

Scientific American

NEW-YORK, FEBRUARY 19, 1853.

The India Rubber Case Again--Extension of the Patent.

On the 24th day of February, 1839 Nathaniel Hayward, of Woburn, Mass., secured a patent for vulcanizing india rubber by means of sulphur, which patent was assigned to Charles Goodyear—a man of a shrewd and future grasping mind. Some idea of the importance of this improvement may be formed from the fact that it has been a subject of continual litigation for a number of years; yea, almost since the day the patent was issued. It is the real vulcanizing substance now used in the manufacture of india rubber fabrics of every description. The claim is in these words, "the combining of sulphur with gum elastic, whether in solution or in substance either by mixing with the digested india rubber, kneading it, or sprinkling it on the surface of sheets and pressing it in."

The conspicuous litigants have been Goodyear, versus Horace H. Day. Daniel Webster distinguished himself not many months before he departed from this earth, on the side of the complainant, before Judge Grier, at Trenton, N. J. "That was a famous court scene; there were Webster and Choate, of Massachusetts, engaged in legal conflict with eye to eye and foot to foot opposed." The fame of such legal champions brought together a crowd of admiring and wondering listeners, who "ne'er shall look upon the like again." The result of that hearing—it was not a trial at law—resulted in victory to the side on which the great deceased lawyer and statesman had devoted his talents and learning, and the result was an injunction to restrain H. H. Day from infringing Goodyear's patent.

As the patent of Hayward expires on the 24th—Thursday next week—it was not to be expected that the proprietors of this patent would calmly suffer it to become public property without an effort to get an extension for seven years. Indeed, we have heard it stated, that the great amount of law business connected with this patent during the past few years was all a well arranged contemplated matter, in order to present a great bill of losses to prove that the inventor, in his agents, had not received sufficient compensation for benefits conferred upon community by the invention. Be that as it may—we cannot credit such stories—the extension was prayed for, and the case has been heard before the Commissioner of Patents. It was the most extraordinary hearing for an extension of a patent that has ever been brought to our notice. It continued for eight or nine days, we believe, from the 1st inst. before the Commissioner, and eminent counsel, three or four on each side, were employed by those interested in the patent and those opposed to it. This is the first time that such a mighty quantity of speech making has been presented to a Commissioner of Patents; it shows us something of the value of the invention. But it is only a few weeks since that all the circulars issued from the Patent Office contained these words in reference to the extension of patents, "all arguments must be submitted in writing." That rule has been departed from, and we are afraid that it may lead to an increase of expenses to inventors by opening up a new field for lawyer's fees. It appears, however, that the law, Sec. 18, Act 1836, contemplated that argument—real argument—should be allowed, but it makes provision only for those opposed to the extension. It says, "any person may appear and show cause why said extension should not be granted," but makes mention of the applicant furnishing his petition, proofs, and statements in writing only. It appears to us that no provision is made in the Patent Laws for such an exhibition of speaking and oratory, as has lately taken place before the Commissioner of Patents in reference to the extension of this patent. The law is plain that the Commissioner shall hear and decide upon evidence produced, both for and against the extension of the patent, but this, in our opinion, has reference only to statements of facts, not speeches; but at the same time it certainly means oral statements; we

think there can be no doubt of this, and the present Commissioner has the same right to say how they shall be made, as the previous one to say, "they shall only be in writing." The public, however, should have full information about such things; we are only afraid, as we said before, that this new mode of hearing arguments will lead to a great evil in entailing unnecessary expenses upon inventors.

The great question discussed before the Commissioner was whether he had or had not a right to extend the patent to an assignee. Those opposed to the extension contended that he had no such right, and the applicants contended he had. The law by strict construction says, and means no more and no less, than that the patent is to be extended to the patentee only. There is not a word in section 18, Oct. 1836, about an assignee, and that is the only authority the Commissioner has for his rule and guide.

