



### Balloon Controversy.

MESSRS EDITORS:—On page 246, Vol. VIII. (new series) of the SCIENTIFIC AMERICAN I find a communication relating to my balloon and written by an aeronaut, Mr. John La Mountain, who states as follows:—

“Mr. Shaw claims that he can ‘trim’ and ‘tack ship,’ in his air-vessel, as he would with a pleasure yacht, so that with a wind traveling in one direction he can haul close to it and move in another.”

I make no such claim, and therefore what Mr. La Mountain has to say about lifting oneself from the floor by the rounds of an arm-chair, while sitting in it, is wholly uncalled-for and gratuitous. What I do claim is this:—That my balloon has a flattened surface on two sides, so constructed and stayed by cords that it will retain its shape; I connect the car and the balloon with a spur-wheel and pinion, so that the balloon can be revolved independent of the car; the latter being formed of two cylinders with a pumping apparatus, so that small quantities of the gas may be compressed so as to allow the aeronaut to elevate or depress his balloon at pleasure, without the use of ballast. With the wheel in one end of the car, like the wheel of a wind-mill, I claim that, by revolving it, I will be enabled to check the headway of the balloon and cause a circulation on the flattened surface, thereby enabling me to turn it in any desired direction and move *with* or *out* of the current. It is not my purpose to make head *against* the current, but to so control the direction of the balloon as to go *with* it or diagonally across it; so that when the balloon strikes a current blowing due east, I may so control its direction (by the use of the wheel) as to travel to the south-east or the south-west; and to accomplish a similar result when a current is encountered which moves to any of the cardinal points of the compass. In a word, I claim that, by means of the controlling power afforded by this wheel, I can travel west, south-west or north-west in a current blowing directly west; also east, south-east or north-east in a current blowing due east; and the same as to the currents blowing to the north or to the south. I do not propose to make head against a hurricane, as Mr. La Mountain intimates, but merely to so far control the direction of my course as to reach any desired point by the *aid* of the currents, and not in spite of them.

The balloon employed by Mr. La Mountain is identical with the original which was sent up from Paris in 1782—nothing more, nothing less. By means of hydrogen and sand-bags he raises and controls his air-ship, and notwithstanding all the “patient and elaborate study” which he has bestowed upon the subject, we find that he has thus far made not the slightest improvement upon the first paper balloon with which Montgolfier astonished the Parisians nearly a century ago. It is not strange that, under such circumstances, Mr. La Mountain should be somewhat jealous of innovations, especially when they emanate from a humble mechanic in an unpretending territory west of the Missouri. But time will vindicate or explode my theory, and I dismiss the subject for the present; promising that, so soon as a balloon of the proper dimensions can be prepared, with the apparatus for compressing the gas and governing the direction, &c., a test will be made of the practical working of my theory. If it meets my expectations and is found to work well, I trust the “aeronaut” of Lansingburgh will “come down” from the high position he has assumed, with less disaster than has sometimes resulted from rapid descents from his aerial flights.

THOMAS L. SHAW.

Omaha, Nebraska, June 25, 1863.

[We have now permitted each of our aeronautic friends to have a fair hearing through our columns, which must terminate the controversy so far as we are concerned. Let them now turn their attention to the real practical question and see which will be the first to make aerial navigation of some value to the world. These ricketty discussions on the subject amount to nothing.—EDS.]

### The “Scientific American” in the Navy.

MESSRS. EDITORS:—It is nearly eight years since I first noticed your widely-known publication, under the title of the SCIENTIFIC AMERICAN, and I state with pleasure that I have always been much pleased with it, and I cannot do otherwise than recommend it to every working man for perusal. It brings light to the minds of those who are seeking after scientific truth, and it seems nearly impossible for me to do without it. During my two years’ experience with the navy in the South, I made it a part of my business to notice how many of the vessels had the SCIENTIFIC AMERICAN on board, and I am happy to say that I found them on nearly all of them, and in every instance it was spoken of in the highest terms. It is the duty of every earnest reader of the SCIENTIFIC AMERICAN to encourage all within his reach to read it.

