Bcientific Amexican
NEW YORK，APRIL 26， 1851.
Knowledge is Democratic．
The few remarks which we are now about to make，are applicable to men of every age and in every condition of life．＂Knowledge is power：：＂wealth is only desirable because of those things which it can purchase to grati－ fy the desires，but there are some things which cannot be purchased with wealth，and know－ ledge is one of them．Wealth car purchase houses，lands，adherents，and bauble honors， and a man may sit down and enjoy these things at once．An heir to an empire may be born，he may be the legal successor to thrones， armies，and navies ；over all these he may exer－ cise dominion and be their possessor，but no man was ever born an heir to knowledge． An idiot may be born a prince or lord，a fool among beggars，while the son of a beggar may be more than a prince among kings and more than a titled lord among magnates．Booke， teachers，and money may be lavished to pro－ cure knowledge，but the individual cannot ob－ tain it from teachers or books，without person－ al effort．Knowledge can only be obtained by labor，and without this no man can obtain it ；and however poor a man may be，if he labors to acquire knowledge，he cannot fail of success according－yes according－to the amount of labor he expends in the search of
it．The nobles and magnates of European nations are well aware of the＂power of know－ ledge．＂This is the reason why they have endowed splendid colleges to which they send their sons to labor as any plebian＇s sons must labor，in acquiring knowledge．Knowledge therefore，is democratic ；it is true that more time and means may be at the command of the rich than the poor，and in this res－ pect，the former have the decided advan． tage；but they are brought to the same level in one respect，they must work．One acquires knowledge faster than another，all have not the same faculties，but talent is in the mass． The majority of great men have sprung from he people．Shakspeare，Newton，Frank－ lin，Watts，Burns，Fulton，\＆c．，were men of the people，the workers－plebians born，but kings of mind，while crowned monarchs beside them are but kings of mud．
There is another wrong notion abroad re－ specting＂a learned man．＂Some suppose that a man cannotbe learned unless he is a great astronomer，or can speak twenty or thir－ ty languages，and soon；andothers that a man must be profoundly acquainted with all the sciences．There are very few who acquire a profound knowledge of more than one science， as a single science requires a lifetime of study． Such men as Humboldt and Henry are excep－ tions；but although a few men become emi－ nent in a number of sciences，the fact is be－ yond dispute，that a man rnust pursue con－ tinually one branch of science to become pro－ foundly versed and eminent in it．
We talk of this and that influence，levelling the mass of men upwards，but the great eleva． tor and democratic reformer is knowledge． The well behaved intelligent man is respected although he may be poor，and we wish this fact to be spread far and wide，and to be felt by every man．The possessor of knowledge who enjoys the simple pleasure of reading，is more rich strictly speaking，than the rich ig． norant man and he feels conscious that he has the means of gratifying a desire－of enjoy－ ing an enjoyment（tautological though the expression be）of a more pleasurable nature than any which can be enjoyed by the most wealthy barbarian who cannot say his A B C．

## New York Gas Lights

Our corporation authorities are great philo－ sophers．Whatever progress others may have made out of the common well－beaten track of old common sense，they exhibit a patriotic spirit of conservatism，for which each member deserves more than a civic crown，or the equi－ vocal honor of being supposed to be capon－ lined，when wearing the heraldric honors of ex matites be it apoken，they alone seem
to preserve that deep respect for almanacs（as almanacs of moonlight）which seems in this sceptical age to have departed from all the world beside．Thus when a contract with a gas company to supply our streets with gas light，（gas was not made to light our streets with light，but to supply the city with gas， mind that），the moon in her usual course has always been brought in to fulfil part of the contract．Now this would have been very wise，had the moon been a primary luminary， but no matter．Well it yo happened on the nights of Wednesday and Thursday of last week，that the moon failed according to the almanac，to fulfil her share in the contract， and consequently nur city was without light． The streets during the storm were so dark，that even＂a lantern dimly burning，＂would have been an object of delight to cheer the lonely raveller on his darksome way．The fault was in the moon not fulfilling the part allotted to her in the contract．As for the almanac wherein that part of the monn＇s contract is spe－ cified，why we don＇t knnw what our philosophic aldermen may make out of it，unless it be to pass some penal statute，to force the night－ ly luminary into future obedience．As a peo－ ple we are far in advance of other nations in some things，but not in municipal manage－ ment－that＇s a fact，more especially in the manner of illuminating our streets．

