Scientific American

NEW YORK, OCTOBER 12, 1850.

City Railroads.

Some time ago a special committee was appointed by the Common Council "to report a general plan of railroads for city uses." This committee, consisting of Aldermen Britton, Chapman and Dodge, have reported, and their report is printed; the document recommends the laying of a track through College Place, West Broadway, Varick street, and Sixth avenue, to 40th street. This city railroad is recommended as a useful auxiliary to city travel. The reasons given for constructing such a road, are ample and good. They state the only exceptions to the general favor with which this proposition is received, proceeds from those who are opposed to all city railroads on account of danger, &c., and those who are interested in stage lines. The first class of objectors are honest in their views, and the second are interested, (and who will say wrongfully?) in a peculiar business, which would, in their opinion, be injured if the project was carried out. A correspondent in the Tribune, of last week Thursday, attacks this report with bad argument and strong feelings. He abuses Alderman Shaw personally, because he offered a resolution to lay down a system of city railroads. He also threats him politically, a thing which we condemn as being illiberal and unjust: if a magistrate, or legislator, offers a motion, or advocates a resolution, which is esteemed to be wrong by any citizen, it is the duty of that citizen, as an enlightened and useful member of the city or commonwealth, to expose the error of the magistrate or legislator; but to threaten politically, is to befray an anti-republican spirit.

The strongest argument urged against city railroads, is the great expense, as the writer alluded to says: an expense probably equal to the Croton Water Works," and he states that "he is not prepared for that." Well, this is tantamount to saying the Croton Water Works found an opponent in him, the very same as city railroads,—if this exhibits an intelligent and liberal spirit, we do not know what such a spirit is.

We are advocates of city railroads, but we would not advocate going into their construction with red hot haste. First, let the city lay down one track—say the one up West Broadway and Sixth Avenue, and give this a fair trial before another one is laid. Experience is the best teacher, and as one line could be constructed for no very great amount, it is nothing more than the suggestion of prudence, to try one first, and be satisfied whether it works well or ill, before another one is made. If it works well, and we have no doubt but it would, another line could be constructed, and so on, year after year, until the whole system is completed.

Water versus Steam Power.

Two communications have appeared in our columns relating to this subject. The one which was published last week was furnished by a gentleman of great experience as a manufacturing engineer and manufacturer, consequently his opinions are of great importance. Some time ago we received a pamphlet containing a report upon this very subject, which was presented to a number of the citizens of Utica, by a committee appointed by said citizens, consisting of Spencer Kellogg, Andrew S. Pond and Edmund Graham. The report describes the investigations of the committee during a visit to Newport, R. I., and it is in favor of steam as an economical motive power, and since that period (1845) a splendid new cotton factory has been erected in Utica —the consequent of that report. Whether that factory will be successful or not, time alone will truly tell. It has not been long enough in operation to prove or disprove the deductions of the committee, but our opinion is, that it will disprove them, and we will give a few reasons for this opinion. The committee overlooked two very important points, in respect to economic results,—they are, the price of fuel and land carriage. They stated that they had a long conversation with Gen. James, of the James Mill, Providence, R. I., "who gave it as his opinion that steam power, all things considered, was as cheap as water power," but, they say, "they did not obtain from him all the information sought, which was the relative difference between water and steam, as a motive power." In comparing the expense of a steam mill (the Bartlett Mill, No. 1, Newport, R. I., of 11,000 spindles) with a water mill of the same capacity at Lowell, they make the difference in favor of the steam mill $216,51 per month, or $2,598,12 per year. By what rule is this accomplished? Why, because they say that the cloth made in the steam mill is better by a quarter of a cent per yard than that made by water power. They make out the difference in the price of motive power to be in favor of the water at $2,677,08 per year, but to overtop this, Mr. Fisher, of the Providence Steam Mill, told them that the same goods made in a steam mill of like material, with those made in a water mill sold for about one-eighth to ¼ cent per yard more in market, hence the profits mentioned were in favor of steam.—We don't believe that there is any correct data for such conclusions. In England and Scotland, the largest cotton manufacturing countries in the world, a reverse opinion has prevailed, but this is wrong also: if the motive power is regular, and the temperature of the mill regular, there can be no possible difference in the quality of goods made by water or steam-power. Steam-power may be profitable in Providence or Newburyport, and unprofitable in Utica. The price of fuel, the import and export expenses of stock and goods, are unequal in the two places. Utica has an inland carriage of 250 miles from New York, and if wood is cheaper in Utica than coal, let it not be forgotten that 2,100 lbs. of coal will raise as much steam as 6 cords of pine wood. At the North, New York is the grand mart for goods, and all the cotton has to be imported from Charleston, Savannah or New Orleans. It may be profitable, therefore, to use steam-power near New York, and unprofitable to use water-power or steam-power in Utica. It would be more profitable to erect a steam cotton factory near New York than any where else, except near coal mines, or in the Southern States. In Manchester and Glasgow, steam cotton factories are abundant, because fuel is cheap, and these two cities are cotton marts. As stated in the communication on this subject last week, we believe that steam power is more profitable at the South, near the cotton field, where the cotton wool can be purchased cheaper than at the North, as one sequence; and another is, cheaper fuel than in most of the situations near the great selling mart at the North.

