

**What is Doing to the Ericsson?—Heat.**

The Ericsson Hot Air Ship, having all her former engines taken out at Green Point, was removed three months ago to the North River side to have great alterations made in her machinery, at the engine works of Hogg & Delamater. We have not visited this vessel in her new berth, nor do we know personally what changes are making or are to be made in her new engines, but we have been informed that the *new engines* making for her are identical in nearly every particular with those of Dr. Stirling. If the former engines of the Ericsson were completely successful, as asserted by so many persons, why were they taken out? Has not the result so far confirmed all we said about the impossibility of hot air being able to compete with steam? It has. Why is it then, that those papers who deceived the public with false representations about its success, have not said a word about their being mistaken? We cannot look upon their conduct as that of honest journalists. Capt Ericsson has shown himself to be a most skillful adept in the Fabian tactics of literature, in staving off his discussion with Major Barnard.

An article on the mechanical action of heat by F. Ronbaud, translated from "L'Illustration," has been published in one of our city magazines, which commences thus:—"When a body is exposed to the action of heat, there is produced the phenomena of dilatation, that physicians explain by saying that the caloric has penetrated a body, and taken the place of the air or water, or other substance interposed in the pores of the body. In order to penetrate a body thus, the caloric has had to overcome a certain resistance, and to exert a mechanical action. In consequence, caloric is a force that can be utilized in the arts and in machines identical with the steam engine. It is this idea that Capt. Ericsson is endeavoring to realize in his new caloric engine."

There are not a few errors in the above, mixed up with some truth. It speaks of caloric as a ponderable body, which it is not, for it penetrates a body, and does not displace either air or water in the pores of the body, but combines with the air or the water. &c., producing dilatation. The caloric or heat when it enters water, forms steam. It is not correct to say "the mechanical force of caloric," any more than it would to say "the mechanical force of force." It requires the combination of caloric with a known ponderable body to produce mechanical force. Water is the best substance known to us when combined with heat to produce the most economical mechanical effects in moving bodies. We have many strong arguments in proof of this, which we have not yet advanced, because we deem it prudent to reserve some charges against such a guerilla machine as the "hot air engine," which no doubt will make a second advent by-and-by, and perhaps reproduce not a few speech, and paper feats superior to any it has yet made. We perceive that Prof. Barnard, of the University of Alabama, has a long article in the last number of "Silliman's Journal," on a proposed improvement of Ericsson's engine. It is an exceedingly dull article, and exhibits a decided want of practical knowledge in engineering.

**Burning Fluid.**

According to a record kept by Mr. E. Merriam, there were, during the year ending September 1st, 1853, some thirty-three fatal and disastrous explosions of burning fluid and kindred preparations, mostly in the cities of New York, Brooklyn, Williamsburgh and vicinity, in which nineteen persons were killed, twenty-three persons fatally or severely injured, three persons slightly wounded, and some three or four buildings fired. The preparations alluded to are buring fluid, camphene, spirit gas, rosin oil, etc.

**Table Rock.**

All the "Table Rock," once so famous at Niagara Falls, is now in the boiling cauldron below. The remaining portion of it fell with a tremendous crash on the morning of the 9th instant.

**New York Railroads.**

There are twenty-one hundred miles of railroad in operation in the State of New York, and ten thousand more under contract.