Atlantic Mail Station on the West of Ireland
＂We learn from Ireland，＂says the Tri－ bune，＂that the advantages which the har－ bors on the Western coast of the Island，and especially Galway，offer to American com－ merce，are about to be set forth in a memoria to the President and Congress of the United States，which will bear signaturesof great res pectability from Dublin and other parts of the Island．It is contended that the voyage would average at least forty hours less than to Liver pool，and might be accomplished with greater safety and with less delay from unfavorable winds．The memorial will ask to have the U．S．Mail Steamers stop at Galway instead of going to Liverpool．We have no doubt its petition will be respectfully considered，and that such action will be taken on it as on ma－ ure consideration shall be found most advan tageous to the interests concerned．If it is a fact that the transit between Europe and America can be made more quickly and safely by way of Galway，that must eventually be the route．＂
It is all a piece of nonsense to suppose that either the American or British Governments will pay the least attention to the unreasona－ ble notions of Irish corporations or any other corporations．The payability of mail routes is the first question，not the practicability． The route between Halifax and England is shorter than between Liverpool and New York， yet it was one of the wisest moves ever made by the British Government，in allowing the Cunarders to come direct to New York．If Gal－ way was a shipping port of any consequence －if it would pay to carry freight and passen－ gers there direct，then their requests would be reasonable，if backed up with the home autho－ rity．What if the American mails were car－ ried to Galway，without any provision by the British Government to make that a mail sta． tion？Why the mails might be there for a month without reaching the London Post Of fice．The best way the Irish people can do is not to go round the world begging for an Irish Atlantic Mail Station，but to jump in and invest their funds in steamships and make Galwa commercial country．Let Dublin Galway，and Cork look to Belfast，and take an example from her in respect to commercial en－ terprise．It would be more reasonable for th people of Boston to petition for the departure of the American Mail Steamers from that port， it being at least one day＇s sail nearer to Eng． land，but would not the idea be laughed at？ Why？Because the mail contractors are a New York Company，and they have rights which cannot be annulled by the government． It is the same with the Cunard vessels，but the Irish corporations seem to think that gov－ ernments should do every thing for that people and the people nothing for themselves．The

The Cunard steamships are owned $k y$ a Scotch company；why not an Irish one？Scotland pays about as much taxes，has only one half the inhabitants，her soil is poor to a proverb， her nobles are continually in England，and yet one single company，in one city，owns more steamboats than all Ireland．Ireland has the same advantages．Let Irish gen tlemen stoptalk． ing and go to work and do something for them selves．Ireland has noble rivers，a rich soil， and a good climate，and yet what do we see？ Only one city in progress in all the island（Bel－ fast），and that one in a barren part of the country compared with Dublin or Cork．Those the true friends of Ireland．

