



NEW YORK, MAY 19, 1849.

**The New Commissioner of Patents.**

Mr. Thomas Ewbanks of this city, has been appointed Commissioner of Patents in place of the Hon. Edmund Burke, removed. This appointment will give general satisfaction to all our inventors. Mr. Ewbanks is an inventor, a practical mechanic, a man of great scientific attainments, and author of that pre-eminent work, "Ewbanks Hydraulics." This work together with many other scientific papers has given him a good and great reputation both at home and abroad. He is a man of unsullied character, modest and generous, but firm and just also. No better appointment could be made. Mr. Burke was a good Commissioner of Patents, and we suppose that he was removed because he was a keen partisan. Mr. Ewbanks is not a hot partisan, but a good quiet citizen, and this qualification is a good recommendation to inventors. What do they care about parties? Our inventors want a man who will compile statistics on the improvements in the Arts, not party statistics. Agricultural statistics, and statistics on public policy, are excellent, but they should be compiled by boards for that purpose. The Patent Office is supported and sustained by the money paid in by inventors to the Treasury, and surely no other class has a right to the labors of those officers, who are paid and supported by the funds paid in by inventors. We contend, and always have contended, for the rights of inventors, but their rights have been overlooked always for the benefit of others. The Patent Department was instituted for the purpose of encouraging improvements in the "Useful Arts." Now, although this is an undeniable fact, we well know, and have spoken of it frequently, that the improvers, the inventors, have received far less attention than some others who never paid a single dime for the advancement of the Arts. Huge documents on agriculture have been issued year after year from the Patent Office, while the epitome of improvements in the Arts has presented a miserable appearance in comparison with their buttermilk neighbors, for whom the inventors did all the churning, and made the churn too. We hope after this that all the Patent Office Reports will embrace matters only relevant to patents and improvements in the arts, with legal information in connexion, and that a copy of every Report for the year be sent to each man who secured a patent during the year.

In penning these lines we write above partisan feelings—for we are on the side of justice with the good will, we know, of inventors, who are of every party in politics, and who care for justice alone in this department above Whig or Democratic feelings. Mr. Ewbanks we know will give his influence and the best wishes of his heart to secure full justice to inventors and to extend a more universal and better knowledge of American Science and Art.

Mr. Burke, as Commissioner of Patents, earned the fame of being a prompt and able officer. Whatever faults one party may have with another, is no business of ours. We speak of him as a high officer of the U. S. Government, who performed his duties with honor to himself and his country, and it is a source of pleasure to know that his mantle has fallen upon worthy shoulders.

**Steam Boiler Explosions.**

We are indebted to the Hon. E. Burke, Ex Commissioner of Patents, for his valuable Report on the subject of Steam Boiler Explosions. By it we learn that it is the opinion of Mr. Cist, that much of the boiler iron of the West is made from inferior ore, deficient in fibre and tenacity, and this is held to be one cause of explosions. Excessive pressure is laid down as another cause, unduly heated metal another, and carelessness or ignorance, of engineers another. Thus four causes are laid down as sources of boiler explosions.—

The employment of cast iron in any part of the boiler is justly condemned. No less than 15 cases of explosion are reported to have been caused by the boilers being made of defective materials

The grand desideratum is, "the best way to prevent steam boilers from exploding."—Every person knows, that they will not explode if there is plenty of water in the boiler, and not too great a pressure on the safety valve. To keep up a good supply of water then is the main point, and this embraces the necessity of having an apparatus to give a sensible warning when the water falls below the safety line. These apparatus are ranged into four classes.

1st. The "common safety gauge" of low pressure boilers and the manometer for high pressure boilers, likewise the glass water gauge and some others that depend on small valves opening to sound an alarm, such as a float, to operate a whistle when the water falls below a certain point, also the common gauge cocks.

2d. Fusible plugs, the safety guard of Mr. Evans, and the expansion guard of Mr. Wright.

3d. The safety apparatus of Mr. Raule, the hydrostatic valve of Mr. Duff, and the interior safety valve of Mr. Easton.

4th. The ordinary force pump, the auxiliary pumping engine (the Doctor) and the self acting pumping engine of Mr. Barnum, as described in No. 3, vol. 2 Scientific American.

