that the slates may come from the machine completely dressed.

CYLINDRICAL FILTERING PRESS.—Pierre du Rieux and Edouard Roettger Lille, France. Patented July 21, 1863.—This invention relates to an improved construction and arrangement of the parts of filtering press2s, designed especially for use in sugar houses, whereby a more efficient working is obtained and all danger of the machine exploding under pressure is avoided, and the operations of filtering the liquid parts and casking the solid parts of semi-liquids may be conducted with more speed, regularity, and efficiency.

## 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 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 advertisemets at § 00 a line, under the head of "Business and Personal."

TT All reference to back numbers should be by volume and page.

J. A., of N. Y., asks: 1st, Whether a weak solution of carbolic acid applied with a watering pot to garden walks will be an effectual mode of preventing the growth of weeds. 2d, What should be the strength the solution. 3d, In what form can the article be procured. 4th, Is A. W. H., of Pa.—We cannot recommend any process for preventing the fermentation of milk.

E. P., of N. Y.—1st, Leather can be covered with a film of india rubber varnish, and still retain its strength and pliability. Such leather may be had in this market. It is perfectly waterproof at the side where the varnish is applied. 2d, Pens of hard rubber or vulcanite have been made. They are tolerably good, but they wear out too soon. Lately they have been improved with gold and irridium points. We use such pens, and they give great satisfaction. Those of gutta perchado not keep ; they become brittle by oxydation,

S. W. W., of Mass., sends us some fine specimens of iron pyrites in cubic crystals and asks their value. Their marketable value is nothing; as mineralogical specimens some may esteem them.

G. M., of Ill., thinks there may be something in the electricat theory of steam boiler explosions because there have been a creat number of boiler explosions and accidents by lightning thisseason occurring at about the same time. He believes there is yet some unknown cause or causes for boiler explosions, and prudently suggests investigation, etc., We believe a boiler constructed on correct principles, of good material, with good workmanship, and managed by a competent person is as safe from explosion by "mysterious "causes as a cooking stove. But let us have the facts of these mysterious explosions. The mystery generally disappears when the facts attending an explosion are discovered by investigation.

T. W. B., of Pa., sends a diagram and explanation of the relative positions of crank and piston of steam engines. His problem is solved by trigonometry, and we differ from him when besays his explanation is "free from the usual objectionable intricacy of algebraic mathematics." Our mechanics generally understand more of algebra than of trigonometry, We think our explanation on page 20, current volume, preforable to his more ambitious attempt.

J. S. R., of Pa., writes of a "perpetual motion" (more correctly designated a "self-mover)" which is running in his neighborhood, it being a "combination of wheels, levers, and rolling balls," and is a puzzle to all mechanics who have seen it. He wants some competent expert to eome and examine it. When "combinations of wheels, levers, and rolling balls" will generate and develop power we shall be glad to "make a note on't."

P. J., of N. Y.— We cannot give a recipe 'for a preventive and defence against musketoes. A remedy for the pain of the sting is aquaammonia. The preventives used are various. Hunters and fishers in the woods of Maine and the wilds of the Adirondacks make a "smudge," a smoke of birch and hemlok bark, etc., in which they sit and into which the winged pests dare not venture; or, they smear their faces and hands with lard or other grease, neither of which remedies are applicable to civilized society. Some persons have faith in bunches of pennyroyal hung in their windows and doors; others use spearmint, in the berb or as an extract—oil or essence. We have no sure preventive but "grin and bear it."

D. P. B., of Mass., says, "I am a machinist of a dozen years' experience, yet 1 must acknowledge that 1 find difficulty in turning tapers of the same dimensions even when the pieces are of exactly the same length. Can you help me?" If the hight of the point of the turning tool is not changed when one piece is taken out of the lathe and replaced by one of exactly the same length, the taper on both will he the same. The best course is to keep the point of the toolexactly at the center. This can be done-by testing the point by the points of the centers of the "live" and "dead "arbors at each change of pieces, or whenever the tool is removed for grinding and replacing. In ordinary turning the point of the cutter may be above the center, but not in turning a taper.

E. A. B., of Conn.—Will air be exhausted from an air chamby water running noder a heavy head? Ans., It will. Is there any automatic device for replacing it when thus exhausted? Ans., We think not,

S. H. E., of Ill.—" Will anything except the limestone now used prevent the slag from sticking to the sides of cupolas?" Fluor spar marine shells and other substances will answer, but limestone is the cheapest material known.

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dence, R. 1.—This invention relates to that class of low-water indicators in which a fusible plug is employed, and consists in a simple and convenient device by which the interior of such indicators can be kept clear from the accumulation of dirt, sediment, or scale, and by which, when such foreign substances have accumulated in the indicator, they may be blown out at any time and the interior of the indicator left perfectly cleau and free. The device by which the important objects are attained, can at other times be employed conveniently as a try cock.

CLOTHES WRINGER.-P. Cramer, Providence, R. I.-This invention relates to a new clothes wringer, which consists of four rollers, one of which is an elastic roller, held loose het ween the three other rigid rollers. The elastic roller is not hung in bearings, and need therefore not be formed on a metallic or wooden or other axle, but will be soft and elastiet broughout.

WINDOW WIPER.-B. F. Burgess, Boston, Mass.-This invention relates to a new and improved method of cleaning windows, and it consists in arranging on a handle, of any desired length, a revolving frame made of tin or other suitable material, and attaching rollers thereto cu which wiping or washing clo.hs are wound and unwound.

PAIL EAR.-Geo. E. Eastman, New Harttord, N. Y.-Thisinvention relates to an improvement in bail ears for pails or buckets, and for other vessels of a similar construction, whereby they are rendered much more durable than the ordinary bail ear, and the invention consists in forming the ear with a branch exterior stay and and an interior stay, which are connected with the mam plate of the car, whereby the main plate is guarded and protected from plarious lateral strain and rendered strong and durable,

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