PETER SMITH, First-class Fireman, U. S. N.  
New York, July 7, 1863.

### Will Vulcanized Rubber corrode Iron?

MESSRS. EDITORS:—In reply to the letter of “Civil Engineer,” on page 404, Vol. VIII, of the SCIENTIFIC AMERICAN, I would say that vulcanized rubber should never be used when the temperature exceeds that of boiling water. The leakage your correspondent refers to, as having taken place, appears to me to have been caused by the india-rubber packing having been destroyed (or partially destroyed) by the action of the heat; and the water that was forced through the then-imperfect joint, combining with the fire, caused the destruction of the plate around the joint. Cement should be used to make such joints.

W. T.

Schenectady, N. Y., June 30, 1863.

[Vulcanized rubber may be successfully used at temperatures not exceeding 230° Fah; at that point sulphur fuses and destroys the union between the rubber and itself.—EDS.]

### Novel Steamship Machinery.

By referring to the subjoined letter (addressed to the editor of the London *Engineer*) it will be seen that some reporters in this country, who try their “prentice hand” at reports of steamship trials, and who frequently astound the mechanical community with cylinders of “40 inches bore and 40 feet stroke” or similar inaccuracies, have their counterparts in England:—

SIR:—In an account given in the *Times* to-day, of the launch of the London and South-western Railway Company’s steamship *Normandy*, I find the following:—

The engines will be supplied with improved surface condensers, arranged with separate cylinders, so that a vacuum can be maintained without the assistance of the main engines.

This I attempt to smooth over by imagining the air and circulating pumps worked by an auxiliary engine. But how am I to explain the following?—

The boilers are of a large size, fitted with brass tubes, the whole of which are of the feathering description, fitted with wood bushes, and also with the peculiar link motion applied to work the slide valves, so as to enable one man to start and stop the engines without difficulty.

I wish *Mr. Punch* was an engineer; perhaps he is. But, laying aside jokes, can any one conceive the *Times*, with its staff of clever reporters, sending a man (if it did send one) to report on the trial of a steamship, when it is evident he does not know a boiler from a paddle-wheel, and yet it is so, and not only so, but the report is published, and no doubt credited by many as a wonder! If these engineering descriptions are so faulty, is it likely that any other scientific reports given in that paper can be trusted? I know some of them are excellent, especially those connected with the navy.

M. O. A. H.

London, June 18, 1863.

WHY COAL IS DEAR.—The suffering coal-miners who indulge in strikes so often, instigated doubtless by the bulls and bears of the stock market, now earn in La Salle, Ill., the modest amount of from \$3 50 to \$6 per day of seven hours; or \$1 25 for every ton mined. The president of the coal company states that they have been obliged to pay \$1 50 per ton during some parts of the season. The exaction is owing to a combination among the miners in that section of the country, by which they have bound themselves not to work at lower rates. The coal from La Salle is exclusively bituminous we believe.

### The New Postal Law.

A new postal law, making a number of important changes in the old system, was passed at the last session of Congress, and went into effect on July 1st. Subjoined is an abstract of the law:—

No mail matter is to be delivered until the postage is paid. Box rent is to be paid one quarter in advance. Letters uncalled-for are to be published in papers having the largest circulation. Letters for foreign citizens are to be published in papers of same language. Letters of value sent to Dead Letter Office are to be kept for four years if the writer cannot be found.

Carriers are to receive salaries from \$800 to \$1,000 per annum, provided the local letters be sufficient to pay the same.

All domestic letters or transient printed matter, whether passing through the mails or otherwise, must be prepaid by stamps.

The maximum standard weight for single rate postage, is one-half ounce avoirdupois. The uniform rate of postage is three cents per half-ounce, to be paid by stamps. For all drop letters, two cents prepaid for each half ounce or fractional part, but no extra postage or carrier’s fee is required.