In England it is not uncommon to extend a patent to an assignee in conjunction with a patentee, but not otherwise, so far as we are informed. It appears to us, however, that an assignee may often suffer injustice from infringers, without recompense by our laws, which grant a man a patent, but do not provide for its enforcement. In England, the Attorney General always appears for the patent plaintiff in the Court of Exchequer, but this is not the case in our patent trials. It is a hard thing for a man to purchase a patent and then have to pay high fees to counsel to bring a case of infringement before the courts of the government which has granted it, whose title deeds have been infringed. Our inventors, we believe, would rather pay \$60, or more, for a patent fee, if the United States District Attorneys were by law compelled to pursue infringers. The District Attorneys might get \$1,000 per year additional salary from the patent fund, for the performance of extra labor. As it regards the extension of a patent to assignees, however, it appears to us that Congress alone can do this, as no provision is made for an extension to such persons by our Patent Laws.

The Ericsson and our Cotemporaries.

It is well known to our readers that we have expressed our opinion that "hot air as a motive agent can never supersede steam." We have given some reasons for entertaining such an opinion, but not all that might be adduced in support of it. In opinion, we have stood nearly alone among the public press of our country; that is, no paper or magazine devoted to news, literature, science, and art, has expressed a decided opinion with arguments attached respecting the success or failure of the Ericsson. What we have said has been expressed calmly and in the most moderate language, but because we have so expressed opinions in opposition to those of some editors who have no scientific knowledge, and who are not capable of passing judgment on such a subject, they have not scrupled at hasty and untrue assertions in speaking of us, although we have given no occasion for personal remarks to any one.

On the 11th of last month (Jan. 1853) the Ericsson made her second trial trip down the New York Bay, with the Corps Editorial of New York City, and on Friday last week the 11th Feb., she was opened for visitors, a month exactly from her trial trip, during which time she has been undergoing repairs at Williamsburgh, or rather getting her finishing touches, Captain Ericsson having stated on her trial trip that "she was not yet fit for going to sea, as her valves and pistons had not been rendered completely air tight." It will no doubt be very difficult to keep them tight, but if any man can do it Capt. Ericsson can. She is now said to be perfected in every part of her machinery, but we cannot forget that on the 12th of last month, the "New York Tribune," warmed with undue excitement, used these words:—"The age of steam is closed, the age of caloric opens, Fulton and Watt belong to the past, Ericsson is the great mechanical genius of the present and future." One month since then has passed away, the Ericsson was lying all that time getting repairs, and we have not heard of a single steamboat striking her colors to hot air.—Every paper in our city used nearly as extra-

vagant language as the "Tribune," especially the "Herald" and "New York Times." Perhaps a month has cooled their imagination and led them to sound reason; it at least has done so to the "Tribune." In that paper of the 11th inst., one month exactly from the day of the Ericsson trial, and thirty days exactly from the time it declared "the age of steam closed," we find these words in a leading editorial:—"Had Capt. Ericsson succeeded in transmitting the moderate force excited under his main pistons to the crank shaft, the days of steam as a marine motor might perhaps be about to be numbered." Here, without any apology for its former wild assertion, "the age of steam is closed," it now says, if all the direct power of the hot air was communicated to the main shaft, (two-thirds more than what it had before,) the age of steam might be about numbered. This is certainly coming down a peg or two, and not in a very ingenious manner.

We have not seen a solitary scientific argument presented by the hot air advocates in favor of it as a superior substitute for steam, and we are thereby convinced that they are all deficient in scientific knowledge. Now a good argument might be presented in its favor based upon its inferior capacity for heat, which is as 3.72 to 1 against water.—We confess that a good argument could be adduced in its favor based upon its atomical numbers, and as Jonathan Edwards would say about a theological question, "it would look strong until it came to be handled, when it would fall to pieces." We will endeavor to present some arguments for and against it next week, and in the meantime wish the Ericsson a safe and prosperous first voyage.

The Hardware Trade.

