Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOL. 2. NEW YORK, MAY 8, 1847. NO. 33.

THE NEW YORK
SCIENTIFIC AMERICAN:
PUBLISHED WEEKLY.
At 128 Fulton Street, New York (Sun Building,) and 13 Court Street, Boston, Mass.
By Munn & Company.
The Principal Office being at New York.

RUFUS PORTER, EDITOR.

TERMS:—$2 a year—$1 in advance, and the remainder in 6 months.

☞See Advertisement on last page.

POETRY.

THE VOICE OF LABOR!

Has stern oppression met a check?
Will not the Poor Man bend his neck,
Nor truckle unto might?
Has that strong advocate, the PRESS,
Proclaimed his wrongs; advanced Redress,
And thundered forth his Right?

Hail, "CHAMPION" of a noble cause,
Promoter of all upright laws,
And LABOR'S warm'st friend;
Success unto thy onward course—
May tyrants feel thy moral force
And to thy TRUTH s attend!

Shall Free-born Men degenerate
Into a crouching, servile state,
And tread Columbia's soil?
Forbid it ev'ry patriot sire,
That men should live—like slaves expire,
Of selfishness the spoil!

Arise, MECHANICS! "Now's the hour,"
That avarice should feel your power,
And LABOR meet REWARD!
That the warm sweat from manly brow,
No longer shall in streamlets flow,
Nor meet with due regard!

You "CHAMPION" lifts his standard high,
With bold, undaunted "eagle eye,"
He views stout Labor's field!
Voice of the toiling classes cheer!
His cause is just—he knows no fear,
Nor will he tamely yield!

RESPONSE.

By WASHINGTON'S immortal name—
By every Patriot's dear to Fame—
We sooner would expire,
Than work from early morn till night,
Still feeling POVERTY'S cold blight;—
WE'RE WORTHY OF OUR HIRE!

THE ROOT OF ALL EVIL.

BY THOMAS HOOD.

Gold! gold! gold! gold!
Bright and yellow, hard and cold,
Molten, graven, hammer'd and rolled;
Heavy to get, and light to hold;
Hoarded, barter'd, bought and sold;
Stolen, borrow'd, squander'd, doled;
Spurn'd by the young, but hugg'd by the old
To the very verge or the church yard mould;
Price of many a crime untold;
Gold! gold! gold! gold!
Good or bad, a thousand fold.
How widely its agencies vary;
To save, to ruin, to curse, to bless;
As even its minted coin express—
Now stamp'd with image of good Queen Bess,
And now of bloody Mary.

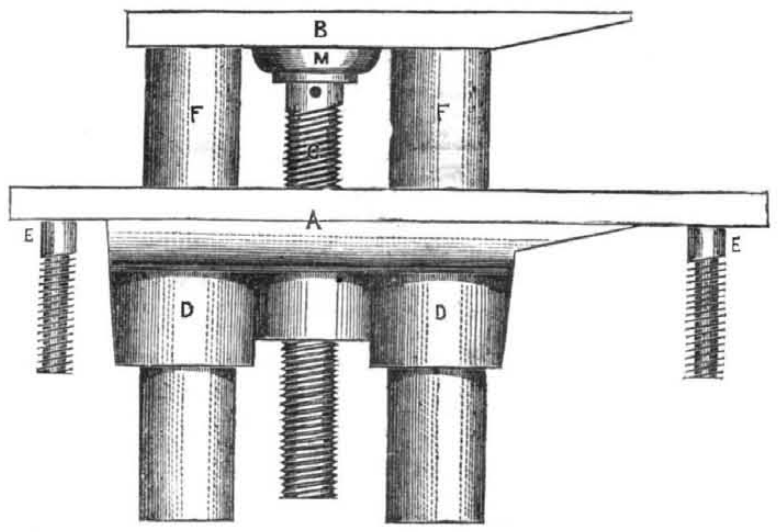
Variety at Sea.

A traveller, less diffuse than travel-writers in general, thus sums up his passage from England to America:

Two things break the monotony
On an Atlantic trip:
Sometimes, alas! we "ship a sea,"
And sometimes "see a ship."

The King of Ashantee is allowed 3333 wives, and of course has business for life in finding out which he likes best

SHEPARD'S BENCH-STOP.



Mr. Chauncey Shepard of Springfield, Mass. has recently invented an excellent article for the use of carpenters, and which approaches so near perfection that we cannot anticipate that it will ever be improved upon. The engraving represents a longitudinal elevation of the invention, and of the full size. It is made of brass or malleable cast iron, and is calculated to be attached to the top of a carpenter's bench,—the lower section being imbedded therein,—and serves to hold the forward end of a board, plank or timber while in the process of being planed. The bed-plate A is from 2 to 3 inches wide, and has a cavity in its upper surface, of a size to receive the stop-plate B when not in use, so that the upper surface of both plates are on a lovel with that of the bench. The stop-plate B is an inch and a half or two inches wide, and at the front end, is reduced in thickness, and is cut in the form of several projecting teeth; and this plate is occasionally elevated or depressed by means of the centre screw C which passes down through the centre of the bed-plate. The latter has two tubular sockets D D, projecting downward from the under side, and is secured to the bench by the wood screws E E. Two vertical sliding bolts F F extend down through the sockets D, and constitute the main support of the stop plate. The centre screw has a collar M below the plate, and the collar is supported by a pin below, so that the plate is held permanent in any position required. Mr. Sheppard has applied for letters patent for this invention and will under improvement in them to general use.

Diamond Cut Diamond.

A few weeks ago, a "sporting character" *looked in* at the Hygeia Hotel, just to see if he could fall in with any subject, but finding none, and understanding from the respectable proprietor, Mr. P——, that he could not be accommodated with a private room wherein to exercise the mysteries of his craft, felt the time begin to hang heavy on his hands; so in order to dispel *ennui*, he took out a pack of cards and began to amuse the bystanders in the bar room with a number of ingenious tricks with them, which soon drew a crowd around.

"Now," said he, after giving them a shuffle and slapping the pack down upon the table, "I'll bet any man ten dollars I can cut the Jack of hearts at the first attempt."

Nobody seemed inclined to take him up, however, till at last a weather-beaten New England skipper, in a pea jacket, stumpt him, by exclaiming: "Darned if I don't bet you! But stop; let me see if all's right"

Then taking up and inspecting it, as if to see that there was no deception in it, he returned it to the table, and began to fumble about in a side pocket, first taking out a jack-knife, then a twist of tobacco, &c., till he produced a roll of bank notes, from which he took one of $10 and handed it to a bystander; the gambler did the same, and taking out a pen-knife, and literally cutting the pack in two through the middle, turned with an air of triumph to the company, and demanded if he had not cut the Jack of hearts.

"No! I'll be darned if you have!" bawled out Jonathan, "for here it is safe and sound."

At the same time producing the card from his pocket, whither he had dexterously conveyed it while pretending to examine the pack to see if it was "all right" The company was convulsed with laughter, while the poor "child of chance" was fain to confess that "it was hard getting the windward of a Yankee."

The alms-house in Essex, Mass., contains but five paupers, the youngest of whom is 60 years old. Population of Essex about 1500.

Pride of Ancestry.

The pride of birth and descent, in some of the old countries, has given rise to such eccentric and ridiculous fancies, that we cannot help laughing at the old fools who took parts in the farce, in spite of their starch and dignity. A man in those ages was just nothing at all, unless he could trace his pedigree through forty-nine great-grand-fathers back to some old legendary prince or fabulous scamp of a warrior. One of these old worthies (the Duke of Somerset) was accustomed to expend his pity upon Adam "because he had no ancestors!" Another, it is said, while boasting of the antiquity of his family, which he carried up to Noah, was told that he was a mere mush-room. "Aye," said the nobleman, "how so, pray?" "Why," replied the other, "when I was in Wales a pedigree of a particular family was shown to me; it filled about five large skins of parchment, and near the middle of it was a note in the margin—*about this time the world was created!*"

A Question in Law.

A man has been indicted in New Orleans for stealing an umbrella. His counsel contend that this is no offence—that umbrellas are public property—and pleads custom to take it out of the statute against felony It is stated in some books on insanity that it once manifested itself in a patient by inducing him to return a borrowed umbrella. The doctors gave an unanimous opinion, according to the authority referred to, that the symptoms were decidedly lunatic, showing a want of prudence in not preparing for a "rainy day," and the man was consigned to the mad house, as the only proper place for him.

Punctuation.

The following example of mal-punctuation strongly illustrates the necessity of putting stops in their proper ploces:—"Cæsar entered on his head, his helmet on his feet, armed sandals upon his brow, there was a cloud in his right hand, his faithful sword in his eye, an angry glare saying nothing, he sat down"

LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending May 1st, 1847.

To B. Morehouse and William W. Willard, of Syracuse, N. Y., for improvement in Cooking Stoves. Patented May 1, 1847.

To Uriah Atherton Boyden, of Boston, Mass. for improvement in Diffusers for Water Wheels. Patented May 1, 1847. Ante-dated November 1, 1846.

To Matthew Stewart of Philadelphia, Penn. for improvement in Roofing. Patented May 1, 1847.

To Nathaniel Waterman, of Boston, Mass. for improvement in Gridirons. Patented May 1, 1847.

To Aug. N. Severance, of Cherry Valley, Ohio, for improvement in Cheese Shelves.—Patented May 1, 1847.

To Elihu Walter of Syracuse, New York, for improvement in Cooking Stoves. Patented May 1, 1847.

To William W. Many, of Albany New York, for improvement in Cast Iron Car Wheels.—Patented May 1, 1847.

To Hall Colby, of Rochester, New York, for improvement in Mariner's Compass. Patented May 1, 1847.

To Ebenezer Cate, of Boston, Mass., for improvement in Window Blinds Patented May 1, 1847.

To Perry C. Gardiner, of New York, for improvement in Rail Road Car Wheels. Patented May 1, 1847.

To Isaac Judson, of New Haven, Conn. for improvement in machinery for Dressing Stone. Patented May 1, 1847.

To J. H. Latournandais, of Flint Hill, Virginia, for improvement in Bedsteads for Invalids. Patented May 1, 1847.

DESIGNS.

To Gilbert Geer, of Troy, New York, for design for Stoves. Patented May 1, 1847.

RE-ISSUE.

To Philos B. Tyler, of New Orleans, La., for improvement in Cotton Presses. (Letters Patent dated Jan. 16, 1845.) Re-issued May 1, 1847.

A Curious Connection.

In a family of six persons the following relation exists, viz: 2 fathers, 2 mothers, 2 brothers-in-law, 3 sisters-in-law, 1 brother and sister, 2 uncles, 2 aunts, 3 cousins, 2 husbands, 2 wives, 3 daughters, 1 son-in-law, 1 father-in-law, 1 mother-in-law, 3 nieces, 1 grandfather, 1 grandmother. How does the relation exist?

SOLUTION.—A man marrying his sister's daughter, becomes husband to his niece, and son-in-law to his sister, and his sister becomes his mother-in-law His sister marries her second husband, who becomes brother-in-law, and father-in-law to his wife's brother, and he also is son-in-law to his brother-in-law.—The two married couple have each a daughter, who of course are cousins, and one of the daughters is sister-in-law to her aunt, and the aunt being sister-in-law to her mother makes three sisters-in-law. The other daughter is niece to her grandmother

A Wise Law.

It was one of the laws of Lycurgus, that no portions should be given with young women in marriage. When this great lawgiver was called upon to justify this enactment, he observed, "that in the choice of a wife, merit only should be considered; and that the law was made to prevent young women being chosen for their riches, or neglected for their poverty."

An Astronomical Pun.

When Sir William Hamilton announced to the Royal Irish Academy his discovery of the central sun—the star round which our orb of day and its planetary attendants revolve, a waggish member exclaimed, "What! our sun's sun! why that *must* be a *grand sun!*"

Recent Fires.

In Dover, N. H., the Bellamey Print Works were destroyed by fire on Saturday week.—Loss $8,000.

At Saxton's River, Vt., the Woolen Factory of A. Smith, with a large stock of goods.—Loss $10,000.

At Petersham, Mass., a Button Factory, tavern house, store and several dwellings and shops, have been destroyed. Loss $50,000.

At Newark, N. J., a Carriage Eactory owned by Hicks & Grey. Loss $3,000.

At New Brunswick, N. J., five stables, not very valuable.

At Toronto, the dwelling house and out buildings of Mr. Barber, editor of the Toronto Herald. A horse and cow were consumed with the stable.

At Kirkland, N. Y., the house of Charles Northup, with its contents among which were 300 bushels of grain.

At Newfane, Vt., the dwelling house of Lyman Gould. Loss $1,000.

In Williamsville, Vt., the store and dwelling house of Mr. — Ward, with contents including $700 in bank notes. Loss $5,000.

At East Cambridge, Mass., a large building occupied by various mechanics. Loss $10,000.

At Washington, N. C , several large ware houses, together with a quantity of turpentine on the wharf. Loss $23,000.

At Cape Elizabeth, Me., a large grist mill owned by Waldron & Graffum. Loss $2,300.

At Westfield, Mass., the dwelling house of Elnathan Atkins, who, being an intemperate man, perished in the flames.

At New Richmond, Indiana, a large distillery and about a dozen dwelling houses, and 25,000 bushels of corn. The consequences of its destruction were less calamitous than those of its existence.

At Amherst, N. H , a large barn, with a large quantity of hay and grain, and 22 head of cattle.

At Hobert, N. Y., a large cassimere factory. Loss $20,000.

At Saxonville, Mass., two large carpet factories, known as Knight's Factories. Loss $40,000.

