The Aniline Bluew-An instructive Lesson.
It is an old maxim that " Fortune favors the brave." It might be appropriately added that it also favors the perieevering. Many ituportant 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 negrative 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 Rermann, contains the following anecdote of the way in which the fugitive blue formerly considered as practically of no value, was rendered perman int It presents a marked contrast to an instance of good abilities wasted on account of unfixedness of purpose, which we give in a aother 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 aldeliyd 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 utilizings this blue color in practice; and M. Clierpin endeavored to fix the same color on silk or wool with similar want of success. His at empts, although fruitless. were incessantly rene:oed. 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 blae, when the idea struck him to confide his troubles to an old friend, a phitographer. 'A trouble shared is a trouble halved,' says the proverb. Cherpin procreded to test this saying, and experienced the reward of his perseverance and his conlidence in the consolations of friendship. He found his photographic friend, and confided to hin the history of all his hopes, his experiments, and his fruitless results. 'Fix the blue? said his friend. 'Is that the only difficul:y? Why it's the easiest thing in the world! Have you tried hyposulphite of soda? thing in the world! Have you tried hyposulphite of soda?'
'Hyposulphite of soda? Mon Dieu, no! Do you think it Hyposulphite of soda? Mon Dicu, no! Do you think it
will fis my color?' 'Of course it will. Doo't y ouknow that will fism y color?' 'Of course it will. Don't youknow that
hyposilphite of soda is the fixing agent par excellence, and that when we wat to fix anything in photography, that is the substance we always employ.'
" Happy is he who possesses faith! Cherpin tried hyposulphite oisoda, and his jop and admiration of the chemical lanowledge of his friend nay be imagined when he saw his blue color metamurphosed into a splendid green, this time perfectly stable. It is scarcely necessary for us to add, that the mode of actinn of action of lyposulphite of soda in this case is entirely different fromits photographic action, and that it would be quite impossivle to predict the one by knowing the other.

This anecdnte entains a moral. It shows, in our opin ion, sot the result of chance, for that is cominon to all the world, -for wnere is the discovery to which chance has not more or less contributed?-but it shows the power of will, the power of persevesance. Chance only favors two kinds of persins-those sufficutly insiucted, or endowed with talr-nts eninent emugh to observe it, to seize it , and to profit hy it; and those who, by patience, perseverance, and the power of their will, force it in tume to become useful to them."

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

## Enditorial sumuary

Chicago was visited July, 21st, by countless numbers of the gand-fly, an insoctabout the size of the gallinippers which infest the Southern swamps. Their advent was sudden, and many of the saloons in tbe north and south sides were competled to close $u_{s}$, in order to prevent their ingress. Wher-
ever a light was placed the flies gathered around it in milever a light was placed the flics gathered around it in mil-
Jions, and covered the glass in the windows to as to render it almost an impnssibility to see the gas jet. The streer larups were besieged, and in many instances the streets were as carls as if no gas were employed. The sidewalks were covered, and many were crushed to death beneath the feet of pedestrians. But sill they increased, and about 1030 o'clock they covered everything. They then commenced to disappear,
and at two n'clock in the morning scarcely one was to be seen. This is about the usual time for their annual visit, but never 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.-Tihe Pittsburgh Gazette sars: "We are informed by Hon. D. D. T. Farrensworth, State senator from $\mathrm{U}_{1}$ shur county, West Fircrinis, that an iron mountain exists in the upper portion of that crunty, of greater extent and purity than any other known
bodv of irou in the world, not excepting the famcus iron of iron in the world, not excepting the fam"us iron
tain 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 cucs through, twenty-five feet in thickness. He declares this ore to be so pure that a blackemith took a piece and torged a horse-shoe from it. This deposit is up the west braneh of the Monongahela river, and can be reached from this city by a railway not exceeding one hundred and fitty miles in leneth."

In the southeast corner of the Territory of Wyoming is situsted Cheyenne. This, the "Magic City," was laid out by General Dodgr, on the 20th and 21et of July. 1867. In one short year it has gained a resident population of over five thousand, having had, perhape, in the flourishing times of gemblers, roughs, and prostitutes, as many more. The citi-
zens now are mostly of a very respectable class, though, like all the western towns, it has a full quota of rum-shops and their patrons.
The solvent power of glycerin upon several substances 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 mor phia, 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 olefiant gas. From this it is not improbable that carbon will hereafter be dete mined 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 Cas pian to the Indus valley by way of Muhad, Herat, and Can dahar, that is to say a route through Russian territory aud opening the way for Russian armies to India. Such a road too, would compete with our Pacific Railroad for the com merce of Eastern Asia.

