

Scientific American

NEW-YORK, OCTOBER 16, 1852.

Power Machines a Benefit to Operatives.

When spinning jennies and power looms were first introduced into England, nothing would do with the outraged and insulted spinners and weavers, but pulling down the factories and the breaking the machines. This was a very foolish operation, but the machine-destructives thought it was a very wise one; they, no doubt, imagined they had slain their greatest enemy. Poor short-sighted mortals! how much they resembled Don Quixotte battling with the wind-mill. We do not say but the hand-spinners and hand-loom weavers of old enjoyed more of the comforts of life than they do now, and perhaps enjoyed the world with a more hearty relish, but this we do know, that those power machines which have superseded severe human toil, have greatly benefited the very operatives who were ruthlessly opposed to their introduction. Gilbert Burns, the brother of the great poet, though not a poet himself, was a shrewd man, possessed of a sound head, and who had labored severely as a farmer, declared that the invention of the Threshing Machine was one of the greatest blessings ever conferred upon mankind. The terrible drudgery of the flail was as the life of a helot to him; he became a free man when the threshing machine was invented. There is the machine for planing wood, too; its introduction was violently opposed by carpenters,—their occupation, like Othello's, was gone, and nothing would suit many of them but smashing up the planers. But are there any carpenters in our country, now, who do not look upon this machine as a blessing? It was their emancipation; it relieved them from a toil which, at best, is gross drudgery. The trip hammer, too, although a very simple innovation, was also looked upon with exceedingly jealous eyes, by the performers of heavy tragedy at the anvil; but what would we have done for the heavy shafting of our steamboats, had those tragedians still monopolized the stage of the stithy? We might go on and enumerate a great number of machines, and recount the benefits which they have conferred upon the operative classes; but we have said enough to direct attention to the point which we wish to elucidate, and the doctrine which we wish to enforce. We are the advocates of all new and useful improvements in machinery, and we are the disseminators of information respecting new inventions and discoveries—this is our business; if we did not believe that machinery conferred blessings and benefits upon mankind, we could not conscientiously follow after such a profession. We believe that machinery has done wonders for the elevation of our race, and we also believe that it has but began to fulfil its mission; our heart and soul, therefore, is with this work of improvements in machinery.

Some people have extolled the blessings of machinery, for allowing more time for mental development; this is one benefit it has conferred upon mankind, but far be it from us to speak favorably of machinery on this account merely. Laziness is a vice, and a lazy idle man should not eat; every man and woman should do something for themselves. There are too many men and women who kill themselves with idleness. There are thousands in our cities who are not under the necessity of working to procure daily bread, who nevertheless, for their own health and pleasure, should labor, or take active exercise in the open air every day. On the other hand there are thousands who drudge away at unhealthy occupations, wearing out soul and body to win their daily bread. Improvements in machinery will benefit this latter class, and improve their condition. Improvements in machinery for the rapid and cheap construction, manufacture, and execution of domestic utensils, goods, and labor, are the very things on which the attention of philanthropic inventors should be fixed. "They were good old days," say the old folks at home, "when all things were made for the family on the plantation and farm. Our clothes were not so fine, but nobody wanted; there was less pride and more contentment." There is much truth in

this, and we are far from believing that large factories, and congregated hundreds laboring together in pent up workshops, is a higher development of humanity; we believe that, in the majority of cases, it is the very reverse,—men and women have become the servants of machinery, instead of machinery having become their servants. Can we not look to a future of better things? We can at least point to the road which will lead to it; this is our present object. Sewing machines, simple and cheap machines for making boots and shoes, great improvements in small carding and spinning machines, and weaving looms, together with other machines for doing different kinds of domestic labor, would conduce to a greater elevation of our race; this is the climax of our remarks—improvements in machinery for the benefit of the toilers.

Our Atlantic Steamships.

About a year ago some of the London journals, devoted to engineering, published a number of articles on the folly of employing side-lever engines in steamships, and advocated the superiority, in every respect, of the oscillating engine for the same purpose. These articles have found a second-hand advocate on this side of the Atlantic. It is said, now, that the side-lever engines of the Collins' steamers are mere copies of the English Marine Engine, and that these engines were put in to give confidence to the American public, or they would not have found any patronage; that is, passengers would not sail in them. It is also said that if these ships were to be built over again, the oscillating and not the side-lever engines would be employed in them. The objections urged against the side-levers are, "they occupy so much room, being more bulky, and consequently more expensive." The oscillating engines, on the other hand, are more compact, consequently they are not so expensive.