At Little Falls, N. J., a saw mill, turning shop, three or four dwelling houses and a barn.

New Uniontown, Md., a barn being struck by lightning was consumed, and with it two horses, and eight head of cattle. Also at about the same time, another barn near Chambersburg, Pa., was fired by lightning, and with several horses and cows, consumed.

At Chambersburg, Indiana, the dwelling house of S. Danner was consumed, and three children perished therein.

At Northampton Mass., the barn and carpenter's shop of Moses Beek were destroyed on the 27th ult.

Near Abington, Md., the Union Mills, and store adjoining, with all their valuable contents.

At Mystic Bridge, Ct., the buildings known as Dean's Factories, together with a grist mill and dwelling house.

At Oldtown, Me., the Wadley Mills, containing six saws for boards, two clap board machines and one shingle machine.

At Lebanon, Tennessee, the extensive cotton and woolen manufactories of Morgan & Co. Loss $40,000.

At Montpilier Vt., a tavern house and outbuildings, with a large quantity of grain.

At Eastport Me., the dwelling house of Mr. Sherwood, the British consul, with most of the furniture.

At Douglaston N. S., the Catholic Chapel.

At Milford N. H., the dwelling house of Capt. L. Brooks.

At Napoleon Ohio, the county court house, with most of the books and papers.

At Aleghany city Pa.. the planing mill and dwelling of Drake & Co., and 6 other houses.

At Flushing L. I., five or six houses, two barns and several horses. Loss $20,000.

At Dumphries Va., eighteen houses, while most of the male inhabitants were absent, engaged in the Potomac fisheries.

Slocum's Cotton Press.

We have recently examined a working model of a cotton press, which is evidently preferable to any one of the many which we have seen. It is calculated for repressing or compressing cotton bales preparatory to shipping, and presses 8 to 12 bales at each operation, which occupies about six minutes. Its construction is peculiarly simple, cheap and convenient. The power is communicated thro' lever geer, by which two stout screws are turned whereby a horizontal beam is depressed, thereby acting on a series of double toggles which drive two opposite sets of plattens or followers, with a force increasing in proportion to the resistance. This press has been invented and patented by Mr. J. Slocum of Syracuse, and a model may be seen at No. 32 Front street.

Route to Egypt.

Egypt is becoming a favorite country with American travellers. We constantly hear of them ascending to the cataracts. The conveniences for visiting the East are much increased. From Paris, the traveller proceeds to Marseilles in 4 days, at an expense of 100 francs. There he finds two lines of French Government steamers, which leaves six times a month—one for Alexandria, the other for Constantinople. The price of passage to Alexandria, for the first class of passengers, is 500 francs, and the expense of food on board, for the trip, usually occupying ten days, is sixty francs more. The voyage from Alexandria to Cairo occupies about 40 hours, at an expense of 75 francs, and at that place there are two good hotels, where the charges are about $2 per day for each guest.

The Inventor's Institute.

A meeting of those who are disposed to favor the plan proposed for an Inventor's Institute, on the general principles described in a former number of this paper, is appointed to be held in the lecture room at Clinton Hall, in this city, on Wednesday the 19th inst. at 10 o'clock, A. M. The plan, object and prospects in the establishment and operation of the institute will be explained, and a full and free discussion thereof encouraged. Mechanics generally are invited to attend.

Improvement in the Daguerreotype.

Under this head the New Orleans Times has an article announcing the discovery of an art by which daguerreotypes may be taken in one second of time. The inventor, however, may be disappointed to learn the fact that the same thing was performed by Prof. Morse six years ago, as may appear by an advertisement which we published in May, 1841, and which closes with this line, "likenesses are taken in the sun light, in one second of time." Why the art has not become more extensively known, we are not informed.

Quick Work.

On the occasion of the illumination in Baltimore, on Wednesday evening, the whole of Barnum's Hotel, including the lights in the transparencies, exceeding 3000 in number, were lighted in less than half a minute, and at the Exchange Hotel, 1700 candles were lit in five seconds. The wicks were previously wet with spirits of turpentine, and persons stationed to light at a given signal.

Coming! Coming!

The London journals estimate that the immigration from Ireland alone, in the coming six months, will be from 200,000 to 300,000. There will probably be as many from Germany, Switzerland and France, besides many from Eugland and Scotland; amounting in all, probably to 600,000. Make room for them at the west.

The Army.

According to last accounts, Santa Anna had hurried up what troops he could muster, and was fortifying a pass about forty miles beyond Vera Cruz. Gen. Scott with most of his troops were on the march, and had passed the National Bridge. Gen. Taylor was sending forward troops and stores towards San Louis Potosi.—Of course interesting news is daily and anxiously expected.

The Vera Cruz Eagle says that Santa Anna's victory at Buena Vista was celebrated with great pomp at the city of Mexico.

Route from Vera Cruz to Mexico.

A Charleston paper gives the important places between these points, one attained and the other yet to be gained by our army, with their distances as follows: From Vera Cruz to Jalapa 70 miles; to Perote 55; to Puebla 95; to Mexico 80. Total, 300 miles. Between Jalapa and Perote the road ascends 9,900 feet.—About half way between Puebla and Mexico, the descent is rapid for about 20 miles.

Extraordinary Fact.

Rowland Hill stated, at a meeting held in Liverpool, last week, that the average amount of money returned to the dead letter office, enclosed in letters which were refused, amounted to £400,000 per annum; and many thousands of pounds were yearly found in letters which had absolutely no address upon them whatever.

Bridging the Ohio.

The Ohio is in a fair way to be bridged, we hear, at *Wheeling*, Va. One of the papers of that city, of a late date, says that circumstances are such as to give us full assurance that the company will be formed under the charter of last winter to erect a bridge over the Ohio during the present summer. The stock is $200,000.

Death of a Powerful Monarch.

A great Emperor of India, little known in Europe, but who nevertheless, was the chief of thirty millions of men, has recently died.—We mean MIN-MEAH, the ruler of Anam, Sovereign of Cochin-China, of Tonquin and of Cambodia. It is said that his successor is determined to open the ports of the empire of Anam to the vessels of all commercial nations.

Vote of Thanks to Gen. Taylor.

In the Massachusetts House of Representatives, prior to its adjournment, a resolution of thanks to Major General Zachary Taylor and his army, was introduced, and on the third reading thereof, and under a call of the yeas and nays, the resolution was passed by 121 yeas to 63 nays. The resolution was subsequently rejected by the diminutive Senate—14 votes only against the resolution,—but this has very little to do with the voice of the people.

Railroad Iron in Maine.

The Portland Advertiser says the Iron Works at Pembroke, Washington county, heretofore engaged in rolling hoops of bar iron, has been fitted up for working railway bars, and are now turning out eighty tons of rails per week.

Railroad Enterprise.

Within the last twelve months the people of the city of New York have subscribed about $7,000,000 to railroad stocks. Boston about $2,000,000; Pittsburgh about $500,000, and Philadelphia about $3,000,000.

Help Yourselves to Pork.

The Baltimore City Council has passed an ordinance allowing any person, white or black, to capture stray swine and appropriate them to his own use without incurring any liability for the act.

Large Fee.

Messrs, Coe & Brown, lawyers, received the large fee of eight thousand dollars, from the corporation of Memphis, Tennessee, for attending to a recent suit of that city before the Supreme Court at Nashville, involving the right of city wharfage.

Christianity in China.

It is stated that there are now upwards of 30 Protestant Missionaries of different denominations, from this country and England laboring in China, and that the spirit of enquiry in reference to Christianity is very considerably extended among the people of that country.

The Highest Fountain.

The highest fountain in the world is on the grounds of the Duke of Devonshire, in England, where a single jet is thrown up to a height of 267 feet—more than 100 feet higher than Niagara Falls.

Santa Anna to the Minister of War.

Your excellency, we've won the day,
My "heroes" fought amid the fray,
And whipped the Yankees without pay,
And then—we wheeled and ran away.

A description of the illumination in this city last evening, must be deferred till our next number.

A Swarm of Bees.

Be quiet. Be active. Be patient. Be humble. Be prayerful. Be watchful. Be hopeful. Be loving. Be gentle. Be merciful. Be gracious. Be just. Be upright. Be kind. Be simple. Be lovely. Be faithful. Be perfect.

A freshet in the Merrimac river has done considerable damage to the Northern Railroad above Concord. At Fishersville, the river swept the embankment of the Railroad entirely away for some distance, so that the cars can not run.

Mr. "Hallowell Gazette,"—had you put our article on the "new covering for roofs," to the credit of the "Sci. American" instead of "exchange," your readers would have better known in what office, city or State the invention might be seen.

While Mr. Levi Slade was riding on horseback in Chelsea, Mass., on Thursday evening, his horse was struck by lightning and instantly killed. He was not harmed.

Col. Jacob Palmer, of Baileyville, Me., killed the past winter fourteen wolves, two moose, nine deer, eleven foxes, three black cats, two otters and four sable.

A letter from Monterey, California, says flour was there $40 a barrel, tea $3 a pound, brown sugar 50 cents a pound, and common domestic cotton 50 cents a yard.

The King of Bavaria is on the point of publishing his fourth volume of poems. He is, probably, the only known author who has never had an unfavorable sentence written of him by critics.

The officers of the British mail steamer Tay on arriving recently in the harbor of Vera Cruz, were much astonished at the sight of the " stars and stripes" on the walls of the castle.

The steamer Roger Williams made the passage from Albany to this city, last week, in 8 hours and 45 minutes, including stops.

A disease similar to that which has attacked the potato in other countries, it is said has attacked the cocoa of Jamaica.

The Woonsocket Patriot states that letter postage has recently been charged on a newspaper on account of an interrogation point ? being found on the margin.

It is stated that the shell which killed Capt. Vinton did not explode and was found to contain 322 musket balls, all of which were replaced and the shell forwarded to the Captain's family.

It is estimated that the salary of Judge Crosby, of the Lowell Police Court, amounts to $377,554 per annum.

A shock of an earthquake was recently experienced in Livingston county N Y., accompanied by a strange and unearthquakely noise.

Among the killed at the battle of Buena Vista was Lieut. William Price of Illinois, in the seventy-second year of his age.

GEN. URREA, whom Taylor has so vainly endeavored to catch, is, say some of our exchanges, a Tennesseean.

Peter C. Brooks, Esq., of Boston, pays a tax of upwards of $7,000 per annum. How cruel to impose such a heavy tax on one man.

Water in which potatoes have been boiled, sprinkled upon plants of any kind, is sure death to all insects in every stage of their existence.

In Turkey, it is necessary to obtain permission of a magistrate before one can have a tooth drawn.

The Liverpool Times boasts that England is now furnishing food to France. An American enquires, Who furnishes it to England ?

Many of the laboring poor of England, have been paid by contribution, for the time they lost in observing the National Fast.

The Massachusetts Legislature, during its recent session passed two hundred and eighty new laws.

The Magnetic Telegraph has been extended from Washington to Fredericksburgh, Va.

The Connecticut River was higher last week than ever known before, save once in 1828.

THE OMNISCIENCE OF GOD.

Great God! Omniscient Father ever nigh,
What power hast thou?'tisthine all-seeing eye
Can pierce the universe and constant scan
The deeds, the looks, the thoughts, the heart of man.
'Tis thou Almighty God, at whose dread voice
The bad shall tremble, and the good rejoice,
When thy last trump shall sound, when flames shall spread,
Thunders re-echo, graves give up their dead;
Think then, O man, upon thy God! 'tis he,
God of the present, past, of all eternity.
Whose eye can pierce through space to thee as deep
As dark and searchless as death's lasting sleep;
Think, 'tis thy final judge, who views thee now
Whate'er thy deeds, O man. Then say canst thou
Unshrinking, bear that awful eye to be
Fixed ever full, unchangeably on thee?
Seek not the depths of mournful solitude,
Seek not the lonely cliffs, so wild and rude,
Hide not thine head within the mountain's lair,
Thither ye flee from man; but God is there.
If dense the night as the dull, silent tomb,
Seek not a covert from its starless gloom.
If 'gainst your fellow men your deeds be dark,
Plot in the density of night; but hark!
There is a voice upon the wind, beware,
'Tis God who speaks, the all-seeing eye is there
Yet not alone, the wicked he beholds,
'Tis for the righteous that their God unfolds,
His purposes of mercy, and looks down
Brightly upon them, and prepares the crown;
Crown of celestial glory, for the brow
Of him who serves his Maker here below.
Search well the deep recesses of the heart,
If ye have sought to hide in secret part
A fault, a thought from God, free the way,
And bring that thought from darkness into day.
For he who fathoms with a glance the deep,
And views the smallest inmates as they sleep
Within their shells secure, can view the whole
Of secret, silent, workings in the soul.
Oh! that forever on our minds could be
Stamped the great words:—

"*Thy God beholdeth thee.*"

That in the crowd as in the silent hour,
We felt those words in all their awful power,
Then if with subtle art the tempter came
To lead the soul to torment and to flame;
In hours of danger and in times of fear
That wondrous safeguard would be ever near.
Or in the seasons when afflictions smart,
Strains every fibre, pierces to the heart;
When we would moura too heavily as one,
From whom has vanish'd life's last gleam of sun;
How sweet to think that looking on our grief,
There is a Power that can give relief,
That but a tear, a sigh, an inward prayer,
Asking aright for strength our woes to bear,
Is seen, is heard by that Omniscient one,
Whose footstool earth is, and heaven his throne.

Evil Influence of Fashion.

