

Scientific American

NEW YORK, JULY 5, 1851.

The Republican and Royal Mail Lines of Atlantic Steamships.

By reference to our record of the passages made from Liverpool to New York, during the last quarter, by the Collins and Cunard Lines of steamships, we are enabled to form a very correct estimate of the relative speed of both lines, and of different vessels in them, by taking the four steamers which made two voyages each in the quarter, viz., the Pacific and Arctic, the Asia and Africa. The two passages of the Pacific occupied 19 days, 23½ hours, average 9 days 23½ hours. The two passages of the Asia occupied 21 days 8½ hours—average 10 days, 16½ hours. The two passages of the Arctic occupied 21 days 23 hours—average 10 days, 23½ hours. The two passages of the Africa occupied 22 days, 12 hours,—average 11 days 6 hours. These figures are not mere verbose opinions, they are facts, and as Burns says "plain facts are sturdy things which cannot be refuted."

It will be observed that the Pacific and Asia have made the best passages, and by comparing the performances of these two noble vessels, we find the Asia has been beaten by the Pacific 1 day and 19 hours in the two passages. By comparing the voyages of the Arctic and Africa, we find the latter to be beaten by the former 13 hours in the two passages. The Pacific made each voyage in 21½ hours less than her opponent; the Arctic in 6½ hours less than hers. The fastest of the Cunard line beat the Arctic 14½ hours in the two voyages, the fastest of the Collins line beat the Africa 2 days 16½ hours in the two voyages.

There is one cheering fact elicited by our record, we allude to the increased speed of Atlantic steamers—the shortening of the duration of voyages. The average duration of the eight voyages of which we have been making comparisons, is 10 days, 17 hours, 22 minutes. Within two years a steam voyage across the Atlantic, has been shortened nearly three days. The increase speed has been about 20 per cent. Some time ago, we predicted that in 20 years from 1851, passages would be made across the Atlantic in seven days. We hope to live to see our reasonable anticipations accomplished.

The increase of speed in these ocean steamers is not attributable to any new principle in the construction of the engines—they have all the old fashioned side levers. The increase of the size of the vessels, and improvements in their form, together with superior management, are the principal causes of the superior results. We will yet see vessels of four and five thousand tons burden navigating the ocean, and in proportion to their tonnage they will meet with less resistance than smaller ones, consequently they will make faster voyages. Below a certain size it is impossible for a steamship to navigate the Atlantic successfully, while the advantages increase with the tonnage, all other things being equal. No doubt there is a line of demarcation, beyond which advantage would cease, but we have not yet reached that line, nor do we truly know how far or near we are to it, experience alone can teach us.

Five peculiar steamships for the California trade have recently been constructed. They are hybrids, having sea hulls and river boat engines—top levers. Two of them, the Prometheus and North America, have made remarkable passages. The latter was to have gone to Ireland, but for some reason did not, for which we are sorry. We should like to see such kind of vessels fairly tested on the stormy Atlantic. The engines are more simple than the side levers, and if they will stand the storms of the Atlantic as well, they are preferable.

Another kind of engine has many advocates, viz., the oscillating kind. Two oscillating engines with cylinders of 85 inches in diameter are now building at the Novelty Works and a pair of equal size at the Allaire Works

for the steamers belonging to Howland & Aspinwall, and destined to run between San Francisco and Canton, in China. Out of these different kinds of steamships, valuable improvements may be expected, but experience will decide. These things cannot be determined by speculation, but the desire to improve, and the determination to excel, cannot reasonably fail to produce superior results.

Business at the Patent Office.