## Painting

The time is at hand when hnuses will be painted to restore the worn out coating，and old paint，dingy，but of sound surface，will re－ ceive the force of the scrub brush．When w take into consideration the preserving nature of paint，it may be said＂it costs nothing．＂ Itis very unwise to allow the paint of houses to fade or be worn off to a certain point of ab－ rasion，in order to save a little－the intended saving is an extra expense．Well do careful captains of ships take advantage of every op porturity to put on the paint，they know tha economy lies in following the old maxim＂ stitch in time saves nine．＂Almost all our farmers do their own painting，so do our me－ chanics who reside in the rural districts White paint is that which is most generally employed，and there is no other kind so uni－ inside of buildings．In the mixing of paint let us give a few words of advice，and first of all，the cheapest is not the cheapest in the true sense of the word．White zinc is stated to be a good substitute for white lead，we do not speak thus personally about it．Use only the best white lead if you use any，and employ the best linseed oil boiled．A little turpentine is used in the mixture，and here is where we wish to give the caution，use but very little of it．It is well known that turpentine makes the paint dry much quicker，but it fulfils the
old adage＂soon ripe，soon rotten．＂The tur－ old adage＂soon ripe，soon rotten．＂The tur－
pentine reduces the oil into a saponacenus com． pound，therefore，if much turpentine is used the paint will wash away with heavy rains． Those who have seen one paint last three times as long as another will now be able to tell the reason．Boiled linseed oil，when dry has a hard yet elastic skin；in this consist its
preservative and endaring qualities．Rosin preservative and endaring qualities．Rosin
varnishes are liable to crack and blister，not the linseed oil varnish．
In painting rooms we have noticed some grand mistakes，and they are nct uncommon． In the choice of color，much，yea，everything， depends on situation．A room that is much shaded should be painted a lively color，and one that looks to the north should be painted a warm culor，one looking to the south may be painted a moderately cold color．We have seen rooms looking to the north painted light blue，they always looked cold and cheerless． The same care should be exercised in selecting paper for rooms，so as to have the colors har monize with the situation．Carpets should be selected with the same regard to the associa tion of feelings．Houses facing the north side of streets，when painted dark brown，really look as if they were＂done up＂brown．

Quarrels of our Countrymen in London．
Our correspondent merely hints at a mis understanding among the exhibitors from our country，who are now in London．There has been a disputa，and we are sorry for it－all proceeding from the floundering and blunder－ ing certificates granted at Washington，to M． C．F．Stansbury and Mr．Riddle．It seems that Mr．Stansbury received a commission to
see all the goods safely on board the St．Law－ rence，and safely delivered at the Exhibition， when his powers were to cease，after which Mr．Riddle＇s were to commence，and to wind up with the termination of the Exhibition． Well，it seems that Mr．Stansbury got himself introduced as the Commissioner，and was in－ troduced to the Queen as such，when lo！who should arrive but Mr．Riddle，and his certifi cate is at once recognized by the Commis
sioners of the Exhibition．The Arnerican ex－ hibitors have held two meetings，and our friend Mr．Macdaniel stated that he saw the Commissioners hand back Mr．Stanbury＇s cer－ tificate and place Mr．Riddle＇s on file．A vote was taken to recogniz Mr．Riddle as the Com－ missioner，and adopted unanimously．
It seems that the certificates for Stansbury and Riddle were very carelestly made out－ just like the way they do business，sometimes t Washington．But after it is well known that Mr．Riddle is the sole commissioner Stansbury，by the last reports，had refused， formally，to deli ver over the goods to him，and there the goods of our exhibitors were lying piled up in heaps．
Our government is great for appointing scuf． y men to minor offices－men who，by such conduct，bring diegrace upon our country． Others will think we are a set of disorganizers in word and deed．Well，it is a good thing that we have men，and many of them，too who stand above such petty doings－men who re honored in every land．We hope that ou xhibitors will yet stand high in the scale of ompetiturs，and bring honor upon themselve nd their country
The Exhibition will continue open abou four months．

Patent Cases．
U．S．Circuit Court，New York，April term． Judge Nelson，Thursday 17th April．
Alfred Hall vs．John Wiles－For alleged in fringeinent of patent for the manufacture of brick presses．Verdict for plaintiff $\$ 1,000$ ．
This case has occupied the court for more Than one session；it has been a long trial，and in one instance the jury did not agree．The patent claimed to be infringed is a brick press．
On the same day，before Judge Nelson，the ollowing cases were decided
John Brown va．Leonard Johnson and Rich－ rd W．Trundy－For infringement of patent for gaff of vessel，the improvement being in a means to prevent its chafing the mast．No defence offered．Verdict for plaintiff for $\$ 5$ （for one gaff）；amount trebled by the court．
Similar suits，with like resulte，wete tried gainst Jas．Nesmith and Jose Maria d＇Mello ［The patentees，it will be observed，in thes аяses，were successful．We like to see infrin ers real，sell－known infringers，put through． This does not always happen．