Several of the New England Hardware manufacturing firms finding themselves seriously injured by evils that have crept into the trade, determined to put a stop to them, if possible, and accordingly advertised a meeting of Hardware Manufacturers, to be held in New York on the 10th inst., when, perhaps, some amicable arrangement might be made that would be beneficial to all parties concerned. The meeting was accordingly held, and a committee appointed to draw up resolutions, but so much opposition was evinced, particularly on the part of the small manufacturers, who do not feel the evils complained of so palpably as the larger firms, that nothing determinate was resolved upon. The points at issue are the present system of long credit, the charges of freightage and insurance which are pre-paid by many large manufacturers, even for great distances, and the cost of packing cases, which are allowed by the manufacturer to the dealer. To remedy these grievances a series of resolutions were drawn up by the above mentioned committee and presented to the meeting for adoption, but they did not appear to meet with general approbation. The first, which was intended to fix the time of giving credit viz., 6 months, alone met with any hearing—the two others, for discontinuing the payment of freightage, and allowing packing cases to the purchaser, being entirely disapproved of. Even with regard to the first, there was much opposition evinced, and the Committee were compelled at last, from the difficulty of obtaining a hearing, to withdraw from the field. It may, therefore, be looked upon as a drawn game, neither party—the long credit nor the short credit—having obtained the ascendancy, for, from the noise and confusion, which we understand from a party present, was exhibited at the meeting, it would be impossible to determine whether the resolution was carried or not. It would, however, be advantageous to the trade—both buyer and seller—if some regular credit system were adopted, for the present mode of carrying on business is open to many serious objections—of which many manufacturers complain, as it appears to us, with justice.

It is no uncommon thing for a manufacturer to date an invoice of goods sold, three or six months forward, in addition to the customary six months' credit of the trade, so that he actually gives nine or twelve months' credit, and sometimes longer, when, by right, the purchaser could only expect six months' time from date of purchase before payment would be due. This is a ruinous method of pro-

cedure, which cannot fail to be detrimental, not only to the party doing so, but likewise to other dealers. As a matter of course these latter, in self-defence, are obliged to do similarly, or, if they refuse such accommodation, they are liable to suffer from loss of business, the buyers complaining of their unaccommodating spirit, as compared with Mr. So-and-so or Mr. So-and-so.

Again, the charges for freightage and insurance are a heavy drawback on a business where manufacturing prices are so slightly remunerative as the hardware trade, and amount to a large item on the debit side of a manufacturer's books, when he is expected to pay the expenses of carriage as far as Albany or Buffalo, and even in some particular cases which we could point out, as far as New Orleans. Even the price of the packing cases, which are now allowed to the buyer, is a heavy item out of the manufacturers' profits, where the business is large, amounting, with some firms, to several thousand dollars yearly,—and although a small manufacturer, whose orders are few, may think to draw custom by making no charge for packing cases, yet it comes onerous where the orders are extensive. If we are not mistaken, in other lines of business it is customary for the purchaser to be at this expense; at all events, it would be of great advantage to those that are concerned in this trade, to come to some unanimous agreement upon these points—their differences can only injure themselves, and while they are pulling different ways, no good can arise. We are opposed to monopolies and cliques, but we are, nevertheless, of opinion that organization is necessary in all stages of society, and that both the manufacturer and the dealer, the seller and the purchaser, are benefitted by a regular system, where chicanery and unfair conduct cannot get the upper hand over the honest and straightforward tradesman. Let the hardware manufacturers, therefore, see to it—it is their affair to do so; and if the present meeting has been abortive, let them canvass the trade and call a general meeting again of hardware manufacturers from all parts of the Union.

White's Truck--Errata.

Mr. Hudson, of Patterson, the author of the late article on White's Truck, on page 163, writes unto us stating that there were several errors printed by us not in his letter, which he wishes us to correct. We will correct them, but beg to state that his letter was carefully read with the proof, and the blame is not ours. The article says "his truck ought to be compared with such as are calculated for even (read uneven) roads." Again, where it says "the centre bearing trucks put upon the Auburn and Rochester Railroad, by Eastwick and Harrison had eccentric centre pins," is not correct; it should merely have stated "that trucks having such centre pins were in use several years ago on the said road."