Where letters are sent without prepayment, double rates will be required before delivery.

Soldiers and sailors may send duly certified letters without prepayment.

When any writer shall endorse upon a prepaid letter his name and address, and a request for its return if not called-for within thirty days or less, such letter shall not be advertised nor treated as a dead letter, but returned, charged with postage at prepaid rates.

Upon regular weekly, tri-weekly, semi-weekly and daily publications and all other regular publications, issued from a known office of publication at stated periods and sent to regular subscribers, postage is required to be paid quarterly in advance.

The maximum standard weight for single postage on printed matter, will be four ounces avoirdupois, the postage on which will be two cents, prepaid by stamps. Rates to regular subscribers payable quarterly in advance for weekly papers, five cents; semi-weekly, ten cents; tri-weekly, fifteen cents; daily, thirty five cents.

Postmasters employing carriers may contract with publishers of newspapers for delivery of same, subject to the approval of the Postmaster General.

No package weighing over 4 pounds can be conveyed by mail, except public documents.

Publishers may enclose in their publications sent to regular subscribers, the bills for subscription thereto without any additional charge for postage, and may write or print upon their publications, or upon the wrappers thereof, the name and address of the subscribers thereto, and the date when the subscription will expire; but any other enclosure or addition, in writing or in print, shall subject the same to letter postage, which shall be collected before delivery thereof.

AN OSCILLATING CYLINDER LOCOMOTIVE.—The *London Engineer* contains an engraving of a locomotive fitted with oscillating engines, which is entirely novel as regards its actual projection, although the idea has been suggested to us many times. The cylinders are four in number, two in one, on each side; they are outside connected and supported by the main framing. The motion of the cylinder causes the ports to open for the supply of steam. “The principal object,” says the inventor, Mr. Joseph Faulding, “is to obviate the inertia and momentum of the working parts.” We do not learn that any steps have been taken towards building a large engine on this principle.

GUNS FOR CHARLESTON.—Orders have been received from the Navy Department directing the shipment to Port Royal of a large number of heavy rifle guns, for our *Monitors*. Several of these immense pieces of ordnance have already been put on board a vessel at the navy yard. They are to replace the 15-inch guns now on board the *Weehawken*, *Nahant* and other armed ships.

In New South Wales there is a population of 348,000, and 800 public schools, in which 35,000 children are receiving instruction.

## Photography among the Turks.

The following humorous and yet truthful remarks are from the *Daily Telegraph*, London:—

"When mankind has grown wiser, our descendants will smile at the folly which distinguished and decorated the so-called 'reformers' who make a noise in the world—and not much more—and will transfer their admiration and their honors together to the true revolutionists—the men of science. It is from the closet and cabinet that the movements originate which shake the earth. The chemist, compelling some new element to the service of man, or explaining for him the occult operations of nature; the mechanic, reinforcing his weak muscles with arms of iron and sinews of steel; the geologist, anticipating over his map storehouses of glittering gold, destined to become the origin of empires; the aeronaut, launching his silent bark upon a sea to which the 'unvoyaged Atlantic' of Columbus was a mill-pond; the anatomist, questioning the mind of the Creator himself by comparison of all his works together; the antiquarian, making the dead eloquent, and eliciting from jaw-bones that died in company with mastodon and mammoth, the story of the primeval earth—these, and not the jaunty gentlemen in stars and ribbons, are the men whom history will take note of.

