

Cincinnati Steam Fire Engine.

Messrs. Editors—A great deal has been published here and elsewhere on the subject of our steam fire engine, which is absolute nonsense. And inferences unfavorable to the inventor have been made on account of the wide-spread destruction of two conflagrations here, which took place recently. In one of them it was stated that upwards of twenty buildings were burned up; in the other, three buildings were destroyed, which rendered it obvious to the writer of this article that the affair was a humbug purely. In the article you published, April 9, 1853, taken I believe from the "Enquirer," it is supposed "that it is impossible to get the engine to fires without cutting up the streets and destroying the bouldering."

I desire to set you right, regarding the steam fire engine as a machine which must soon supersede the ordinary apparatus for extinguishing fires, and will therefore state a few things which ought to remove any prejudice that may have originated from such statements. The steam engine has never torn up the bouldered streets of our city. These are of late construction, and extend over but a small portion of the city, although we contemplate them finally to supersede the ordinary paving. This last is of the common limestone, an extremely friable material, which wears into holes, the adjacent paving readily wearing out under any heavy pressure, such as log wheels or the steam engine, for example. The introduction of a pay fire department here has been nearly contemporaneous with the introduction of the steam fire engine, and the ill feeling with which certain companies, not then brought under the new arrangement, regarded the change, hindered prompt attendance and hearty co-operation at these fires.

As to the twenty frame buildings destroyed, no one here regards their destruction as a loss, and if they had been, a group of twenty frame buildings in proximity to each other anywhere, would doom them to the flames.

I expect to obtain from the ingenious inventor of the engine, Abel Sharok, and from our city fire engineer, Mr. Bray, such a statement of the character, capacity, construction, and practical workings of the machine as will set the public, outside of Cincinnati, right upon this subject. CHARLES CIST.
Cincinnati, April 19, 1853.

[For the Scientific American.]
To File Saws—Niagara Falls Power.

The following plan of filing and setting a cross-cut saw is original, I believe, and may be of use to some of your readers. From the saw, as commonly used, remove every third tooth, file the side of each tooth next this space, perpendicular, the back at an angle of 45°; set the first two fronting on open space on one side, the next two on the other, alternately. The saw is now like a cross-cut tenon saw except that it cuts both ways, with the advantage that one half of the teeth prevent the other half from gripping; it runs smooth and cuts fast.

Since reading your remarks on the water power of Niagara Falls, I would suggest the following idea:—suppose the erection on the bank of the river of one of Parker's latest patent direct-action water wheels, and also the erection of a range of factories a mile in length; an iron penstock 5 feet in diameter an inch thick, hooped with forge iron an inch thick, would bear 200 feet head (130 would be all that would be needed); from a drum 12 feet in diameter on the shaft of said wheel, through said range of factories, over another of the same size, let there be placed (its weight properly supported) a wire rope or band an inch and an eighth in diameter, which would be slower than the working speed of the surface of the drum on said wheel; this rope, under a strain of 10 tons (it is said that it will bear thirty tons dead weight) would transmit 625 horse-power to the whole range of factories. This plan carried out would allow, notwithstanding its concentration, a vast amount of the water-power of Niagara Falls, to be applied usefully and economically.

Hackettstown, N. J. C. J. D.

In the Sandwich Islands they are turning their attention to the growth of wool.

Recent Foreign Inventions.

PURIFYING OIL.—J. P. Wilson, of London, patentee.—This improvement consists in depriving oleic acid of its objectionable smell, so as to render it fit for preparing wool for manufacturing. (He is evidently not acquainted with the American invention of using steam for the same purpose.) The bad odor of the oleic acid is dispelled by heating it in a vessel heated with high pressure steam, and kept at a temperature of 400° Fah., for about two hours. It is afterwards cooled down by the introduction of cold water, when it is fit for use.

ANOTHER OF THE SAME.—George Hutchinson, of Glasgow, patentee.—This invention consists in imparting additional fluidity to lard or tallow oil, or other oils of a naturally viscid character by combining them with chloric ether, so as to give them a character resembling sperm oil. The chloric is found to produce the best effect when used in the proportion of one part to two parts by measure of neutral tallow oil.