It is an outrageous shame that applications for patents are suffered to linger in the dusty pigeon holes of the Patent Office 4, 5, and 6 months before any action is had upon them. Inventors, in many instances, who are subjected to this delay, often, we have no doubt, suffer in their interests very much. We know it is seriously aggravating to their feelings and many times they utter imprecations against the Commissioner and Examiners, which to say the least are unchristian-like and hence the office by such delay, if they do nothing more, increase the quantity of sinners, something that we should not like to be guilty of. In mitigation, however, we can justly assert that the Commissioner is not altogether chargeable with the fault, for hitherto the examining force of the office has been about one half that actually required by the present and prospective wants of the office. Recently, however, four assistant Examiners have been added to the corps of the office, but what are we to expect from their labors if, as the Herald says, one of them is a mere boy of 19 years of age? What confidence can we have in the decisions and opinions of a mere youth, who necessarily cannot have gained any considerable amount of practical information especially upon the Arts and Sciences? We recently had an evidence of some of this children's play (although we are not certain it did not emanate from one whose head is generously sprinkled with some of the evidences of decay). In a note accompanying a returned specification to this office, the Examiner, says, "This screw nut will not work in the model where it must do, as it is made a part of the claim and there is no nut whatever." In the first place there is no sense in the sentence, and in the next place, if there was no nut attached to the model, it is a query to us how the Examiner could have tried to work it, as is inferred he did from the first clause of the sentence. We might instance other rich morceaux which emanate from some old growling Examiner, who finds fault with every thing not prepared strictly according to his own notions. The Examiners of the Patent Office, although many of them are high minded and honorable, are yet evidently a long way behind the age—specimens of learned dullness, and it seems to be a pity that the soapbuds of prescription fail to cleanse and renovate some of the apartments in this, one of the most important bureaus in the country. The decisions of the office in some instances are marked with a peculiar imbecility, and the moment you undertake to reverse them, a spirit of rancorous hostility commences—and it seems almost impossible to touch the tender cords, or cause a solitary humane vibration. Honied words and sugar plums are gall and aloes. If you undertake to reach them by copying the argument from the most learned men of the age, a new and antagonistic theory comes forward as a rebutter. The sages and philosophers of this department have seldom, if ever, found their equals, but the credit does not seem to reach us.

We throw out these random shots for the purpose of eliciting attention to the interests of American inventors, whose money supports the office. It is unjust—yea, cruel, to keep them suspended between hope and fear for so long a time. A farther increase of the examining force is loudly demanded, unless this shameful evil can be remedied. We hope these suggestions will do good. They are true whether they do or not.

Boston Steamships.

In a quiet but very unexpected way, it was announced a short time ago that a steam propeller ship was launched at Philadelphia for the Boston and Liverpool new line, and would be ready to commence her trips on the 10th of this month. Three more vessels, we hear, are

to be constructed after the propeller model of Capt. Richard F. Loper's latest improvement. They are to be fitted up with accommodations for 150 cabin passengers each, and some berths (450) for steerage passengers. The people of Boston are now about to engage energetically in steamships, and it will be a very strange thing if they are not eminently successful.

Paving Streets.—Mud and Dust of London and New York.

"The 300,000 houses of London," says the London Quarterly Review, "are interspersed by a street surface, averaging about 44 square yards per house, and therefore measuring collectively about 13¼ million square yards, of which a large proportion is paved with granite. Upwards of two hundred thousand pairs of wheels, aided by a considerably larger number of iron-shod horses' feet, are constantly grinding this granite to powder; which powder is mixed with from 2 to 10 cartloads of horse-droppings per mile of street per diem, besides an unknown quantity of the sooty deposits discharged from half a million of smoking chimneys. In wet weather these several materials are beaten up into the thin, black, gruel-like compound, known as London mud; of which the watery and gaseous parts evaporate, during sun-shine, into the air we breathe, while the solid particles dry into a subtle dust, whirled up in clouds by the wind and the horses' feet. These dust clouds are deposited on our rooms and furniture; on our skins, our lips, and on the air tubes of our lungs. The close stable-like smell and flavor of the London air, the rapid soiling of our hands, our linen, and the hangings of our rooms, bear ample witness to the reality of this evil; of which every London citizen may find further and more significant indication in the dark hue of the particles deposited by the dust-laden air in its passage through the nasal respiratory channels. To state this matter plainly, and without mincing words—there is not at this moment a man in London, however scrupulously cleanly, nor a woman, however sensitively delicate, whose skin and clothes and nostrils, are not of necessity more or less loaded with a compound of powdered granite, soot, and a still more nauseous substance. The particles which to-day fly in clouds before the scavenger's broom, fly in clouds before the parlor maid's brush, and next day darken the water in our toilet-basins, or are wrung by the laundress from our calico and cambric."

Of New York we cannot say anything less. We can brag of as much dust and as sharp stuff here as any of the Cockneys. We have less moisture to be sure, and less mud, but leaving smoke out of the question, we can make the dust fly in clouds, if not equally black, at least as portentous, as those of London.