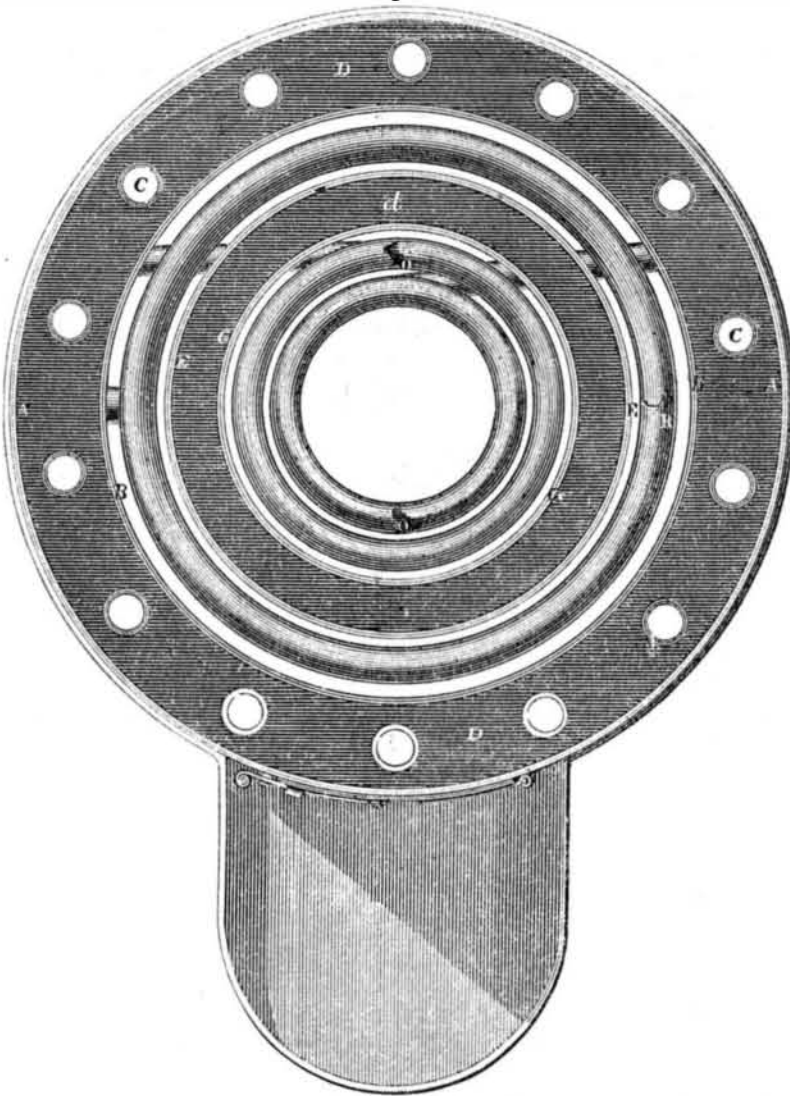
[Continued from the First Page.]

the top flue, N, which communicates with the chimney, P. The steam generated from all these heating surfaces rises into the steam cham-

ber, K, from whence it is taken off to the engine by a pipe.

A very large heating surface is presented in this boiler in a very small space, and these sur-

Figure 3.



faces are covered with a small quantity of water, so as to absorb the heat rapidly and generate steam in the best way, to save the escape of heat in the gases of combustion. The boiler is intended to be kept full of water except the dome, K, which affords sufficient steam room. It is almost impossible that the water level can be reduced in the water jackets to such a degree as to be dangerous. The form of the boiler is

well adapted to withstand great steam pressure.

One of these boilers has been in operation at the porcelain manufactory of Cartledge & Co., Green Point, L. I., for nearly a year, and it has given great satisfaction, and saved more than half the fuel previously expended in a cylindrical boiler to do the same work.

More information may be obtained by letter addressed to the assignees.

**What our Readers think of the Scientific American.**

The author of the annexed letter is the inventor of the celebrated oil press which bears his name, and his good opinions both cheers and encourages us to greater and renewed efforts to make the "Scientific American" more worthy still of the esteem of such excellent and honorable judges:—

Messrs. Editors.—I have been a subscriber to your paper for two years, and I now wonder how I had got along previously without it, I find it it invaluable. A hundred dollars a year expended in other ways would not furnish me with the same amount of useful and interesting information. In fact, I should be at a loss where to go for many things if I were not furnished them here. And I had rather furnish my workmen, and particularly my engineers, with the paper at my own expense, rather than they should be without it, for the items which they would get in it would make them much more useful in my business. I make these remarks for your encouragement; I hope they will remind you that your labors are appreciated.

Yours, &c., D. L. LATOURETTE  
St. Louis, Sept. 2, 1853.

**Suspenders—Their Benefits.**

It is the prevailing fashion, especially in cities, for men to dispense with suspenders, and support their pantaloons by having them made to button tightly around the person, above the hips.

It is our settled conviction, that this practice is decidedly detrimental to health. Much has been justly said against tight lacing, as applied to females; and of suspending heavy skirts to the hips, by fastening them tightly around the waist or loins, where there are no ribs or other

bony frame-work to resist the compressive power.

We admit that half a dozen skirts weighing many pounds are worse for the constitution of the wearer than the drawers and pantaloons as worn by the men, but worse only because the quantity is greater, and the pressure necessary to sustain them is more. The principle is the same. Females should suspend their skirts mainly by the shoulders.

The hips of boys and men are constitutionally narrower than those of the female; and therefore the clothing thus worn requires to be tighter, to prevent slipping down.