Near Utica, at York Mills, there are a number of water-power factories; they will afford a good opportunity to test, by comparative results, the relative profits of steam and water-power as applied to the manufacturing of cotton goods. Our opinion is, that the steam factory will not show such a good column of profits as the water-power factories—time will prove whether we are mistaken or not.

Water-Proof Cloth.

The best water-proof cloth made, is that of india rubber; no other cloth can equal it; oil cloth comes next in order. Woollen and cotton cloth may be rendered nearly water-proof by dipping them in a solution of alum and the sulphate of copper. These two substances should be used in about equal quantities. The cloth should be dried in a warm room afterwards. If cotton cloth is dipped into a very weak solution of glue, and afterwards into a hot and strong solution of alum, and then dried at a high temperature, a very good water-proof cloth is the result, aye, and one that is nearly incombustible.

The bell of the steamer Rhode Island, which foundered at sea on her way to California, and some thirty or forty persons lost, has been picked up on the Azores or Western Islands, by a whaling bark. It is 200 pounds in weight, had the stamp of James S. P. Allaire, N. Y., 1836, upon it, and was attached to a broken beam.

Composition Roofs.

Within the past two weeks, we have received not a few communications about cheap roofing. One inquires about "the preparation of paper for roofs," and another about "a cheap composition for them." We will now present what we call a method of making cheap roofs.

Let the roof boards be fastened down as close as possible; then take cheap cotton cloth —say about 6d. per yard—and nail it down, taking particular care that no seam shall be over any board seam: then have ready a vessel with mineral tar, that is, the tar made at any coal gas works, and lay on with a large brush, or otherwise, a heavy coat of this, laying it smooth—then take a lot of clean sand, strew it thickly all over the tar; then take a roller, or something to roll over the sand, to press it thickly into the tar, after which sweep off the loose sand, give another coat of tar and sand in the same way, and the roof is complete. This makes a cheap and durable roof. Strong brown paper may be used as a substitute for the cotton cloth. A composition of one half pitch and one half of common tar, will answer as well as the coal tar; common tar can easily be made quite hard by pouring some of the oil of vitriol into it—this carbonizes and makes it into a charcoal. A roof may be made in sections as described, that is, one part finished before the other; its surface must be thickly covered with the sand. Some use fine gravel, but clean sharp sand is much better. A roof of this kind will last for a great number of years, and if it is well made, it is more incombustible, by far, than a shingle roof. Farmers would do well to use such kind of roofing for sheds and other kinds of outhouses.

Reform of the Patent Laws.

Of all the reforms which have been proposed for the Patent Laws, none seems to strike close enough at the root of the matter. The reform should commence at the Patent Office, for there is more injustice done to inventors there than anywhere else. Examiners of the Patent Office are a sort of "Privy Council," from whose decision no appeal can be taken, without a great deal of expense being entailed. When an Examiner makes an adverse decision, he does not like to recede from it, although it may be wrong—this is human nature; and there are some men of such dispositions, that they come to conclusions too hastily, and afterwards are too stubborn to recede from their positions. There are others, again, of a more noble nature, men who are cautious and candid in forming their opinions, and who, at the same time, have the right sort of manliness about them to recede from a wrong decision whenever they are convinced of their error. No man of the former class should be an umpire in any situation, for he has not the natural qualifications for the office. It has often happened that inventors have been put to great expense, simply by the whims of the Patent Office: many of them have had applications rejected without any good reason whatever, and have, by a journey to Washington, got all they asked for, and sometimes a little more. Some good and original inventors have been denied patents, while schemers, backed by good friends, have got patents for what was worthless and old. A patent was granted last May, for something which none of my Yankee cousins could guess, if they should try till thanksgiving. It was what? "An improvement on the 'Cotton Gin?'" No. "An improvement on the Steam Engine?" No. Well, don't guess any more, and I will tell you. It was for nothing less than a grindstone with a cord wrapped round its periphery to make the water fly out of the trough in which it revolved. Now, was not that a bright move? The applicant had some good friends, and this is the reason that a device, as old as the ruins of Nineveh, was awarded a patent by our enlightened and impartial Patent Office. As it will not be long before Congress assembles again, I hope inventors will get ready their petitions for a thorough reform.