Never yet was a woman really improved in attraction by mingling with the motely throng of the *beau monde*. She may learn to dress better, to step more gracefully, her head may assume a more elegant turn, her conversation become more polished, her air more distinguished; but in the point of attraction she acquires nothing. Her simplicity of mind departs—her generous confiding impulses of character are lost—she is no longer inclined to interpret favorably of men and things—she listens without believing—sees without admiring—has suffered persecution without learning mercy—and taught to mistrust the candor of others by the forfeiture of her own. The freshness of her disposition has vanished with the freshness of her complexion; hard lines are perceptible in her very soul; and crow's feet attract her every fancy. No longer pure and fair as the statue of alabaster; her beauty, like that of some waxen effigy, is tawdry and meretricious. It is not alone the rouge upon her cheek and the false tresses upon the forehead, which repel the ardor of admiration; it is the artificiality of mind with which such efforts are connected that breaks the spell of beauty.

Amongst the antiquities discovered at Herculaneum, is a tailor's thimble, open at both ends, and, in other respects, precisely similar to the one used at present by tailors

THE WEATHER, &c.

WEDNESDAY, APRIL 28th.

	Hours, A. M.									Hours, P. M.									
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
Therm.	—	38	38	40½	47	50½	52	54½	57½	59	61	62	58	52	51	48	47	48	48
Wires,	—	48	48	51	57½	60	60	62	64½	66½	68	69½	65½	60	58	55	54	55	54

[*Equilibrium*

THURSDAY, 29th.

Therm.	—	48	48	51	54	59½	60½	67	69	72½	70½	69	67	64	61½	60½	58	57½	—
Wires,	—	54	54	57	60	64½	66	73	74	78½	76½	74½	73	70	67	66½	64	63	—

[*Equilibrium ended.*

FRIDAY, 30th

Therm.	—	48	48	49½	54	58	60	62	65	64	65	64½	64½	62	60	57	54	51	48
Wires,	—	52	53	55	60	65	66	67	70	68	70	70	69½	67½	65	63	58½	56½	54

SATURDAY, May 1st.

Therm.	—	40	40	42	49	50	52½	54½	56	58	59	59½	54½	53	51	47	47	47	47
Wires,	—	48	48	52	58	58	60	61	62	64	65½	65	61½	59	57½	53	53	53	53½

[*Equilibrium.*

SUNDAY, 2d.

Therm.	—	—	47	47	47	45	44	44½	45	45	45	45	44	44	44	44	45	45	44½
Wires,	—	—	53	53	53	52	51	51½	52½	52½	52	52	51	51	52	52	53	53	52½

[*Equilibrium continued.* [*Equilibrium.*

MONDAY, 3d.

Therm.	—	44	44	48	53	55	56	58	60	61	61	63	61½	60½	58½	55	54½	53	51½
Wires,	—	52	52	56	61	62	62	64	65	66	66	68	67	66	64	60	60	58½	57

[*Equilibrium.*

TUESDAY, 4th.

Therm	—	44	47	49	53	57	59	60	61	62½	63	64	61	58½	55	54	52	50	50
Wires,	—	50	53	55	58	62	64	64½	66	66	68	68½	66	64	61	59	56	55	54½

REMARKS.

Tuesday April 27. The shock of an earthquake was felt in the evening, at Mount Morris, Livingston County, N. Y., the sound is described like that of the rolling of a heavy wagon, and as somewhat between a crash and a roar, had the solemnity of thunder with the sound of the crash of falling rocks. The houses in the village were violently shaken. In some places doors were unlatched and crockery thrown down.

April 28. At from 6 to 7 A. M. an earthquake depression followed by an equilibration of both wires and thermometer, and a clouded atmosphere, thermometer at Boston down to 30°.—April 29. Rain at 6 P. M. These observations were published in the Brooklyn Star of April 29, before the account of the earthquake reached us. May 1. Cloudy at 11 P. M. May 2. Rain fell to the depth of one inch.

On the 21st and 22d of April, noticed in my last weeks record there were violent thunder storms. A house was struck at Fenner, Madison County, N. Y., on the 21st, and a Mr. Sherman so severely injured that his recovery is doubtful, two barns were struck by lightning in Herkimer and with five tons of hay, a horse and four cows burnt, a barn was struck in Hadley Saratoga County, and with two horses and 200 bushels of grain, two wagons, and three sleighs burnt; this barn had been previously twice struck by lightning. On the 22d a house was struck by lightning in Newburyport Mass., a horse killed the same evening near Chelsea, Mass., by lightning, and the same night a church edifice at Nashvillve, Tenn., struck by lightning and greatly injured.

E MERIAM.

Brooklyn Heights, May 4, 1847.

Extraordinary State of the Atmosphere.

(*Concluded from No.* 32.)

On referring to my meteorological records for the month of January and February, 1847 I find that the earthquake of February 2, was preceded and succeeded by wonderful phenomena. The Antigonish Chronicle states, that in that county, on the evening of January 29, at half past 9, a shock of an earthquake was experienced which broke crockery, opened doors, and alarmed the people, that shortly after a meteor was seen passing through the air which gave a greater light than the full moon that was shining at the time, and was seen to explode. The earthquake was most severe on the highest grounds, on the plains the shock was slight. On the 3d of February, at an early hour a severe lightning storm was experienced at Houston, Texas, accompanied by a heavy rain. At nine o'clock that morning a hurricane, accompanied by lightning, thunder and hail, visited Union Mills, Carroll County, Md. making terrible destruction—in the evening of the same day a lightning storm passed rapidly over Long Island on its way to the north east, and a single clap of thunder was heard, and a single flash of lightning was seen at Brooklyn, New York, the Narrows, Gravesend and Jamacia; this lightning struck a house at Gravesend. On the Rocky Mountains on the road to California, a terrible snow storm raged on the first of February, and in 36 hours five feet of snow fell. Rain fell at Saltville Mountains of Virginia, on the 2d of February at 10 P. M. At Syracuse, New York, a heavy snow storm set in on the third of February, which extended very far north and west. On the fifth of February, during a fall of snow at Mahone Bay, Nova Scotia, grubs or worms in great numbers fell upon the top of the snow; these resembled the cabbage grub and on being taken to the fire showed signs of life, and what is still more extraordinary for that season of the year, in that cold climate, great numbers of Robins appeared and fed upon those grubs or worms.

The correct indication of the wires on the morning of February 4, as recited above, of the "appearance of a snow storm operating at a distance," is equally well confirmed by the following: The Rochester Democrat of Feb. 5, says, "a snow storm of unusual violence commenced about 7 P. M. Wednesday (Feb 3,)—the wind blew a hurricane during the night and by morning the falling snow was drifted into huge heaps rendering locomotion almost impossible."

The Albany Evening Journal, says, "the storm of Wednesday, (Feb. 3,) seems to have ded over a large district of country, and to have assumed a different character at different points of the compass. West and north of Albany a heavy fall of snow accompanied the drifting wind. At Buffalo, Rochester, Utica, through Jefferson, St. Lawrence, Essex, Lewis, and other northern counties, the fall of snow varied from ten to twenty inches."

At Baltimore on the 3d of February, a severe storm was experienced. On referring to my Ocean records I find that several vessels encountered the storm on the 3d and 4th of February. It was very severe in latitude 33° N. long. 76° W. The storm commenced at Wilmington, N. C., on the morning of the 3d, about daylight. On the mountains of Southwestern Virginia, the wind began to blow a gale from the Southwest, at 8 1-4 A. M. on the 3d. At Syracuse the wind commenced blowing a gale at half past 8 P. M. on 3d, from the West, accompanied by snow. At Brooklyn, the wind was N. E. all day the 2d; S, E. all day the 3d, and N. W. all day the 4th.

Thus it will be seen that the lightning, the meteor, the earthquakes, the snow and rain act together, producing changes in our atmosphere of an extraordinary character, reaching, in their effects, to well marked operations upon animal life.

The earthquake on the 21st is equally well indicated by the published record of that and the two following days in the Brooklyn Evening Star of February twenty-third and twenty-fourth as follows:

"*The Weather.*—The storm followed the state of the atmosphere noticed by me in the transcript of my record of Saturday morning, evidencing the accuracy of the wires.

The wires were highest at 12 M. Saturday, 54 deg., the thermometer was highest at 1 P. M. 41 1-2. At 11 P. M. Saturday, wires 47½, thermometer 32 degrees. At 7 A. M., Sabbath, wires 47 dgrees; thermometer 32 deg., after which the thermometer noted a sudden fall of 3 degs., and then remained stationary till 1 P. M. with a single change of half a deg. at 9 A. M., at 2 P. M. rose one deg., and then commenced falling gradually, and at 10 P. M. was at 27 deg., and this morning at 1, was at 26 deg., and continued at that till after 6, and at 7, fell to 25½ deg. The wires vibrated half a degree at 9 A. M. yesterday; 1 degree at 2 P. M., at 4 P. M., half a degree; at 9, 1-2; 10, 1 degree, and from that till one this morning, 1 deg., and from that remained stationary till 7 this morning, when they fell half a degree—Rain fell yesterday and also this morning while the thermometer was from 3 to 6 degrees below the freezing point—hail also fell" E.M.

Monday morning Feb. 22, 7 o'clock.

"*The Weather.*—The wires this morning at 6 are at 42 deg., thermometer at 10 deg.—Difference 32 deg. At 6 last evening the wires were at 45½, and the thermometer at 21. Difference 24 1-2 deg.

On the 13th of January the wires were at 47, the thermometer at 23 at noon. At 7 in the evening of the same day the wires were at 47, and the thermometer at 28, and both remained equilibriated until the happening of a distant earthquake." E. M.

Wednesday morning, Feb. 24.

On the 14th of January, an earthquake was felt at Rice Lake, Upper Canada, same day at 1 P.M. the ship Independence was twice struck by lightning in Lat. 49° 23 min. north, Long. 21° 3 min. west, five men knocked down and two disabled. Same day and day after, ashes fell from the atmosphere upon the Farroe Islands, and rain fell at Brooklyn, Syracuse and Saltville on the 14th and 15th. Lightning storm at Saltville on the 15th. I have made this account as brief as possible to avoid crowding your columns. My Meteorological Journal contains a great number of equally well illustrated cases of connection of atmospheric phenomena. The Scientific American of April 24 mentions that a locomotive was struck by lightning on the 13th of March, that same day snow fell at Brooklyn. E MERIAM

Brooklyn, April 24th, 1847.

Canine Sagacity.

An instance of animal sagacity and humanity unequalled in our remembrance, took place before our door on Saturday An unfortunate dog, in order to make sport for some fools, had a pan tied to its tail, and was sent off on its travels towards Galt. It reached the village utterly exhausted, and lay down before the steps of Mr. Youngs' Tavern, eyeing most anxiously the horrid annoyance hung behind him, but unable to move a step further, or rid himself of the tormentor. Another dog, a Scotch colley, came up at the time, and seeing the distress of his crony, laid himself down gently beside him, and gaining his confidence by a few caresses, proceeded to gnaw the string by which the noisy appendage was attached to his friend's tail, and at the conclusion of about a quarter of an hour's exertions, severed the cord, and started to his legs with the pan hanging from the string in his mouth, and after a few joyful capers around his friend, departed on his travels, in the highest glee at his success.—*Galt (Canada) Reporter.*

Singular Discovery in Mississippi.

The Louisville Journal, in a recent article says: "In the South-western part of Franklin county, Miss., there is a platform or floor of hewn stone, neatly polished, some three feet under ground. It is about one hundred and eight feet long, and eighty feet wide. It extends due north and south, and its surface is perfectly level. The masonry is said to be equal, if not superior, to any work of modern times. The land above it is cultivated, but thirty years ago it was covered with oak and pine trees, measuring from two to three feet in diameter. It is evidently of very remote antiquity, as the Indians who reside in the neighborhood had no knowledge of its existence previous to its recent discovery. Nor is there any tradition among them from which we may form any idea of the object of the work, or of the people who were its builders. There is also a canal and well connected with it, but they have never been explored. A subterranean passage may be underneath. Farther explorations may throw some light upon its origin."

A Beautiful Picture.

A mother, teaching her child to pray, is an object at once the most sublime and tender the imagination can conceive Elevated above earthly things she seems like one of those guardian angels the companion of our earthly pilgrimage. through whose ministrations we are inclined to do good and turn from evil.

NEW INVENTIONS.

Important Improvement in Steam Engines.

Mr. C. C. C. Smith, an ingenious mechanic of Boston, is engaged in perfecting an arrangement of the parts and appertenances of the common steam engine, in such a manner as to nearly supersede the use of the pumps,—prevent entirely the incrustation of the boiler, and save much of the ordinarily requisite attention of the engineer. The principle may be thus explained: The boiler is at first supplied with the required quantity of water, and when the steam is raised, and the engine started, the exhaust steam is immediately condensed in a cold receiver, and the water produced by the condensation, is, by the operation of the machinery, forced back into the boiler, without allowing a particle of the steam to escape, thus securing an uniform quantity of water in the boiler. And whenever it is requisite to blow off steam, the escaping steam is also condensed and immediately returned to the boiler. We are aware that the celebrated Perkins attempted the use of this principle in part, with his extra-high pressure engines, but did not succeed; nor did he attempt the condensation of the steam from the safety valve. And it is certain that this plan has never been successfully applied to low pressure engines, though we see no good reason why it may not be done.—We would encourage Mr. S. to persevere till he has brought this important desideratum to practical perfection.

Improvement in the Magnetic Telegraph.