The disc safety valve is preferred to the conical safety valve. A boiler may be burst by a force below its ordinary working pressure if the tenacity of the metal has been diminished by heat, in such a case the ordinary safety valve is of no use. The fusible alloy plugs are stated not to be reliable, as they give no evidence of the determination of the boiler by age and use, as they are subject both to the pressure and the temperature. Mr. Evans' safety valve, is stated to remove this difficulty, by inserting a tube through the top of the boiler with its bottom resting on one of the flues, and having a small quantity of fusible alloy placed in the bottom of this tube connected to a spindle which is allowed to move round only when the alloy is in a molten state, which by being connected with a cord to a weight, drops it on a support and throws open the safety valve. This apparatus is highly extolled and recommended in the Report.

Barnum's self acting pump is highly extolled as it was in the Report presented to Congress on the same subject in 1845. Mr. Easton's apparatus is also highly spoken of.

Mr. Burke says that it is his deliberate opinion that the best remedy for all the evils complained of, would be to make a strong appeal to the interests of boat masters and proprietors, by giving a remedy, where explosions result in injury to persons or property, to the individuals wounded, or the nearest relative or friends of the killed, in the shape of heavy damages recoverable by action at law. He recommends both personal and boat property of boat owners be held as a *lien*, to respond to the damages of a plaintiff, and that all the members of the corporate body owning a boat, be held liable jointly and individually for damages.

**High Pressure and Low Pressure Engines.**

The high pressure engine as constructed with the condensing engine has the loss of the vacuum, for there is a diminution of its power by the counteracting pressure of the atmosphere on the educting side of the piston, but this counteracting pressure must be obviously less in proportion according to the high pressure of the steam. Bourne believes that a high pressure engine working at from 70 to 90 lbs. on the square inch, as in the case of locomotives, has about the same efficiency from a given quantity of water raised into steam as the condensing engine. For example, if the pressure of the steam in a high pressure engine be 120 lbs. (105 above the atmospheric resistance will only be one eighth of the power. If the pressure of a condensing engine be 16 lbs. on the square inch (1 pound above the atmosphere) and the vacuum be only worth 13 lbs. this will be a loss of one eighth in the condensing engine; therefore a high pressure engine working with steam at 120 pounds pressure has the same proportion-

al atmospheric resistance as a condensing engine working at 16 pounds pressure with the loss of 2 pounds in the vacuum by the attenuated vapor therein. Steam at a pressure of 8 atmospheres, works with the same proportional resistance as the condensing engine working with steam at one pound above the atmospheric pressure. What then is the relative value between a high pressure and a low pressure engine? On this point there are different opinions among practical engineers.—Some contend for and some against the high pressure engine. The condensing engine is more expensive, more complex, occupies more room, and is much heavier than the high pressure. The high pressure is more dangerous, it has the loss of the vacuum and needs more lubricating material.

The advantages claimed for the high pressure engine, are lightness, cheapness, compactness, simplicity, and no condensing water required.

The condensing engine has the advantage of the vacuum, less lubricating material and far less of wear and tear from pressure. For boats navigating shallow rivers, the high pressure engine is best adapted, and for moveable engines such as locomotives, it is also to be preferred. For lifting weights, such as operating cranes and windlasses, and for working hydraulic presses, where a variable power is required, it is also to be preferred. But for a stationary engine many prefer a condensing one, and no doubt they are correct when they use one of such power as will do its work with ease, using the steam expansively. Some who have tried both kinds believe that one good condensing stationary or marine engine, can be worked at less expense and will last longer than two high pressure engines.

**For the Scientific American. To the Fire Department of New York.**

The streams of water thrown direct from the ground or tops of engines into the windows of a burning building, are oftentimes almost ineffectual from the great height of the windows, the water having to be thrown almost directly upwards, and therefore but a small portion being of much service, and ladders are not always of sufficient length to reach the windows.

Now I propose in a measure to remedy this as follows:—

Take four ladders of equal length, two of which raise with their tops against each other (which by a simple contrivance can be made to clasp) then place the others one each side, which will act as braces; thus forming a firm and high stack from the top of which four streams can be thrown into the windows of the building opposite which they may be placed.

This proposition I think would be worth your trial, and the expense you see trifling.

My plan for securing the ladders I can give if you think necessary. H. M.

