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Scientific American,

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At a large meeting of thestockholders of this road, held at Vandalia, Illinois, on the 29th ult., the Company was organized by the election of seventeen Directors, who elected Wm. S. Waite, Pres't; H. P. H. Brownwell, Secy.; Ebenezer Clapp, Treasurer; Wm. H. Morrison, Engineer. Subscriptions to the amount of $160,250 were returned to commence with, and an immediate survey and location of the road from the Illinois line, near Terre Haute, to the Mississippi River, opposite the City of St. Louis, was ordered.

Vicksburg

A convention of citizens of Georgia, Alabama and Mississippi, and others who may be interested in the great chain of railroad from Portland, Me., to Vicksburg, Miss. held at Livingston, Ala., on the 1st of October next, and books for subscription to the stock of the road are to be opened on the 7th of October, at various points on the proposed route.

Mr. Edwards, the Engineer of the Troy and Boston Railroad, and Mr. Felton, the Superintendent of the Fitchburg Road, have been sent to Europe by the Troy and Boston Road to obtain information in regard to the new invention of the powder drill, by which it is stated feet of solid rock may be got through per day.

[We imagine that the above-named individuals will return cleverly hoaxed. The English *occasionally* announce new discoveries something after the "*grave*" style which the Glasgow Mechanic charges the Yankees with.

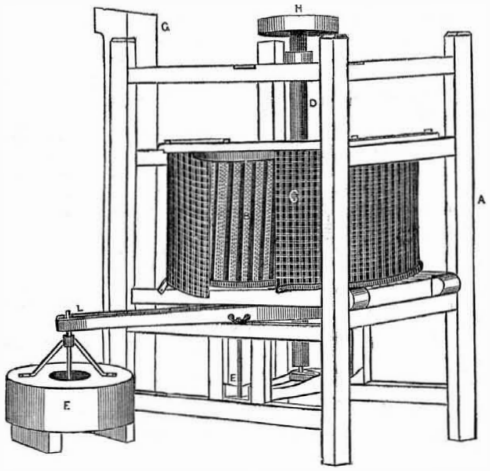
The Selma (Ala. er has accounts from the interior highly favorable to the Alabama and Tennessee Railroad, and concludes that the completion of the road is now certain. Great enthusiasm prevails in the country where the various barbecues are being held, and in Benton County $70,000 worth of stock has been subscribed, with a prospect of over $100,000 being obtained in the County.

The Newburyport Herald says the Essex Railroad, excepting three or four miles in Salem and Danvers, will probably go out of use and the structure be taken up and sold to pay the debts of the concern. The Road has been superseded by the Salem, Lawrence and Lowell ailroad.

The New Albany and Salem Railroad is progressing rapidly toward its completion—the superstructure is laid down in readiness for the rails.

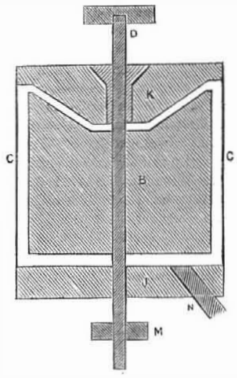
The Boundaries of Utah are thus defined by the bill which has just passed the Senate, erecting it into a territory:—
by the State of alifornia
Territory of Oregon, on the east by the summit of the Rocky Mountains, and on the south by the thirty-seventh parellel of north latitude. Bounded on the west by the State of California and on the north by the

IMPROVED CLEANING MACHINE.---Fig. 1.



This machine is the invention of F. Harris & Sons, of Brooklyn, N. Y., and was originally invented to hull and pearl rice and coffee, but recently it has been applied for smutting and polishing wheat and other grain. Figure is a perspective view, and figure 2 is a vertical section showing the shape of the stone. The same letters of reference indicate like parts. is the frame; B is a running stone; C is a wire case around the stone. A portion of this case is removed to show the stone; D is the spindle; E is a screw bolt, with thumb nut on it for raising or lowering the bridge tree of the running stone; F is a blower or revolving fan, to drive away the lighter particles; G is the fan spout; H is the driving

Fig.



pully. In fig. is a top bed stone, and J is a lower one; N is a spout which carries the grain into the fan, and M is a pully from which a belt passes around a small pully on the spindle of the blower to turn it in its bearing brace, L, and drive the fan. The stones can be set at the rigbt distance apart to pearl barley and wheat in small quantities. The stones consist of three concave and plano-convex stones, of a very porous nature, dressed similar to a mill stone, only closer, forming a thorough beating and scouring surface, with a heavy square wire cloth case around them, (the running or centre stone making 400 revolutions per minute,) all set into a frame, as above represented, with a new-principled fan or blower, rendering powerful current air through a vertical or perpendicular spout, so adjusted as to blow out all light ingredients, without wasting a particle of grain.

The grain passes in the machine, as seen in the section above, at the centre of the top bed-stone around the spindle, thence by the centrifugal force is thrown out to the periphery of the centre, or running stone, passes by its own gravity between it, and the case and so out by the spout at the centre of the lower bed-stone —a distance (on the 30 inch machines) of over eight feet. They will clean from 20 to 150 bushels per hour, according to size, without breaking or wasting the grain, and fron 70 to 80,000 bushels previous to being dressed or picked, which makes them do the work as well as when first put up. They can also be set (as necessity requires) to suit all kinds of grain, and are well adapted to custom mills. They are also very superior for cleaning Buckwheat.

The proprietors being engaged in the milling business, and being well aware of the importance of a good one, are willing always (if requested) to have their Machine thoroughly tried and tested with any or all other machines and will warrant them to last twenty years.

We would state that we have seen numerous certificates from eminent Millers in various p rts of our country, who universally give it a their opinion that this is the best grain cleaner they have ever used. We can also speak personally about it, for we have seen this machine in operation at the great flouring establishment of Messrs. Hecker Brothers, of Cherry street, N. Y., and frem personal observation we can speak confidently of its superior merits. In a great number of places, it has superseded, satisfactorily, other machines which had been employed for the same purpose. There are eight different sizes of these machines, varying in price from $75 to $250. and are made at the Messrs. Harris's Factory, near the Old Bridge, at the foot of Butler street, Brooklyn, L. I., to which communications should be addressed, post-paid.

The curious and exquisitely finished ivories, sent home by Mr. Layard from Ninevah, when they reached England seemed about to crumble into dust. The keen eye of modern science i stantly d tected the cause of the decay. 'Boil them,' it said, "' preparation of gelatine; it is that con tituent part of the ivory which has perished.' It was done; and the ivories are as hard and firm as when first carved; they may last another thousand years.

Useful Receipts.

This much-admired and harmless cosmetic may be prepared thus:—Procure a quarter of a pound of the best Jordan almonds, which blanch by putting them into boiling water for three minntes, and afterwards into cold water for the same time, the skin or pellicle will then slip off by pressure between the thumb and finger. The almonds are now to be crushed in a morter, and rubbed with a quarter of an ounce of the best white or curd soap. Continue the rubbing for a quarter of an hour, during which period gradually add one quart of rose water. When the whole resembles milk, strain through fine muslin. It is then fit for use, and may be applied to the skin with the corner of a soft towel, after washing. Those who are without a morter must grate the almonds on a bread grater, and rub the ingredients together with clean hands. Fresh rain-water, or plain distilled water, will answer in lieu of rose water, where economy is studied. This is the best known remedy for tan, freckles, &c., but we will not go so far with the advertisers as to say it is an absolute cure.

This preparation is universally applied for drying the skin after washing, especially at the joints, which if left even damp at some seasons, produces chaps and chafing, often followed, if neglected, by inflamation. Violet powder is best prepared by mixing three parts of the best wheat starch with one of finely ground orris root; the latter adds to the drying power of the starch, and imparts at the same time an agreeable odour like that of the violet, hence the name of the mixture. It is also prepared by perfuming starch with essential oils, without the additon of orris root; but though the scent of the powder is stronger and to some more tempting to use, it is far less beneficial in its application. The scent, acting as a stimulant to the skin, increases rather than abates any tendency to redness. Unperfumed powder is therefore best to use, dusted over the part with a little swan's down, commonly alled "a puff."

Take one part of rye meal and two parts of Indi meal, mix it well, add a little salt, and throughly wet the whole with boiling milk. Before is to be stir it frequently until cold; and add cold milk, till it is thin enough to pour into pans. Bake it in a brick oven five or six hours.

Take six quarts of water, one teacup full of salt, one pint of lard or ether clean grease, one pint of yeast, the whole to be quite warm—then stir in meal enough to make a stiff batter, let it stand till it rises, then mix up and put in pans to bake. The quantities can of course be reduced proportionately as desired.

Fig

oz. of oz. of butter; 2 oz. of sugar; milk; cinnamon, and paste. Cut the figs into small slices with a pair of scissors; add as much milk as will cover them, the sugar and cinnamon; stew them in an earthenware jar, covered, in the oven. When they boil, the milk will break, and the figs are sufficiently tewed. Take them out f the oven, and st the butter. When cool, line a fl t d h with past, and spread a thick layer of upon it, heaping them up in the centre of the disb, and pourmg in as much of the syrup as the figs will absorb; then cover with a thin paste, and b ke. This pie is better cold than hot.

Considerable quartz have been made at Lake Superior.

Miscellaneous.