The great cause of dust in our city, is repairs of streets. Our streets are paved without skill, with an intention to endure the shortest possible period, and when not a single inch of sand should be left on the top, when all should at once be swept up clean, about three inches of sand are left on top of all repaired pavements, spoiling the goods of our merchants, and raising clouds of dust to render every pedestrian as uncomfortable as possible. Why don't our street inspectors look to this, and why don't our merchants demand a reform? There is no need of using one sixth of the sand that is used. Every extra cart of sand laid down to repair our streets spoils \$50 worth of goods, but there is a scheme behind the sand, as the pavers are paid for the quantity which they use.

Byram's American Clocks.

It is not a very uncommon thing for rich people and rich churches in our country to send to England for their clocks—fine clocks. They think that good clocks cannot be made at home. This is all a mistake, and a very great one. "Far off birds have feathers fair," is an old saying, but if our churches knew what fine clocks are made at Sag Harbor, L. I., N. Y., they surely would never send abroad for them. At the Oakland Works, Sag Harbor, Messrs. Shery & Byram, there are made by Mr. Byram some of

the finest clocks in the world. A clock was put up in the Methodist Episcopal church, Sag Harbor, six years ago, and it never varied three minutes in a year. Some of Byram's clocks have chronometer regulators and are as good as any that can be made. There are many who seem willing to pay more for a foreign clock than for one made at home, forgetting that if they would pay the extra, the clock can be made at home as well as elsewhere. What is it that makes the difference in the price of articles but the workmanship? Nothing; then we say, pay a sufficient price for whatever is good at home, and do not be unreasonable about such things.

Phillips' Fire Annihilator.

This apparatus, which is making not a little stir at the present moment, we perceive, by looking over the back volumes of our foreign London papers, was made the subject of lectures in the Royal Polytechnic Institution, London, by Dr. Ryan, in 1845. It is now six years old. In many public trials which have been made with it in London it failed to give satisfactory results. At the time Dr. Ryan lectured, it was advertised as "A new subject in chemistry of much interest—Phillips' Patent Fire Annihilator." It is no argument against the value or merits of an invention that it is "some years old." Many very excellent inventions have taken a long time to win their way into public favor and come into general use; this was the case with Watt's great improvements in the steam engine; it was the case with the steamboat and locomotive. This "Fire Annihilator," however, is nothing more than the employment of carbonic acid gas to put out the flame. It will do well if applied early, when the fire is but small; but what fire has taken place which might not at one time have been extinguished with a gallon of water? Water is the only sure and cheap "Fire Annihilator."

The Potato Rot.

A Mr. Flanders, who has devoted much attention to this disease and to its causes, informs us that the insects which he is fully satisfied produce the mischief, have already made their appearance in great numbers. He recommends the immediate application of lime to all who would save their potato crop.

New Rotary Cylindrical Engine.

Mr. S. Furman, of Romulus, Seneca Co., N. Y., has applied for a patent for a novel feature in the steam engine. The cylinder is hung so as to rotate by the pressure of rollers attached to the piston rod acting against a fixed curved way, so formed as to guide and direct the cylinder round about to rotate it. One or two piston rods may be used; if two, they are attached at antipodes to the one piston, and work through stuffing boxes on both ends of the cylinder.

Improved Gate.

Mr. Ashley Hotchkins, of Schenectady, Otsego Co., New York, has invented a very excellent improvement in gates, whereby in a simple manner, a gate will swing open both ways, according to the direction in which it is swung. It combined also the self closing principle along with its quality of swinging both ways, thus making it one of the most desirable of gates and a great improvement. Measures have been taken to secure a patent.

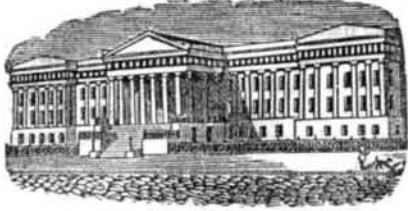
American Flour.

We see it stated in some papers that the character of American flour is suffering in the foreign markets, that it cannot be sold for \$4 less per barrel than the Trieste kind. Will our friend the "American Miller tell why?"

Improvement in Treating Potatoes.

A patent has been taken out in London for preparing potatoes for seed, by scooping out the eyes with a very small portion of the potato by a gouge, and then dusting over the eyes or germs with powdered charcoal. It is stated that the germs thus treated answer the purpose as well as whole potatoes, and can thus be conveniently sent in barrels to any distance. This is a subject worthy of the attention of our farmers.