One reform should be "the return of appeal money, and two-thirds of the Patent fee, to the inventor, if the decision of the District Judge, or a Circuit Court, is against the Patent Office." Another reform, is the return of models to rejected applicants. The Patent Office has no business to keep models for which patents have been refused. This reform would, no doubt, be agreeable to the Patent Office itself.

The great reform wanted, is an easy way to appeal from an *ex parte* decision, so as to have a fair examination of the claims of an applicant and the reasons of rejection. According to the law, as it now stands, this cannet be done. It would be a good plan for the Committee of Patents, to send for those who have got patents this year, and those who have been rejected, and take their evidence in relation to the trouble and expense they have been at, and the manner in which they have been treated; I know several who will pay all their own expenses in going to Washington, to give evidence before a Committee appointed by Congress. The great object of every reform should be "equal and exact justice."

JUNIUS REDIVIVUS.

New York, October, 1850.

Asphaltum Mining in New Brunswick.

We learn from a gentleman who has just completed a tour through the British Provinces, that extensive and very valuable mines of bitumen have been opened in the County of Albert, New Brunswick. The principal operations, at present, are upon an out-cropping, from ten to fourteen feet in thickness, situated about four miles from the wharves of the Petticodiac River, near its mouth. The deposit has been traced along the surface several miles, and the bituminous mineral appears at numerous points along a line of thickly wooded country sixty miles in length, and perhaps ten in breadth. A number of mining leases have been granted by the government. The opening of roads and the projection of a railroad are on the advance, and a general spirit of enterprise and competition by the inhabitants and persons from the United States, is exerting itself throughout that region. On the eastern side of the river, and above Belleveau village, settled by Acadian French, the asphaltum, or mineral pitch, occurs in a soft state, and resembles wax.

This bituminous district is described in Dr. Gesner's Geological Reports of the Province, published as long ago as 1840, and since he has successfully applied the material to the manufacture of gas, it will doubtless afford a new and valuable article of commerce. We recently published an analysis of this beautiful mineral in the Scientific American; we are happy in believing that its resources in New Brunswick are inexhaustible.

A few days ago the roof of a part of the coal mines of Pictou, Nova Scotia, fell in to the extent of thirteen acres; fortunately, at the time, the workmen were at the surface taking their breakfasts. A part of the railway, and a number of miners' tools were buried, and the company have sustained a heavy loss. It is stated that there is coal enough at the surface to meet the demand this season. As the mine is about 400 feet deep, the fall produced but little disturbance at the top of the ground, although the families of the miners abandoned their houses until the shock had subsided.

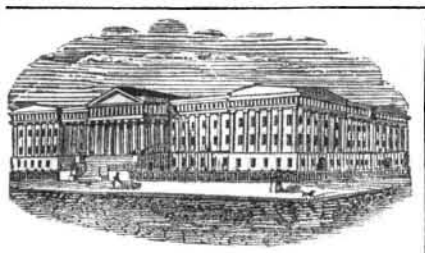
The Carleton Iron works, New Brunswick, which were destroyed by fire some months ago, have been re-built, and will soon commence smelting iron ore. The new buildings are of brick and stone.

Who will Accept the Offer?

"I will send a dollar bill to any person that will send the first number of the fourth volume of the Scientific American in good order, to me, by mail or otherwise, with this address, JOHN GARST, Dayton, Ohio.''

History of Propellers.

The work on Propellers and Steam Navigation, which we have in press, will not be ready for those entitled to it, until about the 20th instant; we shall then be able to fill orders to any extent.



☞ Reported expressly for the Scientific American, from the Patent Office Records.