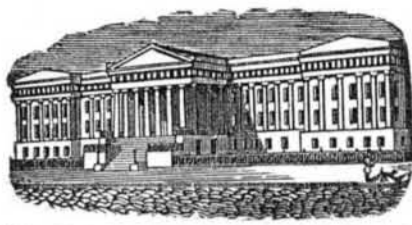
Inventors of Washing Machines to the Rescue.

Mr. James S. Gilliam, of Petersburg, Va., writes to us that he is desirous of purchasing some of the best washing machines that were ever invented. Mr. G. writes that he is the keeper of a large hotel, and desires machines that will do work on a large scale. We can do no better than to advise each of the three hundred washing machine patentees to address Mr. G. a letter setting forth the merits of their respective inventions.

For British Yachts.

An opportunity will be afforded next October for any of the crack British yachts to redeem the national laurels of Old England, which were lost in the race in which the "America" was the declared victor. The New York Yacht Club has offered a purse of \$500, to be sailed for on the 18th of October next, over the usual route in our harbor. The prize is open for the yachts of all nations, and our friends across the Atlantic are affectionately invited to participate with us on that expected trying and joyful occasion.

We have received a letter from Mr. Wilson inventor of the tunnelling machine, which he says is successful, in contradiction to the extract in the "Scientific American" of the 5th inst. We will present the substance of his letter next week.



Reported Officially for the Scientific American

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING FEBRUARY 8, 1853.

PURIFYING FATTY MATTERS—By J. B. Moinier & P. H. Boutigny, of Paris, France. Patented in France, Nov. 14, 1849: We claim the introduction and mingling of a current or currents, of sulphurous acid gas, with mixtures of fatty acids and alkalis, preparatory to the process of being converted into candles, tapers, and articles for burning, thereby rendering such mixtures of a superior quality, and causing them to burn with a stronger, clearer, and brighter light.

HOT AIR FURNACES—By N. A. Boynton, of Boston, Mass.: I do not claim a hollow ring radiator placed over, and made to communicate with the chamber of combustion; but I claim the hollow wheel radiator, made with a hollow rim, hollow spokes, a hollow hub (open at top and bottom), and a valve and valve seat so made and applied to the hub that when the valve is closed it shall cause the heat and volatile products of combustion pass through one or more of the arms and into and through the hollow rim, out of the said rim, through the other arm or arms, into the hub and over the valve, and also so that when the said valve is opened the heat and volatile products of combustion may pass directly up through the hub, without first calculating through the hollow arms and rim, as specified.

CENTRE-BOARD AND RUDDER FOR SHOAL WATER VESSELS—By Geo. Chase, of Prudence Island, R. I. I am aware that one rudder, made to slide within the other, and attached to a centre-board, has been used, so that one shall rise with the other, but in this case there is no indication by which it can be known, when the sliding rudder is up or down, and when used.

I claim attaching the rear end of the movable centre-board and the rudder to the sliding stern post, so that the said centre-board, stern post, and rudder, may be raised or lowered together, substantially as described, and by which means I only use a single rudder, whose position can always be known by the height of the stern post to which it is hung, as also that of the centre-board, the sliding stern post serving as an indicator of the positions of both.

HANGING FARM GATES—By John Wilson, of Milroy, Pa.: I claim the lower double-jointed hinge, in combination with the apparatus attached, and constituting the upper hinge, as described, for the purpose of holding the gate at any inclination required, for the purposes set forth.

CORE-BARS FOR CASTING PIPES—By Geo. Peacock, of West Troy, N. Y.: I claim the core bar having transverse wings or projections of a semicircular or other shape, corresponding to the shape of the article to be cast, said wings or projections permitting the sand to be rammed, for forming the lower half of the core, and holding or binding the sand to the lower part of the bar, and allowing the upper half of the core to be made by the sweep, as set forth.

Also the manner of anchoring the core bar, as described, viz., by means of the metal strips or bridges fitting in recesses in the upper surface of the core bar, said bridges resting upon wooden supports, and having anchor rods bearing upon their upper surfaces, the liquid metal burning out the wooden supports and allowing the core to be withdrawn, by which means the core is prevented from being raised or forced upward by the liquid metals, as it is poured into the mould, and thus enabling pipes to be cast of any desired length.