A method of refining sugar has recently been submitted to the French Academy. It consists merely in adding milk to the French Academy. It consists merely in adding milk
of lime to the sirup, mixing intina tely in quantities depend ent 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 licarbonate. The filtered and decantered liquid yields pure white sugar. The quantity of lime varies frow our fer cent. upward.

The boxes in Boston post office have been provided with metallic doors and patent bank locls. 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 moved, 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 dis til ; add a little sulphuric acid to the distillate and evaporate If aniline is present, a pur,le or red margin will be formed the top of solution where it touches the vessel
M. Lartet, at the last session of the Sociétés Savantes, fre Dited an account of some human bones discovered by him in D.rdogne. The bones of the limbs were of remarkable size and prodigious strengith Three skulls were found also ot 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 de stroyed in the Ottawa District, standing pine lumber, to the value of $\$ 4,000,000$, and the woods are still bunning. The boats on the Montreal rou
$O_{\mathrm{N}}$ the Erie Canal, a boat has been placed, which is pro pe?led on a new principle. The propelling power is a wheel in the centre, fixed uoon a frame which allows it to rise and all according to the depth of water, and permits the cir cumference always to come incontact with the botiom of the canal. Satisfactory results are said to be obtained.
A resident of Martigny, Switzerland, has latelyorganized 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 Moutana, Idaho, and Utal. It lies between the 27 th and 34th weridians of longitude west from Washington, and the 41st nd 45 th parallels of latitude.

No doubt the checse factories of the country add much to the cheese projuct in the market; neither is thereany doubt that the quality of the article decreases as the quantity inreases. The rich productions which oncc made Goshen and Hersimer county famous, are now buried beneath the leath ry a ad 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' vorkshop at Boston. The parallel rods of their engines now in use weigh 249 pounds.

A New tunnel under the Thames is contemplated, at a poin ear the Tower of Lond,n, to le lined with blue brick and ron, and with hydraulic lifts at the ends to raise a carriage den passengers.
Tre Reporter estimates the shoe business at Lynn, for the past year, at $\$ 17,000,000$.

Natore was thoughtful in her arrangement of coal and ron. 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, lowa, and when under full way employs 1,000 men. Its engine is of 900 horse power.

A man 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 Acadoeny of Sciences, vacant by the death of Sir David Brewster, has been filledit 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 lyy the extraction of the first bicus pid of the upher jaw. The tooth was carious, and its interior was filled with pus.

## MANUFACTORING, MINING, AND RAILROAD ITEMS,

The Working Prople. - The Labor Exchange, at Castle Garlen, N. Y maises the following report of the first twelve working days of July: Ap
plicants for emploympot. 1,801 ; conbisting of males, 1,182 ; females, 6 ?2; orders, or cmploy $6,2,2,012$; males. 1,390 ; females, 6.22 ; persons employed. 1,891 ; male 182; fennles, 623 . Among these were 41 fanilies comptising 134 persons.
 mpleyment, 150 ; averige rate of monthly w:ages pald to the inales, $\$ 25$;
verage rate licants: Males, mech waics, 129 ; azriculturists, 1053 ; females, skilled labor 24; unskilled labor. 598. Males alle to read aizd write, 877; notable. 305 ; f malesable to read and write, 456; not :aDle, 166 .
A distinฐuitued experimental chemist of Paris announces that he las; taken advanage ot the property possessed by fluoride of calcium (common tuor
par) of dissolving alnmina at a high temperature to obtain ma noulcent crystals of corundam (sapphire, rubies, \&cc.) He promises shortly to give a full account of the experiment.
The roof the Metropohtan station, now being erected for the Midland Izailway at King's Cross, Loudon, is to ordinary roots wiat the Great Easteru
was to ordinary ves ells. Its span is 210 feet, and the higut of the centrat was oordinary vessels. Its span is $2 f$ feet, and the higut of the central
portiou of the arch from the level of the raild is 99 reet. It covers eleven ines of fails and four acres of cellars.
The statistics of C 'gar manufacture show that Great Brit:ain and her colon ies and tha United States cons ume half the crop of the world, and that Cuba -duces one-thind of the whole supply of the wortic
The descent of the Union Pacifie railroad from the Biack Hillsto Laramie Plains, is every way sensational. The gradeis 90 feet to the mile, 80 winlling
that 24 miles are traveled to reach a point 12 miles distant, and Medieine Bow Moutain, capped even in the summer tive with snow, appears at the right of the traveler one minute, and at the lef ca minute later.
The Winsted Hoe Company which was employed wholly
The of hoes for eouthern plantations, has shut up shop for me manulac The seytie factor.es ot the same place have also a dull seaton, a circumstance with which th.e mowng machines may have much to do
The Paciffc slope intends to provice itself with iron. San Francisco has buill a rolling mill, and Oregon has sent down 1,000 tuns of pig iron to star with.
The patent on Hoe's rotary presses a xpired on Friday, 24th July. An application for its extension for seven years wis not acted upon
owing to the lateness of the time at which it was introdaced.