The following from it informs of manufacture thing can be done linen old

Sixty years carriag after one York and coach making, and produced for the or parts. Soon after into had took

Being on foot for and the as circumstances ook it to York, d a his o to a of vi lag ; E having ever any n of nd g n ng has grown for and ere have gone Engl family of any of to

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The a rollers, The f m o sugar- cane was not engine, as the actual power A of of of of cane e o in new so the the knobs matter new of foreign a good r of n in a order.—

g Shakespear's Dramatic Works, No. 21, Phillips, Sampson & Co., publishers, o ton for sale by Dewitt & Davenport. It contains the play King Henry V., embellished by a portrait of Princess Katharine of France.

We are indebted to Messrs. Dewitt Davenport for the September No. of Graham's popular Magazine. It is well illustrated, well and well printed. In short is not easy to excel it in interest.

The same publishers have also sent us the September number of the Ladies National Magazine. As usual its literary character is superb ; the engravings are also commendable.

"The Arts' Echo," is the title new monthly publication, just commenced, under the charge of Messrs. Kingsley & Longbottom. It is devoted principally to the discussion of American and Foreign Patent Laws, and a review of the Arts and Sciences. Terms $1 per annum.

Glasgow, Aug.

Loss Orion—Iron Vessels—Life Preservers—Railway Life Insurance—of General Taylor—Colonial Railroads, &c.

The cause of the loss of the Orion, off Port-Patrick, is to be inquired into before the principal criminal court of this country. The responsibility is understood to rest with the second mate, who, anxious to avoid the tidal current, and to shorten his voyage was running too close in-shore. The Orion was doubtless steaming at the rate of to miles per hour, and singularly enough the rock on which she struck is not laid down in any chart.

The experiments at Woolwich with shot on iron vessels being against their use for warlike purposes, and a suspicion being entertained that no wooden vessel could have been torn so much open as the Orion, are all points against the use of iron for shipbuilding purposes.

Connected with this matter, it is astonishing that the use of cork fibre mattresses and pillows are not more common on steamers.—They cost little more than those in common use. They have the merit of being anti-infectious—will not transmit disease—and will not harbor vermin. All the loss of life in your inland waters might be prevented by their use. Here it is different still even on our coasts a cork cushion would float half a dozen men; and a pillow would give the heaviest man a chance for life. Their employment on the Orion would have saved every life lost when that vessel went down. Their cost, as has been stated, is trifling, but their value in this case would have been great. One gentleman's life was insured for he was drowned in noble efforts to save others. Other lives were insured. In this country it is stated that the insurance offices may prosecute the owners for damages. That is the lowest view of the value of life; by it the economy to some parties of providing these means of safety to travellers and tourists, is apparent.

Talking of insurance, many travellers now insure their lives against accidents in railway trains. The scale is, first class carriage premium 3d—for one journey any length. 2nd. class, premium 2d. 3rd class, and premium 1d. The first class proceeds, therefore, on the inference that a profit will accrue to the insurers at a proportion of accidents to travellers of less than in eighty thousand! The company makes some allowance, such as medical attendance, interim support, and a sum of money proportioned to the intensity of the injury in any case less than death.

Business here is dull, notwithstanding the excitement apparent in the cotton, linen and woolen trades. No doubt exists that the home trade is depressed.

The failure of the Commercial Exchange Company, which has absorbed all its capital, and will be deficient at least is the last of our great losses. The shares of the company were at one period within a few years at a high premium. The deficiency will all be paid by the shareholders.

The death of your President, General Taylor, immediately after that of Sir Robert Peel, has caused much regret here.

You may safely reckon that Sir Robert Peel's death will cause a great change in political relations. The two divisions of the Conservative party will coalesce; and at the next general election the impression is that they will have a majority and impose a duty of at least s. per quarter on wheat; probably 3s. or 3s. per barrel on flour. Indeed, I hear that the present Administration have in view that measure. Colonial produce will be excepted. It may be added that the speech of your Ambassador, Abbot Lawrence, at the great Exeter meeting, last week, strengthens this party, as it presents the hope that your people will trade with us on equal terms.

You may be no worse of knowing, moreover, that great efforts are now made in this country to increase the growth of cotton in Africa and India; no doubt of their success is entertained. India will be intersected by railways, and the obstructions to the navigation of its rivers will be removed.

Notwithstanding the doubts expressed in colonial journals, you need not doubt that the guarantee for the Halifax and Quebec railway will be in operation next year, and will probably be followed by another, not to Montreal, but to strike the range of the passes further west. The object is to settle that section of country in such a manner as to bring its products readily to markets.

Twenty men were killed in a coal pit at Airdrie, ten miles east of this, on Tuesday morning. The cause was carelessness in the use of lamps. The men went down before the fireman had explored the pit with a safety lamp. The party are all dead, and the question whether they were all or one, two or more culpable, will never be answered.

The death of the Duke of Cambridge makes no political change. He was merely a "good hearted" benevolent man, who knew that he had no higher genius than that of doing good in promoting public societies and institutions, and he labored well amongst them—giving liberally himself and inducing others to follow his example. X X.

For the Scientific American.

In a late number of your journal there was a call for information as to the comparative expense between Water and Steam power.—This is a very vague and open question, and can only be answered in the same way—circumstances altering cases.

Steam power in cost is nearly uniform, and except as to location, a trifle in the cost of fuel, is much the same every where; but that of water has no fixed value, its cost depends on location and other local advantages.

We will present comparatively an extreme case; from which, however, others may be estimated:—A water power, under our intimate knowledge, within five miles of the tide waters of the Hudson River, embracing forty acres of land, an old grist-mill in running order, dwelling and barn, was purchased for $2,350, for the object of cotton manufacture, and on which such was erected, and is now in operation, and from its favorable circumstances is enabled to compete with the market, when some others less favored cannot. This site has a natural rock dam, giving a perpendicular fall of twenty-two feet, on a large stream, and is estimated to render constantly horse power, in the driest time that water runs. Now we will charge to this water power and to the land for the necessary accommodations, which would be equally wanted if steam power was there to be used.

	cost per annum.
for horse power at per cent, for water wheel, $250 for bulk-head and race for location	
Incidental repairs, per cent, . .	
To repair wheel and race every two years, per cent. . . .	
Tallow, oil or grease, . . .	
Annual expense of water power,	
Estimated for horse, Steam Power for engine, boiler, &c, annual expense at per cent. . .	
Incidental repairs, per cent. . .	
To be renewed every years, p. c.	1,750
Two firemen, called engineers, . .	
Four tons coal per day, per ton,	
Two gals. oil per week at	
Total, (risks of explosion and insurance not taken into account)	
Deduct cost water power, . . .	

In favor of water power for 1 year, $10,170

By this estimate on this location, it will be seen that when water power clears per annum, steam power loses $170, and that this water is per annum cheaper than steam in the same place.

Now we will look at an opposite extreme; we will take the city of New York, where we are aware mechanical enterprises are carried on that must be done there and no where else. What is the cheapest power for that place? Why (with due deference to Mr. Paine) we say steam, let it cost what it does. Suppose it had a water power equal to half the wants of the city, and not being enough for all, there is reason to believe it would rise in value to the level of steam, and be no cheaper. Whereas if there was more than the city wanted it would fall below.

We are all aware that there are enterprises carried on throughout the country in locations where they must bring power to them; while there are others, and that too of great magnitude, that can be located on our abundant and cheap water power more remote.

It is possible that this crude exhibit will enable some of your subscribers to perceive that the question of "Water versus Steam Power," in point of economy, depends on so many circumstances, that we may consider them constantly at variance, and that each location is to be considered by itself. B. A.

While Edward III., in repeated his invasion of Scotland, and "ravaged the country with great fury, burning Aberdeen and many similar towns," as the historian tells us; and while he was engaged in raising an army to invade France in exacting from the impoverished English people all their wealth to waste in war; and when he was wasting France with war, borrowing money from all foreign princes who would lend him, pawning the English crown which made him a king, that he might still further extend destruction over fertile France; when, in the battles which our historians and poets have so minutely recorded, and loftily sung out, swords clashed with swords, and battle-axes rung upon coats of mail of the warrior heroes of France, there was a servant of mankind making a noise in Bristol, which was of infinitely greater service to England than the entire conquest of Europe would have been. This was Thomas Blanket. The noise he made was not that of the clashing sword, but of the clashing shuttle. His purpose was not to destroy what his country already possessed, but to give his country what it did not yet possess—blankets, a covering of comfort to go to bed with, to sleep under, that it might be refreshed in sound sleep, and rise in health and strength to its daily work of making mankind happier by being happier itself. Thomas Blanket was soon imitated by his neighbors, who, like him, set up looms in their own houses, and made woolen cloth like that what he made. The cloth was named by his name: and to this day, through all time, in this c untry will the name be known, though nothing else is known of this weaver than that he was the first to introduce the blanket manufacture into England.

No cloth of any kind had been woven in England before the reign of Edward III. We read that in John Kemp, from Flanders, introduced the weaving of cloth into England; that the King invited fullers, dyers, and so forth, to come from Flanders and settle here. This policy on the part of Edward was discreet; and viewed in connection with some other of his actions, prove him to have had some perception of the real sources of national well-being. But he no sooner allowed the cloth manufacture to be implanted in England than he almost rooted it up again by restrictive enactments and oppressive taxes, to carry on his wars. The manufacture of the twisted double thread of woolen, called worsted, was introduced into England about this time, or soon after.