Also the manner, substantially as described, of connecting or joining the core bars, for forming cores for elbows or branch pipes, by means of wooden wedges, which are the means of holding the bars together while the core is being formed, said wedges being burnt out by the liquid metal, when poured into the mould, and allowing the cores to be withdrawn.

[See engraving of this apparatus in No. 13, this vol. Sci. Am.]

MOLDS FOR UNITING STEEL TO CAST IRON—By Chas. Peters, of Trenton, N. J.: I claim the use of a solid base to moulds, in which steel or wrought-iron is to be welded to cast-iron, with an aperture in the same, so that by means thereof the said steel or wrought iron can be subjected to the heat of the furnace while in the mould.

WINNERS—By G. F. S. Zimmerman, of Charlottesville, Va.: I claim the invention, use, and application of the perforated vibrating table, arranged to a sloping bottom or platform, the parallel saw-like strips or straw pushers, combined with an oscillating rake and straw beaters or curved prongs, the whole combined and working with the oscillating hinged standard, and suspending straps, substantially as set forth.

I do not, however, claim the invention of a combined threshing, separating, and winnowing machine, but only such parts as are set forth.

GAS METERS—By E. R. Hallam, of New Haven, Ct., and T. B. Barnard, of Brooklyn, N. Y. (assignors to E. R. Hallam, of New Haven, Ct.): We claim the method of constructing meters with one cylinder working within another, so that the gas passes alternately into the inner cylinder, and out of the space above it, and then out of the inner cylinder, while the supply enters the space above it, the gas being changed in its course or direction by valves, as described.

SURGICAL INSTRUMENTS FOR THE EAR, &c.—By H. Le Riemondie, of New Orleans, La. Ante-dated Oct. 23, 1852: I claim the construction of an instrument for examining the interior of the ear, nose, eye, or other part of the human system, by the combination of the reflectors, the lens, case, tubes, and lamp, as specified.

The Crystal Palace.

The *soi-disant* Crystal Palace, by some called the "Putty Palace," to use a poetical quotation, "wends its slow way along." We have paid a second visit of exploration to this scene of future glory, but saw none of those signs of forwardness that might naturally

have been expected after the Circular that has been issued by the Directors of the Company to intending exhibitors. In their Circular they state that exhibitors are to send in an account of the quantity of space they may require by the first of this month, and they may have had applications more than enough to fill the building, as we understand them to have stated to intending exhibitors; but we should have thought that it would have been time enough to put out this order when there were some signs of a building. In its present condition it can scarcely be expected that their call will be very promptly responded to: before an individual makes up his mind to entrust his property to another person's safekeeping it is natural that he should enquire where it is to be placed, whether it will be protected from the effects of the weather, and other unforeseen contingencies, all of which requirements must necessarily be first guaranteed. Reservoir Square, in its present state, can give no such protection, and unless a great deal more energy is evinced than we see at present exhibited, it is not likely to be in a proper state for the reception of articles, much less ready for public inspection by the 1st of May. Instead of employing only a few dozen workmen, as at present, we would advise the Company to put on some hundreds if they wish the building to be completed at the specified time. Otherwise, without pretending to any extraordinary wisdom, we will venture to affirm that the building will not be open even by the 1st of July. There is a dead-alive sort of look about the whole concern that we do not like—none of that bustle and animation that might naturally be expected, and we will wager anything that Genin's Bazaar, two months before opening, showed more tokens of a great enterprise than our World's Bazaar up town. What the motives of the parties interested may be we cannot take upon us to determine, but it is evident that they are not actually in a very great hurry, whatever pretensions they may put out to the contrary notwithstanding. A five years' lease, and perhaps another in perpetuo, will allow of a longer time for completing the building than by the first of May, and provided those that pull the wires can make the public dance to their tune, what do they care for the opinion of the world? A five years' lease for an object that must, if properly carried out, be only temporary, was almost as corrupt a job as the Broadway Railroad.

Riddle's Report of the Great Exhibition.

[Continued from page 174.]