It is stated that the American wheat was ground too close, and was of a bad color.



Reported expressly for the Scientific American, from the Patent Office Records. Patentees will find it for their interest to have their inventions illustrated in the Scientific American, as it has by far a larger circulation than any other journal of its class in America, and is the only source to which the public are accustomed to refer for the latest improvements. No charge is made except for the execution of the engravings, which belong to the patentee after publication.

LIST OF PATENT CLAIMS

Issued from the United States Patent Office. FOR THE WEEK ENDING JUNE 24, 1851.

To John Cooper (administrator of Benj. Giger, deceased), of Sangamon Co., Illinois, for improvement in Plows.

What is claimed as the invention of Benjamin Giger, is the peculiar form and construction of the standard, with the sockets at the upper extremity and flanges at the lower, and the method of uniting them, so as to form a double machine capable also, of being used for cultivation in its separate parts, as set forth. The whole machine, as above described constitutes Giger's Corn Planter.

To C. A. Pöstley, of Spring Garden, Pa., for self-acting Guard Frog.

I claim the combination of the rising and falling guards, with the levers, by means of an arrangement of levers connecting rods, &c., substantially such as herein specified, and acting in the manner and to produce the results herein set forth.

To John Pepper, of Portsmouth, N. H., (assignor to Crane, Pepper & Crane), for improvement in Knitting Machines.

I claim, first, a sinker, to be used in machines for knitting, so constructed as to form the loops upon the needles used in knitting two separate fabrics at the same time and at one operation, and of sufficient weight to draw the requisite quantity of yarn from the supply to form the loops required.

Second, A slur to be used in knitting machines, so constructed as to let each sinker drop to the falling bar, and draw the requisite quantity of yarn from the supply, to form the loop or loops, between the needles, before it allows the succeeding sinker to drop and act upon the yarn.

Third, a falling bar, so constructed that the slurs and slur boxes traverse upon it instead of traversing a separate bar.

Fourth, the combination of the sinkers, stop bars, combs, and needles that traverse, so arranged as to knit two separate fabrics at the same time, with one and the same set of sinkers and slur.

Fifth, I do not intend to limit myself to the precise construction described in the foregoing specification, but to use such forms of construction as will answer the purpose intended,

To Maria Vaughn (administratrix of J. C. Vaughn, deceased), of Greenbush, N. Y., for machinery for making Wrought Iron Car Wheels.

I claim the machinery and apparatus set forth and described, to wit, the mould blocks or welders, the hammer or ram, with the wedges thereto attached, and the mandrel, in combination with each other, for the purpose set forth.

To Jabez Robins, of Boston, Mass., (assignor to J. R. Morse, of Leominster, Mass.), for improvement in machines for Splitting Horn and Shell.

I claim the cylindrical rotary bed, or drum, in combination with the water cistern, or trough, and its furnace, and machinery over the drum, for bearing the shell or material down upon it during its revolution, as specified, the said drum being provided with a roughened or friction curved surface, such as will adhere to the shell, and cause it to move with it and against the knife, as described.

To Henry Maesser, of Pittsburgh, Pa., for improvement in printing names of subscribers upon newspapers, &c.

The arrangement and construction of a machine for printing names of persons or places on newspapers and other papers, after the manner substantially as described, viz., of a form containing the column of names to be

printed set up in types, and being brought under the action of a stamp, by means of a slide moving by degrees, together with the application of a slitted plate, allowing the paper to be printed to be pressed down on the line right beneath the slit of the plate, and shielding the paper from the lines adjoining that under action of the stamp, as described.

To Jacob Selgrath, of Pottsville, Pa., for improvement in Lubricating Compounds.

I claim the combination of ingredients herein described, whether the proportions be the same as herein set forth, or varied to any extent that the same may admit of, without changing the peculiar character of the compound as a lubricator.

To Lawrence Myers, of Philadelphia, Pa., for improvement in Cars for transportation of Coal.

I do not claim the use of cylinders for conveying material upon common roads, as this has been done heretofore, but I claim the combination of a partition or partitions, with a metallic cylinder or cylinders, provided with flanged rims, as herein described, for the purpose of carrying material in bulk, on rail or other roads where high velocities are attained, said material being held in place by centrifugal force, whilst in motion, and prevented from falling or rolling in the cylinder, by the partition or partitions, whilst in the act of stopping or starting, as herein fully described, or by any other means essentially the same.