Col. H. W. Cleveland, who has been connected with the line of Magnetic Telegraphs since their first establishment as an assistant, has, we learn, by a recent discovery, overcome the difficulty heretofore labored under of crossing water courses, by a peculiarly insulated wire which is passed in a leaden pipe under water. One of these wires or improvements has recently been placed under the draw bridge at Gunpowder river, and has been in successful operation for several days. It is, we believe, the intention of the company to adopt this mode of connection at the several draws and streams along the line, which will obviate many of the vexatious interruptions heretofore experienced. If the North river and other rivers can be crossed with this improvement, it will be one of great advantage.

Improvement in Carriages.

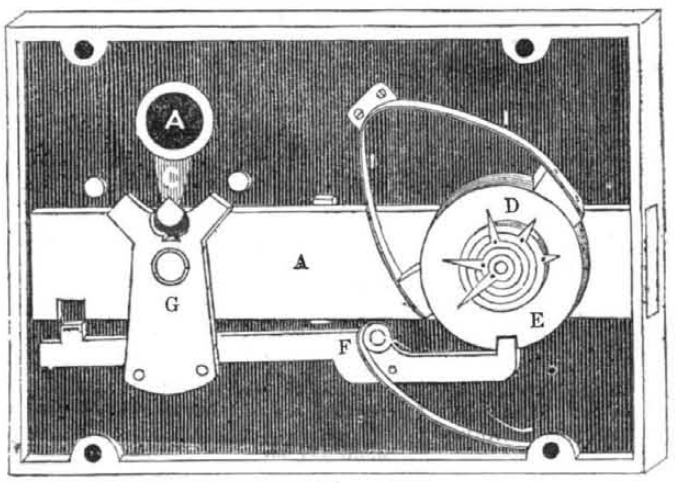
We understand that Mr. Rolmer, a Dutch Cavalry officer now in this City, has invented a new mode of constructing the fore wheels and axle of carriages, by which the wheels move in turning the carriage independently of the axle.—*Tribune.*

If our readers can make out the sense of this description, we shall have to "knock under;" as we find no carriage in the street, the wheels of which do *not* move independently of the axles. Perhaps we may learn more about it.

India Rubber Buffer Springs.

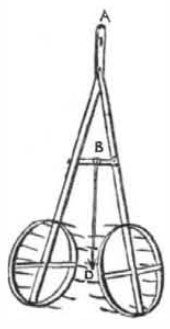
An application of what is termed "Vulcanized India rubber" to the springs of buffers of railway carriages has been patented by Messrs. Fuller & De Bergue, and is in use in some of the carriages of the Great Western railway and on the Eastern Counties railway. The invention appears to be important, and it is stated to have been examined and approved of by Messrs. R. Stephenson, W. Cubit, Brunel, and other competent judges. The buffer springs of Messrs. Fuller combine simplicity with security; and the inventors contend that they are superior to the steel springs usually employed in buffers, because they are at their commencement more elastic and more easily acted upon; the power of their resistance, after yielding to a certain extent, increases in such a ratio as to prevent the possibility of the buffer head being brought to a dead hard stop, and consequently in cases of collision results less dangerous than those which generally ensue can be anticipated. Their lightness, and the facility with which their power may be regulated, are also important advantages. It is difficult, without an experienced judgment, and the practical knowledge of engineering, to give an opinion on such an invention as this that shall be either valuable or influential, but it may be of benefit to the public to call their attention to it.—*English Paper.*

NEW BANK AND SAFE LOCK.



EXPLANATION.—In this engraving is represented a front perspective view of the interior of a lock recently invented by Mr. Almon Roff of this city, and particularly calculated to ensure perfect safety to the vaults or safes of Banks or other places of monetary operations. This like most other locks, consists of a sliding bolt and other machinery arranged with a metallic plate casing: but the view here presented is minus the front plate, knob and circular dial, which we shall describe in their places. This lock requires no key, neither has it any key hole or other aperture whereby gunpowder or other explosive material can be inducted to the interior, but an ordinary knob is attached to the front of the arbor A, to which arbor is attached the bit C whereby the sliding bolt B is occasionally moved forward or back. Through this bolt, near its forward end, is a slot through which projects from the back plate a horizontal stud, which serves as an axle to support a series of cylinders, flanges and indices, as shown at D E, the end of the stud appearing in the centre. This series consists of five cylinders, one within another, and to each of these is attached a pointed index in front, and a broad circular flange D at the opposite end. In the edge of each of the five flanges, is a notch, and as here represented, these notches are all brought to one point, and are filled by an upward projection of the horizontal lever F which is mounted on a fulcrum pivot near F. This projection is called a *stop*, and at the opposite end of the lever is another stop, which is occasionally made to rise into a notch in the sliding bolt. Attached to the lever at its fulcrum pivot, is a spring, the opposite end of which, presses upon the lower casing, and by re-action, tends to elevate the flange-stop and cause it to press against the flanges. A vertical cam-lever G is connected to the sliding bolt by a fulcrum pivot immediately below the knob arbor, and has a notch in the top, corresponding to a notch in the bolt, and both are operated by the bit C. From the two lower corners of the cam lever, two pins project rearward under the horizontal lever; and when the bit is moved either way, the cam lever is put in motion, and one of the pins raises the lever so as to bring the stop into the notch in the bolt when the bolt is drawn back, or behind the end of the bolt when it is thrown forward; in either case, the flanges become liberated from the restraint of the other stop, and the indices may be moved to any other position; but it will be seen that the bolt cannot possibly be moved again till all the flanges are precisely adjusted to admit the stop. To prevent the accidental displacing of the flanges, two small friction blocks are pressed against opposite edges of the flanges by two springs I I. The front plate of the dial has a round aperture through which the indices appear; and a circular dial attached to the front-plate, is so adjusted that the points of the indices appear in front of the dial. On the dial are a large number of letters or figures and points, and each index being capable of as many definite positions as there are points on the dial, the five indices collectively and relatively, are capable of upwards of one hundred millions of different positions, only one of which can admit of the moving of the knob, bit or bolt. Add to this, that each index is capable of various positions on its respective cylinder and that the dial itself is moveable circularly, and the chance of the lock being opened or unbolted by a stranger, approaches very near to zero. Mr Roff has taken measures to secure letters patent, and will furnish these locks to order.

New Fish Trap.



Frequently have feelings of humanity revolted at the peculiar barbarity of the ordinary mode of angling, by not only piercing the tongue and jaws of the unlucky fishes with the barbed hook, but by tearing the tongues and flesh from their mouths by forcibly extracting the hook; and many have discarded the sport on that account. But the invention here introduced, while it is much more sure to nab every scaly rogue that presumes even to nibble, and raise him from the water with no other harm than being slightly tickled in the sides. This trap,—the invention of C. Roosevelt Esq., of this city—consists of two toothed hoops, attached to the two prongs of a V spring, or two straight springs united at the point A to which a common fishing line is attached. These prongs are forced asunder and held in that position by a jointed cross-bar B, from the centre joint of which is suspended a fine cord or wire with barbs at the bottom at D to which the ordinary bait is attached. It will be seen that the least downward force applied to this baited wire will remove the prop B, when the circles of pointed teeth will close upon the unwary intruder and he will be done for. Any number may be set by one fisherman. Mr. R. offers to assign the right to obtain a Patent, to the highest bidder within the time necessary to hear from the more distant subscribers to this paper.

Russell's Uranoscope.

The Uranoscope is in the form of a sphere, of more than five feet in diameter, composed of metal rods or bars, so arranged as to represent all the meridians, parallels of latitude, and primary circles usually marked on artificial globes. If the room in which the instrument is shown have a vaulted ceiling, and all other light be excluded from it, except that which comes from a lamp fixed in the centre of the globe, the exhibition of the various planetary phenomena will be rendered beautifully distinct and perfect. The meridians and circles will make defined shadows on the face of the vault, while the sun, moon, stars, and planets of various magnitudes will, on the contrary, cast upon it their radient reflexion. A transparent covering, upon which are painted several hundred stars and the figures of the constellations, may be thrown over the globe at pleasure; and thus the vaulted ceiling becomes at once a perfect representation of the celestial hemisphere. By means of the machinery, its natural motion is given to the earth, and all the phenomena of the rising and setting of the heavenly bodies are brought before the beholder. Every object is seen in its appropriate place; and by changing the machinery, which consists of many varieties, to be substituted at pleasure, a better illustration than it is possible to give in words, is shown of the *precession of the equinoxes*, the equation of time, the eccentricities of the comet, and many other phenomena which no other instrument that I have ever seen could adequately explain. I am aware that it is impossible, by any mere description, to give more than a faint idea of such an apparatus, and therefore it is I am anxious you shall invite men of science to examine it. Besides the phenomena already mentioned, it may be used to illustrate the aspect of the heavens as seen from the earth in every latitude; the apparent annual course of the sun through the signs of the zodiac; the moon through her monthly course; her retrograde motion of nodes, and what are called harvest moons; eclipses in all their varieties; acceleration of the stars; comets in every form of ellipse; the revolution of double stars; and, I have no doubt, in the hands of genious and science, it may be successfully used to solve many problems which are at present either not at all or but imperfectly understood.—*Cor. Nat. Int.*

Flutes.

It may not be generally known that *double* flutes and flageolets have been successfully produced, by which one performer is enabled to execute a *duett*. The contrivance is very simple, being nothing more than the conjunction of the flutes or flageolets, in a collateral position, with a horizontal projecting mouth piece, which, by communicating with, and conveying the breath through both tubes, renders them conjointly vocal and empowers the performer to execute two parts at once. Mr. Brainbridge, the ingenious maker, adds, "in weight and size these instruments scarcely exceed the common sized German flute," and are fingered for both solos and duetts, so that either of them may in an instant be converted into a solo instrument.

The Western Telegraph.

One of the proprietors under the patentees —comes out in a late number of the Cincinnati Inquirer, with an explanation and statement, finally agreed upon, in regard to the Western and Southwestern lines of telegraph, the existence of which has not only hitherto retarded the progress of the work west of Pittsburg, but induced many to doubt whether it would not be abandoned. It seems now almost certain, says the Cincinnati Gazette, that we shall have a line in operation to this city in July next; for surely, the patentees will not refuse their assent to an arrangement which secures them advantages from early construction and in the adjustment of law suits, equal to any thing they give up to effect the settlement.

The plan for making a separate company for constructing the line from Pittsburg to Cincinnati and Louisville, secures the application of the funds raised along that line to its construction and support, and, by bringing the force of both Mr. O'Reily and Mr. Case to engage, at the same time on different parts of the same line, the early completion of the whole is made sure.

The forming of a distinct company to construct the line from Louisville to New Orleans, in like manner secures the application of the funds raised on that line to its construction, and places in the subscribers the control of it when done. The same is the case on the line from Louisville to St. Louis.

The connection on all these lines with each other, is provided for; and the connection is also secured with the Buffalo line, with the Pennsylvania line, and with the lines east from Washington to Baltimore, Philadelphia, New York, and Boston, and even to Quebec. The Stockholders are protected from responsibility beyond the amount they subscribe, and there is little room to doubt that the stock will yield a large profit as an investment.

There is no doubt now that we shall soon have intercourse with New Orleans, by means of this invention. The subscriptions in New Orleans, to the stock of the company, who propose to construct the telegraph between that city and Washington amounted, at the last accounts, to $60,000.

A company has been formed at Charleston to run regular steamers to Havana.

NEW YORK, MAY 8, 1847.

The United States Patent Office.

In the recently published Report of the Commissioner of Patents, the subjects of application for patents are arranged under twenty-two general classes, each of them embracing many sub-divisions. They are as follows:

Agriculture, including instruments and operations.

Chemical process, manufactures and compounds, including medicines, dyeing, color making, distilling, soap and candle making, mortars, cement, &c.

Calorific, comprising lamps, fireplaces, stoves, grates, furnaces for heating buildings, cooking apparatus, preparations for fuel, &c.

Mathematical, philosophical, and optical instruments, clocks, chronometers, &c.

Lever, screw, and other mechanical powers, as applied to pressing, raising and moving weights.

Stone and clay manufactures, including machines for pottery, glass-making, brick-making, dressing and preparing stone, cement, or other building materials.

Leather, including tanning and dressing, manufacture of boots, shoes, saddlery, harness, &c.

Household furniture, machines and implements for domestic purposes, including washing machines and cracker machines, feather dressing, &c.

Arts, (polite,) fine and ornamental, including music, painting, sculpture, engraving, books, printing, binding, jewelry, &c.

Surgical and medical instruments, including trusses, dental instruments, bathing apparatus. &c. &c.

Wearing apparel, articles for the toilet, &c., including instruments for manufacturing

Metallurgy and the manufacture of metals.

Manufacture of fibrous and textile fabrics, and all machinery therefor.

Steam and other gas engines.

Navigation, comprehending naval architecture, propellers, marine implements, &c.

Civil engineering and architecture.

Land conveyance, comprehending all kinds of vehicles and implements of travel and transportation.

Mills, comprehending all kinds of mills for grinding and crushing; horse powers, and other means of propelling them.

Machinery for working in lumber, comprehending saw-mills, with their implements, planing machines, stave machines, shingle machines, boring and mortising machines, veneering, &c.

Fire arms and implements of war.

Hydraulics and pneumatics, comprehending water wheels, wind mills, machinery for raising water, fire engines, filterers, &c

Miscellaneous, consisting of such cases as cannot be placed in any other classes.