The village of Worsted, about fifteen miles from Norwich, was the first place where this thread was made, and it took the name of the village. There is no spinning nor woolen manufactures at Worsted now, but from the tombs in the graveyard, and the benefactions left to the parish, which are recorded in the church, we have proofs that the manufacturers of Worsted were numerous, opulent, and lived there in successive generations, during several centuries.

It may also be noticed here, that after inquiring into the history of the parish and manufacturers of Worsted, we visited Linsey, which gave the name to the fabric known as linsey woolsey, and the Kersey and the Mere close to in Suffolk, where the workshops were situated, in which the cloth called kerseymere was first made.

The cloth so called now differs from the original, and there is but little trade of any kind in Kersey now. But, as at Worsted, the graveyard and the church have many records of manufacturers long deceased. Their names though now Anglicised, are common in Suffolk, are all of Flemish origin.

[The above is from Somerville's History of the Free Trade Progress, work just issued from the English press. We cannot but notice in every case a decided lack of correct knowledge about the history of the manufacturing arts in England. The author of the above certainly never read some of the old repositories, or he would have known that long before Edward III.'s day, the Flemings had introduced the art of weaving blankets into Britain. Why, Berwick-upon-Tweed was quite a manufacturing place in the reign of Alexander III. It was a jealousy of its manufacturing importance which led Edward III. to besiege, and by treachery (foreswearing himself) take it. The Flemings were the principal citizens of it, and they made it like Frankfort, in Germany, Free City. The blankets made at the north always were superior to those of the south of Britain—Aberdeen maintaining high character for the best.

In order to predict, says Mr. Hind, in a letter to the London Times, the time of re-appearance of a comet moving in an eliptic orbit, with allowance for the attractions of the planets, it is necessary that we should know the precise time of revolution corresponding to some past epoch (as, for instance, the previous perihelion passage), or the period the comet would require to perform its circuit round the sun, if all planetary disturbances were to cease for that moment. The comet in question was observed in and and the interval between the perihelion passages in those years amounted to days or 291¾ years; but this tells nothing with respect to the length of period corresponding to the eclipse described at the instant of perihelion, either in 1264 1556, since it includes the united effects of planetary perturbations between those years. Therefore, before we can ascertain the epoch of the next return, we must calculate the amount of acceleration or retardation due to the disturbances between and which being applied to the above period, gives us the exact time of revolution of the comet at the moment of perihelion passage in the former year, and hence we ascertain the period in Having found this, we can calculate how much it would be increased or diminished by planetary attraction up to the present time, and thus determine the date of the next arrival at perihelion. With these elements, taking into account the attraction of Jupiter, Saturn, Uranus, and Neptune between 1264 and the present time, and of Venus and the Earth in it is found that the length of the comet's revolution at the time of perihelion passage in was days, or years, and in days, or years; that the effects of perturbation will diminish this period days, and therefore the present revolution will occupy days, or years, so that the comet will return again to its perihelion on the 2d of August, and will then be moving in an ellipses of days' period. With Halley's elements, the true time of revolution of the comet in was days, and the perturbations should diminish the ensuing period about days—hence we find the next perihelion passage will on August the 12,

We learn from Newcastle, Delaware, that a new steamboat, named after the town, has just been built there, by Thomas Robinson, on the hooped plan, invented by his father. She is one hundred and twenty feet in length, is built for a company, and intended for California, whither she will be carried on board ship, in pieces like her engine, which is about being completed at the Newcastle Manufacturing Company. The Newcastle is, we understand, entirely secured, according to the plan of construction, by iron hoops, no timbers bein used in her.

New Inventions.

A gentleman connected with a scientific institution, in Cincinnati, describes to us a balloon railway—its object being to make the balloon practicable by giving it direction, power of starting, stopping, raising and lighting at the will of those attached to the car. He proposes to have a guiding rail suspended by strong posts at any reasonable distance from the ground. In order to work a balloon on this railway, he proposes to render it sufficiently buoyant, to sustain freight and passengers, and have it secured by a cord 100 or more feet long, connected to the rail by means of a sliding eye or cap made in two sections, that by means of a smaller cord of the same length the eye or cap can be shut tight on the rail to stop or hold the balloon, or allow it to float along at the pleasure of the balloonеer. While thus secured it can, by means of the rope, be drawn to the earth at any time, for letting out and taking in passengers. This proposition to drive balloon is the only one which has any sort of practicability about it, but we have no confidence that it will ever be adopted, for the reason that during the rapid progress of the balloon thus attached, it would exert a wonderful binding force between the sliding eye and the rail—tending to retard its rapid flight.

All attempts to apply balloons to the purposes of conveyance, we must regard as wild chimeras, tending only to disappoint the projectors. They are much older than the steam engine, and hitherto all experiments have proved abortive, and are only calculated to stimulate good mechanics and truly scientific men to look upon them as phantoms.

We would add that the same plan as the above described, was shown to us and several other editors in this city, something like a year since. We well remember, that one our cotemporary editors stimulated the inventor with the belief that it would revolutionize the travel of the world. His ardor, however, was a little dampened after we had pointed out some of the insurmountable scientific objections, and we have not heard from him since.

Mr. William Merrill, of Northampton, Portage Co., Ohio, has made some excellent improvements on machinery for making laths, for which he has taken measures to secure a patent. The machine makes the laths out of the slabs of legs. It has a circular saw which slits the lath out of a slab as it is fed in, and it has a revolving knife on the saw spindle, which turns the edge of the lath after the saw has cut it. The slab is carried forward the whole length, allowing the saw to cut lath the whole length, when a projection on the saw frame takes the slab, turns it over on revolving rollers, which bring it back to the person to feed it in, who stands at the end of the frame, and merely feeds in the slabs to the slitting

This machine has a register to it, which rings a bell when a hundred laths are finished, to tell the operator that a bunch is ready for binding, so that no counting is required for that purpose.

"Mr. Solomon Sutter, a highly respectable mechanic of Alleghany City, has, we understand, discovered a method of decomposing water by mechanical means, and without the use of a galvanic battery, at a merely nominal expense. He made this discovery by mere accident, in the pursuit of his business as blacksmith, and was first made aware of the fact by the hydrogen evolved from the water exploding, though fortunately without doing much damage."

[There is a mistake in the above, which the Pittsburgh Gazette terms "an important discovery." Hydrogen gas does not explode; it must be mixed with oxygen before it becomes explosive. We must state pointedly that the decomposition of water by hot iron, &c., and by electro magnets, is not new. The decomposition of water cheaply is the grand object.

This is an improvement in the construction of augur handles, invented by Mr. John E. Larkin, of Ballston Spa, Saratoga Co., N. Y., who has taken measures to secure a patent for the same.

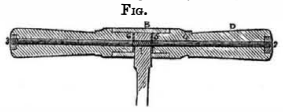
Figure 1 represents the Augur in the handle. Figure 2 is a longitudinal section, through the handle, showing the socket of the augur. The same letters of reference indicate like parts.

The handle is made two parts, the one t fit into the other. One has hollow metal socket, the other has a bolt which passes through a hole bored in the centre of the one

Fig. 1.

carrying the socket of the augur, coupling together by screw and fixed nuts, to hold the shank of the augur snugly, and to remove it at any moment when desired. A is one half of the handle. It is bored through its entire length, and it has a nut, 3, securely fixed inside on its outward end. B is a metal socket which is securely fitted to the part A of the handle. There is a hole in the said socket to receive the upper end of the shank of the augur, C. D is the other part of the handle. It carries the bolt or pin, 4. This bolt has a screw, 1, cut on its middle part, and one on each of its ends. The screw on the ends of the bolts fit into reverse-thread fixed nuts, 3, 2, and there is a thread cut in the opening, G, 5, made through the shank of the augur. By taking the one

Fig.



half, D, of the handle with the screw bolt, 4, in it, and passing the said bolt through the opening, G, 5, in the augur shank, whenever the screw of the bolt comes to the nut 3, it is turned to the right, and then the bolt is screwed into the said nut, and also the screw, into the thread in the shank of the augur, (forming nut;) and thus the two sections of the handle are coupled together, and the augur firmly secured in its socket. This handle is adapted for augurs of various sizes, if the openings in their shanks are made with openings and threads to couple with the screw-bolt, 4. The augur can always be screwed up to any degree of tightness, and no motion of the augur in operation has any tendency to loosen the screw coupling.

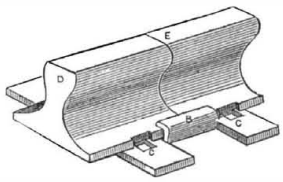
Letters upon business relating to this improvement will receive attention, if addressed (post-paid) to Mr. Larkin, at Ballston.

This artificial stone is now beginning to be extensively used in England, and was first introduced there about 60 years ago, by a lady named Miss Goode. She established a small manufactory at Lambeth, which attained a considerable celebrity. The greater part of the St. Pancras Church has all its ornamental details made of artificial stone, and cost $27,000. The Statue of Britannia, which crowns the Nelson Monument at Yarmouth, is made of artificial stone, and it is so durable that the natural stone of the monument exhibits signs of decay, while the terra cotta is as firm as the day on which it was set up.

