

Scientific American

NEW YORK, JUNE 1, 1850.

Our Atlantic Steamers.

The Atlantic, the first of the Collins' American Mail Line of Steamships, has made her first voyage across the ocean. She made the passage in thirteen days to Liverpool. Many of her friends stated, when she left New York, that they would feel disappointed if she did not make the trip in ten days. The reason why she made so tedious a voyage is stated to be "the breaking of the valve of one of her air-pumps, and the breaking of a number of her paddles."

We feel not a little regret at her somewhat unfortunate trip, but we had no such ideas of her high speed, as were propagated through the columns of our daily press. It was stated in all our daily papers that she ran at the rate of 18 knots per hour on her trial trip. If this was true, she could make the voyage to Liverpool in eight days. The character of our steam ships has received more injury from the inflated boastings of ignorant commentators than from any other source. We hate rant and cant in essence and principle, and have very little confidence in the prudence or judgment of those who forget the old maxim, "let not him that putteth on his armor boast." We have now but entered into competition with Great Britain for a share of Transatlantic Steam Commerce. She has had the monopoly of it for twelve years, and with her great experience in marine navigation it is not wise to under-estimate her abilities, and over-estimate our own. It is best to look every difficulty in the face and meet it with compressed lips and determined hearts. It is more glory to hear others cheer for us than to cheer for ourselves. Washington never exhibited greater wisdom and magnanimity than when he told his war-worn veterans at Yorktown, not to cheer at their own victory,—"posterity would cheer for them."

We have now four steamships running to Europe. As yet none of them has been so successful as their opponents, the Royal Mail Line. Our steamships have not been so well constructed as a whole. There can be no other reason assigned for our want of greater success, than this. The principal blame is thrown upon our engine builders by the press, but it is not their fault altogether, as the side bags of the Washington can fully testify. We want experience principally, for, until within a few years, there was not a single steamboat in America capable of crossing the Atlantic. Our boats were built for river and lake navigation, and were totally different in build and trim from those adapted for ocean navigation. Our opponents have been experienced in marine navigation from the very origin of the art. The rivers of Britain are so short, and the sea coast so extensive, that all their steamboats were built to brave the storms of the Atlantic. From the great speed of our razor-shaped river boats, many, not merely supposed, but asserted, that all we had to do was to launch our sea steamships and drive Uncle John Bull at once from the ocean. With preconceived prejudices, our first steamships were built with engines after a touch of our river craft, but our engineers have wisely adopted the policy in their new engines, of taking those models which experience has proven to be the best, and in a short time we will equal, we do not say surpass, our rivals.

The Pacific left this port on last Saturday, on her first voyage to Liverpool. She looked well and will make the voyage, we think, in about 11 days. All that we have to do to attain and maintain equality on the ocean, is to persevere until success crown our efforts.

The Using of Paint.

It is not an uncommon thing for some paints, especially when exposed to the atmosphere, to rub off like whitewash, after they have been put on for about six or eight months. We have known white paint do this, although both the oil and white lead were said to be good. In respect to white paint, which is most extensively used, there are three things which

may be the causes of its inferiority and rubbing off. These are bad oil, bad lead, and too much turpentine. The best linseed oil only should be used, and it should be boiled, but not too long nor at too great a heat. Linseed oil is frequently adulterated with sun-flower oil, which is very inferior to that of linseed.

Sometimes white lead is sold which is very inferior to others, but painters know how to judge between the good and bad. The best can easily be ascertained by painters from the quantity of oil required to give it proper consistency. In mixing paints, there should be no turpentine at all used for outside work (at most the smallest possible quantity) because the turpentine makes a soap of the oil, consequently, it soon will rub off or be washed away by storms, &c. The only benefit of boiling linseed oil is to drive away its moisture, and ammonia, so that the gluten of the oil will form a beautiful skin or varnish, when dry, to protect the lead from the effects of the atmosphere. While turpentine forms a good varnish with resins and gums, its combination with oil is altogether different, forming a soap, hence those who know not this fact, and use too much turpentine with their paints for outside work, may expect to see it disappear before it is very old. The best way to put on white lead for outside work, is to commence with a very thin coat, and let it dry perfectly. It is better to put on four thin coats, one after another, than two thick ones. The labor, to be sure is more expensive, but those who buy their own paint, and use it in the country, will find out that it will be a saving in the end.