Hecent sumeritall and forstgh zatents

bullding matrrial - Thomas J. Lowry, conncant ville, Pa.-The nature of my itsvention r-lates to mprovements in the composition of matcer tor forming buildog material and in molds for formiug the same.
Levels - Wm. P. Cutter, Chelsea, Mass.-This iuvention consists is an or dinary stock of wood which is provioed with a circular metallic ring made in two parts and iuserted within a central circular opening on the sadd stock within the sald ring a weight d pendulum is suspende tupon a central axis
and provired with arms which swing between cross arms of the ring, and and provired wilh arms which swing between cross arms of the ring, and
al ways maintaining a verticle position no matter what position the stock al ways ma
may be in.
indicator for bollers - Robert Berryman, Philadelphia, Pa.-This in Vention reberes to a new indecator, which is to be attached to steam boilers,
and its object is to prodnce a perfect safety guard aganst 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.
Defice for holding Tools Against grindstones.-Edwin Fernald curting edi;e, can be beld against grindstones, and can be sharpened; the de vice beiuf so arranged that the bevel formed in the tool will be entirely unfform, and that its edge will begroand perfictly stralkht.
Carriagr.-Jod Whitehead, Ames Station, Iowa.-This invention concists in the arrangemeat upon the frame-work of the body or box of a carriage of ne or more conled springs which mar be wonnd up with a crank and ar anged to transmit motion to the axle of the hind wheels and beits
Ointment for Veterinary fraotice.-Ricbard Jones, New York city.Thisinvention and discovery relates to a composition dessign-d for healing
purposes in the treatment of horses. cattle, and other domestic animys and which may also be used with good effect upon the human body for the cure of wounds, bruses, and for other purposes.
Water Whebl.-La Fayette Lyons, Bennington. Vt.-This invention conists of a hollzontal wheel provided with vertical curved ouckets against wo or more openirgs in the cover into a circular cbamber of theda meter of he wheel, from which lateral tubes convey it away out of the clamber lirough the curb whirh sapples the water to the wbee
Dumping Car-Philander Daniels, Jackeon, Mich.-This iuvention con-
ists in the arrancement on the platform of a car, of sist in the arraneement on the platiorm of a car, of a dumping bed $f$ xed on wheels anc provided with racksand pinions, whereby the operator by turn-
ing a crank may move the said bed over the edge of the car until it will ing a crank may move the said bed over the edge of the car until it will
dump by the actinu of momentum and gravitation.the sald bed being providdump by the actinu of momentum and gravitation.the sald bed being provid-
cd with staples which are caught by books suitably placed at the edges of the ed with staples which are caught by books suitably placed at the edges of the
car and to hold it as on a pivot to be restored to a level poeitlon by the oper
ator previous to
tion on the car.
Hoor Skirr.-Louis Fel. heimer, New York cily.-This invention relate Io tie manuracture of hoop ssirts and particularly to the wethot of fastening the tape to the stecl erring. and it conssts in pasing the ettel spring
transversly tirough one eyelet and then clmching or passing down the