Around the waist and hips, the very place where freedom of action and expansion should, of all the other parts of the trunk, be enjoyed, there is tightness, compression, and a destructive lack of freedom.

We plant ourselves on this point, and claim that our position cannot be disturbed, viz.: the animal economy, from head to foot, should never be dressed in such a manner as in the least degree to cramp the freedom of any action of the body or limbs. Let this be the rule with all, and one-half of our doctors might be spared to cultivate the soil.

[The above is from the "New York Phrenological Journal," and contains no small amount of sound sense and solid truth. A case within our own knowledge, of inflammation of the bowels, which resulted in the death of a young man, 23 years of age, was caused, we believe, by the too tight belting of his pantaloons around his waist. Light elastic suspenders are more comfortable than tight lacing the waist.

A new sort of carriage has been constructed for the Orleans Railroad, France. It is a complete house, consisting of a drawing-room, bed-

room, kitchen, and wine cellar, with icing apparatus for fifty bottles of wine; in fact, apartments furnished elegantly and comfortably. It was built under the immediate direction of the Comte de L—, and he can now travel at home from one end of Europe to the other.

**Our Steam Navy—The Princeton.**

Since we published a brief history of our Steam Navy (page 381 of our last volume) many of our cotemporaries have directed public attention to it, by publishing, in some cases the whole, and in others, extracts of our article. One of our objects has been obtained already, and we hope that a searching investigation as to the causes of the inferiority of our steam frigates will be instituted, which will result in good to the country.

It is a shame to our navy managers that the most recent steam frigate built has been, so far, an entire failure: we allude to the "Princeton." A correspondent of the New York "Times," writing from Pictou, Nova Scotia, about her performances, in protecting our Yankee fishermen, says:—

"The U.S. steamship 'Princeton' arrived here on Saturday night at 9 o'clock, after grounding twice in sight of the light-house, while in charge of a branch pilot. She left the Gut of Canso on Saturday morning, about six o'clock. The day was beautiful, and the 'Princeton' was making more miles under steam than ever before. About mid-day the alarm of fire was sounded, the men were beat to quarters, the hose and fire apparatus were brought into play, and by the vigilance and activity of the officers, the danger was soon over. An hour afterwards smoke was pouring out from the hold, and another beat to quarters was sounded. The axmen cut away the felt and lead and clap-boarding in the vicinity of the boilers, and the wood was found to be thoroughly charred. The coal in the bunkers was so hot as to make it advisable to overhaul this black, bituminous furnace-food before trusting it another day in its quiet, sombre, but volcanic cell. Accordingly, to-day, the decks and the coal-heavers are one color. Mr. Shock, the able, skillful, and reliable chief engineer of the 'Princeton,' has made some improvements in his department, by which more steam is generated than she could on Saturday use, with a saving of over one-third of a ton per hour. The amount of coal consumed while steaming from Eastport, Maine, to Halifax, N. S., was 39 1-2 tons in 38 hours—an average of one ton and and three-tenths per hour. Steaming from Halifax to the Straits of Canso, 18 1-2 tons in 25 hours, showed an average of three-fourths of a ton under Mr. Shock's improvement. From Canso to Pictou she carried 20 pounds of steam, performed 32 1-2 revolutions, and accomplished eight knots. This is the 'Princeton's' utmost—her climax of speed under the most favorable circumstances."

From this extract (if correct) we learn that the slothfulness of the "Princeton" is not owing to a want of steam, but something else, and that it is dangerous to "fire-up" and keep a good head of steam on. The boiler quarters must be badly planned on the one hand, and either the engines or the screw-propeller (we do not know which) badly constructed or planned on the other. We have seen it stated in some of our cotemporaries, that Chief Engineer Isherwood, who has written so much in some of our magazines about the performances of our naval steamships, had charge of the construction and fitting up of the machinery, boilers, and screw of the "Princeton." This may not be correct; somebody, however, is to blame—but who that person (or persons) is, we cannot tell. Our object, however, is not to reach individuals, but the system—as our whole Steam Navy is a disgrace to our country.

**A Juvenile Aeronaut.**

Charles Wise, aged 17 years, son of Mr. John Wise, the well-known aeronaut, ascended in his father's balloon, the "Irene," from Shanondale Springs, Va., last week, in the presence of a large concourse of spectators. The ascension took place at 20 minutes past 2 o'clock P. M., and at 10 minutes after 4 the balloon descended on the farm of Mr. E. Turner, five miles above Shepherdstown.

It is only great souls that know how much glory is in being good.