"Photography—almost the latest born of scientific inventions—is a proof of what we mean. At first only the experiment of the savant in his study, it has become in turn an elegant amusement, a trade, and a necessity, until we almost wonder how our forefathers managed to be satisfied with silhouettes and miniatures. It would take all the columns that lie before the reader even to touch upon the thousand and one ramifications of the simple discovery which lies at the base of the art now so widely practiced. Photography has lately assumed a most curious function, namely, that of a religious reformer. If any idea could be pronounced *bizarre* beforehand, it would have been, we should think, that the invention of M. Daguerre could have any possible connection with the decline of Mohammedism, much less conduce to it. There is a well-known song, the wit of which lies in bringing together the most unexpected people, making *Aeneas* play whist with the 'King of the Cannibal Islands,' and Charlemagne dance a polka with Mrs. Fry. Hardly less grotesque must it seem to those who know the habits of the East to read that photography is just now the rage at the 'Sweet Waters,' and that all Constantinople is 'agog' for a portrait of the Sultan. A sharp-witted Turk named Abdullah, who has imported the art into the East, has persuaded the 'faithful' to petition his Majesty *en masse* for 'cartes-de-visite' all around; and the Sultan, no ways loath, has consented, it would seem, to be made immortal 'in this style.' Considering that the windows of 'the infidels' are full of the portraits of their charming princesses, and that everybody knows the blood royal by sight as well as his own sisters, it might seem unnecessary for us to criticize the desire of Stamboul. But when it is recollected what Mohammed would have to say about such a thing, and how energetically the Koran, in its heat against idolatry, denounces 'the picture of any created being,' it must be decidedly a sensation to an orthodox Moslem to hear that the Vicegerent of God, the Padishah of all believers, has 'given a sitting.' We get our word 'Arabesques' from the geometrical or running adornment with which old Saracenic and Mussulman art, jealous of any imitative outline, ornamented its books and houses. Now, if the Ulemas don't quickly call the convocation of Islam together and write a number of pastoral letters in the papers, the awful heresy of Abdullah will prevail, and a good Turk will boggle no longer at having his picture taken. Mohammed foresaw a good deal, but not the photographic camera, or there would have been a special chapter in the Koran against that 'device of Babel.'"

WHERE OUR BUTTER COMES FROM.—On Tuesday of last week there were shipped from St. Albans (Vt.) depot 1,565 tubs of butter, and on Tuesday of the present week, 1,468 tubs. The amount of money paid for butter in one week, up to June 20th, has been \$14,000. On Tuesday we counted 224 wagons, double and single, on Main and Lake streets, at one time.—*Exchange*.

## Utility of Divers in Overflowed Shafts of Collieries.

A correspondent of the *Colliery Guardian* (England) says that an interesting and successful experiment was recently made at the Dearnley Colliery, near Rochdale, under the following circumstances:—"About a month ago, owing to the breaking of the bucket-dagger, the cylinder cover and the engine beams were broken, and during the time required to repair the engine, the water had risen to a considerable height in the shaft. When repaired, the engine worked well till Sunday, the 17th, when it was observed that there was not quite so much water delivered by the pump. This deficiency was more observable on Monday, and on Tuesday it was seen that the pump delivered no water at the down-stroke. It was supposed the bottom valve or "clack" did not close, and other suppositions were made, but they were mere guesses, seeing that some twenty yards of water were in the pit shaft. The engineer remarked that if a diving-bell could be sent down, it would be discovered what was the cause of the pump not lifting. The proprietors of the colliery immediately acted on the idea, and, believing that a diver might be found who would go down and possibly not only discover but remedy the defect in the pump, went immediately to Liverpool and called on Mr. Rodrigues, an employer of divers. After a little explanation, Ellis Javons, the diver who was so successful in the *Royal Charter* wreck, agreed to go over to Dearnley and attempt the repair. He went over with another diver, Thomas Allen; but, after inspecting the pit, they telegraphed for John Bulmer to assist them. A platform was constructed about sixty yards down the shaft, for the air-pump to be worked upon, near to the water. On Thursday morning Javons, being equipped in diver's dress and helmet, was lowered into the water, the pumping engine working very slowly. He had previously very carefully studied the plan of the pump, and had had the possible causes of the defect fully explained to him. Besides the pipe which conveyed the air to the diver, he had a line tied round his body for safety and for signals. After he had been in the water about twenty minutes, a signal was given for the engine to work quick. The diver ascended in half an hour, and brought up with him four or five broken screw-bolts which had fastened the flange of the pump-tree above the bucket door, and he said that when the engine worked quickly the water at the down-stroke came out at the joint with such violence that he was hurled to the side of the pit, and at the up-stroke his whole body was drawn with great force against the opening; and it was observed at the top of the pit that the pump worked well at that time, and it was believed for a moment that he had succeeded in mending the pump. In the afternoon he again went down, taking with him new bolts and a powerful key. He was this time under water an hour and three-quarters, and when he came up said that he had put all the bolts in and was screwing the last bolt when he broke it, and cracked the flange, and this necessitated his again going down on the following morning, which he did, and finished repairing the joint and made a careful examination of the rope, the bucket-door, and the joints of the pump-trees, and all he declared to be in good working order. The engine was set to work, and the pump has worked very well. The diver, the proprietors, and the workmen were all well pleased at the success of the attempt, believing, too, that in similar doubtful cases the services of the diver may be most advantageously resorted to, and a very considerable saving of money and time be effected."