In several of the classes the number of applications are given, also the number of patents granted, from which it appears that a large number have been rejected for want of novelty. In the class of agricultural implements, of 161 applications, only 78 were granted; in that of the lever, screw and other mechanical powers for pressing &c., of 27 applications, only *seven* were granted; of course 20 of the 27 applicants are dissatisfied with the management of the Patent Office, notwithstanding that patents have been granted probably in every instance in which the granting of such patents would not have infringed on the exclusive rights of others. We may take this occasion to remark that it is a matter of deep regret that inventors have no means of informing themselves concerning the construction of the various articles already patented. We can imagine no measure whereby our government could so essentially advance the arts and sciences, and with them the prosperity of this country, as by the publication of a volume or series of volumes, containing brief descriptions with illustrations of the mechanical inventions patented within the last fourteen years. While they would command an extensive sale, it would not only save to the country millions of dollars, annually, which are expended by individuals in vain study and experiments, but by enlightening all who should examine the work, lead to four fold the ordinary amount of valuable new discoveries and inventions

The Planets.

That the planets are inhabited by living animals, we have as positive evidence, as we have that quadrupeds or even insects inhabit the yet unexplored islands of this earth; but whether they are inhabited by men or similar immortal beings, is at present, beyond the reach of human research. It is ascertained that these orbs, like our own, roll in regulated periods round the sun; that they have nights and days, and successions of seasons; that they are provided with atmospheres, supporting clouds, and agitated by winds, and, that thus, also, their climates and seasons are modified by evaporation, and that showers refresh their surfaces. For we know, that wherever the existence of clouds is made manifest, there water must exist; there evaporation must go on there electricity, with its train of phenomena, must reign; there rains must fall; there hail and snow must descend. Notwithstanding the dense atmosphere and thick clouds with which Venus and Mercury are constantly enveloped, the telescope has exhibited to us great irregularities on their surfaces, and thus proved the existence of mountains and valleys. But it is upon the planet Mars, which approaches nearest to the earth, that the greatest advances have been made in this department of inquiry Under favorable circumstances its disc is seen to be mapped out by a varied outline, some portions being less reflective than land. Baer and Maedler, two Prussian astronomers, have devoted many years' labor to the examination of Mars; and the result has put us in possessiou of a map of the geography of that planet almost as exact and well defined as that which we possess of our own. In fact, the geographical outlines of land and water have been made apparent upon it. But a still more extraordinary fact in relation to this planet remains to be considered. Among the shaded markings which have been noted by the telescope upon its disc, a remarkable region of brilliant white light, standing out in boldest relief, has been observed surrounding the visible pole. This highly illuminated spot is to be seen most plainly when it emerges from the long night of the winter season; but when it has passed slowly beneath the heat of the solar beams it is found to have gradually contracted its dimensions; and at last, before it has plunged into light on the opposite side, to have entirely disappeared. But the opposite pole, then coming into similar relations, is found to be furnished with a like luminous spot, which, in its turn, dissolves as it becomes heated by the summer sun. Now these facts prove to us, incontestibly, that the very geograpical regions of Mars are facsimiles of our own. In its long polar winters the snows accumulate in the desolation of its high northern and southern latitudes until they become visible to us in consequence of their reflective properties; and these are slowly melted as the sun's rays gather power in the advancing season, until they cease to be appreciable to terrestrial eyes.

The Age of Progress.

The *Racine Advocate* says: "When stage coaches first started in this country, (not Wisconsin, but America,) all called this mode of travelling extraordinary rapid. When steamboats made a trip from New York to Albany in twenty hours, all the fast goers were in ecstacies. When another advance was made, and a boat called the Sun, (she ought to have been called the Moon, because that does not go half its voyage sometimes, between sun and sun) ran the same distance between morning and evening, wonder was everywhere. When the old North American got her steam up to do it in nine hours or so, it did, in Yankee phrase, "*beat all natur*." When railroads first got in active operation, with locomotives on them, the world of America went wild at the tho't of such unparalleled speed, and deemed it, as it had deemed each previous increase of rate, the *ne plus ultra*. And now that we have the Telegraph, many imagine that no farther acceleration of speed can be acquired."

Patents in Europe.

The expense of procuring a patent in

Great Britain, is	£110
In Ireland,	130
Scotland,	80
Canada,	2

In France the brevets of invention or patents are granted for five, ten, or fifteen years. The tax prescribed is 500 francs for 15 years, to be paid by annuities of 100 francs each, under penalty of forfeiture if a year elapses without payment.

In Austria the fees are for every year the patent lasts:—for the first five years 10 guilders, convention money, each year, or 50 guilders in the whole; for the 6th year, 15 guilders; for the 7th 20 guilders, and so on increasing 5 more each successive year, so that the 15th year is 60 guilders; or for the whole 15 years 425 guilders or florins, (about 45 cents for each guilder.) Half the fee is paid at the application, and the other half at the beginning of every successive year, according to the number of years &c.

In Bavaria the term is limited, at the highest, to fifteen years, except by special grant for a longer period; and in case of the introduction of a foreign patent, the time allowed is the term still remaining of the foreign patent. The fee is, for the first five years 5 florins per year; for the next five years 10 florins each; and from the tenth year 20, 30, and so increasing each successive year 10 florins, the fifteenth year being 60 florins; in the whole fifteen years, 275 florins.

In the kingdom of Wurtemberg the duration of the patent is limited to ten years, except by special grant. The fee required yearly is from five to twenty guilders; half at the delivery of the patent, and the other half at the beginning of each successive year afterwards.

In Saxony patents extend for 10 years. The fees are regulated by the greater or less importance of the patent requested; in no case do they exceed one hundred dollars at the first execution of the patent

In Russia the patent law allows patents for inventions, &c., of home origin, and also for the introduction of foreign inventions, &c.—The term of the former may be from five to ten years, but that of the latter cannot exceed six years. The applicant must, at the same time pay the fee required; which is, for three years, 90 silver roubles; for five years, 150; for ten years, 450 silver roubles; and in case of inventions or improvements from abroad for one year, 60 silver roubles; for two years, 120; for three years, 180; for four years, 240; for five years, 300; and for six years, 360 silver roubles.

In Belgium the fees are for 5 years 150 florins, for 10 years 400, for 15 years 600 or 700, according to the importance of the invention.

In Holland the law of the country is almost the same as that of Belgium—so are the fees.

In the Papal States the fees are determined by the importance of the invention, &c.; also the time and duration of the patent is fixed by the same rule. The tax or fee required is ten dollars for one year; and for the introduction to use of an already known invention, &c., fifteen dollars for one year. If an extension of the term be desired, one-third more must be paid; the first payment in all cases to be on the delivery of the patent—the second within the first quarter of each successive year of its term.

Plank Roads.

Two additional roads of Plank are constructing near Montreal; one three miles in length, the other eleven, built at a cost of about $4000 a mile. Red pine rails are used. There are some plank roads in Canada which have been fifteen years in use and are in good order now. They are great improvements in travelling.—The Chambly plank road company have declared a dividend of $6,000 profit for the last year. The road cost $16,000, and is ten miles long. The capital has been more than realized.

Blacksmith's Work.

The Germantown Telegraph says:

"A horse shoe has been exhibited to us by Edward Rinker, of this borough, which was made by him, assisted by Thomas Arthur, from the rough, complete, steel toed and corked, at *one heat!* In addition to this, it was fitted to a horse's hoof—all with one heat.

Thompsonville Carpet Manufactory.

This is one of the most extensive manufactories in the U. States, using 1,000,000 *pounds of wool and* 10,000 *pounds of flax yarn* per annum in their establishment. They manufacture, Three Ply Brussels, and Axminster Carpeting of the richest patterns, the weaving being mostly done at present on hand looms, they are, however, about introducing power looms into this factory, for weaving Rugs and Axminster carpets. The wool for Axminster carpeting is first woven in a web, and afterwards cut in strips forming what is called Chenniele card, this is done upon a machine invented by Messrs. Davidson and Parks of Springfield, Vt., which is the first and only one of the kind in the United States, and has more than paid for itself in six months. This machine has over two hundred cutters or knives which are attached to a cylinder, making some three hundred revolutions and cutting full two yards of web per minute into strips which being passed over a grooved cylinder heated by having hot irons inserted within, it is prepared for weaving. Beside the large carpet establishment there is in this village a factory 150 by 43 feet on the group and five stories high, for the manufacture of knit shirts, drawers, and fancy ginghams, this establishment has about 30 sets of wool cards and twenty-five or thirty gingham looms

Substitute for Repudiation.

A writer in the London Times proposes that the national debt of Great Britain shall be paid off at once by a direct property tax. The debt is now 800,000,000 pounds. The value of public and private property he estimates at 4,500,000,000 pounds, and suggests a tax of 20 per cent. on this property, which would be more than enough to liquidate the whole debt forthwith. He thinks it would only be putting money out of one end of the purse into the other, as the debt is principally due to British subjects; and that with four fifths of their present property the people would actually be as rich as they are now, with the debt hanging over them.

Enterprise in Utica.

Four companies for the manufacture of cotton and woolen fabrics have been recently organized at Utica, the capitals of which vary from $100,000 to $300,000. One of them is already in operation. It has been found that steam is not only an economical motive power, but a large contributor to the value of the manufactured article. In addition to its heating the buildings, and driving the machinery, it is used to dry, full, dye, and soften the fabrics, with the most perfect success. The steam after performing these various functions, is condensed and transformed into the purest water, which is used in washing and cleansing the wool, to which it imparts great softness and lustre.

What a Change.

One of the National School Masters in Ireland says a correspondent, "remarked that this time twelve months he had *one hundred and forty* school children, this day he had not one. Half, he said, are *dead*, and the remainder are unable to attend for want of sufficient food and raiment, and he is himself obliged to get some situation on the roads to support a large family."

To New Subscribers.

Those subscribing to the Scientific American will be furnished, if desired, with all the back numbers of the present volume. Bound together at the end of the year, they will form a handsome and valuable work.

THE
SCIENTIFIC AMERICAN.

Persons wishing to subscribe for this paper, have only to enclose the amount in a letter directed (post paid) to

MUNN & COMPANY,

Publishers of the Scientific American, New York City

TERMS.—$2 a year; ONE DOLLAR IN ADVANCE—the remainder in 6 months

Postmasters are respectfully requested to receive subscriptions for this Paper, to whom a discount of 25 per cent will be allowed.

Any person sending us 4 subscribers for 6 months, shall receive a copy of the paper for the same length of time.

FOREIGN CORRESPONDENCE.

London, April 4, 1847.

Electricity—Smelting Copper by it—Inventions, &c.

Benjamin Franklin first trailed lightning from the clouds, thus rendering it in some degree under the control of man; but it remained for the philosophers of our day to put it in the traces and make it work. It is somewhere about 12 years since, that experiments in telegraphing by electricity were made, but the first machine of the kind put in actual *working* operation, of which we have an account, was in the latter part of 1839, on the line of the Great Western Railway. This was called *Ponton's Galvanic Telegraph.* A working model of the machine was on exhibition at a Mechanic's Fair held in Edinburgh in Jan. 1840. By this telegraph 42 different signals were communicated from one end of the room to the other by means of three insulated copper wires.—Letters were arranged in view of the spectator at one end like the keys of a piano, and it was by acting on these that the intelligence was immediately conveyed. The manner in which the attention of the guardian of the telegraph at one end was drawn to the machine when a communication was about to be made from the other was by a distinct exertion of galvanic influence brought to play on a needle at the farther end of the wire. The deviation caused in this needle moved a platinum wire kept at a white heat by a spirit lamp. The motion brought the hot wire in contact with a fine cotton thread attached to a cord by which a pendulum was kept aside from a gong.. The hot wire burned the thread, the pendulum fell and struck the required signal on the gong, to call the superintendant to his post. A few years after Professor Morse succeeded in making his splendid improvement on the Telegraph, and world-wide almost has been his renown. And still later, a patent has been obtained here and a line of telegraph put in operation, purporting to go some distance ahead of the Professor's. But magnificent as have been the results hitherto obtained, they are, it would seem to be entirely thrown in the shade as we proceed; for I saw in one of the last numbers of the *Mechanics' Magazine*, published here, the engravings and descriptions of a Magnetic Telegraph, invented by one of the editors of the New York *Scientific American*, and copied from that paper, which, if put into working operation, will really be *the* electric wonder of the world. But we stop not here: having got the animal entirely under our thumb, we feel disposed to push him pretty hard; and hence one of the great discoveries of the day is a process for *smelting copper* by means of electricity. This has recently been patented, and the process is stated to produce in less that two days what by the old process three weeks to perform; affording too, the invaluable convenience and saving of having the ore smelted on the spot, a saving that can be better appreciated from the fact, that from 10,000 tons of copper ore brought to England last year all the way from Australia, only 1600 tons of copper were obtained. The saving of fuel too, in this operation of electricity, is almost beyond belief. It is stated that in one district alone (Swansea) the estimated annual saving in coal will not be less than *five hundred thousand pounds sterling!*—But once more of electricity, and enough. An electrical clock is to be erected in the tower of Wenham church, near Ipswich, and the motive power is to be incessantly maintained by a perpetual electric current derived from the earth.

A number of cabs with newly invented wheels have just been put on the pave here. Their novelty consists in the entire absence of springs. A hollow tube of India rubber about a foot in diameter, inflated with air, encircles each wheel in the manner of a tire, and with the addition of this simple but novel appendage the vehicle glides noiselessly along, affording the greatest possible amount of cab comfort to the passenger.

A patent has been taken out in Aberdeen for iron coaches. The trial one, carrying 19 persons besides driver and boy, weighed only 11 cwt. and was drawn by two ordinary horses at the rate of ten miles an hour.

Smith's patent convex propeller, and Parkhurst's submerged vertical propeller, are now being applied to two steam packets of the first at this port and the latter at Liverpool.

