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What Inventors are Doing for the World.

By the late news from Europe, accounts have been received which are not a little flattering to our American inventors. In Great Britain and Ireland, the usual method of reaping grain is by the sickle: hundreds of reapers may be seen in the harvest season cutting down the golden grain. The wages paid are very fair,—women get from half a dollar to five shillings per day and board; men more, but how much it does not matter. The British agriculturists, having to pay such high rents, have long desired and hoped for the invention of a good machine to supersede the sickle, but although many machines have been brought forward there to reap by horse-power, they have all failed to give satisfaction. The American cradle, even, is unknown and unused in England; and in respect to cutting down the grain and harvesting in a hurry, as we do here, they are far behind the American age. Their eyes have been opened at last. a great reaping match was held on the 24th of last month, in Essexshire, and thither were invited all the reaping machines exposed at the Great Fair. A number were tried but proved abortive in their attempts to work well. It was then the stout but unprepossessing machine of Mr. McCormick, illustrated on page 164, this volume of the Scientific American, made its appearance, ready for action. Those who estimated the worth of the machines by a polished piece of brass here, and a burnished piece of steel there, shook their heads as the driver mounted his seat; but with a snap of his whip he started his team, applied his hand to the lever of his clutch, and set his wheels and cutters in motion, and away he went, sweeping a wide swath and raking it up on the platform at one operation, with such a velocity as to elicit repeated cheers from the on-lookers.

The success of this experiment will lead to the introduction of the American Power Reaper into Britain, and it will be the means of saving millions of pounds during some seasons.

At a plowing match which was held by the Agricultural Committee of the Exhibition, the plow of friend Starbuck, of Troy, N. Y., received the highest praise, and was acknowledged to work with greater ease than any of its rivals. We hope this excellent plow will not be pirated on the other side of the Salt River, but that friend Starbuck will receive orders for making 30,000, at least, so as to pay back the exact number of the Eddiston Scotch plow, which were imported into to this country before our mechanics gave their decided attention to the improving of our farming implements.

The London Expositor, a beautiful weekly paper devoted to illustrate and describe meritorious machines and works of art, has published engravings of Dick's Anti-friction Press, which had been illustrated in our columns; also Burrell's Straw Cutter, thus showing that with the influence of a respectable press in presenting good inventions at home, that same influence is not bounded by our own shores, but reaches to the other side of the Atlantic.

Important Patent Cases---Planing Machines.

In the U. S. Circuit Court for the Northern District of New York, at Cooperstown, 7th of August, 1851, Judge Nelson presiding. Wilson versus Allen, Law, Beardslee, and Barlow. The complainant prayed for an injunction to restrain the defendants from using what is known as Woodworth's Planing Machine. The defendants are all patentees, and each has a patent for a planing machine, as being a different invention from the other; and no doubt there is a great dissimilarity between them. There is no resemblance between some of them; as one has stationary cutters, like Law's, and the other reciprocating cutters, like Barlow's. It was alleged that every one of them was an infringement on the Woodworth Patent. The defence pleaded non-infringement. After three days' submission of testimony on both sides, to show cause that injunctions should issue on the one hand, and to show cause that injunctions should not issue on the other; and after considerable discussion on both sides the prosecution was abandoned for the present. We have been informed, that the assignees of the Woodworth patent intend to apply for an amended specification to cover mechanical pressure on the plank in the act of planing, and also to apply to Congress for an extension of the Woodworth patent. It would be a very imprudent move to get an amended specification covering such a device, for it would assuredly be a wedge to split itself. The present prosecutions, we think, were not fully weighed in the balance by the assignees of the Woodworth patent.

Short Conversations on Mechanics---No. 3.

Q. "Last week I desired to know something more about the laws for governing forces."

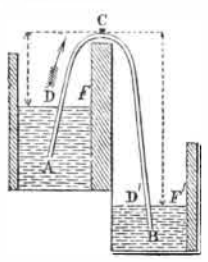
A. You mean the methods of applying the forces to propel machinery, &c.