REFINING SUGAR.—John McIntosh, of Surrey, patentee.—The improvement consists in placing evaporating pans used in the concentration of saccharine fluids in rooms, the air of which is heated to such a temperature as will evaporate the fluid. A current of air is made to circulate through the room, so as to carry off the vapors as the saccharine fluids are raised by endless bands passing over and under rollers in and above the pans, to expose an extended surface to the action of the heated air. This is nearly the same kind of an invention as that recently secured by Mr. Bessemer, of London, in this country, the claims of whose patents were recently published in our columns.

INDIA RUBBER AND COAL TAR.—Mr. C. Goodyear, of this city, has recently taken out a patent in England, for a new compound, composed of india rubber and coal tar vulcanized with sulphur. Coal tar is heated in an open boiler until it acquires the consistency of melted rosin, when it is mixed with india rubber, in proportions which may vary according to the character of the material to be produced for a specific purpose. It is mixed with sulphur and then heated to vulcanize it.

INDIA RUBBER TEETH.—This article, in the form of purified white india rubber, has been patented in England, for making artificial teeth, gums, and palates. By its adoption many advantages hitherto impossible to be attained, have been introduced. The adhesion is complete, it can be moulded with perfection, to suit every inequality of the gums and teeth, and supplies an artificial periosteum, as it were, to the teeth, when become painful by the wasting away of the gum, added to these is the elasticity of the material, which completely obviates the inconveniences that arise from any motion with artificial teeth as made by other means.

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

Silvered Glass.

In our last number we noticed the alleged improvement of the Rev. M. Hill, for making silvered glass, and referred to previous notices in our columns, so that all our readers might refer to them, and see that we stated the exact truth. By the latest arrivals of our foreign exchanges we select the following up on the very subject we alluded to last week. It is taken from the London Weekly Times:

"Among the many striking novelties in decorative art which were displayed at the Crystal Palace in Hyde park, there were few more appropriate to the character of that marvellous structure, or more brilliant and effective in themselves, than the specimens of silvered glass in vases, goblets, epergnes, candelabras, wine-coolers, salts, tazzas, inkstands, &c., which were exhibited by Messrs. Hale, Thomson, and Co., and to which we or more than one occasion called the attention of our readers. The gorgeousness and novelty of this beautiful art manufacture, far surpassing anything of the kind in richness of tints, purity and delicacy of material, and elegant appropriateness of form, rendered it in a short time one of the most favorite ornaments of the drawing room and dining room. The difficul-

ties that presented themselves in the early stage of this unique manufacture, were such that the price was proportionately high, and objects of silvered glass could only be procured by those to whom cost was of little importance. Recently, however, these difficulties have been to a great degree overcome, and we understand that the price of these articles is now so considerably reduced that they may be said to be accessible to all lovers of the beautiful in art.

But the value of the discovery will not, we find, be bounded by useful elegancies alone, since it is applicable to objects of more practical utility. It has long been admitted that for surgeons' speculæ, for railway reflectors, for carriages, ships, light houses, and reading lamps, the silvered mirrors far exceed in brilliancy and permanency any others yet invented, and now that the price has been reduced, in some instances, we understand, as much as two hundred per cent., so as to make them generally available for such purposes, the use of silvered reflectors is become almost universal. The patentees have already received extensive orders for the United States, forty of the largest size being destined for the illumination of Fremont Hall, a public building erected on a grander scale than any this country can boast of. The fitness of these reflectors for marine purposes is being fully recognized by the Admiralty, whose example is followed by the Ordnance and other governmental boards, with results which the fogs prevailing at this season have helped to render remarkably conspicuous."

American Madder.

"The experiments which have of late been made with home-grown madder," says the "Lowell Journal," "have proved that, when properly treated, American is equal to the best French madder. Like Turkey, Dutch or Alsace madders, the American requires the addition of a little chalk to produce the best effects. During the past winter, the Merrimack Company have used, with great success, some madder grown in Montague, Franklin Co., Mass., and are now about to dye some calico with this Massachusetts madder, to be exhibited at the New York Crystal Palace.—Within a few days the Merrimack Company have received a small sample of madder grown in Georgia, which proves to be an excellent article—quite equal to that of Massachusetts. We have been informed that there grows wild, in Florida a plant, whose roots, when eaten by hogs, colors their bones red. Such is the effect of madder. Doubtless this is an indigenous species, whose cultivation would richly reward the planter. It is hoped that samples of this 'Pinkroot,' as it is termed in Florida, may be forwarded to Lowell for trial in dyeing. It is very desirable to determine whether it is madder requiring the peculiar treatment of all madders, (except the Avignon,) to produce the fullest, fattest, and most brilliant colors."