## Dieting.

Dieting is usually considered to mean the same thing as a kind of starvation. The idea which the educated physician attaches to the term is a judicious regulation of the quantity and quality of the food, according to the circumstances of each case. A healthy man may diet himself in order to keep well; an invalid may diet with a view to the recovery of his health; yet the things eaten by the two will widely differ in their nature, bulk and mode of preparation. A vast multitude are suffering hourly by the horrors of dyspepsia; no two are precisely alike in all points, since there is an endless variety of combinations as to age, sex, occupation, air, exercise, mode of eating, sleeping, constitution, temperament,

&c. Yet dyspepsia is always brought on by over and irregular eating; it could be banished from the world in a generation, if the children were educated to eat moderately, regularly and slowly; the parents who do this will do their offspring a higher good than by leaving them large fortunes, which, in three cases out of four, foster idleness, gluttony and every evil thing. As the rich can get any thing to eat or drink when they want it, they, with indulged children, bring on dyspepsia by eating irregularly and without an appetite. The poor—those who have to work for a living—induce the horrible disease by eating too rapidly and at unseasonable hours; mainly by eating heartily at supper and going to bed within an hour or two afterward. In the heyday of youth and manly vigor there may not for a while be noticed any special ill effect from such a practice—in truth, it is at first inappreciable, but it is cumulative and impossible not to manifest itself in due time. Infinite Benevolence forgives a moral delinquency; but omnipotent as he is and loving towards all, it is not in the nature of his government of created things to work a miracle, to suspend a natural law, in order to shield one of his creatures from the legitimate effects of a violence offered the physical system by excesses in eating, drinking or exercise.

Perhaps hearty suppers make more dyspeptics than any or all other causes combined. If dinner is at noon, nothing should be taken for supper but a single cup of weak tea or other hot drink and a piece of stale bread and butter. After forty years of age, those who live in-doors, sedentary persons—that is, all who do not work with their hands as laborers—would do better not to take any supper at all. Half the time the sedentary, who eat at noon, do not feel hungry at supper; especially if they see nothing on the table but bread and butter and tea. But nature is goaded on to act against her instincts in almost every family in the nation by "relishes" being placed on the supper-table, in the shape of chipped beef, salt fish, cake, preserves or other kinds of sweetmeat, and before the person is aware, a hearty meal has been taken, resulting in present uncomfortableness, in disturbed sleep, in a weary waking in the morning, bad taste in the mouth and little or no appetite for breakfast, all of which can be avoided by beginning early to eat habitually, according to the suggestions above made.—*Hall's Journal of Health*.