In painting woodwork, the first operation consists in killing the knots, from which the turpentine would otherwise exude and spoil the work. To effect this, the knots are covered with fresh slaked lime which dries up and burns out the turpentine. When this has been on twenty-four hours, it is scraped off, and the knots painted over with a mixture of red and white lead, mixed with glue size. After this they are gone over a second time with red and white lead, mixed with linseed oil.—When dry they must be rubbed perfectly smooth with pumice stone, and the work is ready to receive the priming coat. This is composed of red and white lead, well diluted with linseed oil. The nail holes and other imperfections are then stopped with putty, and the succeeding coats are laid on, the work being rubbed down between each coat, to bring it to an even surface. The first coat after the priming, is mixed with linseed oil and a little turpentine. In laying on the second coat, where the work is not to be finished white, an approach must be made to the required color. The third coat is usually the last, and is made with a base of white lead, mixed with the requisite color, and diluted with one-third of linseed oil to two-thirds of turpentine, for inside.

Painting on stucco, and all other work in which the surface is required to be without gloss, has an additional coat mixed with turpentine only, which, from its drying of one uniform flat tint, is called a flattening coat.

If the knots show through the second coat, they must be carefully covered with silver leaf.

Work finished as above described would be technically specified as knotted, primed, painted 3 oils, and flattened.

Flattening is almost indispensable in all delicate interior work, but it is not suited to outside work, as it will not bear exposure to the weather.

Painting on stucco is primed with boiled linseed oil, and should then receive at least three coats of white lead and oil, and be finished with a flat tint. The great secret of success in painting stucco is, that the surface should be perfectly dry; and, as this can hardly be the case in less than two years after the erection of a building, it will always be advisable to finish new work in distemper, which can be washed off whenever the walls are sufficiently dry to receive the permanent decorations.

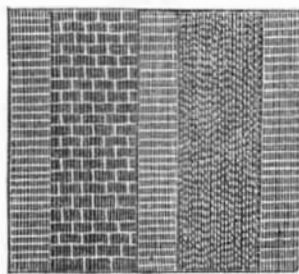
The Paving of Streets.

As the advantages of good roads through the country are unquestionable, so the benefits of well paved streets in cities are no less apparent. Good roads are an evidence of civiliza-

tion. The Indian follows the trail of his forefather, and gives evidence of some kindred instinct like the brute, but the civilized man levels the mountain and fills up the morass to make a permanent pathway for the horse and his rider, the carriage and his driver. The importance of good roads was not unknown to the ancients, and to the Carthaginians, a commercial people, is the invention of paved roads traced. From them the Romans learned the art as they did that of shipbuilding. During the reign of Julius Cæsar the Capital was in communication with the chief towns by well paved roads which branched from the seven-hilled city, at one time, to every province of the empire. The Romans introduced their system of roads into Britain, and they were made upon a gigantic scale, with an eye to permanency, it being the common opinion then that the Roman Empire was to endure for ever.

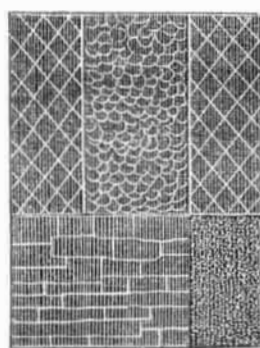
We here present three cuts of different kinds of pavements, to show different kinds of it and to illustrate it, as this is a subject with which many are less acquainted than would be supposed.

FIG. 1.



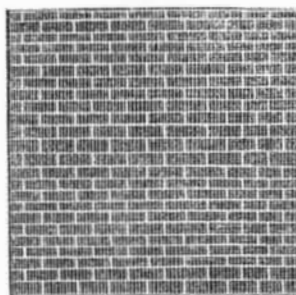
This is a pavement made of large thick flags for the wheel tracks and filled in between with neatly laid small rectangular blocks of trap. The tracks and foot ways are laid in a bed of concrete and cement, made firm and evenly, and the whole surface made slightly convex.

FIG. 2.



This is a pavement called the "Perrine pavement," and is now being laid down in a part of Broadway. The street is excavated to considerable depth, and a tier of broad flag stones laid down first, the seams of which are filled with pitch; above this is laid broken metal and gravel, the pitch being freely used amongst it, and then on the top are laid the diamond block tracks for the wheels, with the horse tracks between, made of cobble stone. There are four tracks on the width of the street, and the whole is gently rounding.