LIST OF PATENT CLAIMS
Issued from the United States Patent Office.

FOR THE WEEK ENDING OCTOBER 1, 1850.

To Herrick Aiken, of Franklin, N. H., for improvement in wrought-iron Car-wheels.

I claim the combination of a rim, with arms at the ends of the spokes, by means of the inner flange and bevel, between the flange and opposite side of the rim.

To Stephen Bowerman, of Detroit, Mich., for improvement in Cotton-stalk Harvesters.

I claim the combination of two saw-teeth wheels, with the frame, and supported thereby, and the triangular pieces of iron for disengaging the stalks, in the manner and forthe purposes herein set forth.

To A. Buffum & P. Thorp, of New York, N. Y., for improved Double-acting Rocker, for washing gold.

We claim the combination of the movable pan with the gold washing rocker, so arranged and operated as to give to the pan inside of the rocker a double rocking or vibrating motion, sidewise and endwise, substantially as described in this specification.

To W. P. Coleman, of New Orleans, La., for improvement in Mills for grinding.

I claim the elastic cushion inserted in the bottom of the socket, of the cock-head, substantially in the manner and for the purpose herein set forth.

To R. J. Colvin, of Lancaster Pa., for improvement in Slides of Seed Planters.

I claim the combination of thereversing slides with each other and the hopper, by which the machine can be readily adapted to the different varieties of planting, in the manner and for the purposes set forth.

To Reuben Daniels, of Woodstock, Vt., for improvement in Vegetable Cutters.

I claim the combination of the double edged reciprocating blade, with the hopper and removable bars, for slicing vegetable substances, as herein set forth.

To Halvor Halvorson, of Northampton, Mass., (assignor to Wm. M. Chace, of Boston, Mass.,) for improvement in Looms.

I claim the combination of the stationary circular plate, the gears, the circular box with the tubular shaft, H, and the main shaft, the same being for the purpose of effecting the rotations of the cam-shaft, K, without any such exposure of gears as is customary in most other looms, and which are not only often productive of accidents to attendants, or workmen, but often destroy or injure the shutters when thrown out of the lay by the action of the pickers.

I also olaim the combination of mechanism for operating the harnesses, when they are constructed substantially as specified, the said combination consisting of the supporting or radial bars of the harness frames, the rocker shaft, *q*, and tubular shaft, *t* the arm, *v*, and its pin or stud, which enters the groove of the cam, and the endless chain and fixed pulleys, the whole being applied together and made to operate essentially as above described.

I also claim the mode of constructing each of the harness frames, viz., of a combination of a bar and thread carriers as applied together, and made to operate in the manner above described.

I also claim the combination of an endless belt and its projection or picker with each shuttle box and its picker staff, so as to constitute the floor or bottom of the shuttle box, and operate, and be operated in manner as described. This mode of constructing the shuttle box, in consequence of the belt moving with the shuttle, reduces the friction of the shuttle in its passage out of the box.

I also claim the combination of mechanism, for operating each picker staff, the same consisting of the cord and pulley attached to it and the main frame, the spring of the foot of the picker staff, the spring latch on the lay, and the discharging cam or plane affixed to one of the harness frames, the whole being as above described.

I also claim the above described mode of making the race beam, viz., with elevations or plates to extend above it, and between and above the lower warp threads, so as to constitute a support for the shuttle in its passage over the race beam; the same enabling me to protect the yarns from injury from the shuttle, and to run the loom at a greater velocity than it would be safe to operate it with a race beam constructed in the ordinary manner.

To J. J. Herndon, of Marlborough Distriot, S. C., for improvement in Rice Harvesters.

I claim as my invention the application of the vertical blade and wing attached to either or both sides of a beam and their combination with each other, and the other parts of this machine running by hand or horse power.

To O. B. Judd, of Rockton, N. Y., for improvement in Saw Gates.

I claim *raising* and *lowering* the saw, for the purpose of using the whole cutting part of the same.

[The Patent Office is exceedingly generous in this case: we are happy to see its advancement in philanthropy.]

To Lewis Lupton, of Winchester, Va., for improvements in Dash-boards for Carriages.

I claim the arrangement of the winch-shaped hand and foot lever, in combination with, and attaching the same to, a jointed moving dash-frame; together also with the attaching of said jointed moving dash-frame to the running gear part of the vehicle, instead of to the body part of the vehicle, as is usual.