## Strength of Character.

Strength of character consists of two things—power of will and power of self-restraint. It requires two things, therefore, for its existence—strong feelings and strong command over them. Now we all very often mistake strong feelings for strong character. A man who bears all before him, before whose frown domestics tremble and whose bursts of fury make the children of the household quake—because he has his will obeyed and his own way in all things—we call him a strong man. The truth is, that he is the weak man; it is his passions that are strong; he, mastered by them, is weak. You must measure the strength of a man by the power of the feelings he subdues, not by the power of those that subdue him. And hence composure is very often the highest result of strength. Did we ever see a man receive a flagrant injury, and then reply quietly? That is a man spiritually strong. Or did we ever see a man in anguish, stand, as if carved out of solid rock, mastering himself? Or one bearing a hopeless daily trial, remain silent and never tell the world what cankered his home peace? That is strength. He who, with strong passions, remains chaste; he who, keenly sensitive, with manly powers of indignation in him, can be provoked and yet restrain himself and forgive, these are the strong men, the spiritual heroes.

CASTOR OIL ADMINISTRATION.—The medical men of Paris recommend the following way of administering castor oil to children:—The quantity of oil prescribed is poured into a small earthen pan over a moderate fire, an egg broken into it, and stirred up so as to form something like what cooks call buttered eggs; when it is done a little salt or sugar or a few drops of orange water, or some currant jelly should be added. The sick child will eat it eagerly and never discover the fraud.

The saving banks of New York State now hold on deposit upwards of eighty millions of dollars.

## Improved Self-regulating Wind-power.

We published, quite recently, a letter from a correspondent at the West, calling for the introduction of a windmill, or a power of any kind receiving its motion from or through the agency of the wind. We respond to this request by placing before the public the accompanying engraving, which illustrates a very neatly-constructed and well-designed portable windmill, which will be found extremely useful in many places. It can be adapted to plowing, thrashing grain, grinding, or driving any kind of machinery whatsoever.

Annexed is the inventor's description of his machine:—

The hub, C, is keyed on the shaft, D, and has eight arms which carry a similar number of fans; these fans are loose on the arms, and have a small rod on their inner ends running through slots in the hub, C. The hub, C, is keyed on a small shaft running through shaft D, with a friction pulley, E, on the other end. The fans, B, on the regulator hub, C, always stand edgewise to the wind and facing the way the wheel revolves; between the hub K and the hub C is a spring which holds the hub, C, in the right position; said hub, by its connection with the rods to the

fans, A, hold them in the right position to take the wind. If the spring holds the hub, C, to run 50 or more revolutions, and yields at that rate by the air reacting on the fans, B, the check-hub, C, and the spring turn the fans, A, edgewise to the wind, more or less, according to the speed at which it revolves. In order to stop the wheel it is necessary to draw on the lever, F; this act raises the brake, G, against the pulley, E; this pulley being on the same shaft with the hub, C, checks the hub and turns the fans, A, edgewise to the wind. When the whole is to be started, release the lever, F, and the spring compels the hub, C, to take the proper position; the wheel will then begin to work. Power can be taken from the wheel by the shaft running down through the column, H; this shaft is connected by gearing at the top in such a manner that it is always in gear, and allows the wheel to turn facing to the wind in the column, H. On the loose end of the said shaft there is a pinion meshing into the bevel wheels, I I. This pinion is shifted from one wheel to the other by a lever, J, which enables the motion of the wheel to be changed ahead or back. Application for a patent is now pending. For further information address Jonathan Troop, at Erie, Pa.

## RICHARDSON'S CREAM PUMP.

Butter-making has almost attained to the dignity of a fine art, so many and so varied are the churns, workers, presses, and other tools and utensils employed in its manufacture. Certainly the public cannot complain of any extra care that is bestowed upon the process of butter-making, for too often much of it comes to market in an unsaleable condition. It is often composed of too much hairs and dirt to be desirable, and, either half-worked or over-worked, is not by any means what butter should be. One great cause of its becoming unpalatable, when kept for a short time, is the pieces of unchurned, hardened cream that are worked up in it. These substances escape the general separating that takes place among the fresher quantities of the fluid and pass over into the butter when it is gathered and made ready for the market. It is very difficult, and indeed impossible, to remove these curds at this stage of butter-making, as they cannot be detected by the eye; their

presence in the manufactured article induces a chemical change which is highly injurious to the quality and to the market value. The cream pump herewith illustrated is intended to prevent this difficulty, and the object of it is to break up the hardened or dried cream-curds so that they may be easily separated in the churn by the dasher. The machine is very sim-