Well, supposing our steamship companies adopted the oscillating engine in preference to the side-lever, would this not also be merely copying after the English engine? Assuredly it would; what is the difference, then, in this respect? Nothing. But would the Collins Company, if they had their engines to put in again, adopt the oscillating kind; and would the able engineers of the Novelty and Atlantic Works recommend them in preference to the side-levers? We believe they would not. It is evidence of narrow-mindedness to refuse to adopt a good thing because it is foreign, and it is a sign of good sense to adopt an excellent thing whatever paternity it may have—Indian, Chinese, or English. Those engineers who prefer, at least in heavy and expensive engines, to adopt those of tried and proven qualities, exhibit more wisdom than those who adopt, recklessly, less expensive but untried and unproven engines. It is all very well to write long vaunting articles about this and that evil in present modes of engineering, but when this is done without facts to back up assertions, we may set down the writer as a better paragraphist than practitioner.

In 1848 a Commissioner was appointed by the British Government to examine into and report upon the state of the mercantile marine steamships. The President of the West India Mail Company gave in his evidence in favor of the side-lever engines for steamers; and, until we have further practical data to guide us, we must say that those engineers who counselled the side-levers for the Collins' steamships, exhibited sound judgment and good sense. It is not the mere economy of space and price of an engine at first, which, in the long run, proves most economical. The economy in repairs and general expenses must be looked into. An engine can be built of equal power with another and not cost one-half as much to construct it. It may run well for a while, but, in the course of a year, it will cost perhaps five times more for repairs, and never at best give satisfaction. We must remember, that every week which a large steamship is unnecessarily laid up for repairs, involves a great loss in the mere interest of money invested in its construction. How necessary, then, to count well the cost of what kind of engine should be employed in a steamship. In our opinion, the side-lever is the most economical, and therefore the best for steamships exposed to Atlantic storms. All

the parts are so well braced together, and so arranged for steadiness of action, that, in our opinion, the oscillating is greatly inferior to it? The beam engine has beautiful adaptations for working the pumps, and although it occupies more room than the direct acting engine, still, it is no more an objection against its employment than it would be against the oscillating engine, for other purposes, because it is more bulky than the steam wheel. We have practical data for the side-lever engine, where is data for the superior economy of the oscillating marine engine? A new engine cannot be put into a large steamship every two or three years; neither will it do, to put out more for repairs, in the course of a few years, than the whole original cost of the engine. We are the advocates of sensible improvements, but no friends to innovations for mere innovation sake.

Beardslee's Planing Machine.

On page 20, last volume of the Scientific American, we published an illustrated description of the Planing Machine of George W. Beardslee, of Albany, N. Y., and made some very strong statements respecting its working qualities. Since that time this machine has been winning its way into public use and favor. In the city of Albany, Ahijah Jones has invested a large amount of capital in dressing lumber, and has three of the Beardslee machines in active operation, each of which (as we learn by the Albany Argus) dresses 4,000 boards or planks in ten hours, including all stoppages. One of these machines has planed stuff for Messrs. Boardman & Gray, of Albany—the famous pianoforte makers—which always was planed by hand heretofore, no power planing machine being able to do the work. The stuff was for the "Tuning Boards" of pianos. There are now forty of Beardslee's machines in operation, in different parts of our country, and the demand for them is so great, that 150 men are now employed in their construction at Townsend's Machine and Foundry Works, in Albany. A large and splendid machine is now being constructed, for London, as the latest American improvement in such machines; it will excite admiration, and what is better, confer great benefits upon those who are to run it. The establishment of Mr. Jones is but new; he owns the right for Albany, which is a great city for lumber, and it seems he is driving a thriving business. One of these machines is now in operation in Williamsburg, near this city; the lumber which it dresses is nearly as smooth as a polished slab of marble. Every one, who has seen the lumber planed by it, has spoken enthusiastically of its beautiful and even surface. Beardslee's machine is a "line cutter," and has a self-adjusting throat, and is capable of the nicest adjustment to plane boards of great thinness; of this we have an evidence in the tuning boards which were planed for the company mentioned above. We have seen some thin boards planed by it, which we are sure could not be planed by a rotary cutter with safety. We welcome every improvement in machinery, let the improvement come from what quarter it may, and be it for any useful object whatever.