To Sylvanus Sawyer, of Templeton, Mass., for improvement in machinery for Cutting Rattan, &c.

I claim, first, the combination of the cutters, as described, with the levers, the springs, and cams, or their equivalents, and handles and links, for the purpose of applying said cutters or scrapers, so as to act upon the stick of rattan in the manner herein described, and by which they may all be operated simultaneously, substantially in the manner described.

Second, in the process of cutting cane or rattan into strands, as described, I claim bending the stick at the point at which the cutter is removing the strand from the surface.

Third, I claim the combination of the elements which compose each simple section of the cutting apparatus, that is to say, of the cutter and gauge, with the stock, guide, and bed roller, or their equivalents, substantially as described, for the purpose of bending the stick and removing the strand therefrom, whether said section is used alone or is combined with others, as described.

Fourth, I claim the combination of that part of the machine called the scraper, with the feeding rollers or their equivalents, and the several sections of the cutting apparatus, said sections being so arranged, in relation to each other, as that the stick, in passing from the one to the other, shall be properly bent, and also that the several cutters should act upon different points of its circumference, the whole being arranged and operating substantially as set forth.

To Chas. Starr, of New York, N. Y., for improvement in machines for finishing the Backs of Books.

I do not claim to be the inventor of backing books by means of a roller, as rollers having concave peripheries have been used, which were passed longitudinally over the back, nor do I claim the construction of the clamps or jaws between which the book is held. Nor do I claim to have invented the use of circular engraved tools, or rollers for embossing books, but I claim, first, the use, for the purpose described, of a roller of the whole length or part of the length of the back of the book, either plain, for a plain back book, or grooved for a raised banded book; or having a figure or figures cut or engraved, or otherwise made upon it, rolling over the back of the book, from side to side, or from the centre to the sides, and having a yielding pressure applied to it by weighted levers, or their equivalents, in the manner substantially as described.

Second, I claim clamping or holding the book in a swinging book holder, or its equivalent, which hangs on pivots or journals, and is capable of being swung back and forth, so as to cause the back of the book held in it, to describe an arc of a circle, and bring each part of the back to the roller, so that it shall receive an equal pressure all over its surface, substantially for the purpose as set forth.

Third, the gauges sliding upon an inclined bar, or bars, that they may be set to form guides for placing both ends of the back of the book at an equal or nearly equal elevation in the clamp, so as to cause each part to receive a uniform pressure, and may be drawn back from the book without dragging or rubbing the surface of the back, in the manner substantially as shown.

To S. T. Armstrong, of New York, N. Y., for improvement in making Gutta Percha Hollow Ware.

I claim the method, substantially as described, of moulding articles of gutta percha, or the compounds of gutta percha, with other substances, by first making the same in the form of a pipe, and whilst in a partially heated and plastic state, giving to it the form required in a mould by forcing a liquid inside to expand the gutta percha, as described.

To Wm. & Wm. H. Lewis, of New York, N. Y., for improvement in fastening Pedestals to Columns.

I claim the application of the piece, c, and different shaped lugs, 8 and 9, on the end of the column, to enter the hole, 2, and notches, 3 and 4, so that on turning the columns the lugs take the inclined seats, to attach the column to the pedestal, in combination with the locking piece, to prevent the column turning, substantially as described.

To Wm. H. Start, of Smyrna, Ill., for improvement in Grain Harvesters.

I claim, first, the standard to which the steering wheel is attached, constructed as herein described, so as to perform its own office proper, and also to adjust the cutter at the required height above the surface of the ground.

Second, the discharging rake, which is moved as described, in combination with the endless apron for collecting and discharging the cut grain, as set forth.

To Joseph Wright, of Waterloo, N. Y., for improvement in Mashing Tubs.

I claim, first, the employment of buckets formed by the revolving arms, working within the hopper, for delivering the grain through suitable openings into, and operating in combination with the mashing cylinder having an outlet or outlets, for supplying the cooler, substantially as described.

Second, the use of a mashing cylinder, having beaters within it, and operating in combination with a cooler, carrying any number of barrels or shafts fitted with projecting pins, essentially as described for the purposes as set forth. [See engraving on page 137, this Vol. Sci. Am.]

