

THE Scientific American.

MUNN & COMPANY, Editors & Proprietors.

PUBLISHED WEEKLY AT NO. 37 PARK ROW (PARK BUILDING), NEW YORK.

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Messrs. Sampson Low, Son & Co., Booksellers, 47 Ludgate Hill London, England, are the Agents to receive European subscriptions or advertisements for the SCIENTIFIC AMERICAN. Orders sent to them will be promptly attended to.

VOL. X. NO. 20. [NEW SERIES.]..... Twentieth Year

NEW YORK, SATURDAY, MAY 14, 1864.

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GREAT IMPROVEMENT IN FEEDING ARMIES.

On the 30th of July, 1850, Gail Borden, Jr., then residing in Galveston, Texas, now of Elizabethport, N. J., obtained a patent for concentrating animal food by which it was rendered far more portable, and could be kept sweet and fresh for a long period. After securing patents for his improvement in foreign countries, Mr. Borden bought droves of cattle in Texas, and prepared large quantities of food by his process. But he neglected to have his new article tried and advertised so as to create a demand as rapidly as it was produced, and he consequently found a large supply on his hands for which there was no market. Though the numerous shipmasters and others who tried it recommended it in the highest terms, the enterprise of manufacturing it did not succeed. It led Mr. Borden, however, to the invention of his plan for condensing milk, out of which he is making money fast enough. We record this fact with great satisfaction, as Mr. Borden is the most loyal of men.

We have just received a pamphlet from Professor E. N. Horsford, late of Harvard University, in which Mr. Borden's scheme of concentrating animal food is urged upon the Government as the proper plan for preparing fresh meat for our armies. Prof. Horsford discusses the subject with all the lights of statistical returns, and with those of the most profound physical, chemical, and microscopic science. He shows that an ox weighing 1,800 lbs. on the hoof yields only 112 lbs. of dry food, and that by the actual methods practiced in the army only 18 lbs. is utilized!

Prof. Horsford's plan is to make the fresh meat for the armies into sausages. He would have a large establishment erected by the Government in Illinois, and have it furnished with all suitable vessels and conveniences for conducting the operations. He estimates that this plan would effect a saving in feeding our armies of more than \$100,000,000 a-year, besides supplying the soldiers with more healthful and palatable food, and increasing very largely that all-important element, the mobility of the troops.

We have been frequently impressed during the progress of the war with the efficiency of the Commissary Department of the army. It has been uniformly praised in the reports of commanding generals, and we have never seen a word of complaint against it in the letters of newspaper correspondents, of subordinate officers, or of private soldiers. To the able and intelligent officers of this department we commend Prof. Horsford's suggestions as worthy of the most careful consideration.

In England bean meal is extensively used for fattening hogs.

A PLEA FOR INVENTORS.

Many good machines and useful inventions are condemned prematurely and thrown out of use for want of a little practical common sense on the part of those who operate them, and we regret that even in this day of machinery, when its use is all but universal, there are many narrow-minded and conservative individuals who are so wedded to old ideas and old-fashioned ways of doing work, that they see no good in any thing that tends to save it, and every improvement is, in their eyes, a "new-fangled humbug." It is surprising to see the extent to which this indifference, or worse than indifference, is carried, and it is but simple justice to inventors that their efforts to benefit society should meet with more encouragement from it.

One patient, earnest and energetic inventor of a capital washing machine, said to us recently: "The greatest difficulty I have to contend with is the prejudices of servant girls; they throw up their hands in horror when the machine comes home, and give such doleful accounts to their masters and mistresses of the machine's inefficiency, that I experience serious loss in consequence."

This is precisely the same trouble that many others have to encounter, and we feel it to be so unjust to inventors that we herewith remonstrate against it. Servants are not alone to blame, either; very many others who should be more thoughtful look upon a new invention as something that will take care of itself, that requires no judgment or practice to become acquainted with its virtues, and if they "don't get the hang of it," so to speak, at the first trial, they not only throw it aside themselves, but condemn it as useless to their circle of acquaintance.

Now this is all wrong. An individual has no more moral right to slander a new invention than he has the character of respectable people, and the gross injustice of it will be apparent to all thoughtful persons. A lady said to us the other day, "I don't like Wheeler & Wilson's machine;" and when we inquired the reason, she replied, "Oh, the threads break sometimes." Poor woman! What a distressing hardship! Another complains of clothes-wringers, and don't like them because it is too much trouble to fasten them on the tub, &c. Now, these all seem very trivial matters in themselves, but it is not the simple refusal of these benighted individuals to employ the results of ingenuity, but the bad influence they exercise on the community that we deplore.