The Plant Fly Trap.

We have read of the vegetable snake of Africa, and the water-spider flower in Persia; we have seen a pea grow up with wings, which might easily be mistaken for those of a dragon-fly, but one of the most ingenious fly-traps in the world is a plant which grows in our shaking deep marshes; it has a small fibrous root; it has no leaves; the stalk is about three-sixteenths of an inch in diameter, is one foot high, and is surmounted with a flower; it is furnished with a bag of a peculiar form, and something like a purse at the throat. The mouth is lined with hairs, which are the watchers for prey and the sentinels to the vegetable nerves of the plant; they are very numerous and powerful, and act at once upon the throat of the bag, which has a thick cartilage, like an india rubber band. No sooner does a fly enter this bag, than, like the sensitive plant, it contracts, closes upon the fly, and makes it a prisoner within its vegetable crushing folds. In this manner the plant supplies itself with food, and on cutting one open with a knife, the bottom of the bag will be found stuffed with the skulls and limbs of wa-

ter flies, reminding a person of some cannibal's cave. How wonderful are all the works of the Almighty; every seed bringeth forth after its kind, and with all its special adaptations.

The Widow of Henry Bell.

It is well known to all acquainted with the history of steam navigation, that a Scotch carpenter, named Henry Bell, although not the first who invented or proved the practicability of navigating rivers by steam power, yet he was the first in Europe who successfully established the fact. This was in 1811, three years after Fulton commenced running with the Clermont between Albany and New York. The name of Henry Bell's first boat was "The Comet." It made regular trips between Glasgow and Greenock, two cities on the river Clyde. Bell had no sooner (after great risk) established the payability of steam navigation, than richer men entered upon a struggle of competition, which, from his inadequate means, at last forced him to retire. His wife, a heroine of the first water, did business on her own account, and freely advanced all her extra funds to her husband, in order that he might carry out his favorite scheme and come off with success. When Henry Bell grew old and infirm, his friends applied to the British Government to get a pension for him on account of the valuable services he rendered to the navigation of Great Britain. This was refused for the reason that he was not the original inventor,—Mr. Miller, of Dalswinton, being that person, and he was dead. The citizens of Glasgow, however, gave him a pension of £100 per annum, and since his death, which took place some years ago, they have given £50 to his old wife. We see by the "Scottish Guardian," of Sept. 10, that this pension has been increased to £100 per annum—nearly \$500. It is a remarkable fact that New York, in America, and Glasgow in Scotland, are the two most famous cities in the world for the building of steamships, and these two cities have the honor of being the places, where steam navigation was first established on the two separate continents. In 1823 the revenue of river dues, in Glasgow, was \$35,000, now it is \$380,000. This great increase has been brought about by steam navigation.

Burning Smoke.

Two years ago the cities in England and Scotland were like smoked hams, owing to the dense volumes of smoke which filled the atmosphere by the use of bituminous coal. The fields of grain were black in appearance from the same cause, and the hedges were in the like condition. Now all is changed; the sky is no longer like a smoke-house; the rains descend in clear streams, not in inky rivulets; the houses begin to look as if their faces were washed, and the hedges begin to wear their old dark green appearance. All this has been accomplished by an Act of Parliament making it penal for factories to let their smoke escape. The smoke is all burned by simple contrivances of furnaces, among which "Juke's," which was illustrated in last volume of the Scientific American, is very conspicuous. A Commission of Government first established that the burning of smoke was perfectly practicable, and Parliament then enforced the fact by law. The factory and mill owners soon found out how to fulfil the conditions of this law, and the result is, they save a great deal of fuel by the operation. Like many other good things, this important improvement at first met with a great deal of opposition; there are some men who cannot judge when a good turn is done to them, and we can say that this is true in respect to many useful inventions.

Report on Lighthouses.

We return our sincere thanks to Mr. George Mathiot, the eminent Electrotypist, and T. A. Jenkins, Esq., Secretary of the Lighthouse Board, for a copy of the "Report on Lighthouses," by the Commissioners appointed by Government; also for the reply of the Commission to the Fifth Auditor, who formerly had control of the inefficient old system; also for a copy of a report containing a list of the lighthouses, lighted beacons, and floating lights in the United States. These documents are of great use to us, and the gentlemen who have favored us with them have not only conferred a favor upon us, but will thereby be the means of doing good to others.