FIG. 3.



This is a pavement made of oblong blocks of trap, each of about 10 inches long and six broad and six deep neatly trimmed. The ground is excavated about 14 inches and a strata of 4 inches gravel mixed with sand and some plaster of Paris is laid down and well beetled and levelled and then sprinkled with water. Then another strata is laid down of the same stuff and treated in the same way, making it slightly convex. On the top of this these oblong blocks are laid in among a bed of sand mixed with ground burnt bricks. These blocks must be accurately laid and well rammed down, and in our opinion will make the best pavement for a business city like New

York, where there is an immense amount of travel.

The idea of paving the streets of modern cities is derived from, and based upon the Roman roads. Many of these are still in perfect repair in Italy, especially in the neighborhood of Rome. The stones are generally of trap rock, of a polyangular shape, of a very large surface, and about fourteen inches deep. They are slightly pyramidal, and set with their broad faces upwards. They are well fitted together, and sometimes laid in cement, though not always. In Naples the blocks are rectangular (mostly square) of about two feet, by two surface, and six inches in thickness, well fitted together, placed diagonally on the street, and laid in a thick bed of Roman cement.—This pavement excels in solidity and evenness, but becomes dangerously smooth, hence it is necessary, from time to time to cut grooves on its surface. The city of Rome is paved with blocks which are parallelograms, of about ten inches square surface. They are laid in a thick bed of cement. In the cities of northern Italy the roads may be called stone railroads, as the tracks for the wheels are broad flat stones, laid with precision, while the tracks for the horses' feet, between the lines, are paved with small stones. This is a good pavement, when well made, and was partially carried out on the great turnpike between the cities of Albany and Schenectady, in New York. None of these kinds of pavements are suitable for such a city as New York, in our opinion.

A great number of different kinds of pavements have been tried in New York city. The cobble stone, or small boulder pavement, is the oldest, and not a bad pavement when well laid down, but this is seldom the case, and one great difficulty in the way of its endurance, is the great variety in the quality of the stones. Wooden blocks were at one time supposed to be the best of all pavements, before their enduring qualities were tried. The pavement which has got the name of "Russ" in this city, is nothing more nor less than the Neapolitan pavement only its pozoloni bed of concrete for the diagonal blocks, is made in sections. It will soon have to be treated in this city, after it becomes smooth, like the pavement in Naples. This is the only objection to it, but it is a very serious one. The pavement in figure 1 is the best for steep inclines, to allow horses to pull heavy loads up the same, and although not required in such a city as New York, it may be good for some other city. The Perrine pavement is not suitable for streets like Broadway, where the carriages and omnibusses will be continually crossing the tracks, and it will be expensive for repairs, because there is so much street lifting for gas pipes, and common sewers. The Russ and Perrine pavements are solid and lasting, but we must look to a pavement that will be enduring, easily repaired, easily laid down, and that will obviate the surface difficulties of the two pavements mentioned, such a pavement is figure 3. It is smooth, yet presents an excellent foothold. It is enduring, can be laid down in one half the time of the Russ, and one-twentieth of the time of the Perrine. It will allow easy access to drains and pipes, and its substrata will be impermeable to water, and firm—qualities desired for a good pavement. We commend it to the attention of our City Inspectors and paving engineers.

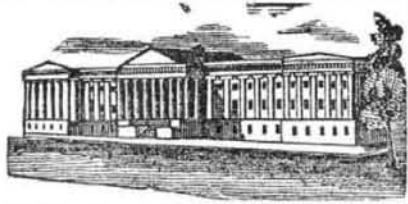
Reform of the Patent Laws.

The Bill for the Reform of the Patent Laws which has been considerably discussed in the Senate, and amended, has been recommitted to the committee on Patents. Whether it will become a law this session, or not, it is impossible to tell at present.

Thanks Due.

We are indebted to Gregory's Express for the prompt delivery of a package of gold from San Francisco on the afternoon of the arrival of the Crescent City. The business at this end of the route is under the efficient management of Mr. J. C. Thomson, office 149 Pearl st., N. Y.

We are indebted to several senators and representatives in Congress for valuable public documents.