To M. M. Mathews, of Rochester, N. Y., for the use of Rosin-oil in Printers' ink.

I claim the employment of rosin-oil in the manufacture of printing ink, substantially as herein set forth.

To Wm. Markland & J. Milnes, of Lowell, Mass., for improvements in Weavers's Shuttles.

We claim, first, the combination and arrangement of the friction levers in weavers' shuttles, in such a manner that the lever shall be allowed to vibrate towards and from the bobbin, for the purpose of producing a more even tension, substantially as herein described.

Second, the combination and arrangement of a spring and cam surface upon the friction lever, in order that as the friction lever is raised from its seat, the compression may be made more or less as desired, substantially as hereln described.

To Gelston Sanford, of Ellenville, N. Y., for improved Auger Handle.

I claim securing augers, and other tools, in their handles by means of a tube attached to the inner half of one part, and an eccentric attached to the inner half of the other part of the handle, the eccentric part passing into the tube and the eccentric fitting into the dovetailed grooved slot of the shank, substantially as herein described.

To Wm. W. Smith, of Boston, Mass., for improvement in Spring Callipers.

I claim the circular spring enclosed within the hollow head resting on the pivot on which the two parts turn, and acting on the two parts (or shanks) throwing them outward against the nut on the cross bar.

To C. S. Snead, of Louisville, Ky., for improvement in Grain Driers.

I claim the revolving barrel, consisting of the wheels, and the bars provided with arms, carrying scrapers, in combination with the troughs arranged one above another, in the manner substantially as herein set forth, for the purpose of drying meal, grain, &c.

[See an engraving of this apparatus in number 33, Vol. 5, Sci. Am.]

To Ashley Townsend, of Pavilion, N. Y., for improvement in the construction of endless aprons in threshing machines and grain cleaners.

I claim the method of constructing the closed metallic apron for separating grain in the manner described.

To Amos Westcott, of Syracuse, N. Y., for improved Door Spring.

I claim the door spring, consisting essentially of a spring, jointed lever, strap and curved track, the latter being of the form herein described, to control the action of the spring and the several parts, together with the door and the door frame, being arranged with respect to each other substantially as herein described.

To Isaac Woodward, of Mechanicsburgh, Ohio, for improvement in Straw Cutters.

I claim the combination of the moving cleansing bar, with the stationary blade, substantially in the manner and for the purpose herein set forth.

I also claim the treadles constructed and arranged substantially as herein set forth, in combination with the cutter gate.

RE-ISSUES.

To L. R. Livingston, J. J. Roggen & C. Adams, of Pittsburgh, Pa., for improvement in shanks of door-knobs. Patent dated July 7, 1846: improvement added Dec. 11, 1847.

We claim the method of making the shank for door knobs in two pieces, coupled together near the middle by a notched connection, and held together by means of the escutcheon at one end, and the latch-bolt (or by the tumbler that operates a latch-bolt) at the other, substantially as herein described.

We also claim the constructing the keeper and the lever fastener, of such shape and proportions that the keeper can be reversed in its position upon the latch plate, and the lever fastener be reversed in its position in relation to the keeper, for the purpose of adapting our improved lock or latch to doors, opening either to the right or to the left, substantially as herein set forth.

We also claim the connecting the respective shanks of the knobs to each other and to the lock or latch, by means of the tooth in the halved portion of one shank fitting into an aperture in the halved portion of the other, and the two being confined to each other by the tumbler, the tube projecting from the side of the lock or latch, and the escutheon secured to the door, substantially in the manner herein set forth.

DESIGN.

To Anthony W. Jones, of New York, N. Y., (Assignorto E. R. Brown, of Albany, N.Y.,) for design for Stoves.

Fair of the American Institute.

The Twenty-third Annual Fair of this Institute opened on Tuesday last week. We do not think there are a greater variety of articles than were exhibited last year, but the arrangement is altogether better. The machine room is larger, and this we are glad to see. The more room that is provided for machinery the more will always be displayed.

It is not our intention to speak of, or describe any machine or article that is futile or old, except it may be for the purpose of pointing a moral. As usual, there are a considerable number of well-known good looking articles, which appear like reserved stock—but let these pass. There are many new things, some of which we will notice briefly now, and others next week.