The principal ingredient in English terra cotta, is potter's white clay, one-half; pulverised stone ware, one-fifth; ditto of glass, two-fifths, and powdered white sand and flint, two-fifths. These ingredients are well mixed together, in water, moulded, and baked. Some beautiful artificial stone is made in New York under the name of Scagliola. It is not the same as the above described terra cotta, but in appearance nothing can be more beautiful. It resembles glass on the outside, in respect to polish, with all the variegated beauty of many colored marble.

This invention is the property of Mr. William Van Anden, the inventor, and Mr. William Bushnell, of Poughkeepsie, N. Y. The chair is made of wrought iron, by a machine secured by patent to Mr. Van Anden in the United States, and for which measures have been taken to secure a patent in England.

We have seen a model of the machine, and can confidently speak of the ingenuity displayed in its construction, and its value as a useful invention. Figure is a perspective view of

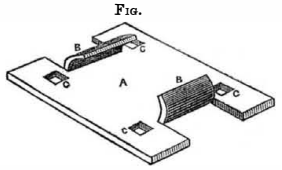


the rail secured in the chair, and figure 2 is a perspective view of the chair itself. D E are the sections of two rails placed together and secured at the joint on the chair by the jaws,

The chair is bolted down by the spikes, C C. In fig. 2 the chair is represented as made of a single block or plate, A, of wrought iron.

The machine takes the bar of iron as it comes from the rolls—cuts it—forms the jaws, punches the holes and completes the chair at a single blow. The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws, as represented in fig. 1. The jaws are then ham-

Fig.



mered down snug upon the bed plate of the rails, thus securing them in the most perfect manner, The advantages of the wrought over the cast iron rail chair admits of but little argument. The proprietors, whose names are mentioned above, express themselves able and willing to show its great superiority at any moment, and all communications addressed to them on the subject will receive attention.

The National Intelligencer says, that Prof. Page is now delivering lectures in Washington before the Smithsonian Institute, and states that there is no longer any doubt of the application of this power as a substitute for steam.

He exhibited the most imposing experiments ever witnessed in this branch of science. An immense bar of iron, weighing one hundred and sixty pounds, was made to spring up by magnetic action, and to move rapidly up and down, dancing like a feather in the air, without any visible support. The force operating upon this bar he stated to average three hundred pounds through ten inches of its motion. He said he could raise this bar one hundred feet, as readily as though ten inches, and he expected no difficulty in doing the same with a bar weighing one ton, or a hundred tons. He could make a pile-driver or a forge-hammer, with great simplicity, and could make an engine with a stroke of six, twelve, twenty, or any number of feet.

The most beautiful experiment we ever witnessed was the loud sound and brilliant flash from the galvanic spark, when produced by a certain point in his great magnet. Each snap was loud as a pistol; and when he produced the same spark at a little distance from this point, it made no noise at all. This recent discovery he stated to have a practical bearing upon the construction of an electro-magnetic engine. Truly, a great power is here; and where is the limit to it?

He then exhibited his engine, of between four and five horse power, operated by a battery within the space of three cubit feet. It looked very unlike a magnetic machine. It was a reciprocating engine of two feet stroke, and the whole battery and engine weighed about one ton. when the power was thrown on by the motion of a lever the engine started off magnificently, making one hundred and fourteen strokes per minute; though when it droev a circular saw ten inches in diameter, sawing up boards an inch and a quarter th' k into laths, the engine made but about eighty strokes per minute. There was great anxiety on the part of the spectators to obtain specimines of these laths, to preserve as trophies of this great mechanical triumph. The force operating upon his magnetic cylinder throughout the whole motion of two feet, was stated to be six hundred pounds when the engine was moving very slowly, but he had not been able to ascertain what the force was when the engine was running at a working speed, though it was considerably less. The most important and interesting point, however, is the expense of the power. Professor Page stated that he had reduced the cost so far, that it was less than steam under many and most conditions, though not so low as the cheapest steam engines. With all the imperfections of the engine, the consumption of three pounds of zinc per day would produce one horse power. The larger his engines, (contrary to what has been known before,) the greater the economy. Professor Page was himself surprised at the result. There were yet practical difficulties to be overcome; the battery had yet to be improved; and it remained to try the experiment on grander scale, to make a power of one hundred horse, or more.

Truly the age is fraught with wonders; and we can now look forward with certanty to the time when coal will be put to better uses than to burn, scald, and destroy.

concluding paragraph of the above article is perhaps one of the greatest wonders of this age "fraught with wonders." If it had told us the exact period to which "we can now look forward with certainty when coal will be put to better uses than to burn, scald and destroy," it would for a *certainty* have done the State some service, especially since an extra appropriation of funds is asked for to bring such *wonders* to be facts, and this after a previous appropriation by the last Congress of $20,000, which has all been spent, it seems, upon a five horse power engine. We like to hear of discoveries and improvements which have a hopeful tendency to benefit the human race, and if an electro-magnetic engine can be worked more economically than a steam engine, then it will be a general benefit. No one can doubt this, but experiment, practical use for some time, is the only true way to prove this, for electro magnetic engines three times larger than Prof. Page's, have been constructed with high hopes of success, especially Davidson's Locomotive. It is wonderful how fortunate some people are in getting government appropriations. Prof. Morse got $30,000, and Prof. Page got $20,000. We hope the people are *satisfied* about these appropriations, if individuals are not.

We learn by the Glasgow "Daily Mail," that a very important improvement in the manufacture of flax has just been exhibited in England by a Mr. Doulan, which, it seems, prepares the flax for spinning by the removal of its fibrine matter without steeping. The discovery is said to be patented. Fourteen pounds of the unsteeped flax produced 4 pounds and 4 ounces of good flax, whereas the same quantity of steeped flax produced nearly pound less. This is stated to be a great improvement over the old way. It almost appears certain to us that this is the invention of Robert Patterson, who patented the discovery last year in the United States, and then went back to Ireland to introduce the invention there. We were informed by Mr. Goddard, assignee in the United States, that Mr. Patterson was manufacturing by his process at his brother's factory, s mewhere near Belfast.

NEW YORK, AUGUST 24, 1850.

The fundamental principle of navigating the air has long been known, but the practical application of the principle is modern discovery. Any thing which is lighter, bulk for bulk, than the atmosphere, will ascend to a certain height and float in it. Rarified air was first used to inflate balloons, it being found that 435° of heat just doubled the bulk of quantity of air. The discovery of hydrogen gas, by Cavendish, it being 14½ times lighter than air, gave an interesting impulse to aerostation, for in 1783 Messrs. Roberts & Charles, of Paris, discovered a way to retain this gas in a balloon, by a varnish made of india rubber dissolved in turpentine. This was valuable discovery, because hydrogen will pass through metals, and there is a great difficulty in retaining it in any vessel. The next valuable discovery in the art was the application of light carburetted hydrogen for the purpose of inflation. The difficulty and expense of using hydrogen, renders its employment almost impracticable on a large scale. The carburetted hydrogen, although heavier, can be easily made, is cheaper, and it just reqnires a larger balloon than for hydrogen, to bring up the same weight. A great number of ascents have been made in balloons. Mr. Green is the hero of a hundred, and so is John Wise, of Pennsylvania, but hitherto all efforts to navigate the air economically and safely have not been successful. The two points stated are the drawbacks to aerial navigation. Whether we shall yet see the balloon managed with the precision of a steamboat or locomotive, and aerial voyages made economically and safely, we cannot tell, but we would like to see it. What a glorious thing it would be to safely ride upon the whirlwind and the cloud, and on some sunny afternoon take "the *high* road to Boston," to have an evening's revery on old Plymouth Rock.

Within a short period aerial navigators have become more numerous, daring and ingenious, and the result of a number of efforts may soon bring the art to perfection. If a new gas was discovered which would exceed hydrogen in buoyancy as much as hydrogen exceeds common air, we would have a hope of economical aerial navigation; and if some new motor was discovered which could exercise safely as much power as a steam engine, in one-sixth of the space and the same of the weight, then might we confidently say, "aerial navigation is now perfectly *practicable*, both as it respects economy and safety." Various plans have recently been tried to propel balloons, and some of them have been successful. Mr. Taggart has made more than one excursion from Lowell, Mass., manœuvring his balloon by machinery to go in any direction. Mr. Bell, of London, has made two or three excurions, propelling his oblate spheroid in all directions—up down, forwards and backwards, above Cremorne Gardens. MM. Baral and Bixio, two *savans* of Paris, recently went up in a balloon for making experiments. In spite of unfavorable circumstances, they ascertained the following results:—The experimental proof that the light is not polarized; The existence of compact masses of clouds of the depth of 3000 metres; and at a later date we find the aeronaut, M. Poitevin, of Paris, mounting his balloon and ascending to the clouds on horseback, voyaging through the air to the distance of leagues. Mr. Wise, too, of Pennsylvania, the veteran atmosphere voyager, made two or three perfectly manageable ascents on the 3rd inst., at Lancaster, Pa. Only for the tearing of the balloon, when it descended after one of the partial excursions, we suppose he would have gone to Washington to pack off some of the spouters, in the true fashion of old Mr. Punch. What these experiments may lead to, we cannot at present tell, but we should be glad, although it is like hoping against doubt, if they would lead to making the art perfectly practicable as a system of transporting passengers safely from one place to another.