New York, May 1st, 1849.

[Will H. M. give us his plan for securing the ladders and bracing them perfectly. We would not like to trust ourselves with a pipe on the top of the second ladder, when only braced by its tall fellow; that is, as the ladders in use are constructed.]

**Daniel's Planing Machine.**

Messrs. Richard Ball and Thomas H. Rice, of Worcester, Mass., who purchased of Mr. Thomas E. Daniels the inventor, the right of his planing machine, are now successors and successful manufacturers of his machines, to which they have added some very valuable improvements, with a true Yankee spirit of inventiveness.

These machines have now a justly deserved reputation for squaring out stuff for machinery and all kinds of mill work, floor and other kinds of boards, and stuff for bedsteads, tables, bureaus, and for panneling, and for hollowing out water wheel linings. They are also capable of planing iron by being made strong enough.

These machines are delivered in Worcester, (always on hand, ready made to fill orders) at any moment. The prices are very reasonable. One 7 feet long, to plane 30 inches wide with common gearing costs from \$200 to \$250.

Travellers can now go from this city to Cleveland, Ohio, in two days.

**Patent Case.—Iron Blast.**

At Trenton, N. J., before Judge Grier of Philadelphia, a case was tried for the infringement of a patent, C. C. Alger, of Stockbridge, Mass. vs. J. E. Edsell, of Hamburg, N. J.—The patent was for an improvement in the arrangement of the blast pipes leading from the heating oven or cylinder to the tweres, which were placed inside of the stack between the lining and the stone work by Mr. Alger, instead of bringing them down on the outside as in the old way. This arrangement was adopted by Mr. Edsell, with the addition of a large box of cast iron behind the lining of the boshes, through which the air also passed to the tweres. This was used 15 months before the suit was brought. The effect of the improvement was held to be the keeping of the supply blast at an equable temperament.

The defendant contended that the additional box behind the boshes altered the nature of the invention—that Alger's produced an inferior article of iron than was produced before its introduction, with a greater consumption of stock. This defence was held to be of no consequence as affecting the matter of infringement, but only as one of degree for the amount of damages. A verdict was given for the plaintiff of \$350.

This is a case which goes far to show that our Courts and Juries are willing to sustain and protect inventors in some rights, more freely than those rights are sometimes conceded to them at Washington.

**American Cast Steel.**

It is not generally known that the important article of cast steel—for the supplies of which we are dependent on foreign countries, principally England—is now produced in this country from American iron, and that of a quality much superior to that imported. For this important advancement towards a state of entire independence of other countries, we are indebted to the energy and enterprise of the Adirondac Steel Manufacturing Company, and to the ingenuity and science of their superintendent, Mr. Joseph Dixon. Their manufactory is located at Jersey City, N. J., and the iron which they use for making the steel is manufactured by themselves, at their works situated on the western borders of the county of Essex, in the State of New York. The ore from which it is made is there found in inexhaustible quantity, and being in the heart of an extensive forest, which will furnish charcoal for a century, their works might be so extended as to meet the wants of the Union.—They are now prepared, we understand, to furnish steel of all sizes and forms, and at prices below that of the best qualities of imported steel.

Mr. Dixon is a man of uncommon ingenuity, and scientific attainments. We have been informed that the English steel imported now from some cause or other, is not so good as it used to be some years ago. Our informant is a gentleman who is a large tool manufacturer and is able to judge.

The Lowell Machine shop has declared a semi-annual dividend of 10 per cent. This is doing good business and shows that it must be well managed.

Banvard has been invited to visit Windsor Castle with his Panorama, where the Queen and royal family will examine it. This is a substantial compliment to American genius and enterprise, in old England.

We thank our friends of the Wellsburg Herald for their generous notice and also for informing us that they published the prospectus of the Scientific American. We shall certainly forward the paper regularly hereafter and regret that we overlooked them, which was certainly inadvertance. We cannot forward all the back numbers.

**Our London Patrons.**

We are happy in being able to inform our English patrons that such arrangements have been completed with the London Patent Office that the Scientific American may hereafter be found there. Messrs. Barlow & Payne are agents at 89 Chancery Lane, and will receive remittances on account of the Scientific American from those who may desire to subscribe.

Terms—3 dollars per year and postage paid out of the United States.