The show of agricultural implements is good and the stock large. Among them stands conspicuous a Grain Separator, of Benj. D. Sanders, of Holydays Cove, Va. It was illustrated on page 324 of our Fourth volume, and it has been patented since that time; it was never exhibited here before. The principle of its action is the separation of all impurities from grain by vacuum, according to the specific gravity of any impurity. This is the most perfectgrain separator that we ever saw operate, for the amount of pressure can be regulated to the utmost nicety to separate chess, smut, &c. The chess ascends into a receptacle, and the good wheat falls. No other machine can separate, as it does, chess and wheat; there is only one machine of the kind in operation in this State, and it cleans 400 bushels of wheat per hour.

Ransom Cook, of Saratoga, exhibits his smoke consuming tuyere; this apparatus is entirely different from any of the common construction: it is applicable to all kinds of blast furnaces. Into the blast pipe there is conducted a small tube inside, leading from the stalk or smoke-pipe; therefore, when the blast from the bellows, or blower, comes to this tube, it is condensed, and as it passes out at the extremity of the small pipe spoken of, to go into the furnace, it expands and forms a partial vacuum at the end of the said pipe; this vacuum draws some of the smoke from the exit pipe, and returns it again to the fire. It is a smoke or carbonic oxide consumer, and saves about 25 per cent. of fuel. This is the most scientific smoke consumer that we ever saw, for there is no extra mechanical action brought into play by its operation—simply a law of nature; the blast can be regulated at will, either for a greater return of smoke, or a greater supply of oxygen.

These two machines described, it will be observed, are constructed and operated on scientific principles—both embracing the same classification in philosophy, yet very different in construction and application.

PARLOR GRATES.—Among the numerous and ingenious inventions to warm and beautify parlors, now exhibiting at the Fair, none attract more attention, or are more worthy of notice than those elegant "Cast Iron Parlor Grates," from the manufactory of Messrs. W. & N. Jackson, No. 238 Front street, and it is surprising to see to what perfection they have attained in this branch of business—so useful and necessary to our comfort. They have six new patterns on exhibition, one of which is principally made of German silver, and is called the "Jenny Lind" pattern. The contrast between these new improvements and the old-fashioned and unsightly brass grates, is very remarkable.

There is what is called a self-acting churn in operation; it does not deserve the name of "self-acting," for it is operated by a clock-power, wound up from time to time. Let us say, that for small churns, a good hint may be derived from this, so as to save time; by applying a man-power for five minutes, a rope or spring may be wound up, to drive the dasher for half an hour, so as to churn the milk.

Patent Ca

United States Circuit Court, New York District, 28th ult. In this Court, Judge Nelson presiding, a motion for an injunction prayed for, Goodyear against Day, for alleged infringement of patent for the manufacture of india rubber goods, was denied and the bill was dismissed with costs.

Another such case, Goodyear vs. Horace H Day, was decided on the 5th inst., at Trenton N. J. It occupied the court for two weeks, and was decided in favor of the defendant, Mr. Day. This case has been a long time on the carpet. Mr. Staples, of New York, was one of the counsel for plaintiff; Mr. Geo. Gifford for defendant.

A motion of injunction, prayed for Allen to restrain Sprague from infringing his patent for revolver pistol, was also denied, but a trial was ordered.

Samuel Colt, of Hartford, the Springfield Republican states, has instituted a suit for damages to the amount of $3000 against the Massachusetts Arms Co., of Chicopee, for an alleged infringement of his patent for revolving pistol.

On application of Bicknell & Jenkins, Mr. Justice McLean, in the U. S. Circuit Court at Columbus, Ohio, on the 17th ult., granted an injunction against Reynolds, Kete & Tatem, prohibiting them from making, constructing, selling or using the Woodworth planing machine in Cincinnati.

Wonderful Transformation.

The following is from the Derby (Conn.) Journal:—"One of the early trains of cars on the Naugatuck Railroad, ran into a hand-car when near the residence of Peter Phelps, Esq., Derby, yesterday morning, and smashed it up into a 'cocked hat.' We understand that there were six laborers in it, who barely escaped the same fate."

The London correspondent of the New York Herald states that the commercial tonnage of the United States is 20,000 tons more than that of England, the former being 3,150,000 tons, and the latter 3,130,000 tons.

[The above, we believe, cannot be correct, as Great Britain has no less than 33,672 sailing vessels and 1,110 steam vessels, and employ 236,000 seamen.