Among the novelties produced at the Grand Agricultural Meeting recently held at Exeter, England, was one which excited great curiosity; it was the cooking of the monster joint, called by M. Soyer the baron and saddle back of beef *a la* Magna Charta, weighing 535 lbs. For the first time in the annals of cookery, this was subjected to a new process of roasting, by use of an agent which has been discovered half a century, that is to say, gas. To gratify the curiosity of the public, it was placed in the middle of the castle yard, resting upon dripping pan, environed with bricks and surrounded by 219 jets of gas, and covered by sheet iron. It took five hours to roast, and consumed 700 feet of gas of the value of 3s. ¾d. It weighed after being cooked, 497 lbs; the drippings 23 lbs; the osmazeme lbs; thus losing by evaporation only lbs. To cook this piece of beef by an ordinary fire would have taken fourteen hours. This apparatus was invented and fitted up by Mr. Warriner of London, who was prepared have roasted all the dinner by the same means, that is, 400 chickens, quarters of lamb, and 33 ribs of beef, at a cost of 12s for gas.

[This cooking by gas is not a new process, but certainly we have never heard of it being employed on so grand scale before. It a favorite idea with an old teacher of ours, that "the time would yet come when all our cooking, heating and lighting of dwellings would be done by gas, and that gas produced from water." The old Prof. has long since descended to the tomb, without seeing his prophecy fulfilled, but we have no doubt of its fulfillment at some day not far distant. It would be one of the greatest blessings ever conferred upon the human race, if by the simple turning of a faucet, the dinner could be cooked and the apartment warmed and illuminated. What do men and women toil and struggle so much for in this world, but for happiness; and domestic comfort is the seat and centre of all true enjoyment. Just think of all the clamjamfrey of stoves, furnaces, coal, and all their attendant dirt, lumber and trouble, being at once abolished for a more economical and cleanly agent to perform all their offices. Why, the very thought of it is enough to wreath every face in smiles, and set all the world in good humor.

Three weeks prior to the expiration of all subscriptions to the Scientific American, subscribers will receive a notice to that effect, in order that they may have ample time to forward the amount for renewal before the paper is discontinued. Our terms are advance cash, without respect to persons. We cannot employ agents to traverse the country to collect subscription money, for the reason that our paper has a large general circulation—making it too expensive to resort to the agency system. In making remittances for the new volume, it would be well for subscribers to call for whatever back numbers they have missed through the mail. They will always be sent if we have them on hand. We also request them to be particular in giving the address to which they wish the paper sent, in a plain manner, and not depend upon the Postmaster to mark it. The post stamp is often so blurred that it is with difficulty we are able to decypher the name, and are often obliged to delay sending on that account.

Mr. Wm. R. Greenleaf, of Silvercreek, N. Y., informs us by letter that there are hundreds of mechanics in the country who are manufacturing and selling Drilling Machines, for which John W. Hall obtained a patent about eleven years ago, and they are doing this because they are not aware that there is any patent on the machine. "The claim consists in the manner of forcing the drill, viz., by means of a screw with the mandrill passing through it." Mr. Greenleaf says we will confer a great favor upon many of our readers by publishing this, as the patentee is now passing through the country collecting damages for the infringement of his patent right.

The following is an extract from a letter received from Mr. L. A. Hudson, of Syracuse, N. Y.:—

"I wish to state that I have decomposed water with the Magneto Electric Machine, described in Vol. 2, No. 40, Sci. Am., (the machine is described as the invention of Messrs. Hudson & Cornell) which instrument has been much altered since that time. There have been many promises of an electric light, and I have long been in pursuit of this very object. From what I could learn of Mr. Paine's operations, I thought he was on the right track and ahead of me, so I kept cool and awaited the result. On the evening of the 12th inst., I passed a stream of hydrogen gas into a vessel containing spirits of turpentine, by leading the gas tube below the surface of the fluid. I placed another tube, which had 12 small orifices on the top of the turpentine bottle. On lighting the gas, the appearance was that of hydrogen burning in the atmosphere. By putting more pressure on the gasometer, the middle of the flame changed to a blueish white; more pressure was added, when a momentary sputtering of the gas took place, and there arose streams of a most brilliaht and highly illuminating white light. On the 15th I tried the experiments again, with the same success.

I am happy to make this statement as an evidence in favor of Mr. Paine.

L. A. Hudson.

Syracuse, N. Y., Aug. 17, 1850.

We published a few days ago a paper from Mr. Mathiot, from the Scientific American, stating that he had proved, by satisfactory experiments, that hydrogen can be used for illumination by passing it through turpentine.—Mr. M. leaves untouched the question of expense, which is considered by a writer in the Rochester Advertiser, of that city. He says:

"Admitting the brightness of the light in burning hydrogen united with the vapor of turpentine, described by Mr. Mathiot, the only point of consequence to the public is the cost of the light, volume per volume.

"Now 33 oz. of zinc with the due quantity of oil of vitrol and water, yields one ounce or twelve cubic feet of hydrogen. The zinc costs at wholesale about ten cents, which would be the cost of twelve feet of the gas, for the zinc alone, omitting the cost of the acid and turpentine. But twelve cubic feet of coal gas costs forty-eight mills, *or one half a cent*! !—Hence, the prepared hydrogen light would cost twenty times as much as the same light from coal gas in this city."—[Phil. Ledger.

[The Rochester gentleman has not quite hit the mark as lover of science or a correct expounder of the economical value of hydrogen, as compared with carburetted hydrogen. Hydrogen can be produced by White's apparatus without zinc or acids, nearly if not as cheap as coal gas. Even allowing the cost of the hydrogen passed through turpentine to be very expensive, surely, as a matter of scientific discovery, it is of *some consequence to the public.*

The Annual meeting of this Association commenced on the 19th inst., at Yale College, New Haven. The proceedings of this Association are always of an interesting character, and we shall take the earliest opportunity of placing a clear abstract report of them before our readers.

The Vandkikak, or Norwegian Water Telescope has been introduced into the herring fishery of Scotland with great success. It is well adapted to discover shoals of herring at a considerable depth, but it is of no avail except in the calm quiet salt water lakes, or arms of the sea, which are so common in that country running far up between the highland mountains.

On the nights of the 9th and 10th inst., observations were made at Yale College for the yearly appearance of shooting stars. In three hours 451 meteors were observed. Some of them were of extraordinary splendor.

A friend who had read the following valuable item of information but who had forgotten which way "to rub his eyes," for loss of sight by age, requested us yesterday to republish the process. It is follows:

For near sightedness, close the eye and press the fingers gently from the nose *outward*, across the eyes. This flattens the pupil, and thus lengthens or extends the angle of vision. This should be done several times day, till short sightedness is overcome.

For loss of sight by age, such as require magnifying glasses, pass the fingers and towel from the outer corner of the eyes *inwardly*, above and below the eye balls, pressing gently against them. This rounds them up, and preserves or restores the sight.

It has been already said that this is nothing new. The venerable John Quincy Adams preserved his sight in this way, in full vigor to the day of his death. He told Lawyer Ford, of Lancaster who wore glasses, that if he would manipulate his eyes with his fingers, from their external angles inwardly, he would soon be able to dispense with glasses. Ford tried it, and soon restored his sight perfectly, and has since preserved it by the continuance of this practice.

[The above is from the Pennsylvanian; we cannot endorse it, as we have no positive experimental facts in our possession respecting such manipulations for the preservation of the sight. We have been informed that this is the process pursued with such success by Prof. Bronson for restoring the eye sight. Its correctness can easily be tested by those who have weak eye sight.

We beat the English on steam hammers. At the Kemble foundry, opposite West Point, there is one in operation which weighs 1,940 pounds—whereas the hammer inported from England to be used in an iron factory connecticut, weighs but 1,400 pounds.

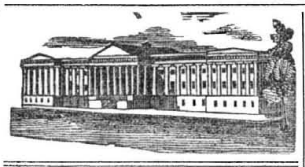
[The above we copy from an exchange, just to observe that many people in their ignorance of a subject, overshoot the mark in commenting upon it. The above comparison, we believe, first appeared in the Albany Atlas, and it should never have been made, for if the size of the hammers only was concerned, no importation would have been made from England. The great hammer recently imported is not common *trip*, but one of Nasmith's direct acting patent steam hammers.

The St. Louis Republican gives an account of a saw mill constructed on a new and singular principle. The inventor is Mr. Amos Jackson, of Potowantamie county, Iowa. The mill derives its power from the weight of the log to be sawed. The ways on which the carriage travels are fixed on bearings that enter into the frame; the opposite ends are pro vided with large segments of a cog-wheel working into a series of cog-wheels and pinions, thus when the log is pushed forward to the saw, its weight is brought to act with great force through the segments of a shaft, having several intermediate gearings to increase the speed sufficiently for driving the grand shaft. The price of these mills is said to be light compared with others, and they can be attatched to wheels for traveling through the country.

[This must be the famous log that sawed itself. We can see no reason why the inventor should place his mill upon wheels to travel through the country, except it is for the purpose of making the log draw itself, for surely the log which can saw itself will be able to draw itself.

We have received several communications of late from the West, stating that G. Williams had been round collecting subscriptions for the Scientific American. The public are warned against him, as he is no agent of ours—and never will be, if we can help it.

The time for holding the State Fair at Cincinnati has been changed to the 2d, 3d, and 4th days of October next.