Notice to Correspondents．
Those who have any business to communi ate with the Editor，he desires them to doso by letter in as few words as possible．Wríte and re－write，so as to condense and clarify ：－ this will be found to be of great benefit to hose who write．We have many correspon－ dents who can and who do this，in a commend． ble manner．We do not address this to them， Thoughts are more easy to condense on paper han by tongue，so every man should also writ o us clearly and in a compact style．W have received a number of communications， lately，which have been laid aside．We want short but comprehensive and clear articles．

## Young Children in Factories

The Providence（R．I ）Post states that there are young children working in some of the Rhode Island mills，of such tender ages that they appear to be more fit for cradles than working in a factory．During the past winter they have been employed from half－past five in the morning till 8 o＇clock in the evening．We do not know anything about the positive correct hess of the above：it appears too terrible to believe．What are the Quakers of Rhode Isl－ and about？
Shortest Passage Ever Made Across the At lantic．
The American Republican Mail Steamship Pacific＂arrived at this port on Saturday a 0 A．M．，after a passage of 9 days and 20 ours from Liverpool，the shartest on record The Pacific inas made the two shortest passage ver made across the Big Pond．
When news of the Pacific＇s arrival was nnounced at the Exchange，three cheers wer given for the Collins＇Line
It is expected by many now living thatthey will yet cross the Atlantic in seven days．


0 Reported expressly for the Soientifio Amori can，from the Patent Office Reoords．Patentees will find it for their interest to have their inventions il lustrated in the Scientifo American，as it has by far a larger orrulacion han any other journal of its clas in Amerioa，and is the only source to whioh the pub
lio are acoustomed to refer for the latest improve ments．No oharge is made except for the execution ments．No oharge is made except for the execution
of the engravings，which belong to the patentee af－ ter publication．