The operation of this apparatus is as follows:—When the cream is poured in, it is drawn down into the tube by the action of the bucket, and forced through the strainer at the bottom into the churn below. In the passage all the curds are completely separated, and the whole fluid is homogeneous or of the same consistence throughout, thus preventing any of the evils mentioned previously in this article. Farmers will find this a useful addition to their dairies, as it is recommended by a large number of butter-makers in this State who have used it and know whereof they affirm.

This cream pump was patented on Sept. 23, 1862, by M. A. Richardson, of Sherman, N. Y. For further information apply to Richardson & Keeler, Sherman, N. Y.

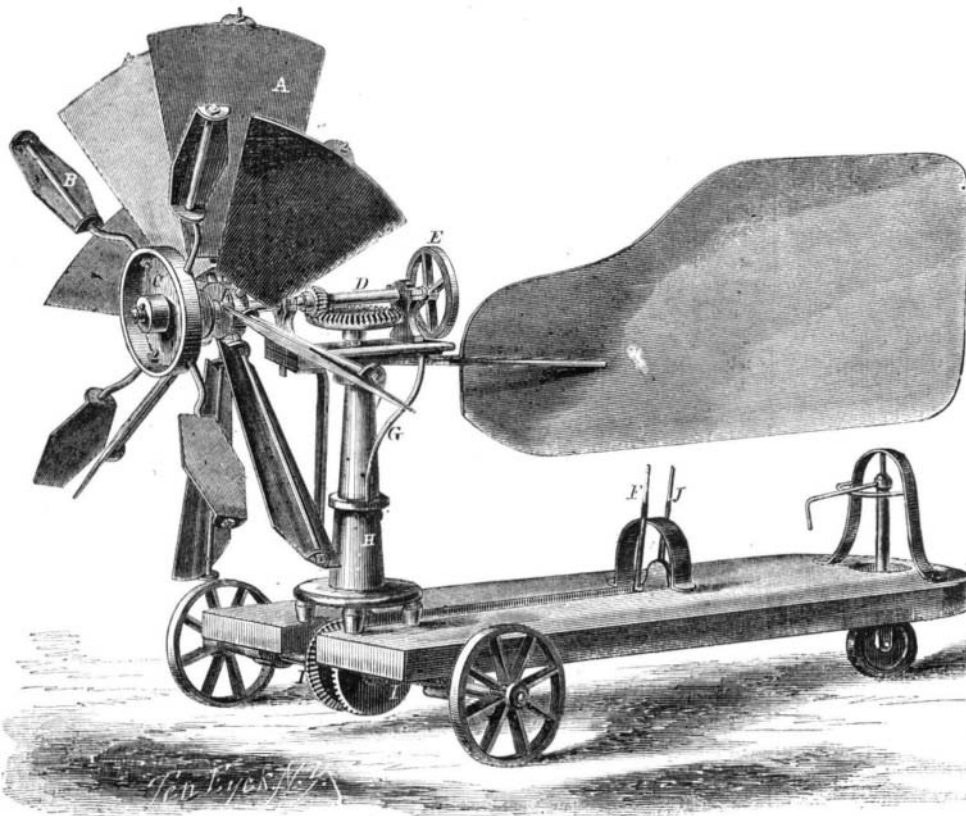
## CITY RAILS AND CARS.