☞ Our weekly List of Patents and Designs contains every new Patent, Re issue and Design emanating from the Department, and is prepared officially, expressly for the Scientific American, and for no other paper in the city, consequently other journals are obliged to wait the issue of the "Sci. Am." in order to profit by the expense to which we are subject, and of course must be one week behind. Those publishers who copy from this department in our columns, will, in justice to us, give proper credit for the same.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending August 13, 1850.

To N. Barlow, of St. Loui , Mo., for improvement in friction clutches.

I claim the sliding collar, connected to and in combination with the nut, substantially in the manner and for the purposes herein specified. [See engraving of this apparatus in No. 35, Vol. 5.]

To Bartholomew Beniowski, now residing in London, England, for improvement in Cylinder Printing Presses. Patented in England Oct.

That which I claim is constructing a printing machine in which the form or forms of types or blocks are placed on or secured to the inner or concave surface of a cylinder or drum, which is made to revolve and carry the form or forms secured thereto from the inking rollers to the printing or impression cylinders, all of which parts are mounted inside the cylinder or drum.

Second, I claim the methods above shown and described of making the inking rollers balls of printing presses or machines.

To J. Davis, of u a o, N. Y., (Assignor to A. B. Warren & J. G. Davis, for improvement in the manufacture of Candles.

What I claim is the arrangement and manner of operating the knives by which the cylinder of fat, with its central wick, is cut into suitable lengths for candles, and the fat removed from the end of the wick.

I also claim the device for regulating the length, and delivering the candles, substantially as herein desoribed.

To J. F. Tozen, of Rochester, Y., for improvement in instruments for Vaccinating.

What I claim is the sliding cylinder, in combination with the thumb-key, spring and piston, for the purposes herein described and set forth.

To Adam Hays, of Madison, Ind., fo improvement in Splints for fr ctures

What I claim is the cutting out a portion of the splint to afford an opportunity for dressing as often as may be necessary, the upper and lower portions of the splint being kept firmly united by means of brace, so as by extensions and counter extensions, to keep, throughout the treatment, the proper relative position of the parts concerned, the slide being replaced after each dressing, or any other device substantially the same.

To G. H ust n, of Washington, N. C., for improvement in weighing machines.

What I claim is the iron frame, together with the skids and regulating screw, used in combination, with a weighing beam, as described in the foregoing specification.

To Wm. H. Hovey, of Ha t o , Conn., for imment in Packing Boxes and Axles.

What I claim as new is the combination of the metallic packing ring, having its outer periphery of conical form, the arched springs having their ends inclined to fit the said ring, and the regulating screws, with the journal box and the axle, in the manner and for the purposes substantially as described. [This is a very excellent improvement, and is used by Tracy & Fales on the cars made by them in Hartford, Conn.]

To Allen Judd of Chicopee, Mass., for improvement in Pentagraphs.

What I claim is the instrument constructed and arranged as above set forth, consisting of a pencil, moving parallel with the eye tube, with which it is connected, as herein described, and marking on a vertical plane, plane, parallel with their axis of horizonta motion, such objects as the sight through the eye tube passes over. engraving in No. 1, Vol. 5.

To B. Kean, of Worcester, for improvement in Bench-hooks.

What I claim is forming the head with any suitable number of edges, of any required form, to suit various kinds of work, and having the spindle, of which the head formed part, ground and fitted in a socket, set at an inclination to the bench, so that any edge of the head can be set to the work and secured by a spring catch, and whatever edge is turned to the work will be higher than the back or opposite edge.

[This is a very unique device.]

To A. McKinney, of Montgomery, N. for imment in apparatus for regulating the setting Bows in Wagon-tops.

I claim the combination and arrangement of the rules, the rods, the pins, the adjusting screws and the holdfast bolts, arranged and adjusted upon a frame, in the manner and for the purposes substantially as herein described.

And I also claim the adjustable rule sliding in the swinging bar and attached to the same frame with the before described combination, in the manner set forth. [This invention is one of more than ordinary importance.]

To R. Milligan, Rarden, Eng., for improvement in ornamenting textile fabrics. Patented in England March

What I claim as my improvement is the new or improved ornamental fabric or manufacture made substantially as specified, viz., having any ground suitable or unsuitable for receiving and exhibiting bright color or colors when imprinted thereon, and having figures, stripes, or other portions of surface floated over the said ground in material and color suitable for representing such bright color or colors, and having such bright color or colors printed on the said boated surfaces.

To J. sson, of New York, N. Y., for improvement in Pianofortes.

What I claim is combining two sets of strings operated by separate actions with one and the same sounding board, whereby I am enabled to produce greater effects both in quality of tone and in power than heretofore, and also to maintain the unison of the notes, and the tune to a degree not possible before; the whole being constructed and operated substantially in the manner described herein.

To W. Robinson, of Lebanon, Con , ment in Sh p Ventilators.

First, I claim the ventilating chamber constructed in the manner substantially as described, having a tube, or air passage, communicating with the cabin or between-decks of a ship or other vessel, entering it, and provided with a register, either for the purpose of admitting pure air, by long tubes to the lower parts of the cabins or between decks, or for carrying off the ventilated air by short tubes from their upper parts.

Second, I do not claim the use of a float valve in the ventilating tube, irrespective of the manner of applying them, but I claim having the two float valves attached together in the manner described, and each acting independently of the other upon a separate seat in the ventilating chamber, so that any water passing one valve may be shut off by the other.

To J. C. Tennent & J. Workman, of Ph ladelphia, Pa., for safety apparatus for steam boilers.

What we claim is the application of a rope, made of any combustible material (using for this purpose wool as prepared in the manner before noticed, or any other material which will answer the intended effect,) to the upper surfaces of one or more tubes or flues of boiler, which, when said tubes or flues are uncovered of water, will burn off or part in the manner as before described, for the action of the excessively heated metal and surcharged steam, which rope is connected with, and by its parting actuates the apparatus herein described, or any part thereof, for the purpose either of giving alarm or putting in action means of safety, or both, substantially as herein described.

To J. Pecare J. Smith, of New York, N. Y., for improved concealed trigger for fire-arms. ted Dec. Re-issued Aug.

What we claim is the construction of a concealed trigger, capable of being disclosed and made ready to operate by simple pressure imparted by the hand to its rear end, as described herein.

To John Hinton, of Pack's Ferry, Va., for improvement in Harvesters of clover heads and other grain. Patented May Re-issued Aug.

What I claim is, first, the combination and arrangement of the transverse pendent finger bar, the mortised right-angled plates, the adjustive slide bars and knife or cutter, with the revolving axletree of spring conveyor bars, arranged and operating in the manner described, by which the heads of clover, wheat and other description of grain are severed from the stems or stalks, and delivered into a receiver.

Second, I also claim the combination of the right-angled rods, fingers and pendent bar, with the transverse timber for adjusting the knife and fingers, longitudinally and vertically in connection with the spring conveyor bars, as described and represented.

DESIGNS.

To W. Bryant, of Boston, Mas , for s gn ast iron bracket.

To J. Rathbone, of Albany, N. Y., for design for Coal Stoves.

To R. J. Blanchard, of Albany, N. Y., (As ign r to B. P. Learned G. H. T tcher) for design for stov

To S. S. Jewett & F. H. Root, of Buffalo, N. Y., for design for stoves

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The N. Y. Herald says, "From the little we hear of the preparations on the part of our people to exhibit specimens of their industry and ingenuity in the great Fair, which is to be held in London next year, we are very much inclided to believe that the project does not meet with as much favor as might be expected. We do not know how to account for this apathy. It may be that our citizens are working cautiously, and are determined to take the world by surprise, in the beauty and elegance of the articles which they propose exhibiting, and are therefore silent. We hope sincerely that such is the case. American mechanics and artisans need not fear competition with any nation in existence, in any department of industry; and we are confident they do not. We cannot, however, account for the apparent apathy which exists on this subject. It must be recollected that the time for the opening of the Exhibition approaches rapidly, and that there are but a few months more within which to prepare for it. We expect to see our people secure their full share of the prizes, and will be much disappointed if they do not."

[In regard to the above, we can assure the Herald, and all others interested, that our mechanics are preparing to exhibit at the World's Fair some of the boldest and most striking specimens of their ingenuity. From our intimate association with the various branches of American industry, we are probably better able than any other journal to know the actual state of this matter. We are constantly receiving letters from different sections of the country, asking advice how to proceed, and it is a matter of some regret that no depository has been selected in this city for the receptacle of such articles as are already prepared. This is the point where the largest share will be delivered for shipment, and some responsible person should be appointed to take charge of them. Several of our acquaintance have already gone to England with operating machines, for the purpose of introducing them into use, prior to the Exhibition.