Our weekly List of Patents and Designs contains every new Patent, Re-issue and Design emanating from the Department, and is prepared officially, expressly for the Scientific American, and for no other paper in the city, consequently other journals are obliged to wait the issue of the "Sci. Am." in order to profit by the expense to which we are subject, and of course must be one week behind. Those publishers who copy from this department in our columns, will, in justice to us, give proper credit for the same.

LIST OF PATENT CLAIMS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending May 21, 1850.

To Chas. Baeder, of New York, N. Y., for improvement in machines for polishing raw hide whips.

I claim the before described method of grinding, smoothing and polishing raw hide whips, in the manner and for the purpose set forth, that is to say, by the combination of the endless revolving belts, between which the rough raw hide whip is placed, the suspended frame containing the upper endless belt being arranged and operated in the manner and for the purpose set forth.

To John Bevin, of New York, N. Y., for improved Arch Girder.

I claim the method substantially as above described, of strengthening arches by means of metal straps, chains or ropes, which constitute the cords, and pass around the ends and over the arched surfaces thereof without being attached thereto, substantially in the manner and for the purpose specified.

And I also claim providing the arch or beam with rollers at the ends around which the strap, chain or rope passes, substantially as described, when this is combined with a coupling and tightening screw for varying the length of the said strap, chain or rope, substantially in the manner and for the purpose specified.

To J. H. Dakin, of Baton Rouge, La., for improvement in machines for drying bagasse.

I claim the employment of a revolving or rotary inclined flue, as applied and used for drying the bagasse, or compressed sugar cane, or any other green or wet substance intended for fuel, with the heat and flame coming from the furnace under the sugar kettles, or from any furnace whatever, all passing into and through this said inclined or rotary flue, at one and the same time, causing thereby the said bagasse or compressed sugar cane or other said substance intended for fuel, to become dry, and combustible and prepared for fuel the moment that it has passed through said flue, using such machinery or mechanical means as I have herein described, or any other suitable or mechanical means, as I have herein described, or any other suitable mechanical agency, or means that will enable me to carry out and put into practical execution, or use the principle or principles herein set forth, described and claimed, and to obtain the intended objects and results in combination as a whole.

To P. S. Devian, of Reading, Pa., for arrangement and connection of screw-propellers.

I claim the arrangement of the principal and auxiliary propellers connected by cog gearing, or its equivalent, with that of the water pipes, in the manner and for the purpose herein described.

To J. G. Garretson, of Salem, Iowa, for improvements in hand looms.

I claim the shedding the web by the direct action of the lathe on the treddles, by means of a moveable finger and a finger staff, or any other similar fixtures for the purpose, bearing down the treddle, and thereby producing a shed in the web at the backward vibration of the lathe.

I also claim the combined action of the hand, cam wheel, finger staff and the finger upon the treddles, as above described, for the purpose of shedding the web by the backward vibration of the lathe.

I also claim the combined action of the hand, cam wheel, by the zig-zag groove, lifting side and drivers upon the picker-staff, as above described, for the purpose of throwing the shut-

tle back and forth alternately at each backward vibration of the lathe, immediately after the shed is produced, the loom to be propelled by hand or other suitable power, all the above parts being substantially as herein described.

To J. Jack, (Assignor to Alfred Bell,) of Nunda, N. Y., for improved wickets for lock-gates.

I claim making and arranging a sliding wicket gate in such manner, that when shut it shall rest upon its seat, and make a light joint, but when moving to or from its closed position, shall be raised from its seat and supported on wheels to diminish the friction, and consequently the expenditure of power required to open or close it; the power for operating it, being applied through a lever, or its equivalent, so as to move the gate very slowly but with great force, until it is started from its seat and the weight thrown upon the friction wheels, and then to act upon it with diminished force, but move it faster until it is fully open, thus counterbalancing, as near as may be, the force and the resistance.

I do not claim the mere counterbalancing of the weight of the gate and the pressure of the water on its upper edge, by means of the pressure of the water acting upon a flange at its lower edge, but I claim placing a flange for this purpose in an inclined position, substantially as described, so that the vena contracta shall not prevent the issuing water from pressing against it.

To E. Jenney, of New Bedford, Mass., for improvement in machinery for sawing staves.

I claim the mode of steadying a long cylinder saw, viz., by means of a shaft and proper connections, at one end of the saw, in combination with a series of friction rollers and their supporting frame, applied outside of the saw and made to bear against the curved surface of the same, and at or near its other or serrated side, substantially as herein described.