Under this title a small treatise has been sent to us by the author, who signs himself "Onward," and who advocates the laying-out of New York city with improved rail-tracks, and the entire abolition of horse-omnibuses from the streets. For Broadway, the most central street, he proposes a railway on which the cars shall be driven by steam power, but not with dummies or high pressure locomotives. On

this head he says:—"The dummy has its thoughtless advocates; steam directly applied to each car has and is receiving much attention; reserved spring-power has been much talked about; reserved compressed atmospheric air has been named, and lastly manual power has been attempted. My plan is to have any desired number of single cars pass at a suitable speed up and down Broadway without the use of visible power or machinery, and without the clatter of horse or hoof. The arrangement contemplated is nothing else than stationary engines about half a mile distant from each other, located in the basements of houses by the roadside, with vaults extending to the centre of the street, where all the appliances of the steam power can be located and will give constant motion without interruption." This is the plan proposed to operate a street railway in Broadway, with steam power. The details of the method are not given, but it is not an impracticable project. One of the old methods proposed of operating railroad cars with steam was by stationary engines, and for city railways, in some cases, it may be the best mode. It commends itself for one important feature, namely, the free use of the track for passenger cars only.

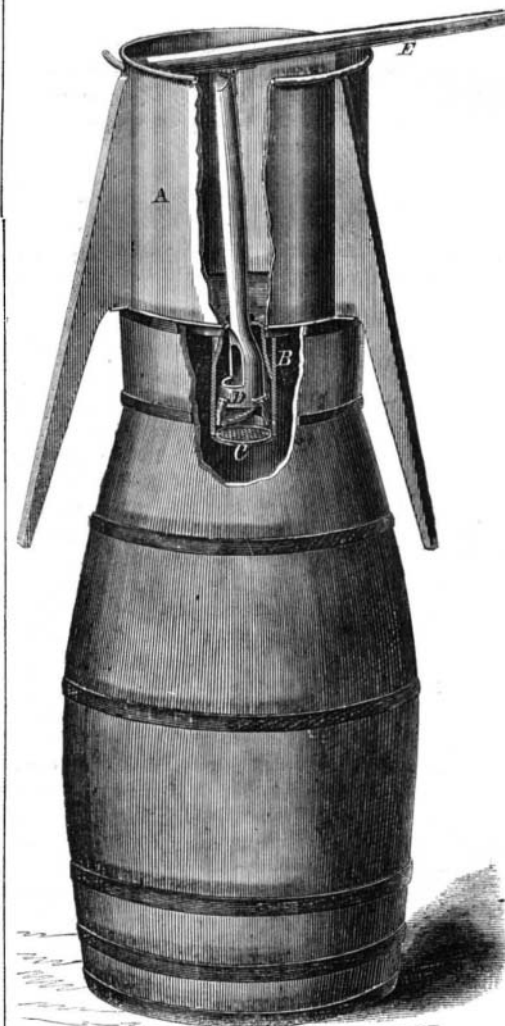
MODELS OF IRON-CLADS.—Harrison & Loring, of Boston, Harlan & Hallingsworth, of Wilmington, Del., Chas. Secor, of Jersey, Thos. F. Rowland, of Greenpoint, L. I., Geo. Quintard, of New York and other armored ship-builders, have sent to Washington, within the past few days, models of new ocean iron-clad vessels-of-war, plans for which were invited some time since by Secretary Welles. Almost every theory advocated by newspaper-writers is represented in the huge pile of diminutive craft; but the difference of opinion among builders, which deserves most notice, is that relative to broadsides and turrets. The majority are for turrets, yet some able constructors prefer the old-fashioned broadside. The generality of the vessels are from 3,000 to 4,000 tons burden.

MICHIGAN TAR.—The manufacture of tar from the pines of Michigan was begun last fall by a party of Norwegians, who have settled at Grand Traverse, and propose to enter extensively into the business. Another party have since then entered into the same business at Sauble River.



TROOP'S SELF-REGULATING WIND-POWER.

ple; it consists of a tin case, A, fitted with a tube, B, and strainer, C, one side of the case being removed in order to show the interior. There is a bucket, D, in



all respects like that of an ordinary pump, in the tube, and operated by the handle, E, one end of which is fitted with a spur entering one side of the case.