LIST OF PATENT CLAIMS
Isaued from the United States Patent office
for the weeg ending april $15,1851$.
To C．A．Broquette，of Ruy Neuve，St．Nicholas，St
Martin Martin，France，for improvement in material for transferring colors in Calico Printing．Patented in Franoe，April 1， 1849 ；in England，April 21.
I claim the use of extract of fibrine，to form， with or without any other oily or fat matters， by the means which I have described，or any other equivalent means，a mastic，adequate to thickening and retaining on fibres，threads，tis sues，of every description and of every mate rial or substance，the archil color，and such other colors as are incorporated with that mas－ tic．
I also claim the above process of preparing and purifying the extract of cassine，in order by the means which i have specified，or any other equivalent means，to impart to fibres， threads and tissues，of vegetable nature of every description，by means of a preparation of mordant，the property of better uniting to or attracting the coloring matter of archil，and in general other coloring matters，either in printing or dyeing，whetherthis preparation or mordant be applied on the fibres or threads of vegetable nature，previous to the weaving，of whether it be applied after the weaving on tissues of vegetable nature，or on tissues com－ posed partly of vegetable and partly of anima substances．
［We understand this to cover the use of glue in color making ：if so，we know of it being used perhaps before Broquette was born．The Patent Office，however，knows little about these practical arts．
To John Buckinglam \＆J．H．Baird，of Watertown Conn．，（assignors to The S
The rotaring die for making impressions on metals and other substances，iu a well known instrument，and we make no claim founded on that instrument，in itself considered．But w claitn the combination of such die with a axle，on which the same may vibrate，which axle is at right angles with the axis of rota tion，and not in the same plane，substantially in the manner and for the purposes set forth To E．T．Hanon Valcke，of Paris，France，for im rovement in Mill Stones．
I claim constructing the running stones of mills with oblique apertures，or passages， through the body of the stone，and provided with hoods or funnele，to collect the air during the rotation，and connected on the grinding face of the stone，with furrows，substantially as lescribed，when this arrangement is com－ bined with the use of vertical pipes leading from the extremity of one of the apertures o passages，to a funnel leading to the next suc ceeding ublique $\mathrm{f}^{\text {assage }}$ in the body of the stone，substantially in the marner and for the purpose specified
To John Krauser，of Reading，Pa．，for improve ments in Iron Kailings．
I claim securing the palings permanently to the horizuntal rods or bars of iron，for the pur－ pose of constructing an entire section ofrailing by means of the methods of operating the rods or bars with the palings having jaws，recesses， and bearinga，as described herein，anit together with other devices in castings，termed saddles or troughs，having doverils and tenons cast to them，for the purposes herein named，and this I claim，whether the several parts be form－ ed and adapted to each other，and operated precisely as represented and described，or oth
fected by means equivalent to those within named．
To R．F．Loper \＆John W．Nystrom，of Philadel phia，Pa．，for improvements in the Steam Engine． We claim，first，the construction and ar－ rangement of the columns by which the steam cylinder is connected with the bed frame，in such manner that they constitute the air pump and condenser，substantially as herein set forth．
Second，the method herein described of ac tuating the cut－off valve of one steam cylin der，by a motion derived from the valve o valve rod，of the other cylinder，substantially as herein set forth．
Third，the adjustable supplementary valve in connection with apertures or ports in the steam valves，by means of which the steam can be worked at full pressure throughout the whole length of the stroke，without disenga－ ging the cut－off valve．