A pneumatic machine to test the capacity of the lungs, with a view to establishing a precise and easy method of detecting disease was put in operation recently at a fashionable soiree. It was laughable to see with what avidity even the philosophers applied to have a peep into futurity, by learning to what height they could blow up the cylinder, whose index was to show whether their bellows were in strength or weakness. The common average standard is 180 degrees. Wasted with a puff, some would give in at 70 or 90 degrees, whilst others exhausted their wind to the last breath, but were exceedingly lively at 210, 220 or 230 degrees. One stout lunged gentleman actually raised the tube to 300 degrees, the maximum of the height.

At the last meeting of the Liverpool Pylotechnic Society, a specimen of an improved description of belt for driving machinery was exhibited. It was made from wool carded, spun, woven and well milled, then passed through a composition to make it firm and adhesive, the latter process being the subject of the patent. It was stated to be more durable than the common leather belt, also less elastic, in consequence of which it can be worked slacker, and thus effect a saving of power.

A French chemist has taken out a patent for the manufacture of gas from excremental matter. The gas is said to be much superior to that from oil or coal, much cheaper. and perfectly inodorous. D. M.

The Fortunes of Inventors.

(The following letter was not intended for publication; but it presents such perfect illustrations of *real life*, and every day experience of inventors. that we cannot willingly withold it from our readers,—well knowing that many of the experienced among them will find it peculiarly interesting, and believing we shall be excused by the writer.)

Fly Creek, (Otsego Co.,) N. Y.

Mr. Editor.

I mail this at Cooperstown, it being our nearest or most convenient Post Office, and *pay the postage*—mind that—and if it does not come to hand so marked, just let me know, and I will do as you recommend to some others of your correspondents, "blow 'em up." Methinks that I hear you draw a long breath as you cast your eye over this long close written scrawl, and turn over the leaves and contemplate the ill-written, unintelligible mass in hopeless despondency and exclaim, what can all this mean? What ambitious blockhead has thrust this long communication upon me, who have already more than I can bear. Well, sir, I acknowledge that it is somewhat appalling, but I have some time past been an interested reader of your interesting and amusing paper, and appreciate it on more accounts than one; if you will have patience to peruse my tedious communication, you will learn why. Emboldened by the amount of perseverance and patience you have exhibited with your numerous correspondents and the candor and fairness of your very lenient remarks to many of them, I have ventured to intrude upon you some of my thoughts and aspirations, and may perhaps give you some sketch of my past doings, if I find you feel sufficient courage and interest to go through the painful operation. I have been for 35 years a hard working mechanic, laboring with my own hands at most of the mechanical trades, and dabbling in inventions and "making patent rights," as they say in Yankee land, and most of the time employing many mechanics; with the usual results of such operations, I have benefitted others more than myself. I have expended thousands of dollars and years of labor to perfect valuable improvements and to project important discoveries, and, as usual, the community reaps the benefit, and I have not even the poor satisfaction of having it known that I was the contriver, or that I spent weary, sleepless nights that they might get the avails; for of the thousands of individuals who daily use some one or other of the many improvements that I have made, I presume that not a dozen know that I ever existed. But I will not complain, as I know that it is the lot of most inventors to die poor. But now to business: I have several important improvements that I have long had in contemplation, and one or two of recent projection. Although not a subscriber in my own name, I read your paper constantly, as my sons subscribe and take it, and I have induced several of my friends in different places to whom I have shown it, to take the paper. I claim no merit for this, for it affords me gratification to be able to get them interested enough to try to inform themselves on some of the many scientific questions which are discussed in your paper, and are applicable to the every day concerns of life I have been much amused, and sometimes surprised, to see in your paper accounts of inventions and discoveries proposed, which I have made years ago myself, some exactly like, and some with variations slight, but still the same. I have made many, and some that would be very valuable, if put in practical use; some that have since been patented, and fortunes made from them by others ignorant I doubt not, of my invention. One, the famous Spike Machine, of Burdon, from which he made a fortune;—I made one on a small scale in 1815 and '16, defective and incomplete, but still sufficient to make a nail from lead or copper, but I was poor and by the horror of friends for *patent* rights, I was forced to abandon it. I have made quite a number of inventions; some I got patented, and should have made a fortune from, but poverty and the inefficiency of the Patent Laws prevented my taking the advantage of them. The Hydraulic Oil Press for making Linseed Oil, was patented by me. Although not the inventor of the principle, yet I so modified it that it made it come into use and be valuable for that purpose, and the public was as much indebted to me as though I discovered the principle, and it is now undisputed that three-fourths of all the linseed oil now made in the United States is made with my "double horizontal hydrostatic oil press, precisely as patented by me, and described in Niles' Register, of August, 1832. I spent and lost two thousand dollars in getting it up, experimenting and trying to get it into use, relying on the known usefulness of it, and the public generosity—generosity!! Such as poor Whitney experienced when the whole people, aye even sovereign states, repudiated their own acts, and grasped by sheer brute force his lawful vested property where the improvement made by him saved the population from emigration and the whole country from becoming a barren waste. This is strong language, but it is nearly identical with that used by Judge Johnson, he who stood "alone to save a sinking land" from the charge of tyranny and injustice. I do not pretend to place myself on an equality with Whitney, yet my all to lose was as deeply felt as his. It is also true, that I was not as deeply wronged as he was, but I had people come some 150 miles, under pretence to purchase of me my right, when their real object was only to ascertain the value of the improvement and to see one in operation, that they might be able to go home and build for themselves. This was done in several instances,—mechanics sent on purpose, and altho' I offered to sell cheap, considering the value to them and the cost to me; but they found me poor, and knowing that I had expended all I had, the saving of 20 years industry, and in debt besides, they thought that I should not be in a situation to visit on them the due consequences of their iniquity, they were sure any way to make money as fast as they should be obliged to spend it by me, and in the significant language of one of them, when questioned by my agent, he thought the "*d— thing ought to pay its own way.*"

(*To be continued.*)

History of Architecture.

(*Continued from No.* 32.)

The Architects driven from Constantinople (Byzantium) were the first who combined with it the use of the Ionic pedestals and columns, provided with capitals formed according to their own taste, among which were twisted ones. In this Lombard-Byzantine style were erected the cathedrals of Bamberg, Worms and Mentz, also the church Miniato al Monte, near Florence, and the most ancient part of the minister of Strasburg. Cupolas were afterwards added, as used in the East, and these, as well as the tasteless capitals, and the many slender pillars and minarets, of which we often see two rows, one on another, indicate the proper Byzantine or Oriental style of architecture. In this style were erected, besides the church of St. Sophia in Constantinople, and others, the church of St. Mark in Venice, the Baptisterium and the cathedral of Pisa, and the church of St. Vitalis, in Ravenna. The Normans, who had settled in Sicily, built the cathedral of Messina upon the foundation of an old temple,—a huge but tasteless edifice, in which, by means of the changes made in different centuries, we may observe, at the same time, the rise and fall of the art. The Vandals, Alans, Suevii and Visigoths had penetrated into Spain and Portugal: the Arabs and Moors expelled them in the 8th century, and destroyed the kingdom of the Goths. The Mussulman conquerors had, at that time, almost exclusive possession of the arts and sciences.—Saracen architects rose in Greece, Italy, Sicily, and other countries: after some time, many Christains, particularly Greeks, joined them, and formed together a fraternity, who kept secret the rules of their art, and whose members recognized one another by particular signs, (like *Free masons.*) At this period, three different styles of architecture prevailed—the Arabian, a peculiar style, formed after Greek models; the Moorish, which originated in Spain, out of the remains of Roman edifices; and the modern Gothic, which originated in the kingdom of the Visigoths, in Spain, through the mixture of the Arabian and Moorish architecture, and flourished from the 11th until the 15th century. The two first styles differ but little from each other: the Moorish style is principally distinguished from the Arabian by arches in the form of a horse-shoe. But the Gothic, or old German, is very different. Swinburne mentions the following marks of distinction: The Gothic arches are pointed; the Arabian, circular: the Gothic churches have pointed and straight towers; the mosques terminate in globes, and have here and there minarets, covered with a ball or cone: the Arabian walls are adorned with Mosaic and stucco, which we find in no ancient church in the Gothic style: The Gothic columns often stand united in groups, over which is placed a very low entablature, upon which arches are erected; or the arches stand immediately upon the capitals of the columns. The Arabian and Moorish columns are single, and if, by chance, they are placed close together, in order to support a very heavy part of the building, they never touch one another; but the arches are supported by a stout and thick arch below.

(*To be Continued.*)

Foreign Items.

A note which was lately paid into the Bank of England was dated the 28th of July, 1736, No. 94, value £25. This note, which had been out 111 years, would, at compound interest, have produced £6,400 at five per cent.

A Welsh farmer, who had abandoned a field of potatoes, which were diseased, commenced digging the ground a few days ago, for other purposes, when he found a capital crop which produced a high price.

Drainage is working wonders in the county of Caithness, Scotland, where bogs and lochs are rapidly disappearing, and giving cheering promise of being speedily converted into fruitful fields.

The Sarah Sands brought to Liverpool on her last trip from New York, a large barrel of oysters, alive and in prime condition. They were supplied with salt water on the passage, and occasionally regaled with a little oatmeal.

A correspondent of the *Church and State Gazette* endeavors to prove that rain was unknown in the world till the time of the flood.

The Rev. Henry Palmer, M A., a clergyman of the Church of England, has published a pamphlet in defence of the slave trade!

The Pope has resolved to institute an order of chivalry. The order is to be the reward of merit and good actions, without regard to the faith and country of the individual.

The Sultan of Turkey has promised to build a Protestant Chapel for the English workmen employed in some iron works near Constantinople.

The vestrymen of Rt. Mary's, Oxford, have refused to permit the erection of a staine glass window, as tending to Romanize t Church.

TO CORRESPONDENTS.

"T. J. D. of Ohio"—We have taken time, by robbing other subjects,—to peruse your six long pages on the subject of a six wheeled steamboat. You are indeed entitled to credit for much ingenuity displayed in mathematical calculations,—mode of supporting the axles, of steering the apparatus, —securing the strength of the posts, and of applying the power; and the only error we find in your deeply studied plan is that the whole is built upon premises totally fallacious and worthless. We had occasion, three several times since the commencement of this paper, to show, and in one instance, demonstrate in full, the fallacy of the supposition that a barrel or drum, or a drum paddle-wheel would roll over or through water with any less resistance than it would encounter if dragged or propelled without rolling or revolving; and it is readily demonstrable that a vessel of the size and construction you describe, would require more than seven thousand horse powers to propel it with the speed which you anticipate. For your six drums will not only displace six times as much water in every mile of progress, as would an ordinary steamboat of equal tonage, but this water must be displaced, and returned so much more abruptly, that the resistance will be more than ten fold in proportion to the quantity of water removed. We would inform you moreover that the resistance of water against paddles at the depth of ten feet below the surface, is no greater per square foot than at three feet from the surface. Do not be discouraged, but study the true principles of natural philosophy, and try again.

"G. Y. of Michigan."—By way of consoling you under some little unavoidable disappointment, we can assure you that many persons before you have been deceived by the supposition that more power could be produced by condensing steam of low pressure, than by the force of that of high pressure. But the fact is, that more than double the fuel is required to produce 100 feet of steam under mere atmospheric pressure, thus removing 100 feet of air preparatory to the employment of atmospheric pressure by the condensation of the steam, than is required to produce sufficient high pressure steam power to remove an equal quantity of air, produce an equal vacuum, or effect an equal power by the operation of a high pressure engine. Your plan for a rotary engine has some excellent points, but like most others, is restricted from rapid motion, by the difficulty of the vibratory motion of the sliding gates or valves.

We shall look out for the paper you speak of. Your postmaster neglected to mark *paid* on your letter, and you of course will call on him and demand the 10 cents back.

"T. H. M. of Mass."—We see no reason why your plan of machinery for sawing ship timber should not succeed well, if properly finished and adjusted. But whether you will *perfect* it in all its details is another question. We are confident of the practicability of carrying a machine of this kind, to still greater perfection than what you apparently anticipate, insomuch that it will control the motion of the timber according to pattern, without the aid of an attendant during a run of the saw: but we cannot communicate to you a plan for this without some expense of time, &c.

"J. M. H. of Ohio."—Agreeable to your request, we subjoin a brief catalogue of such scientific works as we should recommend for the library of a Mechanic's Association. Mahan's Civil Engineering—$3 Dana's Mineralogy, $3,50. Bartlet's Optics,—$2. Scholfield's Geometry, $5. Johnston's Elements—50 cts. American House Carpenter, $2,25.—Scribner's Engineers' Companion, $1. Davis's Manual of Magnetism, $1. Chamber's Information—$4. Elements of Technalogy—$3,50. Ranlett's Architect, $6. Gilroy's Wonders of Nature and Art, 75 cents. We can furnish most of these at short notice

"H. M'C. New York."—The steam engine article which you saw in that other paper, was a 'umbug. The windmills alluded to are all genuine,—one kind can be constructed for $25, but is not yet patented. We shall remember you for an agent.

"W. D. of Conn."—We are not anxious for particular descriptions of new machines unless the inventors thereof are willing to furnish the expense, or at least, part of the expense of engravings thereof.

"O. B. of New York."—You must allow us two or three weeks to read and consider your densely written communication.

"J. C. of Vermont."—Your scientific theory is perfectly correct, as has been fully demonstrated in a former number of this paper; and in the first number of the "American Mechanic," Jan. 1st, 1842, is a description and engraving of a machine for producing heat by compression of atmospheric air, sufficient to supply the engine with steam, and half the power and heat saved as surplus Write again.