This article is not a plea for useless machines, or for any special machine, but it only asks that common justice be shown to new inventions. Try them as if you wanted to get the benefit of them, reader! and not as if you expected to see them get up and walk and talk. Put them upon their merits alone, and if you are satisfied that you have done all that you would if the machine were your own, and still fail, ask some of your acquaintances to help you out of your trouble, and you will doubtless be successful. A little oil goes a great way sometimes, and a screw loose, or a pin out of some part, makes an important difference in the action of a machine. Always be sure you are right, and then go ahead; and if you use as much common sense in trying a new invention as you do in the ordinary affairs of life, you will not be disappointed.

HAP-HAZARD.

When a man does work at hap-hazard he generally repents of it. Taking a size on a rule at random has spoiled many a fine piece of work, and giving the handle of a slide-rest on a lathe or planer a turn too much, has been the means of throwing heavy shafting out of the center, smashing the shears, the slide rest itself, and very often the face plate of the lathe. The skillful artisan shows his superiority in dealing gently and cautiously with his work, and it is only the tyro that jumps to conclusions, and guesses where he ought to be positive. All men are liable to accident and mischance, none more so than mechanics, upon whom depends a great deal at the present time, but skill is needed, not sleight of hand, and sober progress instead of the haste that makes waste. No come-by-chance job can be a good one, and there is no place where cool heads are more required than in the workshop. Manual dexterity is a good thing, but that does not mean tricks, legerdemain or capers of

any sort. It is far better to take a reasonable time and do the job in hand well, than to rattle it off "any how," and have it to do over again."

THE CHENANGO BOILER EXPLOSION.

No verdict has been rendered by the jury in this case up to the time we go to press, but it seems quite probable that they will come in with the usual one in such cases—"mysterious accident," enormous pressure suddenly generated, some nonsense about superheated steam, &c. &c. From the evidence adduced from the examination of disinterested practical men, it appears that the boilers were not properly braced, and exploded in consequence. This is, in plain English, the cause of the disaster. A strain of nearly ten tons was brought upon each iron strap only five-eighths of an inch sectional area, to which the braces between the arches of the fire-box and the flat shell of the boiler were connected, and they naturally gave way in consequence. There were but thirty-two of these straps instead of sixty-four—just half the number called for in the specification, and the disaster which occurred is the result of the omission. By the acceptance of the boilers by the Government, the contractors (the Morgan Iron Works) are relieved from all blame in the matter.

THE DAILY PRESS AND MECHANICAL REPORTS.

In the inquest on the *Chenango* disaster the most ridiculous blunders were repeatedly perpetrated through every paragraph by the reporters of the daily press. We read in the *Times* that iron is "minched," instead of punched; and we hear of "ciphering gages," instead of siphon gages. Mr. Martin is made to say that he "thinks 64 lengths of the hose shown is sufficient to stay my boilers measuring 18 feet by 10 inches, at 60 pounds to her square inch." Mr. De Luce is charged with saying that he thinks 20,000 lbs. a very high estimate for a piece of iron to resist a boiler. It requires as much study to find out what the gentleman testifying *did* say as to arrive at the cause of the explosion. Mr. Martin especially must be highly gratified with the important discovery in staying boilers with "hose," which the reporter fathers upon him.

ON BOILING WATER.

Mr. W. Grove, F.R.S., in a lecture before the Royal Institution, presents some facts on a subject lately brought to the notice of this association. He first alluded to the statements of Donny before the Brussels Royal Academy, in 1843, that in proportion as water is deprived of its air, the character of its ebullition changes, becoming more and more abrupt, and boiling like sulphuric acid with jumps (*soubresauts*), and between each burst of vapor, the water reaches a temperature above its boiling point. To effect this it is necessary that the water be boiled in a tube with a narrow orifice, through which the vapor issues; if it be boiled in an open vessel, it continually re-absorbs the air and boils in the ordinary way. Mr. Grove found that with the oxy-hydrogen gas given off from ignited platinum plunged in water, there was always a greater or less quantity of nitrogen mixed, which led him to examine more carefully the phenomenon of boiling. He arranged two copper wires parallel to each other in a Florence flask, so as nearly to reach the bottom; the lower ends were united by a platinum wire, about an inch and a half long, which was curved horizontally. Distilled water which had been boiled and cooled in an air-pump vacuum, was poured into this flask so as to fill about one-fourth of its capacity. The whole was placed under the air-pump receiver, and a connection was made with the wires of a voltaic battery. In this manner the platinum wire was heated and the boiling continued indefinitely. The effect was curious; the water did not boil in the ordinary way, but at regular intervals bursts of vapor took place, after which the water was perfectly tranquil.

Another experiment was made with a glass tube five feet long and four-tenths of an inch internal diameter bent into a V-shape, into one end a loop of platinum wire being sealed with great care. Into this tube water, purged of air, was poured to the depth of 8 inches, and the rest of the tube was filled with olive oil. The experiment of boiling presented nearly the same peculiarities as those already men-