Q. "No. I mean the nature of the forces—their mode of action, and as you have stated that a static pressure cannot produce motion, I would like to know how you can account for the raising of water thirty feet high by a syphon, and discharging it over a bank, as is done by the static pressure of the atmosphere?"

A. Are you sure that this is done by the static pressure of the atmosphere?

Q. "I have heard those say it was who pretended to know: for example, the waters of the Pacific are some feet higher than those of the Atlantic: now supposing the two are separated by a wall 30 feet high, would the waters of the Pacific not be discharged by the static pressure of the atmosphere into the Atlantic, by means of a syphon?"

A. The waters of the Pacific would be discharged into the Atlantic, but not by static pressure. Have you forgotten what static pressure means? It means forces in equilibrio. The natural pressure of the atmosphere is equal to 15 pounds to the square inch, and the reason why we do not see water running up hill, 30 feet high, is owing to the equilibrium of forces—those of the atmosphere and fluids—their static or equilibrium state. Disturb this equilibrium and we have no more a static but a dynamic question to deal with, as I can explain to you quite easily. But, first of all, you seem to have great courage in attempting to drain the Pacific Ocean with a syphon. If you pay strict attention to the conversation of learned and unlearned men, you will soon perceive that the latter deal always with mighty questions, the ocean or the sun—something unapproachable and grand. But let us test this question, as we easily can, by a simple experiment.



Here you see we have the syphon, which is a bent tube of unequal branches; here are two vessels, A and B; you may call A the Pacific ocean, if you please, and B the Atlantic. Well we wish to bring the waters of A into B by atmospheric pressure, and you see they have to be carried over the wall at the bend, C, of the syphon. Well, this figure exemplifies your proposition exactly. When the syphon is plunged into the two liquids, whose upper surfaces are D E, D′ E′, and when a vent is made at C by drawing out the small plug, the waters will stand exactly as they are represented in the figure—the Pacific will have no fears of being drained, you see, by a static pressure—the pressure of the atmosphere being balanced on both sides. But withdraw the air from the syphon by an air-pump applied at the plug, and the water will rise in both branches—in both branches of the syphon, mind you—by the atmospheric pressure without, and unite; and when the orifice at C is stopped, the water will flow from the vessel, A, into B, so long as the level, D′ E′ is below D E, and the short leg of the syphon below the water surface in A. The atmospheric pressure upon the two surfaces in the separate vessels, tends to force the water up the two legs of the syphon; and when the syphon is filled, these pressures are counteracted in part by the weight of the water in the long leg; and as the atmospheric pressure is very nearly the same for a difference of level of some 28 feet, by reason of the slight density of the air, the weight of the suspended columns of water will, for the difference of the level of the water represented, differ considerably by reason of the different density of the water; a cubic foot of air weighs only 1·2 oz., a cubic foot of water weighs 62 lbs., a very great difference. The atmospheric pressure opposed to the long column of water, is therefore less in proportion than that opposed to the short column, thus leaving an excess of pressure in favor of the short column to produce and continue the motion, until the water in both vessels is about on a level; in other words, the pressure changed from dynamic to static or equilibrium. There is no stationary pressure, either, about the action of this instrument, for the air moves downward on the surface, D E, as the water rises in the short leg, and the air on the surface, D′ E′, rises. The action is exactly like pressing the water up the short leg by the plunger of a pump, until the resistance is equal to the pressure (P=R), when, of course, the water must cease to flow. The velocity with which the liquid will flow through the syphon is thus beautifully expressed by Professor Bartlett: $V=\sqrt{2g(h'-h)}$; the velocity of the water flowing through the syphon is equal to the square root of twice the gravity into the difference of level of the fluid in the two vessels; or, if you please, your two oceans.

Q. "I confess that I now see clearly into a subject respecting which I have been profoundly ignorant, but thought I was well acquainted with. I should like to know something now about the motions of solid bodies, their momentum, velocities, &c."

A. The questions I have been explaining to you all relate to gravitating forces, and I will still treat of them in discussing velocities, as this branch of mechanics is but very imperfectly understood by the great mass of our fellow men.

To our Subscribers.