To S. Lewis, of Tiffin, Ohio, for improvements in machines for sawing wood.

I claim, 1st, the combination and arrangement of the suspended vibrating feeding lever and rotating forked arm, jointed reaching arm, rack and slide bar, with the self-champing self-adjusting hinged jaws for holding the wood firmly during the operation of sawing, the feeding of the log being effected by means of the rotating forked arm, actuating the feeding lever in the manner for the purpose set forth.

I also claim the combination of the transverse bent lifting arm, and suspended lifting lever with the suspended feeding lever and bent rod, for unlocking the spring dog, and vertical spring catch, as described, by which the feeding lever is engaged with the jointed reaching arm, simultaneously with the ascent of the swinging sash, in the manner and for the purpose set forth.

To J. A. Maynard, of Boston, Mass., for device for discharging ashes from tuyers.

I claim combining with the valve on the end of the discharge pipe, a scraper, substantially as herein described, so that the opening of the valve by the stopping of the blast shall cause the scrapers to act, substantially in the manner and for the purpose specified.

To J. C. Parry, of Pittsburgh, Pa., for method of giving rotary motion to fluid iron in casting rolls.

I claim the combination of the paddle or fan, with two rods, and the frame work and gearing for giving motion to the fan, for the purpose of producing the rotary motion of the iron in casting chilled rolls and similar castings.

To C. Ross, of West Buddiek, Ohio, for improvement in feed-regulator for canals.

I claim the combination of the box, the float, sliding valve, segment gate and float, arranged and connected with the mechanism whereby they have an united action, in the manner and for the purposes herein described.

To C. Schiele, of Frankfort, Germany, for improvement in the form of rubbing surfaces for regulating abrasion.

I claim the application of the curved form above described to the rubbing surfaces of cocks or valves, pivots of upright shafts, mill stones, or other parts of machinery in general, where the rubbing surfaces have to bear a pressure in the direction of their axes.

[See engraving in this No.]

To J. M. Seely & W. E. Tomlinson, of Lockport O., for improvement in attachments to mills for preparing corn in the cob for grinding.

We claim the block with its arrangement of incline planes, knives, throats and other devices, which adapt it to operate on corn cobs or ears of corn received from a suitable feeder, and also to be inserted in the eye and be driven by the irons of the runner stone of grinding mills, substantially in the manner and for the purpose described.

We also claim the block arranged as described, in combination with the tubular feeder, arranged substantially in the manner represented and for the purpose described.

To John Shuttleworth of Frankford, Pa., for improvements in Power-looms.

I claim, firstly, the imparting to the heddle bearer a motion simultaneous with, and in opposite direction to, the vertical one of the cylindrical jacquard by an arrangement of supplementary levers and their appendages as herein described, or by mechanism substantially equivalent, the scroll cam or split pulley, being so arranged as to act alternately as a lock and guide and as a cam.

Secondly, the arrangement and combination, substantially as described and represented, of a segmental shell and stoppers for the ready adjustment of the jacquard to the pattern.

To S. Stevens, (Assignor to G. Forbes), of East Brookfield, Mass., for machine for grinding spiral knives.

I lay no claim to the invention or use of a carriage and stock, such as is used in the machine of Hovey, but I claim the employment and use of the radial arm, and its pivot, or contrivances for supporting the knife, substantially in the manner and connected with the other parts of the mechanism, as herein specified.

To T. C. Theaker, of Mansfield, O., for improvement in apparatus for setting logs in saw mills.

I claim the combination of the alternating cylinder, eccentric sliding dog, cog, notch and spiral spring, with the common vibrating hand lever and concentric circles of teeth, inclining in opposite directions for turning the ratchet wheel on the end of the pinion axle, to the right or to the left for moving the log on the head or tail block, either to the right or left, toward, or from the saw, as before described.

To J. D. White, of Hartford, Conn., for improvement in Lathes for turning.

I claim the central stock head and the chuck and large spur wheel, with the slots in them to allow the axle to be placed in and taken out of the chuck sideways; the large spur wheel being driven by the small spur wheels, the one acting as a compensation gearing to the other, while the slot of the large spur wheel is passing the other spur wheel, in the manner substantially as set forth.

[See engraving of this excellent machine in No. 16, Vol. 4.]

RE-ISSUE.

To W. Emmons, of New York, N. Y., administrator of C. Emmons, deceased, late of New York, N. Y., for improvement in Planing machines. Patented June 27, 1848: reissued May 21, 1850.