## To J．B．Marsh，of Lew ment in CookingStoves

I clain Cooking Stoves． which the air containing the surplus heat from the oven is conveyed to the back of the fire－ chamber，where it receives an access of heat and afterwards to the flues，by which arrange ment the heat is equalized between the tw ovens，and the upper one is ventilated as set forth．
To S．S．Putnam，of Boston，Mass，for impruve ment in Window Curtain Fixtures．
I claim the method or means herein descri bed，of fartening the confining bar in the groove of the roller in which the cloth is press ed ；that is，by having the ends of said bar re bated as described，and fitting the caps at the ends of said roller over said rebated ends of said bar，as above set forth；this arrangement of the caps and bar，（the said caps or one of them，being loose，so as to movelaterally，but not to revolve，the side of the rebated ends of the bar operating as shouldere，to prevent a revolution）enables me to adapt my improved fixture to windows of different widths
To John W．Robbins，of Camden，Ohio，for improve ment in setting logs in saw－rnills．
I claim，first，the vibrating dog having the distance of its head or tongue，with respect to the saw，adjusted laterally by a set screw，sub－ stantially as represented，so that by planing the tongue of the head，in each successive curf，and bringing the face of the $\log$ in con－ tact therewith，the thickness of each consecu tive board is exactly counterpart with the first
Second，I claim，for analogous purposes，at the rear end of the log，which is destitute of a curf，the vibrating dug，whose distance，in res－ pect to the stationary block，is adjustable，by means of a set screw，the range between the head of the dog and the block，affording an easy and determined means of giving exactly he saine thickness to the boards，at the rea end of the $\log$
To A．D．Spoor，of Troy，N．Y．，for improvement in
gitating Grate Bars． I claim the application to the movable grate of two separate rechanical inovements，where－ by it may receive a rocking or a vertical vibra ory motion，at pleasure，the several parts coni structed and operating substantially in the manner shown and described
To Andrew Dennison，of Bruuswick，Me．，for ma chines for ontting out the curners and scouring the dges of paper for boses．Ante－dated April 4， 185 1 claim the combination of the knife an die，substantially in the manner and for th purpose herein described．
To Samuel A very，of Phonix，N．Y．，for improve
I claim mating the whel with length of teeth that，when its spindle is forced outwards by the spring，they shall engage with he teeth on hoth sides of the $\operatorname{cog}$ wheel，$F$ thereby locking the sume and securing the lats in any desired position，substantially a herein described．
To HL Hoffman \＆C．F．Hill，of New York，N．Y． for improvement in Ornamenting Marlle．
We claim the above described ink，and the wax color and etch water used in combination herewith，substantially as described．
To D．G．Littlefield，of Lowell，Mass．，for improv I claing stoves．
I clain the peculiar arrangement or manner
diving flues，the ash－pit，the lateral chambers the ascending flues，the central discharge flue the oven or air heating chamber，and its sur rounding flue space，all as represented and specified．
To John \＆Wm．W．Wood，of Conshohocken， Pa glazed shoet iron．
We claim the employment of thick plates of iron as shield plates；or，in other words，pla－ cing four（more or less）thin plates between two shield plates of double weight．in forming packs for rolling，so that each ehield plate wil make two plates of proper size to constitute the inside plates of another pack，for the smoothing and finishing process，or rolling．
designs．
To D．Arnold，of Providence，R．I．，for design for Cooking Stoves．
To John Abendroth，of
（For the Soientifio American．）
Practical Remarlss on Illuminating Gas． ［Continued from page 238．］
The coal to be decomposed is first broken in to small pieces，say from 3 to 4 inches square and is then introduced into retorts（generally of cast iron），which are brought up to a cher ry red heat，or a temperature of about 270 Wedgewood，by a furnace in which they are placed，and whose fire is conducted by a se ries of properly arranged flues under and around them；the coal is then reduced to a level of uniform thickness，and the retort ren－ dered air－tight by a lid luted with plastic clay，which is placed over its mouth．The mount of coal introduced at one time or a it is termed，a charge，is constantly varying the amount of the charge being governed by the temperature of the retort，the freedom with which the gas is liberated，and various loca auses，but the general quantity used for one charge in a single retort，is 2 bushels，or from 150 to 175 lhs ．The decomposition of th coal begins iminediately after being introdu ed into the heated retorts，and continues ae veral hours；the quantity of gas generated gradually decreasing towards the end．Ac cording to Peckston，in an eight hours＇distil ation，the relative quantities of gas given of re，first hour， 20 ；eecond hour， 15 ；third hour 4 ；fourth hour， 13 ；fifth hour， 12 ；wixth our， 10 ；seventh hour， 9 ；and the eighth hour 8 per cent．of the whole quantity：thi xperiment was conducted with a uniform tem－ perature and the retorts constantly at a red heat．
Before we describe the remaining portion of the apparatus，it may be proper to make a few emarks upon the ingredients of this gaseous mixture，and also upon the new combinations formed while the decomposition is going on This combination consists（after the separation of the tar and aqueous liquid）of olifient gas light carburetted hydrogen，carbonic oxide hydrogen，vapors of the volatile oils of tar sulphuret of carbon，ammonia，sulphuretted hydrogen，carbonic acid，cyanogen，sulpho－ yanogen，sulphurous acid，hydrochloric acid queous vapor，and nitrogen．The carbonic acid and a part of the free hydrogen hav doubtless the same origin，being formed from the moisture in the coal and from portions queous vapors that are generated，which， passing over the red－hot coke，are converted into two gases．The nitrogen of the coal is ottained entirely as cyanogen and ammonia， partly in combination，and the latter is also ound with sulpho－cyanogen，and the othe acids forming volatile salus；the free nitrogen on the contrary，is the residue of the atmos pheric air contained in the retort．Sulphuret ted hydrogen and sulphurous acid are due to the sulphur generated from sulphuret of iron， commonly called iron pyrites，which alınost invariably accompanies coal，and great care should be taken that all coal containing thi substance be rejected．In the former the sul phur unites with the hydrogen of the coal and in the latter it unites with the oxygen of the water contained in the coal．The firat four of the ingredients ramed，viz．，olifient gas， light carburetted hydrogen，carbonic oxide and hydrogen，together with the vapors of the tar oil，form the proper bulk of the gas，and
dependent；the other ingredients are smal quantities of impurities，which are conetantly varying under different circumstances，and are mostly governed by the supervision and well－ directed care of the manager．
If the heat at which the distillation is car－ ried on is not of a uniform ternperature，in ail cases，the results，even from the same coal， will vary，according to Clegg，from fifty to sixty er cent，both in quantity and quality．If the etort is too cold，nitrogen and hydrogen are berated and unite，forming ammonia，vapor of bitumen，（which afterwards condenses form ing tar，ammoniacal liquor，and essential oils） and carbonic oxide．If the retort is too hot， Il the dense hydro－carburets are resolved in to carbon and hydrogen；the product is great r，but the specific gravity little more than that of hydrogen，and the illuminating pow of the gas decreased in the same ratio （It will be found that the illuminating power of gas generated under the same circumstances is almost directly as its specific gravity；the heavier the gas，that is the greater its specific ravity，the greater the amount of light given If gas of specific gravity 0.300 gives the light qual to six candles，that of the specific gravi－ y 0.500 will give the light of ten cendles，or a to 5 ．This theory has been doubted；but Mr Clegg ascertained the＇same result in 1817 from many experiments）．Dr．Henry found that below a red heat almost nothing but hydrogen tmosphere air and some tar pressed off with bardly any illuminating gas，but that at a high temperature illuminating gas alone ap peared，composed of carburetted hydrogen， carbonic oxide，hydrogen and nitrogen．At heheat of $27^{\circ}$ ，Wedgewood，or that of melt－ ing copper，（which has been found to be the best）the bitumen is decomposed，at the same ime the hydrogen is liberated and unites with ts carbon forming olifient carburetted hydro－ en gases，often of specific gravity 0.470 ．The peration should not be continued for too long time，for the process would in the end te productive of almost exclusively carbonic oxide and hydrogen．The following table showing the result of an experiment by Henry out of 100 parts of Wigan Cannel Coal，fully stablishes these statements ：－