FLAX—This class, although embracing a variety of substances, was not an extensive one, the chief and most interesting features relative to vegetable substances having been those comprised in the growth and manufacture of flax and hemp, including preparations by Claussen's patent.

Of the flax plant there are several varieties in cultivation, the best seed coming from the Riga and Holland. As the different varieties arrive at maturity at different times, and the stem rises to different heights, it is very essential that the seed be not mixed, as this would occasion great inconveniences and loss in the pulling of the flax. The most common variety of flax in Great Britain is of a moderate length, with a strong stem. If it is not sown very thick, it will throw out branches at the top, and produce much seed. It is, therefore, a matter of calculation whether it will be most profitable to have finer flax, with less seed, or an inferior quality of flax and an abundance of seed. There is a small variety which does not rise above a foot, grows fast, and ripens its seed sooner. When the principal object is to get linseed, this variety is preferred; but the flax is shorter, and also coarser.

The soil best adapted to the growth of flax is a deep, rich loam, in which there is much vegetable mould. It should be yellow, and loose to a considerable depth, with a sound bottom, neither too dry nor too moist. Either of these extremes invariably destroys the flax. It is, therefore, not suited either to hot gravelly soils, or cold wet clays; but any other soil may be so tilled and prepared as to produce good flax. The land should also be free from weeds, as the weeding of this crop forms a very important item in the expense

of cultivation. These circumstances suggest the following mode of preparing the land:—A long fallow, including two winters and a summer, will be a good preparation for the heavier loams, which should be trenched plowed, and worked deep. The manure generally used is rotten dung, or a compost of earth and dung, or some artificial dressings.—If the land is sufficiently clean, a crop of potatoes, well manured, may be substituted with advantage for the fallow. Flax has also been found perfectly successful, when grown after clover, on a single plowing, especially if the clover be biennial. The stubble of the clover is plowed up, either in the spring or autumn, with some care, and then the harrow and roller are passed over the ground before sowing. If the soil contains a great portion of clay, lime may be used with advantage; but in the lighter loams it may be dispensed with. At all events, it should not be used immediately before the flax is sown, but for some previous crop. Peat ashes make an excellent manure, as they improve the soil and keep off insects, which are apt to injure the root of the flax. For the want of peat ashes, those made by the burning of weeds and earth in a smothered fire are a good substitute. There is another manure, also, which has been found to answer exceedingly well, composed of the sweepings of streets in towns, mixed with night soil. Where night soil cannot be obtained in sufficient quantities, rape cakes, from which the oil has been expressed, dissolved in cows' urine, form a very excellent manure.

When the flax begins to get yellow at the bottom of the stem, it is time to pull it, if very fine flax is desired, such as is made into thread for lace or fine cambric; but then the seed will be of little or no value. Every flax-grower judges for himself what is most profitable on the whole. The pulling is done carefully by small handfuls at a time. These are laid upon the ground to dry, two and two, obliquely across each other. Fine weather is essential to this part of the operation. Soon after this they are collected in larger bundles, and placed with the root end on the ground, the bundles being slightly tied near the seed end. The other end is spread out, that the air may have access, and the rain not damage the flax. When sufficiently dry they are tied more firmly in the middle, and stacked on the ground till the next season. Some carry the flax, as soon as it is dry, under a shed, and take off the capsules with the seed by ripling. Sometimes, if the capsules are brittle, the seed is beaten out by means of a flat, wooden bat. The flax is then, according to the usual process, immediately steeped. By Claussen's invention, this method, to a certain extent, is dispensed with, the pure fibre being more easily and rapidly separated from the wood. As this process has excited great attention, both in this country and Europe, it is certainly deserving of a fair trial. In order to explain it as far as possible, we cannot, perhaps, do better than to use the Chevalier's own words.

[Here follows a very long article from the "Morning Chronicle;" a pamphlet published by Mr. J. Wylie, of this city, contains a far better description of the process. It appears to us that our Commissioner's information on such an interesting subject as flax should not be second hand. The Claussen flax cotton, after all, it turns out now, cannot be spun on cotton machinery.