1st, I claim the combination of the lever frame, cam wheel, and plane stock, substantially in the manner described, by means of which combination, and the configuration of the cam wheels, substantially as specified, and the plane stock which is made to move in a different and lower line, during its forward stroke, than during its backward stroke, in the manner and for the purposes described.

2nd, The combination and arrangement of the tonguing and grooving planes running with the slides, and the mode of adjusting the same in combination with the surface plane, the cam wheels and levers, substantially in the manner specified, for planing, tonguing and grooving boards and plank at one operation.

And finally, the mode of contracting and expanding the grated bed, in the manner specified, in combination with the tonguing and grooving planes.

DESIGNS.

To D. Root, of Cincinnati, Ohio, or design for stoves.

Farmers and Mechanics.

It is a perverted public sentiment that esteems the industrial pursuits more humble than clerkships and trade, and assigns to the producing classes a lower grade in social life than is awarded to the mercantile portion of the community. The adage of Pope, "Act well your part, there all the honor lies," is a sublime truth. It should nerve the souls of our

farmers and mechanics, to assert the dignity of their callings, as the true and only sources of the public wealth, and to maintain their claim to personal respectability. But to do this successfully, they must cultivate their minds and manners, and see to it, that in science and general knowledge, and refinement, they are not behind those whose delicate pursuits have generally secured the pre-eminence in personal adornment and social elevation.—Let them take the illustrious Franklin for their model, and emulate other mechanics who have risen to wealth high public respect, and they will never have occasion to be ashamed of their business or condition in life.

Important Discovery in Turkey.

The Paris *Debats* publishes the following letter from Constantinople:—The Ambassador of France has received information of an important discovery made in the neighborhood of Erzeroum of an extensive bed of coal, specimens of which have been distributed to the consular body in the locality. The province of Erzeroum has hitherto been without combustible materials, and the only fuel of the poor is the dried dung of the cattle. The country, though very productive is excessively cold, and the thermometer descends as low as 25 degrees below zero. The importance of this discovery may be, therefore, readily appreciated, and is, probably, but the prelude to other and more valuable ones, for foreign scientific men have already explored the mountains of that part of Turkey, and have positively stated that the soil, bearing an analogy to that of the Altai, in the north of Russia, should contain mines of gold and silver. The Turkish government, it is said, intend to have the mine worked by the Governor of the province, who will pay a considerable revenue to the State.

The First American Painter.

At the recent Festival of the New Jersey Historical Society held at Newark, Mr. Whitehead submitted for the inspection of the members a number of sketches and drawings in Pencil and India Ink, by John Watson,—the first Limner, of whose establishment in America we have any knowledge. They were, with only a few exceptions, miniature likenesses of persons living at that time, most of them originals, and some, in pencil, were beautifully finished. Mr. W. read a brief sketch of the artist, embodying what little information tradition has preserved respecting him. He resided in Amboy to which place he came from Scotland in 1715, and died there in 1786.—From the miniatures exhibited, it was evident he had a reputation beyond the limits of the Province, for, besides some of the members of the Schuyler, Johnson and Leslie families of New Jersey;—there were likenesses of Gov. Burnet and Lady, of New York, of Governor Keith of Pa., Gov. Spotteswood of Va., and various personages from the West Indies and elsewhere.

Workingmen's Association for Protection of the Sabbath.

A great meeting of workingmen has been held in the City of Glasgow, Scotland, for the purpose of laboring to bring about measures for the better observance of the Sabbath, and the following is one of the resolutions adopted—Resolved, That we hereby express our decided conviction that the employment of men and animals either in public or private conveyances on the Sabbath day, by persons who are free from bodily infirmity, or who are not under obvious and pressing necessity to do so, is a direct violation of the fourth commandment, and an unjustifiable infringement of the right of both man and beast to rest from toil during the whole of the sacred day; and we are also of opinion that the practice, unhappily so prevalent, of professing christians using their own private carriages or hiring other vehicles on the Sabbath, often on the slightest pretences, is not only contrary to the dictates of religion and humanity, but presents one of the greatest obstacles to the progress of the cause of Sabbath observance amongst all classes of the community.

The town of Belfast, Ireland, seems to be growing very fast indeed, its population has increased since 1831, from something over 50,000 to above 100,000.