Bolt Trimmer.-Henry Howe, Oneorita, N. Y.-Thisinvention relates to a cutter sliding withg bots, ivets and otber saitavie articles, and consist is flust with the under side of the plate. Reciprocating motion is imparte oy means of an oseillating cam, working on the said plate, and by means of spring catch projecting tronn the rear end of the cutter. The cutter is sup ported in the plate oy having beveled edges which rest upon the similar
slaped inner edges of the slot in the plate. The cutting edge of the tool and shaped inmer edges of the slot in the plate. The cutting edge of the tool an in $z$ cut is produced on a reciprocating cutter.
Lock.-John G.Spathlef, Sandusky, Oblo.--This invention relates to cer tain improvements which are applicable to door locks, safe locks, trunk
lock

Wood Sawing Ma ohine.-Henry A. Daniels, Thomaston, Conn.-This in vention conisists in arranging the bearings of the crank shaft in the same
slide to which the slide to which the swinging saw frame is pivotecl, so that the distance be-
ween the working and swinging centers cannot be varied. The invention alsoconsistsin the use of a reciprocating block, which turns loose on the rist pin of the crank and
Coffer Roaster.-Freiderich Max Bode, Vienna, Aastria.-This invention elates to a new coffiec roaster. which consists of a spherical shell hung in semispherical iacket, its one axis being hollow and serving as a filling alid
sischarge discharge opening. The slecll can be revolved by means of a handle attached to the cover of the aforesaid hollow axis, whic
Garriage Clif.--Themas MicCreary, Matteawan. N. Y.-This invention relates to a new deviec for connecting the shaft of a carrtage with the front
axle of the samc by meaus of a pivot which will not rattle, which canno axle of the same by meaus of a pivot which will not rattle, which canno to be tiken of: The invention consists in s curng the pivot to the end of the slaft and not to the clip, as usual, and in then langing it loose in
ot the clip gnd in locking it to the same by means of a eping cateh. Sewing Maching--Stephen French, Orange, Mass.-This invention re-
lates to a now shuttle sewing machine, and consists in so combining with lates to a new shattle sewing machine, and con,ists in so combintng with
eacli other an osciiktugg sluttle driver, a double canareed motion, and a each other an osciilaturg shuttle driver, a double cain-feed motion, and a slotted plate for movinis the necdle up and down; that in one machine the
main advantarean inany different kiads of sewing macbines are contaiued main advantageqol inany different blads of sewing macbines are contaiued construction can be obtained.
Hand l'enci.-J.D. Higgins, Greenville, Conn.-This invention consists in arranging a slding tubnlar punch in an arm that is parallel with, and projects $y$ against the upper or pressmg jaw. When the punch is to be used it is by the lower one. but the sarme time almay puided in th.
Maciline for Driving Fbnce Posts.-Isaac J. Parker, Bufflle Grove despgned to be placed upon a wagon or any suitable frame mounted on
Fviliells; the device being constructed in such a manner that it may be oper and
ated whe on lic wagon and, drawn from place to place where the posts are o be driven.
Switce Lock.-Join V. Chamberlain, Cincinnati, Ohio.-Thts invention
relates to a loek for railroadswitc hes, and it consistsin a novel construction and arrangement of parts, whereby the lock is rendered self locking and a ery simple and darable loct obtained ; all s
Liquid Measore.- Ward Sprague, Sandy Creck, N. Y.-This invenlon is thick viscid luyuids, such for instanceas molasses, sirups, etc,, etc.; and to
this end the invention eonsista in constractiog the measure with double this end the invention eonsists in constrncting the measure with double
walls with aspace allowed berween to receive water or other suitable fluid Walls with $:$ apace allowed between to receive watcr or other sutabe m casure is used the heat radiated from the walls of the
the contents of the same sufticiently flud to flow readily.
flattening and betidina Rods for chain Lings.-Peter Hendricks, Trenton, N.Y.-Tb:s invention relates to a machine for flattening and bendpecially for mit ing purposes. Tue invention consists in a peculiar construc tion and arrangement of parts whereby the two different sized links re
quireci tor the manufacture ofeach chain may have tie rods of whicn they quired tor the manufacture of each chain may have the rods
are to med, flattened and bent on one and the same macline.
Centrrina Latie.-Benjamin F. Bee, Harwick, Mass.-This inventiou re lates to a new centuring lathe designcd for centering articles, that 1s, ad ustulng their endscentrally in linc with the bit of the lathe so that the artiends in order that they may befitted eentrally in a turning lathe.
AcGuk for.-H. D. Pennoyer, Athens, N. Y.- Thisi invention relates to 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 ratcliet,
whereby the auger may be turned and boles bored in close proximity to whereby the auger may be turned and boles bored in close proximity to lany vertical tixtures where an ordinary fixed handie cannot he turned, and
at the same tine adinit of the handle being adjusted and turncd as usua in places where there is room to allow it.