SPECIMENS OF WOAD—This plant was once cultivated to a great extent for the blue dye extracted from it, but has been greatly superseded by indigo. It might still be cultivated to great advantage, as it improves the color of indigo when mixed with it in a certain proportion. The plants, when just about flowering, are mown with a scythe, washed with water and sun dried; after this they are ground into a paste, which, kept in heaps for about a fortnight, is then formed and pressed into solid balls. It is also occasionally sown as food for cattle, and has lately been recommended for this purpose under the name of pastel. Its vigorous growth and hardy nature are in its favor; but it will only flourish in very rich soils.

[The Woad Plant, we believe, is cultivated in some parts of the United States.

Recent Foreign Inventions.

OLD FABRICS MADE INTO NEW—L. F. Vandelin, of London, patentee.—The operation of converting old fabrics into fibres for being again employed in manufacturing woven goods has been hitherto performed on such fabrics whilst in a dry state, by which means the fibres were in a great measure injured or destroyed. The loss resulting from this process the patentee now proposes to obviate by operating on the fabrics whilst wet, so as to enable the fibres composing them to be drawn out or untwisted, instead of being broken, as heretofore. The materials are cut into pieces of from 2 to 8 inches square, and subjected to the action of machinery which is similar to that used by paper-makers, two beating wheels and plates of teeth being provided in the same trough, and a stream of water kept constantly flowing through it.—When operating on silk rags, the water should be used at a temperature of about 80 degrees, when a small quantity of soft soap may be advantageously introduced into it.—In conclusion, the patentee states that the mode of operating may be varied, so long as the peculiar character of the invention, that of treating old fabrics in water so as to separate their fibres into a state to be again used with other fabrics by spinning and weaving be retained.

NEW GUTTA PERCHA COMPOSITION—Alfred H. Gaullie, Paris, patentee.—This improved composition is formed by mixing together equal parts of gutta percha and of Roman cement reduced to a pasty consistence with ox-gall. The operation of mixing is to be performed while the gutta percha is in a heated and plastic state, and the two ingredients must be well masticated so as to cause them to combine intimately together. Any kind of coloring matter may be combined with the materials according to the effect desired to be produced.

WORKING STEAM EXPANSIVELY—John H. Johnson, of Glasgow, patentee.—The improvement has a relation to working steam expansively, and consists in arranging the cylinders of an engine in such a manner that after the steam has acted by high pressure on a piston of small area, it is admitted alternately into two larger cylinders, whose pistons it shall move by its expansion, but the stroke of which shall be only half the length of the high pressure cylinder.

[At the present day there are many improvements in steam engines which look like marching backwards in the history of invention.]

TANNERS' GREASE—William Tanner, Exeter, Eng., patentee. (Well named.)—These improvements consist in using blubber combined with cod liver oil for dressing leather. The blubber is first melted by the application of heat, which should not exceed 130 to 140 degrees Fah., and an equal quantity of cod liver oil is then introduced, and well stirred in order to incorporate it thoroughly. The mixture should be used at a temperature of about 70 to 80 deg. Fah., and well stirred previous to removing any portion of it from the vessel in which it is contained. For thick skins, the proportion of blubber must be reduced, as they do not so readily absorb the mixture as thinner ones, for dressing which a larger proportion of blubber than that above stated may be employed.

NAPPING CLOTH—Wm. Murdock, of Holborn, Eng., patentee.—This improvement consists in subjecting milled or fulled woolen fabrics to an operation of beating, whereby the exterior fibres will be brought to an upright position, forming a pile, which is to be reduced to a uniform length by shearing. The beating is performed by rods striking the fabric across its length whilst in a wet state; and as the pile is only raised on each side of the part struck by the rod, care must be taken to shift the fabric gradually, so as to bring a fresh portion of it constantly under the action of the beating-rod. The operation may be repeated if the pile is not sufficiently raised by a single treatment.

[Condensed and selected from the "London Expositor," "Mechanics' Magazine," "Artisan," "Repertory of Inventions," and "Genie Industriel," Paris.