Our subscribers will see our new prospectus on the last page of this number. Three weeks before the expiration of all subscriptions, subscribers receive notice to that effect, in order to allow them plenty of time to renew the same before the paper is discontinued. Our terms are cash in advance. We do not employ agents to go round and collect subscribers. We have trusted to the worth of our paper to recommend itself and thanks to our subscribers we have not trusted in vain. Our next is the seventh volume, and we solicit the attention of our readers to our prospectus. 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 sincerely request subscribers to be particular in sending us their address; write it full and plain. The Scientific American is now acknowledged on all hands to be the best mechanical paper in the world, and we hope our subscribers will do as they have done heretofore, viz., solicit their friends who are not subscribers to subscribe, for assuredly, Volume 7 will be the finest ever published.

Steam Superseded.

An invention is said to have been made at the west, in which carbon entirely supersedes the necessity for steam. The experiments show that a greater amount of power, with less heat, is obtained from the charcoal, and at one thirty-sixth of the cost incurred in the use of steam.—[Exchange.

[Carbon is coal, and when it burns, the result of its combination with the atmosphere is carbonic acid gas. This has been condensed into fluid and was employed years ago to supersede steam, but it was all a bam.

There are a great many men who never see or get beyond the edge of science, and there they revolve in centrifugal grandeur, never perpendicular nor straight in position, but buzzing like boys' tops which have been perforated for the admission of air, they not only amuse themselves with their own humming, but also astonish the groundlings. Miserable discoveries like the above, to supersede steam, are continually rotating before the public.

Steamboat Question.

Messrs. Editors.—Will you oblige several of your subscribers by answering the following question. Suppose a steamboat to be placed in a fair uniform (and not shallow) current of five or ten miles per hour. Turn her head up stream and run any given distance; then down stream the same, what will be the effect of said current upon the motion of the paddle wheels per minute, up and down, comparatively? O.

[The difference is, that the pressure is on the back of the paddles and with their motion, when running against the stream; and the reverse when running with the current. But with respect to the velocity of the boat, if the engines work with a uniform rate of power, we can see no difference, except that due to the floatage of the vessel with the stream. The reason of this is that when the vessel goes against the stream, although the back pressure is with the motion of the paddle, the water on which the paddle acts recedes with a velocity due to the current—in other words, slip. In the other, the pressure of the current is against the face—or motion of the paddle, consequently there is less slip. A still body of water affords the proper fulcrum for the action of the paddles; therefore all departure of the water from this state, must affect the paddles, as $x=y$ for the current; and if we consider a the known and proper condition of the water, the equation will be $a-xy$. This is our opinion, and has reference only to the paddles acting against and with the current. If any experiments ments have been made we would like to know about them, for plain facts are sturdy things and cannot be refuted; but an experiment, and a *fair* and *proper* experiment are two different things. Great care must be observed in making experiments.

Petition for the Extension of a Patent.

United States Patent Office.—On petition of Sewall Short, of New London, Connecticut, praying for the extension of a patent granted to him, October 6th, 1837, for improvement in railway ovens for seven years, from the the expiration of said patent, which takes place on the sixth day of October, 1851.

It is ordered that the said petition be heard at the Patent Office on the 29th day of September, 1851, at 12 o'clock M.; and all persons are notified to appear and show cause, if any they have why said petition ought not to be granted.

Persons opposing the extension are required to file in the Patent Office their objections, specifically set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party, to be used at the said hearing, must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

Thos. Ewbank, Com. of Patents.

Worcester Mechanics' Fair.

The Third Exhibition of the Worcester Co. (Mass.) Fair will be opened in the city of Worcester on Tuesday the 16th of next month, (September, and will continue for several days. The mechanics, manufacturers, artists, and inventors of Massachusetts and neighboring States are respectfully invited to furnish specimens of their productions. The Mechanics' Fairs at Worcester have always been distinguished by impartial decisions on the part of the judges, and great urbanity on the part of the managers. We have no doubt but the Worcester mechanics will have a good Fair. John Boyden, Esq., is superintendent, and all those who intend to exhibit will receive all the information they may want by addressing him at Worcester. The Worcester mechanics have a high character for skill.