Solky Plow--Benj. Slusser Sidiey, 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 becapable of easy operation, of reacy ad cost, while yet enabling them to be capable of easy operation, of
justment, and oryillding to immovable obstaeles without breaking.
Low-watre indioator--T. G. Eiswald, Providenee, R. I.-The object this invention is to furnish a neat and convenient instrument, which, being
autuchce to the head of a steam boiler, will enable the engincer at any time to try the condition of the water in the boiler and will, of itself, sound to try the condition of the water in the boiler, and
Combined Low-water indicatorand Try Cock.-T. G. Eiswald, Provi ence, R. 1.-This invention relates to that class of low-water indicators 10 ice by whicl the interior of such indicators can be kept clear from the ac cumulation of dirt, sediment, or scale, and by which, when such foreign subptances 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 de time and the interior of the indicator left perfectly cleau and tree. The de
viec by wlichthese important objects are attained, can at ot her times beem viec bv wlichthese important obje
ployed conveniently as a try cock.
Ccothes Whinger.-P. Cramer, Providence, R. 1.-Tbis invention re
ates to a new clothes wringer, which consists of four rollers, one of elastic roller, held loose hetween the thre other rigid rollers, The elas au elastic roller, held loose hetween the three other rigid rollers, The elas
tic roller is not hung in bearings, and nced therefore not be formed on a me
tallic or wooden or otller axle, bnt will be soft and clastiet troughout.

Window Wiper.-B. F. Burgees, Bostor, 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 trame made of tin or other uitalle material, and attaching rollers thereto ou which wiping or washiog
Pail Eaf.-Geo. E, Eater
Pail Eak.-Geo. E. Eastnan, New Garttord, N. Y.-Tlisinvention 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 ordnary bail ear, and the minention consists in torming 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 snd protected from
DJarious lateral strain and rendered strong and durable.

Combined Window and Blind Fastrining.- Wm. L. Barnes. Irvington,
. Y. -Tlis invention consists in adevice by which the blind and sash of a
tindow can securely be fastened on the inside by combining the two fastwhidow
crings.

Oil CUP.-Sylvester Charntey, Portage City, Wis.-This invention consist Orl Cup.-Sylvcster Charntey, Portage City, Wis.-This invention consists
n so arranging a valve in an oil cuo that it can be raised by the motion of in so arranging a valve in an on cud that it can be raised by the motion of
the part to whieh the cup is atiached and closed by its own gravity, so that the disclarge of the oil will depend upon the rapidity of the motion up and down.