"D. R. jr., of Hamilton, N. Y."—We have as many correspondents who are subscribers to our paper as we have time to reply to, without taking the trouble to answer those who get an imperfect idea upon a subject by occasionally borrowing their neighbor's paper.

"E. M. T. of Watertown, Mass," and "W. H. B. of Middletown Del."—Your bundles have been forwarded as desired. The latter we directed to the care of G. W. Adriance Philadelphia, at which place the package can be had.

"L M. W. of Ridgefield, Ct."—We are obliged to defer your article till next week. It will appear illustrated in our next number.

"G. P. F. of Taunton, Mass."—Your agent has called at our office several times and made enquiries relative to having an engraving made of your excellent blind spring, but as our artist cannot define a position in which to sketch it properly, we think you will be obliged to defer its illustration.

"J. R. W. of North Danville, Mass."—We can furnish you with a complete set of the first volume of the Scientific American (bound) for four dollars.

FIRST VOLUME.

We would inform those who have been disappointed in procuring the whole of the first volume of the Scientific American, that we have recently come into possession of a few complete sets of the last half, (i. e. from Nos. 26 to 52 inclusive) which we will dispose of at the subscription price, viz. $1 per set.

ADVERTISEMENTS.

☞ This paper circulates in every State in the Union, and is seen principally by mechanics and manufacturers. Hence it may be considered the best medium of advertising, for those who import or manufacture machinery, mechanics tools, or such wares and materials as are generally used by those classes. The few advertisements in this paper are regarded with much more attention than those in closely printed dailies.

Advertisements are inserted in this paper at the following rates:

One square, of eight lines one insertion,	$ 0 50
" " " " two do.,	75
" " " " three do.,	1 00
" " " " one month,	1 25
" " " " three do.,	3 75
" " " " six do.,	7 50
" " " " twelve do.,	15 00

TERMS:—CASH IN ADVANCE.

GENERAL AGENTS
FOR THE SCIENTIFIC AMERICAN.

New York City,	Geo. Dexter.
" "	Wm. Taylor & Co.
Boston,	Messrs. Hotchkiss & Co.
Philadelphia,	George W. Adriance.
Boston,	Jordon & Wiley.

LOCAL AGENTS.

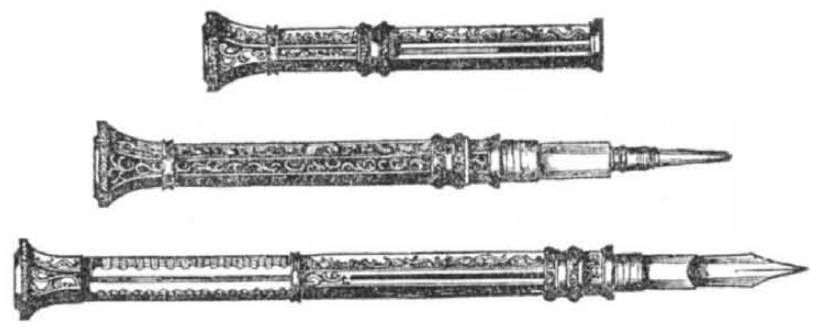
Albany,	Peter Cook.
Baltimore, Md.,	S. Sands.
Cabotville, Mass.,	E. F. Brown.
Concord, N. H.	Rufus Merrell.
Hartford, Ct.,	E. H. Bowers.
Lynn, Mass,	J. E. F. Marsh.
Middletown, Ct.,	Wm. Woodward.
Norwich, Ct.,	Safford & Parks.
New Haven, Ct.,	E. Downes.
New Bedford, Mass.,	Robinson, Parsons & Co.
Newark, N. J.,	J. L. Agens.
Newark, N. J	Robert Kashaw.
Providence, R. I.,	H. & J. S. Rowe.
Rochester, N. Y.	D. M. Dewey.
Springfield, Mass.,	Wm. B. Brocket.
Salem, Mass.,	L. Chandler.
Saco, Me.,	Isaac Crooker.
Troy, N. Y.,	A. Smith.
Taunton, Mass.,	W. P. Seaver.
Worcester, Mass.,	S. Thompson.
Williamsburgh,	J. C. Gander.
Dover, N. H.	D. L. Norris.

CITY CARRIERS.
Clark Selleck, Squire Selleck.

Persons residing in the city or Brooklyn, can have the paper left at their residences regularly, by sending their address to the office, 128 Fulton st., 2d floor.

To Builders and Hardware Dealers.

☞ We would inform those who deal or have occasion to use DOOR LOCKS or LATCHES in the construction of buildings, that we have just received a large lot of Mortice Locks and Latches, which we can furnish at a less price than the original cost to manufacture them. They are of a beautiful pattern and some of the Locks of an entirely new style. They may be had in any quantity, by application at this office. MUNN & CO. 128 Fulton st.



Bagley's Patent Extension Penholder and Pencil.

THIS is the most compact, complete, convenient and useful pocket companion ever offered to the public. The multiplicity of its usefulness and the smallness o its size, renders it a perfect Multum in parvo.

In the short space of 2 3-4 inches is contained a Pen, Pencil, and a reserve of leads, and by one motion slides either the pen or the pencil out and extends the holder to six inches, which is but little more than half the length, when shut up, of the common pen holder, but when extended ls one fourth longer. This article is secured by two patents, and the Manufacturers are now ready to receive orders for them in any quantity, either of Gold or Silver, together with his celebrated ever pointed Gold Pens, which need no proof of their superiority except the increased demand for the last six years, and the numerous attempts at imitation.

A. G. BAGLEY, No. 189 Broadway.
New York, Sept. 1, 1846. o24 tf

GENERAL PATENT AGENCY.
REMOVED.

THE SUBSCRIBER has removed his Patent Agency from 12 Platt to 189 Water street.

The object of this Agency is to enable Inventors to realize something for their inventions, either by the sale of Patent Goods or Patent Rights.

Charges moderate, and no charge will be made until the inventor realizes something from his invention.

Letters Patent will be secured upon moderate terms. Applications can be made to the undersigned, personally or by letter post paid.

m8 3m* SAMUEL C. HILLS, Patent Agent.

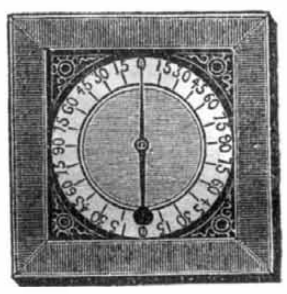
AMERICAN HARDWARE.

THE SUBSCRIBER having been engaged in selling American Hardware on commission for 7 years, solicits consignments from manufacturers, and will refer to those who have employed him the above number of years. SAMUEL C. HILLS,
m8 3m* 189 Water st.

AGRICULTURAL TOOLS.

INVENTORS and Makers of superior Agricultural Implements are notified that the subscriber will sell such articles on commission, and make prompt returns. SAMUEL C. HILLS,
m8 3m* 189 Water st.

Plumb and Level Indicator.



THE UTILITY of this invention so far exceeds the expectation of the inventor that he has been induced to engage in the manufacture of them to a large extent. It is understood from the engraving, that the proper position of the instrument is vertical, and that the weight of the ball will keep the index in a perpendicular position, so that either the bottom or side of the frame being placed against a horizontal, vertical or oblique surface, the index will show its inclination, (if there be any) in degrees.

Besides its utility, the Indicator possesses a share of elegance, consisting of a neat mahogany frame 9 inches square and glass, encasing a lithographic dial with an appropriate picture in the centre, and the movement is so free that a variation of one fourth of a degree is indicated. They may be sent to any part of the U. S. by Express.

For sale, wholesale and retail, at this office. Address MUNN & CO (post paid) ☞ Price $1 single. A discount to dealers. m13 tf

BOOKS! BOOKS!!

☞ We would inform those who are desirous of procuring **MECHANICAL AND SCIENTIFIC BOOKS,** that we have made arrangements whereby we can furnish almost any work, at the lowest prices. We have Scribner's Mechanic, and Scholfield's Geometry, constantly on hand.

Price of Scribner's Mechanic, tuck & gilt edge $1,50
" " plain, bound in leather, $1,12
" of Scholfield's Geometry (per vol.) $1,50

☞ The trade furnished at a discount.

MUNN & CO., Publishers,
F6 128 Fulton street, N. Y., 2d floor

Foster's Window Shades.

THE NEW (intended) PATENT FRICTION WINDOW SPRING, recently invented by G P. Foster of Taunton, Mass. is now ready and for sale as below. It consists of a spring attached to the sash made to bear upon the inside of the window frame, and thereby holds the sash in any position with equal strength of a cord and weight.

These convenient springs have been tested and are known to supersede every other spring yet invented, for convenience, while, for durability, they will last much longer than any kind now in use.

They may be seen at the hardware store of W. N. Seymour & Co. No. 4 Chatham Square, and may be had upon application to James Lancaster, Agent for this city, at the same place, who will give full instructions in adjusting them. a24 4t*

Lap-welded Wrought Iron Tubes
FOR TUBULAR BOILERS,

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York.

WONDERFUL CURE OF RHEUMATISM.

Dr. S. B. SMITH'S Torpedo Magnetic Machine.

THE CURES PERFORMED BY THIS NEW and singular machine, which obtained the premium and medal at the Fair of the American Institute, are multiplying rapidly throughout the United States

"I hereby certify that I was grievously afflicted with rheumatism over 11 years, that one leg became two inches shorter than the other, and it settled in every joint in me, so that I could not stoop to the floor, nor bring my knees nearer than 7 inches, and that I was entirely cured by Dr. Smith's Magnetic Machine. If any one thinks that this is not true, I should be happy to have them call on me at Essex, Massachusetts, and see for themselves.

THOMAS DADE.

State of New York, City of New York, SS.—On the 16th day of February, A. D. 1847, appeared before me Doctor S. B. Smith, who being by me duly sworn, did depose and say that the following certificates and extracts from letters are each and every one of them true as received from the several persons whose names are thereunto attached, and that the same are a portion of the many testimonies of the cures by his Magnetic Machine.

Affirmed before me, this 16th day of Feb. 1847.
DAVID S. JACKSON,
Acting Mayor of the City of New York.

Cured of the Dropsy, Jaundice, and Contraction of the Leg: Sarah Sanger, 154 Delancey st., N. Y.

Cured of Lock Jaw: A case under the care of A D. Bacon, M D., Annisquam, Mass.

Case of Scrofula and Palpitation of the Heart: Two of Dr. Smith's own children, the scars still to be seen.

Cured of Spinal Complaint and Weak Eyes; Cases attested to by H. Peck, New London, Huron County, Ohio.

Cured of Rheumatism: Several cases attested to by J. Miller, of New London, Ohio.

For further particulars relative to the wonderful cures performed by these wonderful machines, we would refer you to the inventor, who has original letters from those cured, that he would be pleased to show at his office.

Price $12, neatly put up in mahogany cases, with a book of explanation to accompany.

Orders from any part of the United States, promptly attended to. Address
F27 tf MUNN & CO. (post paid) New York.

NOTICE.
TO COTTON & WOOLEN MANUFACTURERS.

THE subscriber will furnish to order his Improved Cotton Willow and Wool Picker. It is warranted to do more work and much better in quality, with less outlay of power than any other machine in use, also the repairs required are much less on the machine itself and the succeeding machinery, the cotton or wool being so perfectly opened there is much less strain upon the card, clothing, &c., &c. It has been introduced into more than 60 of the best Mills in New England and quite a number of them have stated to me that they save the expense of the machine in a few months in WASTE ALONE, when much stock is used. EDMUND BACON,
Superintendant of Portsmouth, N. H.
d12 6m* Steam Mills.

PATENT AGENCY AT WASHINGTON.
ZENAS C. ROBBINS,
Mechanical Engineer and Agent for procuring Patents.

WILL prepare the necessary Drawings and Papers for applicants for Patents, and transact all other business in the line of his profession at the Patent Office. He can be consulted on all questions relating to the Patent Laws and decisions in the United States or Europe. Persons at a distance desirous of having examinations made at the Patent Office, prior to making application for a patent, may forward (post paid, enclosing a fee of five dollars) a clear statement of their case, when immediate attention will be given to it, and all the information that could be obtained by a visit of the applicant in person, promptly communicated. All letters on business must be post paid, and contain a suitable fee, where a written opinion is required.

Office on F street opposite Patent Office.

He has the honor of referring, by permission, to Hon. Edmund Burke, Com. of Patents; Hon. H. L Ellsworth, late do; H. Knowles, Machinist, Patent Office; Judge Cranch, Washington, D. C.; Hon. R. Choate, Mass., U. S. Senate; Hon. W. Allen, Ohio, do; Hon. J. B. Bowlin, M. C. Missouri, Hon. Willis Hall, New York; Hon. Robert Smith, M. C. Illinois; Hon. S. Breese, U. S. Senate; Hon. J. H. Relfe, M. C. Missouri; Capt. H. M. Shreve, Missouri. j23

TO PATENTEES AND MANUFACTURERS.

THE undersigned, Forwarding and Commission Merchants, located at Harrisburg, the seat of Government of Pennsylvania, solicit consignments of Groceries, Merchandise, Domestic Manufactures, and useful Patent articles.

They are in the midst of Flouring Mills, Forges, Furnaces, Coal Mines, Canals, Rail Roads, and one of the best agricultural districts in the Union.

☞ One of the undersigned is a machinist of many years experience, and will give personal attention to patent machinery.