To Jean Blanc, of New Orleans, La., for improvement in making Hemp from Okra.

I claim preparing of hemp from the bark of the okra plant, in its green state, and the herein described method of preparing it for use.

DESIGNS.

To S. A. House, of Mechanicsville, N. Y., for design for Stoves.

(For the Scientific American.)

Practical Remarks on Illuminating Gas.

[Continued from page 326.]

Complaints have sometimes been made by persons using gas, grounded upon an opinion that it effects the lungs deleteriously; this, however, is seldom, if ever the case, unless the gas is allowed to escape by accident or through carelessness, and then the odor of the air is rendered so unpleasant that a person would naturally escape from the apartment before its effects could be produced upon the lungs. In almost every instance the cause of such unpleasant feelings may be traced directly to the carbonic acid gas emanating from an anthracite coal fire, from hydrogen generated in cess-pools and drains and conveyed through them to the building; or perhaps may result from gas which passes from the burner unconsumed, or, in a close apartment where many lights are burning, to the vitiated air caused by the carbonic acid gas evolved during combustion, and which collects, if proper means are not adopted to secure ventilation. It is so much easier to charge all such unpleasant sensations, all odors and annoyances to the gas, than it is to spend a little time and thought in searching out the true cause, that it is often done, much to the annoyance of gas companies and their agents, and at a great sacrifice of time.

Many consumers have a mistaken idea as

regards regulating their burners, to produce an economical consumption of gas: it is a great error where we have, say for instance, five burners, and wish to decrease the light to partially close them all, the proper manner of regulating them would be to entirely close two or three of them as the case may be, and increase the flame in the remaining ones; for by turning them all down, we consume much more gas in proportion to the quantity of light given; while in the latter case by extinguishing the two or three, we derive the best economical results from the remaining ones burning. A little careful examination will convince every skeptical person of the truthfulness of these statements.

Every gas consumer should learn to read the meter within his premises; and it would be well if he should habituate himself to the calculation of his consumption of gas nightly; by so doing, he could regulate the amount consumed as it may please him, and not only derive benefit but satisfaction thereby. If upon lighting up his burners, and examining his meter he finds that they are consuming more gas than is requisite, he has only to shut off the cocks and reduce the amount; and if he finds upon examination that the expense of one evening's illumination is too large, he can govern himself accordingly and economize upon the following evening; and thus he can make his bill for gas just whatever he pleases; and will know the amount due, even before his bill is presented. Were this course pursued by all gas consumers much trouble and hardship would be saved, and I trust that a matter so simple, and which takes so little time will come into more general custom among the consumers of gas.

Whenever coal gas works are about being located, there is almost invariably a general complaint made by those residing or owning land in the vicinity, conceiving that they will be a great nuisance, and thereby decrease its value. An opinion of this kind expressed, would convey to any practical mind the want of information upon the subject; and any person understanding the nature and the construction of a coal gas apparatus, would, we are convinced never entertain such an opinion. There can be no direct nuisance emanating from a well conducted coal gas establishment, the very nature of the process forbids it. The gas is generated in closed vessels and is conveyed through all its detail progressions from the retort to the burner, unseen, through pipes, and invisible. There is no smoke from the fires, coke being the only fuel used, and this is perfectly free from all smoke or gas, save perhaps a small portion of carbonic acid gas, which is not visible, and cannot be deleterious when escaping in the open air, by means of a suitable chimney.

When the retorts are opened for the renewal of coal, the escaping gas or smoke is ignited immediately and burnt, very little if any passing off unconsumed. And I repeat it, there can be no nuisance or inconvenience arising from a well arranged and well managed coal gas establishment, and there can be no odor of gas without being caused by some accident, or by gross carelessness of the workmen employed.

J. B. B.

[Remainder next week.]

Treatment of Children in Public Schools.

Many physicians in our city complain that it is injurious to the health of children in detaining them as the custom is, around or in the school, during the time they should be at home for dinner. The dinner meal is the most important of any to children.

Professor Dick, of Edinburgh, has pronounced an opinion that hydrophobia is purely a work of imagination.

[The above is going the rounds but is not altogether true. Prof. Dick never said that hydrophobia was purely the work of fiction, but that it had been like many other diseases produced by the imagination.]

Mr. Whitney has been lecturing before the London Geographical Society, on the subject of his railroad to the Pacific through Canada.