Extension Ladder.-Jobn A. Smith, Lacon, ill.-This invention has for is object to Curnish an improved extension ladder, designed especially for
remen, painters, and tinners' use, but wbich slall be equally applicable for iremen, paintcrs, and tinners' use, but which slall be equally applicable for ther uses, which slall be simpl.
and moved from place to place.
Door Mat.-Wm. Young, Franklin, Mass.-This invention has for its object turnish a simple, cheap, and serviceable door mat, whicb may be mad Forn, maybe refilled with little troable and at trifing expenee.
Ev P orator.-N. Evinger, Terre. Haute, Ind.-Tlis invention has forits obct to furnish an improved apparatusfor evaporating cane or other saccha rine Juice for the manufacture of molasses and sugar.
Tracr Clearer.- John Callaghan, St. Louis, Mo.-This invention has for its object to furnish an improved device for attachment to street railroad ars, by means of which the cars may be made to clear the track for them
Tablecutlert.-Wm. Clayton, Bristol, Conn.-This invention relates to new manner of attaching the bolsters to the shanks and handles of knives d forks, and conslsts in attaching a wronght or cast metal holster to the part of the bolster. The shank is perforated, and the uppcr edges of the lot is formed are reeessed, as wellas the lower edge of the bolster, so that caft; its ister firmly together, and to the handle.
'Tanners' hóos.-James Hoffman, Belvidere, n. J.-Tbis invention has its object to turnish an improved hook for tanners' use in handling des withoutin juring theirgrain.
apparatus for Clarifying Cane Juick.-Wm. Dill, Houma, la.-The ject of this invention is to pro
Crayon Holdee.-Pufuswinht Bors Crayon holdee,-Rufus Wright. Brooklyn, N. Y.-This inventioa relates ing hy artist 3 , end in schools aid institations of learuing for demonstrating oblems on the blackboa
Giband Self.Otler.-Cyrus B. White, Port Richmond, N. Y.-This invenon relates to animprovement in self.luoricating gibsfor steam engines, and
an 1 mprovement on a device for that purpose patented by $W \mathrm{~m}$. ov. 19,1867. The object of the invention is to avoid the waste of oll caused y the motion of the cross head, and while ellecting this end to obtain a per or reliable bearing at all times of the friction roller against the raidc.
Back-band Hook.-Charles Waek, Evansville, Ind.-This in vention relates
 urcly lept in place when in use.
Copn SaEle eb.-A. C. Mills, Oaktown, Ind.-This finvention has ct to turnith a simple, convenient, and effective instrument for shelling corn, and which shall at the same time be durable and cheap.
Boots and Shobs.-Willism Smith, Whitehall, Bridesburg,Pa.-This in nention consists in inserting in the sole of a noot or shoc stridsof wood, metal,
other fuitalle material, in such a manner as to preserve the sole from wear, and to admit of sald material belng readily withdrawn or detached om the fole when, from wear or othercauses, it becomesnecessary to have iv ones attached. The obiect of the invention is to protect the sle of all conspicnous even when applied to light or "dress" buors and shoes.
Smut Machine.-E. McLane, Young America, ill.-This invention relates a machine fordeprivinggrain of smut andother impurities, and it consists in a securing device of peculiar construction and a uovel arrangement of a
suction blast, whereby a very powerful and eflicient blast is obtained withont wasting or blowing away the grain, and the grain secured in the most tho gh manner by a very compact device.
Machinr eor Dressing Slatr Frambs.-W. F. Mosser, Allentown, Pa. This invention has for its object to so improve the constructlon of slate frame
machines that each slate may be automatically fed from a pilc, have their eorners ronded off and their edges dressel and may then be fed corner wise to the revolving planers by which both sides of the frame are dressed, so that the slates may comefrom the machine completely dressed.

Cylinimical Filterina Press.--Pierre du Rieux and Edouard Roettáer nstruction and arrangement of the paris of altering pressos, lesigned reciallv for uss in sugar houses, whereby a more efficient working is ob tained and all danger of the machine exploding under pressure is avoide andthe operations of oltering the liquid parts and casking the solid parts
semi-liquids may be conducted with more speed, regularity, and efficiency.