Cast-Iron Houses.

Bogardus & Hoppin, corner of Centre and Duane sts., this city, are engaged at present, in constructing for the corporation a large iron tower for a fire alarm bell to be erected on a lot in McDougal near the corner of Spring street. It will be similar to the one erected by the same firm in 1851, on Thirty-third street, measuring nearly one hundred feet in height by 20 feet diameter. They have also ready an highly ornamental front of six stories in height, and fifty feet in width, for the Messrs. Tatham, to be erected on the lot near the old church in Beekman street. Also, a front of five stories, and twenty-five feet wide, for Messrs. Hopkins & Bros., to be placed next the Grocers' Bank, in Barclay st. and one of similar design for Broadway. These fronts are unique and attractive in their design, and will do much towards introducing a new feature of house building in this city, which will improve the appearance of our streets by breaking the monotony of the brown stone and brick fronts.

Supreme Court—United States.

The Supreme Court of the United States, at its session of 1853, has decided the following points:—

1. Copy Right—A sale by the Sheriff of an engraved plate of a map, does not convey the

copy-right. This is not a subject of a levy on an execution.

2. Patents—Any person has a right to demand a copy of a patent from the Commissioners of Patents, on a tender of the fee required by law; and an action will be sustained against the officer who refuses it. The officer is not, however, compelled to comply with such a demand when accompanied with personal insult and abuse; but if another demand be made by the same party in a proper manner, the officer cannot withhold a copy till an apology be made for the prior insult. Ill temper and bad manners do not work a forfeiture of a man's civil rights (even if he be uncivil.) [Case of Bayden, vs. Burke]

3. Collisions at Sea—In case of accidental collisions at sea, when neither is in fault, each party bears his own loss. [Case of ship Washington vs. Mary Francis]

Submarine Telegraph.

In a lecture delivered at Belfast, a few days ago, Mr. J. B. Lindsay showed that much yet remained to be done in the beautiful applications of science to telegraphic purposes. Mr. Lindsay said that he had recently instituted a series of experiments with the view of testing an idea that he had formed some fifteen years ago,—that no submarine wires are necessary for the transmission of electricity. In explanation of this principle, he said:—"I shall localize the case, in order to render it intelligible. Suppose a wire connected with the copper end of the battery to be led down to the shore, and connected with a sheet of metal laid in the river. Suppose a wire from the zinc end taken to Broughty Ferry, and soldered to a metallic plate placed also in the river. Suppose similar plates laid in the river on the Fife side, at Newport and South Ferry, and these joined by a wire having in its course one or more telegraphs.—Suppose now that a charge of electricity is sent through the wire on the Dundee side, this current may make its circuit from the copper to the zinc either by leaping four miles through the water from Broughty Ferry to Dundee, or by a leap of two miles across the river to the other wire at South Ferry, and another leap of two miles from Newport to Dundee. In such a case, I have found that part of the electricity does not go across, and part of it does; but the part of it that does go across is sufficient to work one or ten thousand telegraphs."—[Ex.]

The same facts as those set forth above were presented in the October number of the "Edinburgh Review" for 1849. Experiments were also made by Mr. Thomas Taylor, formerly of this city, now of Boston, two years ago down at the Narrows in sending the electric current through part of the sea without a wire. We have had a diagram of his plan, and an account of his experiments in our possession for more than a twelvemonth. It is impossible to employ fresh water lakes as an electric medium, but salt water answers very well.

Disastrous Wreck.

The steamship Independence, running on the Pacific, was wrecked on the shoals of Margaretta Island, on the 16th of February, and 140 passengers lost their lives. After striking she was run on the beach 300 yards from shore, where she took fire and was totally consumed. The scene was terrific, as the surf was sweeping out from land. Most of those who lost their lives were from the Eastern States.

The herb ægilops, hitherto considered as worse than useless, grows abundantly on the shores of the Mediterranean. It produces a species of grain resembling wheat in form, but much smaller. By a few years' cultivation this weed has been perfected into an excellent wheat.

The human voice has been heard across the Straits of Giberalta, a distance of more than ten miles. This only happens in peculiar states of the weather. The sound of a military band has been heard at a distance of seventy miles on a clear frosty morning.

The "Edinburgh Scotsman" says that the Earl of Ellesmore has been appointed her Majesty's commissioner to attend the great exhibition at New York.