Time of collection


In the first hour，
5） $\left.\begin{array}{c}\text { 5 }\end{array}\right\} \begin{gathered}\text { hours a lter com } \\ \text { mencement，}\end{gathered}$

After the heat has developed the gaseous and liquid products of the coal，the latter in the form of coal tar and ammoniacal liquor are deposited in receivers or tanks，while the former areconducted by the ineans of cast． ron pipes to the refrigerator or condenser， which consists of a series of vertical pipes，so arranged as to expose as much cooling surface as necessary，and connected with boxes upon which they rest ；the warm gas，as it issues from the retorts，passes through this series of pipes，and becomes cooled，whereby the va－ pors of water，tar oil are condensed，and re posited in the boxes，while the aeriform por－ tion is conveyed off，with but a very limited quantity of the tar and oil in suspension．

J．B．B．

## （To be Continued．） <br> American Shawls．

Ingenuity has been the occasion of recent uccess of the eastern mills in manufacturing hawls．The fringes of these shawle，in Scot－ and，are made by hand．The idea sugges－ ted itself to one of the enterprising mill own－ ers at Lawrence，that if a machine could be invented for weaving and knotting the fringes， the shawl could be made at so light a cost，as to enable the manufacturer to undersell the Scotch in our market．An ingenious mecha－ nic－a carpenter we are told－with some aid from his son，hit upon an invention for making the fringes by machinery；and to this circum－ tance the great prosperity of the manufacture owing．－［Exchange．
［Some mistake in the above．The foreign shawls could be sold much cheaper only for he duty；the quarrel between two New York importing houses in this city last year，brought importing houses in this city last year，bro