## dravers to dorrespondents.

##  

- 12 reference nobock numbers shoula be by nolume and pade.
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 effectua mode of preventing the growth of weeds. 2d, Whats should be the strength
the solution. 3d, In what form can the article be procured. 4th, Is there anything in the nature of the substance requiring precaution in using it. Answer, ist, It will.: 2 d , The solution mast be very we:ak, 1 part carbo
ic aciic in 1,000 to 2,000 parts of water. 3 d , It may be procured pure in Ic aciid in 1,000 to 2,000 parts of water. 3d, It may be procured pure, in the
form of white crystals, very fnstble by a slight heat, and very volatile. It may also he had impure and much cheaper, as a solution'coutaminated with hydrocarbon oils and naphthalin, which however are no objection to the use proposed, for these last substances are not soluble in water, and theretore easily separated when dissolving the acid. 4id. Pure carbolic acid is a vir ulent poison. When appliediin'too strong a solution larger plants may suffer;
very weak solutions destroy only very small plants and animals as parr sites, miasma. Even fles and musketoes avold its odor and may be driven away by it.
L. J. S., of Mass.-There is at present no book published on the details of the subject you inquitre about, it being guite new. Chemists with a volatile base as carbonate of ammonia. The pure liquid carbonic aeid is a most intractable sabstance. as it requires some 40 atmospheres pressure to prevent its volatilization, and when this pressure is removed it volatilizes so rapidly that the remang nquid solidifles.
W. G., and T. S. H., of Ill.-A reference to the ordinary treatises on physics will enable you to answer for yourselves the ques-
tions you ask. We do not wish to burden our colamns with answers to questions which have no practical utlity and answers to wbich may be foand
A. W. H.. of Pa.-We cannot recommend any process for preventing the fermentation or milk.
E. P., of N. Y.-1st, Leather can be covered with a film of India rubber varnisl, and still retain its strength and pliability. Such leather uay be lade in this market. It is perfectly waterproof at the side becn made. They are tolerably good, but they wear ont too soon. Lately they bave been improved with gold and irridium points. We use such pens, and they give great satisfaction. Thoseof gutta percha do not keep ; they S. W. W., of Mass., sends us some fine specimens of iron pyrites in cubic crystals and asks their value. Their marketable value lo G. M., of Ill., thinks there may be something in the electrical theory or steam borer exploshon because there have been a ereatnam ber about at about the same time. He believes there is yet some unknown cause or We belic re a boiler constructed oncorrect princtples, of good material, with goud workmanship, and managed by a competent person is as safe fron explosion by " mysterious "causes as a cooking stove. But let us
have the facts of these mysterious explosions, The mystery generally dishave the facts of these mysterious explosions, The mystery generally dis-
tion.
T. W. B., of Pa., sends a diagram and explanation of the relative positions of crank and piston of stcam engines. His problem is tion is "free from the usual objectionable intricacs of algebratc mathe matics." Our meehanics generally understand more of algebra than of trigonometry, We think our explanation on page 20, current volume, pre.
fcrable to
. S. R., of Pa ., writes of a " perpetual motion" (more cor rectly designated a " self-mover)" which is running in his neighborhood,
it being a "combination of "heels, levers, and rolling balls," aud is a puztheing a "combination of heels, levers, and rolling balls," aud is a puz zle to all mechanics who have seen it. He wants some competent expert
to eorme and examine it. When "combinations of whecls, ng balls" will generate and develop power we shall be glad to " rake note on'
P. J., of N. Y.-We cannot give a recipe 'for a preventive and def ence against musketoes. A remcdy for the pain of the stingls aquammonia. The preventives used are various. Hunters and flshers in the
oods of maine and the wilds of the Adirondacks makea "smudgc," a smoke of birch and licmlock bark, etc., in which they sit and into which he winged pests dare not ventare; or, they smear their faces and hands ized society. Some persons bave tist in by their windows and doors; others use spearmint, in the berbor as an ex tract-oll or essence. We have no sure preventive but "grln and bear it." D. P. B., of Mass., says, "I am a machinist of a dozen years' length. Can you help me?" If the thight 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 toolesactly at the center. Thls can be
done-by testing the point by the points of the centers of the "live "and dead "arbors at or grinding and replacing. In orcinary tarting 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 nnder a heavy head? Ans., Itwill. Is there any anto
matic devieefor replacing it when thas exhausted ? Ans., We think not,
S. H. E., of Ill.-" Will anything except the limestone now uscd prevent the slag from sticking to the sides of cupolas?" Fluor spar
marine shells and other substances will answer, but limcstone is the cheap. marine shells and of


## Business and 2ersonat.

Furniture factory for sale.--Is in perfect running order and can be purchased eneap. Stipping advantages excellent. Power, sttam. For parteculars adass Wa. Wenlow, Reru,
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Wanted-to negotiate for philosophical apparatus. Send o J. R. Ray, Sacramento, Cal.
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Manufacturers of, and wholesale dealers in, notions, fancy goods, etc., may find a customer by addressing (witb card, etc.,) box 499, Wanted-a second-landl 30-horse power engine and boiler, Peck's patent drop press. Milo Peck \& Co., New Haven, Ct. Send for description of Huntoon governor on entirely new principles. 103 State st., Boston, or 79 Liberty st., New York.
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Millstone-dressing diamond machine, simple, effective, and durable. Also, Glazier's diamonds, diamond drlls, tools formini ig, and
other purposes. Send stamp for circular. J. Dickinson, 64 Nassau st.,N.Y. Prang's American chromos for sale at all respectable art tores. Catalogues mailed free by L. Prang \& Co., Boston
For breech-loading shot guns, address C. Parker, Meriden, C t. Winans' boiler powder (11 Wall st., N. Y.,) 12 years a stand-


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