The purest coal often exhibits impressions of plants, agreeing in species with those found in a more perfect state in strata of shale accompanying coal. The vegetable origin of this fuel is still more unequivocally shown by its internal structure when seen under the microscope, consisting, as it does, of woody fibre, dotted and scaleform vessels, and cellular tissue. This structure is observable not only in bituminous coal, but even in anthracite, where the change from the original wood has been carried farthest. The various plants which, by their decomposition, have produced coal, were not drifted into their present position, but grew in almost every case, on the spots where the coal is now found. This is proved by the position of erect trees, the lower portions of which rest on seams of coal, and by the abundance of stumps and roots, occurring both in North America and Europe, in the underclays or floors of coal-seams. The name of stigmaria has been given to the vast abundance of these roots, which were first shown by Dr. Binney, of Manchester, to belong to fossil trees called sigillaræ, a conclusion previously thrown out as a conjecture, on botanical grounds, by M. Adolphe Bogniart. Sir C. Lyell described, in 1842, ten forests of superimposed fossil trees, at right angles to the places of stratification, on the shores of the Bay of Funday, in Nova Scotia; and recently Mr. Richard Brown has found, in a single coast section in Cape Breton, forty-one underclays with roots, and eighteen tiers of upright trees of the genera Sigillaria, Lipidodendron, and Calamite. These remains of fifty-nine submerged forests extend through a thickness of 1600 feet of strata. Their entombment implies the repeated subsidence of land, such as took place during the earthquake of 1811–12, when part of the alluvial plain of the Mississipi, called "The Sunk Country," near New Madrid, ninety miles long by thirty in breath, was submerged. Thousands of dead trees are still standing there under water, while a still greater number lie prostrate.

The manner in which the interlaced roots of the deciduous cypress are fixed in blue clay at the bottom of every large swamp in the Delta of the Mississipppi, affords some analogy to the old carboniferous underclays, and to explain the new admixture of earthly matter in coal. Sir C. Lyell refers to the exclusion from the central parts of those cypress swamps in Louisiana, of the turbid waters of the Mississippi. The margin of the morass supports a dense growth of reeds, canes and brushwood, through which the sedimentary waters must flow very slowly, parting with all their alluvial matter before they reach the interior of the vast timber covered swamps.

Recent artesian borings, 400 feet deep, have shown both in the deltas of the Po and Ganges, that the substance of ancient terrestrial surfaces, once supporting turf or a forest, have sunk far below the level of the sea. The number and richness, however, of the seams of coal stored up in the carboniferous strata, doubtless indicate a peculiarity of climate and vegetation more favorable than any which now exists for the accumulation of vegetable matter. As to the climate of the coal period, the evidence of palms having flourished at that time, which was formerly supposed to imply a tropical heat is now questioned by able botanists, and as tree-ferns abound in New Zealand, the cauloperis of the coal being wet, have required high temperature. The absence of coal in winter may have caused the extension of certain tropical forms in the coal period far into high latitudes, and the absence of great heat in summer may have checked the decomposition of plants, till continuous masses of them were buried under sediment thrown upon them when the land was submerged. The length of time during which dead trees continue to stand erect in submerged areas in the plains of the Mississippi shows that the envelopement of upright carboniferous stems in shale and sands may have taken place very gradually.

The Cliff and Minnesota mines have recently been turning out immense masses of copper ore, and great difficulty appears to be in getting it from the mines in peices small enough for shipment. Seven pieces taken from the Cliff mine weighed 29,852 pounds; four from the Minesota, 14,641. The masses are so heavy that it takes teams of ten, twelve and sometimes fourteen horses, to haul them the distance of three quarters of mile from the mines to the lake. The copper is too tenacious and compact to be broken in peices in blasting, and it has to be cut up in peices with a long chisel, three-fourths of an inch in width, by chiping off piece after piece with heavy hammer. By this slow and expensive process these large masses of copper are cut up into pieces for shipment. A schooner recently sailed for port down the Lake, with upwards of sixty tons on board, and the docks are filled with masses of the most enormous size, waiting shipmen . Is it not possible that this copper could be sawed much easier than cut with the chisel?

"J. Y. P., of Ohio."—Scott's work is in two volumes, and are quite large. They would have to be sent by Express. The Principia and Manual have been forwarded by mail.

"C. H. C., of Mass."—I any claim could be granted it must be based upon the particular construction of the beater, and not upon the method of operating it. This device is well known and could not be patented. We are of the opinion that the beater is new, and advise you to construct a model and forward it to this office for further examination. This is all we can say at present.

"J. B., of S. C."—Your business has been delayed considerably. We shall write you in a few days.

"S. H. B., of Va."—We have handed your communication to Mr. B. for attention. The agents for Mr. R., are not authorized, we presume, to negotiate sales in your region. We would give our opinion in favor of Mr. B.'s plan.

"G. S. H. & Co., of S. C."—Machines for making bolts and forming the heads are in use, but we do not know where they are manufactured; perhaps some one in the business who may chance to see this will furnish us with the necessary information.

S. L., of N. Y."—We see nothing patentable in your device, and advise you not to spend any money upon it.

"H. G. B., of Conn."—Is informed that there is nothing new in his plan for carriages; the same principle was patented a few years since.

"M. K., of N. Y."—Hereafter we will acknowledge the proposition made in yours of the

In each communication please to state the amount your due, and it will be placed to your credit as you propose.

"E. T. B., of Ohio."—We forwarded to you on the 15th inst., two copies of the Sci. Am., Nos. 20 and 25. In the latter you will find illustrated an invention so much like yours (as we understand it) that you could not claim to be the original inventor

"A. C. C., of Mass."—We do not know how great the demand would be for such a machine. They are now in use by confectioners, and we presume every large concern uses them.

"C. M. of Ohio."—The sketch of your Thermometer Churn has been examined; cylindrical churns with thermometers attached, and double metalic sides and bottoms, in which ice, cold or warm water may be placed to regulate the temperature, are now in use: John Mayer & Co. of this city, have them for sale. You could not patent the one represented.

"W. H., of Pa."—You could not use the reaper with your improvement without Mr. H's consent. A patent would be useless under those circumstances. If it could be applied independently you might be warranted in making an application. Perhaps you could arrange the matter with him.

"J. B., of Mass."—Please give us the date of the patent you refer to, and we will investigate the matter to your satisfaction. This will save us some trouble.

"S. T. H., of Va."—You could not obtain a patent for the device submitted for examination; by reference to No. of the present volume you will find an engraving of the same principle. It is impossible for us to say how much you could or could not make by the purchase of the patent referred to; a moment's reflection will show you the absurdity of such a question.

"A. J. S., of Geo." The drawings of your hive have been examined. We think the improvement over the other decidedly good. Upon receipt of the model you will hear from us by letter.

"J. W. S. of Ill."—We do not think it advisable to apply for a patent. The thing in itself may be new, but the want of it is not felt, you will no doubt agree with us on this point. $1 received and credited.

"H. B. T. of Vt."—We think your brake to be both new and useful. You had better construct a model showing the connection and operation more fully. It can be made of wood painted over—send it to this office when complete.

"S. of Ind"—Your papers have just come to hand. They will be examined, and an opinion concerning a re-issue of the patent given.

"S. A., of Geo."—No person could rightfully patent from your suggestions; it would be perjury to do so, for in making an application the applicant is required to make oath that the invention is his. In case two persons invent the same thing, the question would arise as to which was the first inventor.

"J. R. V. T., of Ohio"—Take three vessels of muriatic acid, weakened by water to stand by Twaddle's Hydrometer, each made up in the same way; put the brass for five minutes into the first, and two or three minutes into the other two, then put it into soft cold water, and wash it well. It should then be put into warm water and afterwards varnished.

"E. W. K., of N. H."—The principle of regulating the vice is new and sufficiently novel, in our opinion, to warrant an application for letters patent. You had better send a model to this office. We have been delayed in answering this by a press of business.

"G. G. H., of Pa."—We think patent can be obtained on the Railroad Frog; it is different from any other we have seen. The present model will answer the purpose for the Patent Office.

"T. B., of N. Y."—We shall examine your subject in time for next week's issue. It strikes us at first sight that the principle is not new.

"G. C., of N. Y."—We wrote you a day or two since in regard to your model. Please attend to the order.

"H. W. B., of N. Y."—Why don't you furnish a new model for the Patent Office? the letters will be granted as soon as you attend to it. The delay can be of no advantage to you whatever.

"R. H. T., of Mass."—We do not discover any thing new in the principle of your pump. It is simply a modification of the on invented by Mr. West, of this city, some time since. It will work without doubt but could not in our opinion be patented.

Money received of Patent Office business, since August 13th, 1850:—

A. C., of Mass., $20; C. S., of N. Y., $130; F. C. G., of N. J., $60; G. D. P. of Me., $45, and R. D. P., of Del., $60.

Persons desiring the claims of any invention which has been patented within fourteen years can obtain a copy by addressing a letter to this office; stating the name of the patentee, and the year the patent was granted (adding the month of the year when convenient), and enclosing one dollar as fees for copying.

We are obliged to inform our patrons that complete sets of all the past Volumes are entirely exhausted.

Those desiring to secure Volume 5 but have delayed subscribing at first, are advised to remit $2 without delay or they may be disappointed in getting volume at all, should they wait until the Nos. are all published?

In the description of Hubbell' Solar Magnetic Engine, in our last number, the figures 9 and 10 are transposed fig. 9 should be referred to as 10, and *vice versa*.

Any of our friend order numbers they have ed—we shall always send them, he them onh nd. We make this statement to save much time and trouble, to which we are subjected in replying, when the numbers called for cannot be supplied.

Patent Office.

128 Fulton Street.

HINTS TO INVENTORS.—Inventors and others requiring protection by United States Letters Patent, are informed that all business relating to the procuration of letters patent, or filing caveats, is transacted at the Scientific American Office, with the utmost economy and despatch. Drawings of all kinds executed on the most reasonable terms. Messrs. Munn & Co. can be consulted at all times in regard to Patent business, at their office, and such advice rendered as will enable inventors to adopt the safest means for securing their rights.