Letters post paid will receive immediate attention.
FUNK & MILLER
Harrisburg, Pa., Feb. 14 F20 13t*

Engraving on Wood

NEATLY AND PROMPTLY EXECUTED AT the Office of the Scientific American, 128 Fulton st, three doors from the Sun Office. Designs DRAWINGS of all kinds for PATENTS, &c., also made as above, at very low charges,

The Art of Painting.

(*Continued from No.* 32.)

CARRIAGE PAINTING.

In this, as in other painting on wood, the paint is mixed with oil without spirits, with litharge for a drier ; but for the succeeding coats the paint is ground in boiled oil and japan, in the proportion of three to one, and diluted with spirits of turpentine, so as to flow freely and lay smooth, without showing any imprints of the brush. In painting wagons or sleighs, the work must be thoroughly smoothed with glass-paper, after the first coat is dry. Three, or at most four coats of the required color is sufficient : or if the intended color is expensive, the two first coats may be of some cheap, but similar color. If the paint is fine, and well laid on, it will require no smoothing, but may be finished with one or two coats of copal varnish. If the work is such as to require stripeing or ornamenting, this is done prior to varnishing The colors for stripeing are prepared in a similar manner ; but colors for ornamenting may contain a larger proportion of japan, but less of spirits. Flat camel-hair brushes are sometimes used in laying on the last coat of paint, as they leave the paint more smooth. Long camel-hair pencils are used for striping, and the artist guides his hand and pencil by means of *guaging* with his fingers : that is, he places some one of his fingers in such a position, that it may bear on the edges of the pannels or frame work, sliding along as the hand moves with the pencil. In striping wheels, the finger is made to slide on the edge of the spokes, or of the rim, as the case may require. The only requisite rules to be observed in varnishing, are to spread the varnish uniformly, laying on as full and flowing a quantity as will remain on a vertcial surface without running, and finish by brushing it in the direction of the grain of the wood. In painting coach bodies, where a polished surface is required, six, eight or ten coats of paint are applied. The paint for the second, third, fourth and fifth coats, may consist principally of white lead, with a small quantity of black or other color, and a little litharge for drying; these are mixed with boiled oil, to the consistency of soft mortar, and then diluted with spirits sufficient for the convenience of grinding them ; and when ground the compound is again diluted with spirits till it will work freely with a brush. These several coats being successively allowed to dry, the surface is levelled and smoothed by a piece of pumice stone, being made level on the work side ; and the work is kept wet with water during the process. Then several more coats are applied, each in succession being smoothed with pumice stone, finely ground, mixed with water and applied with a piece of cotton or linen cloth. After this fitting up, the work may receive two coats of the required color, prepared the same as for wagons, and the last coat is smoothed with fine pumice. The work is then varnished, and the last is polished with rotten stone and sweet oil. The ornamenting, if any, is done after the first coat of varnish is put on but prior to the second.

SIGN PAINTING.

When a sign is to be lettered with gold or gilt lelters, the face of the board, after being painted and smoothed, is to be varnished with copal varnish, before the letters are formed.—The letters are drawn and painted with a composition called by painters, " Gold sizing," and which is prepared as follows :—Grind equal quantities of white lead and litharge, in a mixture of equal quantities of old fat linseed oil, copal varnish and spirits of turpentine.—To this composition may be added a very minute quantity of chrome yellow, sufficient to bring the sizing near to a gold color. The oil for this purpose, may be generally procured from the top of oil paint that has been long standing in an open vessel. With this sizing the letters, ruling and ornaments are formed, the sizing being applied with brushes and pencils, the same as common paint. When this sizing becomes hard, but yet not so perfectly dry but that a slight stickiness remains, the sized parts are covered with gold leaf, which is gently pressed down with a puff, or ball of raw cotton. The leaves of gold for this purpose, may be first laid on a piece of soft buff leather or sheepskin, and may be cut into convenient sized pieces, with a smooth edged knife. These pieces may then be conveyed to the work, and each piece placed where wanted, by means of a little block of wood, covered with fine flannel The most convenient shape for this block is that of a segment, about three inches long and three-fourths of an inch thick ; the strip of flannel being drawn over the straight side and the two ends thereof, tacked upon the curved part. The flannel, being occasionally rubbed on the hand, or on another piece of cloth, instantly acquires an elective attractive property, sufficient to raise several pieces of the leaf in succession, and carry them to the sized work :—the block being slightly pressed on the leaf, the latter will adhere to the flannel, and may be carried to and placed on, such part of the sizing, as its size and form will best fit. In this manner, the sized letters, or figures, are completely covered with the gold leaf, which will adhere to the sizing : the whole may then be rubbed over with cotton, and all the superfluous leaf will be brushed off, leaving the letters or figures entire. No varnish must be put on over the gold leaf, as it would injure the appearance of it, without contributing to its durability ; but gilt letters, or ornaments on carriages, sleighs or chairs, on which they are exposed to wear, must necessarily be varnished in order to preserve them. Silver or brass leaf may be managed in the same manner, but neither of them will retain its lustre, unless it is protected by a coat of varnish. In the formation of letters, in sign-painting, very little instruction can be given. The shape and proportion of the letter depends on the taste and skill of the artist : but in general, the perpendicular section of capitals are made to swell at the top and bottom, more than those in types, and the horizontal lines and crosses are heavier. In calculating the size of letters —Roman or antique capitals,—which may be placed in a line, divide the length of the board by the number of letters in the line, and take three-fourths of the quotient for the height, or vertical length of the letters. When a V or W succeeds an A or L, the two letters may stand closer than in type work ; and on the other hand, when an I succeeds H, or is succeeded by L, the space should be greater than in types. By the observance of these and similar rules, the proportion and balance of the line of letters may be made far superior to those of printed words.

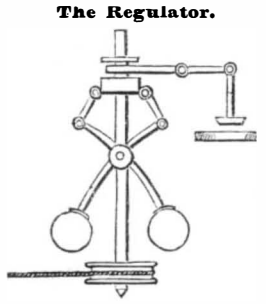
(*To be continued.*)

To Wash Iron with Tin.

Small pieces of iron may be tinned, after being filed bright, by washing them with a saturated solution of muriate of ammonia in water and by dipping them, while moist, in a vessel of melted tin. If the iron is of such form as cannot be conveniently filed, it may be immersed in nitric acid, diluted with as much water as acid ; when the acid begins to act sensibly on every part, it may be washed with water, and then with the muriate of ammonia and if a little fine rosin be sprinkled on it previously to dipping it in the tin, it may be an advantage. The iron must remain in the tin till it becomes nearly as hot as the tin, otherwise it will be coated too thick. Muriatic acid may sometimes be used, instead of muriate of ammonia, and if the iron is not filed, it will answer a better purpose. The inside of cast iron vessels may be tinned as follows :—Cleanse the iron by scouring or rubbing it with a sharp grained stone, keeping the iron wet with diluted nitric acid. As the most prominent parts of the iron will be first brightened by the stone, the acid will also commence its action on the same parts, which will very much facilitate the work, while the hollows, and deeper parts of the surface, will remain untouched till the iron is nearly smooth.—When this is accomplished, wash the iron with water, and then with clear muriatic acid: turn the vessel over to drain off the superfluous acid : then set it upright and fill it with melted tin, which must be cautiously poured, directly on the bottom of the vessel first, and the stream increased till the vessel is full; then pour out the tin suddenly, and invert the vessel till it is cold. Sheets of iron are tinned in the manufactories of tin plate, by immersing the sheets, endwise, in a pot of melted tin, the top of which is covered with about two inches depth of tallow. This tallow answers a better purpose, after it has become brown by use, than it does at first. The only preparation of the iron sheets is, to scour them perfectly clean and bright.

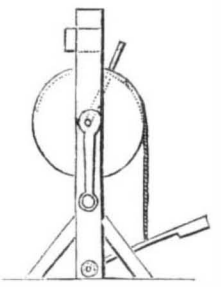
MECHANICAL MOVEMENTS.

The Regulator.



This cut illustrates the self-regulating principle whereby water wheels and steam engines are made to regulate their own speed, and represents a revolving perpendicular shaft, carrying two balls which vibrate on levers, supported on a common centre above; these balls being acted on by the centrifugal force, fly out according to the velocity of the shaft. On the upper part of the shaft is placed a loose collar, connected to the opposite ends of the levers which carry the two balls, which by their position either elevate or depress the loose collar, and regulate the valve on the right, with which it is connected—this arrangement is generally used to regulate the supply of steam to engines. By a different arrangement, this regulator (or governor as it is more generally termed) is made to raise or depress the gate of a watermill, or govern the positions of the sails of a wind mill; and though many modifications have been introduced, they are all based on the same principle, and depending of the centrifugal force.

Circular and Rectilinear Motion.



In this cut is represented some of the modes of converting the rectilinear motion to the curvilinear or circular ; and vise versa. In the cut is seen a drum or pulley round which a cord is passed, and one end thereof is attached to a lever or treadle below. An arm or lever is also attached to the periphery of the drum, and on the end of the axle is a crank.—Now by depressing the treadle (which is usually done with the foot) a vertical rectilinear motion is produced in the vertical part of the cord, while a circular motion is produced in the drum and the crank. Put the drum in motion by applying the hand to the crank or to the arm, and the same result is produced.—there are various other modes of converting one kind of motion to another, such as the rack and pinion, ratch and ratchet, crank and pitman, &c., which we shall notice in future numbers.

On Sowing Flower Seeds.

As this is the season for sowing flowers, we would again remind our readers, the *ladies* especially, that they must expect small and delicate kinds of flower seeds to fail, unless they take more pains than usual in sowing them. In this climate where the hot sun soon dries the earth to a greater depth than it will do to cover the seeds, of course some kind of shade or covering must be resorted to, or failure is certain. If we observe the manner in which Nature provides for the vegetation of fine seeds, we find that the seeds are scattered upon the fine vegetable mould of the fields or woods, amongst half decomposed leaves or moss, and where trees or fences afford shade, and shelter from winds. The covering of earth must be very slight, and while air must not be excluded, constant moisture must be secured. How then can we best imitate Nature in securing the growth of such seeds? We answer, first, let the soil be rich and fine, of a nature that will not bake so as to become hard when dry; second, cover the seeds lightly with the earth ; third, if dry weather, keep the ground moist by frequent watering; and fourth, ***shade the delicate kinds from the sun***, and shelter them from winds; this can be done in various ways, as by placing a shingle or small piece of thin board on the south side, or over the spot where the seeds are sown; or an inverted flower pot, with a small stone under the edge; a small box, or frame with milinet or thin cloth over the top, &c.; or even a small handful of fine brush from the woods, laid over the seeds, and fastened from blowing away, will be of much benefit. Some kinds of seeds, especially those of large size, as the Balsamine Morning Glory, Marigold, Sweet Pea, &c., will vegetate freely in any common soil, without any particular care. The seeds of the *Cypress vine* will not often come up without being first *scalded*, with boiling hot water.—The *Globe Amaranthus*, also, requires scalding, but the water should not be quite *boiling*. —*O. Cult*

Glass Roofed Streets.

A curious street covering is in process of construction at Paris—one of those galleries couvertes, or streets protected from the weather by glass, and the plan is one of magnificence hitherto undreamed of. It is to stretch the immense length from the *Boulevard St. Denis* to the *Place de Chatelet*, and the highest architectural talent of France has been employed in the design. It will soon be of no consequence, in Paris whether it rains or shines—the caprices of the sky being entirely cut off from the public promenades, by a sub-sky of glass, and the walking and shopping dry in the most wet and foggy, snowy and drizzly seasons. As carriages cannot enter these covered streets, of course the rich are there obliged to be on a footing with the poor, and the splendor is eminently republican.

THE NEW YORK
SCIENTIFIC AMERICAN:

Published Weekly at 128 *Fulton Street.*, (*Sun Building,*) *New York, and No.* 13 *Court Street, Boston ; the principal office being at New York.*

BY MUNN & COMPANY.

The SCIENTIFIC AMERICAN is the Advocate of Industry and Journal of Mechanica. and other Improvements: as such its contents are probably more varied and interesting, than those of any other weekly newspaper in the United States, and certainly more useful. It contains as much interesting Intelligence as six ordinary daily papers, while for *real benefit*, it is unequalled by any thing yet published Each number regularly contains from THREE to SIX ORIGINAL ENGRAVINGS, illustrated by NEW INVENTIONS, American and Foreign,—SCIENTIFIC PRINCIPLES and CURIOSITIES,—Notices of the progress of Mechanical and other Scientific Improvements Scientific Essays on the principles of the Sciences of MECHANICS, CHEMISTRY and ARCHITECTURE,—Catalogues of American Patents,—INSTRUCTION in various ARTS and TRADES, *with engravings*,—Curious Philosophical Experiments,—the latest RAIL ROAD INTELLIGENCE in EUROPE and AMERICA,—Valuable information on the Art of GARDENING, &c. &c.

This paper is especially entitled to the patronage of MECHANICS and MANUFACTURERS, being devoted to the interests of those classes. It is particularly useful to FARMERS, as it will not only apprise them of IMPROVEMENTS in AGRICULTURAL IMPLEMENTS, but INSTRUCT them in various MECHANICAL TRADES, and guard against impositions. As a FAMILY NEWSPAPER, it will convey more USEFUL Intelligence to children and young people, than five times its cost in school instruction.

TERMS.—The Scientific American is sent to subscribers in the country at the rate of $2 a year, ONE DOLLAR IN ADVANCE, the remainder in 6 months. Persons desiring to subscribe, have only to enclose the amount in a letter, directed to

MUNN & COMPANY,

Publishers of the Scientific American, New York.