Arrangements have been made with Messrs. Barlow and Payne, Patent Attorneys, in London, for procuring Letters Patent in Great Britain and France, with great facility and dispatch.

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"A single experiment will impart more real knowledge than can can be derived from reading a volume."

A steel watch-spring tipped with sulphur and lowered into a jar of oxygen gas, bursts into a most magnificent combustion; the oxyde of iron which is formed falls down in burning globules, like glowing meteors. 2. Mix grains of flour of sulphur with of bright iron-filings in a Florence flask, and heat it on a chafer of red-hot cinders. Heat and light are evolved, and sulphuret of iron (pyrites) is formed—used in preparing sulphuretted hydrogen. Dissolve fifty grains of green vitriol (copperas) in 2 ounces of water, and pour a few drops into 4 glasses, previously filled nearly full of water. Into one pour olution of potash; oxyde of iron falls, which soon becomes rust. To another, add pearlash, carbonate of iron falls. Add prussiate of potash to the third, and blue ink is formed. To the fourth add an infusion of galls, and black ink appears. Add oxalic acid to the last, and the color disappears. Add to each perhydrochlorate of iron and observe the difference of tint.

grains of sugar of lead in 4½ oz. of water, and pour into 5 glasses; to the first add pearlash, and white lead precipitates; to another add hydro-sulphu et of amm nia, the solution turns black; to the third add an infusion of galls a white precipitate is produced; to the next add iodide of potassium, the liquid becomes yellow; suspend in the fifth a piece of zinc, the lead will be deposited on it in beautiful crystalline plates, forming the lead-tree (arbor saturni.)

Plunge copper at r d heat under water and it becomes very tenacious. cool it slowly and it becomes brittle. 2. Pu the blade of a knife in solution of blue vitriol, it will be coated with copper. Add ammonia (hartshorn) to solution of blue vitriol, it will lose its color; add more, and the liquid deep blue color. 4. Into 4 glasses, containing a solution of blue vitriol, add the tests applied to iron, (exp. the tints will be different. 5. To pieces of copper add strong nitric acid (qua fortis , deep red fumes of nitric oxyde, a poisonous gas, will be evolved.

Dissolve tin in muriatic acid (spirit of salt) with a little aqua fortis—tin mordant, used by dyers, is formed; add a little soda and putty of tin is precipitated, which, when heated, becomes a lemon-yellow powder. 2. Melt parts of copper with of in, gun-metal, one of the strongest alloys known, is formed.

(To be Continued.)

If any person should be stung by a bee or other insect, rub some spirits of urpe tine on the place, and pain will nearly cease in one minute. It is aid the pain arising from the bite of a copperhead snake may be arrested in a few minutes, by the continued application of this article, and from my own knowledge of its effects in other cases, I have not the least doubt of it. The effect of all poison is to contract the blood vessels and prevent free circulation the natural consequence is pain and inflammation immediately. Spirits of turpentine, by its penetrating and expanding qualities, soon overcome the difficulty.—[Farmer's Cabinet.

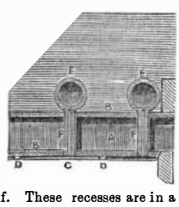
[We have often tried the spirits of turpentine for musquito bites, and such small fry, but never found the least benefit from it. We notice this because we saw the above quoted in another paper, stating that it was good for all kinds of *bites*. The incorrectness of the above lies in the statement that "all poisons contract the blood vessels and prevent a free circulation." If this was true then the poisons would do no harm, but it is not true, for the lymphatic vessels take up the poison, and it is carried to the pulmonary artery, thence from the right ventricle of the lungs, where the air at once, instead of merely oxidizing the blood, produces decomposition, and death ensues. The grand object with all poisons is to contract the lymphatic and blood vessels above the wound, to prevent the poison being carried to the lungs.

[Continued from 384.]

The accompanying engraving epresent the paddles made of hollow cones, A A, made of metal of a sufficient thickness, and cut at the vertex at right angles to the plane of its base, so as to divide them into two equal parts, whi h are affixed to the arms, B B, represented. These half cones may vary in number. The best form is the half cone, with the angle of degrees at the plane of the base, but by extending the surface of the half cone greater propelling force is the result. This invention is the subject of patent in England—the inventor being a Gent., as he styles himself—named Thomas Parlour, of Hollo-way. Experiments were made by Mr. Ewbank, (to be found in his Report,) which prove conclusively that hollow drums or cones are not the things for paddles, as some have supposed.

A great number have heard that Mr. Francis B. Stevens, of Hoboken, N. Y., had in ented a new plan for increasing the speed of steamboats by interposing a stratum of air between the immersed surface of the vessel and the water, but few know any more about it, although it has been patented both in America and in Europe, in

F ur is a longitudinal section through the bottom of the vessel; and fig. 2 is a transverse se to n; A are the timbers of the bottom of the vessel, and B is the planking; C C are pieces of planking of an angular shape, shown first on the planking forming series of recesses upon the bottom of the vessel, or these recesses may be formed out of the plank-



ing itself. These recesses are in a series, divided by strips, and run along the whole length of the vessel. Running fore and aft along the whole bottom, inside, are trunks, E E, from which are small branch pipes, through the bottom of the vessel, one at least for each recess, and terminating on the outside behind the angular shaped pieces, C C. This position of the pipes behind the base of the angles, C C, prevents the water from entering the pipes when the vessel is in motion. The bases of the angular pieces being laid towards the stern of the vessel, the main pipes, E, communicate with the air-compressing apparatus by which the air is forced in through the system of conduits, and the recesses kept charged with a stratum of atmospheric air.

A steamboat constructed upon this plan has been employed by Mr. Stevens, and was laid up a short time since, at Hoboken, affording an opportunity for examining her construction. It does not appear to embrace any economical principle, whereby with the same power, the speed of a steamboat can be increased in the least. It was invented to get rid of frictional surface, but the cure is worse than the disease.

The spinning of the fine thread used for lace-making in the Netherlands, is an operation demanding so high a degree of minute cace and vigilant attention, that it is impossible it can be ever taken from human hands by machinery. None but Belgian fingers are skilled in this art. The very finest sort of this thread is made in Brussels, in damp, underground cellars, for it is so extremely delicate that it is liable to break by contact with the dry air above ground; and it is obtained in subterraneous atmospheres. There are numbers of old Belgian thread-makers who, like spiders, have passed the best part of their lives spinning in cellar. This sort of occupation naturally has an injuriou upon the health, and therefore, to induce people to follow it, they are highly paid.

To form an accurate idea of this occupat on, it is necessary to see a Brabant thread-spinner at her work. She carefully examines every thread, watching it closely as she draws it off the distaff; and that she may see it the more distinctly, a piece of dark blue paper is used as back ground for the flax. Whenever the spinner notices the unevenness, she stops the ev lution of her wheel, breaks off the faulty piece of flax, and then resumes her spinning. This fine flax being as costly as gold, the pieces thus broken off are carefully laid aside to be used in other ways.

Notwithstanding the overwhelming supply of imitations which modern ingenuity has created, real Brussels lace has maintained its value, like the precious stones and metals.—Fashion has adhered with wonderful pertinacity to the quaint old patterns of former times.

Each of the lace making towns of Belgi m excels in one particular description of lace; in other words, each has his own point Hence the terms point de Bruxelles, point de Malines, point de Valenciennes, &c.

Many of the lace workers live and die in the houses in which they were born, and most of them understand and practice only the stitches which their mothers and grandmothers worked before them. The consequence is, that certain points have become unchangeably fixed in particular towns or districts. Fashion assigns to each a particular place and purpose; for example, the point de Malines (machine lace) is used chiefly for trimming night dresses, pillow cases, &c., the point de Valenciennes (Valenciennes lace) is employed for ordinary wear, or negligee; but the more rich and costly point de Bruxelles (Brussels lace) is reserved for bridal and ball dresses, and for the robes of queens and courtly ladies.

The beetle was an emblem of the sun, to which deity it was peculiarly sacred; and it is often represented as in a boat, with extended wings, holding in its claws the globe of the sun or elevated in the firmament as a type of that luminary in the meridian. igures of other deities are often seen praying to it when in this character. It was also an emblem of Pthah, or the creative power; it was, moreover, a symbol of the world: and is frequently figured as an astronomical sign, and in connection with funeral rites. In some one or other of the acceptations in which it was honored, its figure was engraved on seals, was cut in stone as separate object, and was used in all kinds of ornaments, particularly rings and necklaces. Some of larger than common size frequently had a prayer or legend connected with the dead engraved on them; and a winged beetle was usually placed upon the bodies that were embalmed according to the most expensive process. The beetle was not only venerated when alive, but embalmed after death and some have been found in that state at Thebes. Considerable ingenuity has been exercised in order to discover the real sacred beetle of Egypt, and to ascertain to what extent other species may have partaken of the honors paid to that one. The species usually represented appears to be the *Scarabaeus sacer* of Linnaeus, and which is still very common in every part of Egypt. It is about the size of a common beetle, and its general color is also black; but it is distinguished by a broad white band upon the interior margin of its oval corselet. Perhaps the most remarkable, and certainly the most gigantic, of ancient Egyptian representations of the sacred beetle, is that in the British Museum, carved out of a block of a greenish-coloured granite.