

by their union a frustrum of an octagonal pyramid of 50° of inclination, and having their foci corresponding in the point, F.—they parallelize the rays of light which pass over the lenses. M M are the plane mirrors placed above the pyramidal lenses, L' L', and so inclined as to project the beams reflected from them in planes parallel to the horizon. Z Z are lower zones, substituted for curved mirrors. The lower part shows the movable frame work, which carries the lenses and mirrors, and the rollers on which it circulates, with the clock-work for giving motion to the whole.

Mirrors or reflecting lights are open to the objection of losing light by reflection and of being composed of perishable materials as it regards their polish; the plated silver convex concavo plates soon wear out by frequent polishing. The dioptric lens of Mr. Gilliland is made of imperishable materials, and its illuminating effect in comparison with a mirror is said to be as 140 is to 87—a great difference truly. We consider that making dioptric lens of moulded crystal, by which they can be produced at such a low rate as to be employed for the different purposes we have stated, is one of the most valuable inventions that has been brought before the public in a long time. There should be an improved system of signal lights adopted for steamboats, so that there can never be a collision made by one vessel respecting the light which another is steering, such as a red light on the larboard paddle box, and a red one on the starboard one, and a clear brilliant lens light on the bow. This lens has been applied to lanterns for hanging on the top mast of sailing vessels, and no one should be allowed at sea, or at anchor in a river to be without such a lantern. Every rear car of a railroad train should have one of these lamps, in order to prevent being run into, as sometimes has been done by a following train when something detained the first one. The lamps and lanterns made with a crystal lens give a light which can be seen at many miles distant.—These improved crystal lenses applied in different ways to lamps, like figure 2, for railroad, dock, and steamboat lamps, also to lanterns for steam and sailing vessels, can be seen at the warehouse of the Brooklyn Flint Glass Co., No. 30 South William street, this city. We would state here that this American Company was awarded a prize medal at the World's Fair for the best flint glass that was exhibited there—it possessed a greater amount of brilliancy and purity of color than any exhibited by the famous establishments of France Bohemia and England.

The Largest Gypsum Field in the World.

Dr. George G. Shumark, of Arkansas, recently delivered a speech upon railroad matters at Fort Smith, Ark., during which he made known the very important fact that the largest gypsum field in the world lies about three hundred miles west of Fort Smith, Ark., in the plains explored by Capt. Marcy last year, extending over an area of three hundred miles north and south, east and west. The strata in some places is twenty feet thick, of the purest kind, white, and in some instances transparent. He says there is a sufficient quantity of it to supply the whole world, and would employ a railroad in its transportations one hundred years. Gypsum when burnt, becomes what is known by the name of plaster of Paris—a very valuable article.

A Ten Thousand Dollar Prize.

Mr. Henry L. Fitch, of San Francisco, has offered a prize of ten thousand dollars for the best treatise on the proposed Pacific and Atlantic Railway—the work to be written in simple and lucid style, and embrace the most thorough and exact treatment of the subject in all its bearings. Mr. Fitch names a committee to meet at Washington on the 15th day of November next; and the manuscripts are to be sent to S. P. Andrews, New York City, before the 1st of November, 1853.

[The above we take from an exchange.—We are not acquainted with any of the particulars, but as it has floated about considerably, we must say that we consider it a rare phenomenon. Who is this benevolent gentle-

man, Mr. Henry L. Fitch, of San Francisco who offers such a prize for a railroad treatise, and who is this S. P. Andrews?

Another Awful Railroad Accident.

On Friday (6th inst.) last week, the railroad express train, which left this city for New Haven at 8 A. M. dashed down into the river at Norwalk in the gap of the draw-bridge at that place, which had been opened to let a steamboat pass, by which event no less than 46 of our fellow beings lost their lives.

The train alluded to consisted of engine, tender, one baggage car, a smoking and mail car, and five first class passenger cars.

The Norwalk railroad station is located from a quarter to half a mile on the west side of the bridge over Norwalk river, and between it and the bridge is a sharp curve to the right, in the road. The track is laid nearly on a level with the general surface of the ground at that place, but a number of houses and trees so intervene as to prevent any view of the bridge from the railroad, until fairly upon it.

The bridge signal may be seen at a great distance this side of the draw, but, getting nearer, it is not clearly in view. The train to which the accident happened does not stop at Norwalk, and it seems the engineer neglected to notice the signal of the draw being opened.

Owing to the curve in the road just before coming to the draw, the place has always been held to be dangerous, but the following instructions of the company are severe and precise:—

“6. All trains must run with care in approaching Norwalk River Bridge. Trains going east from Norwalk station will move around the curve with exceeding care, and Conductors on trains out of time are cautioned about crossing the bridge; they will be held responsible for the safety of the trains.

8. In foggy weather, trains will approach the bridge with great care, and if trains are due, stop and send a man 1,000 feet ahead with signals.”

Instead of obeying these instructions, from evidence adduced before the Coroner's Jury, it appears the accident was caused solely by the engineer—Samuel Tucker. The draw signal was set correctly, but he heeded it not, nor did he check up the train materially until he came in sight of the draw itself, at a distance of scarcely ten rods. Then he reversed his engine, and, with the fireman, jumped into the water, both escaping, but with injuries.

So great was the momentum of the train that it came on to the bridge without slackening its speed, at the rate of 40 miles per hour; the gap, 60 feet wide, was almost leaped by the engine; it struck the opposite pier without varying its line more than 5 inches, and buried itself partly in the central abutment. The tender turned bottom upwards and lodged fairly upon the locomotive. The baggage car then lodged in an upright position on the top of the tender. The smoking and mail car taking a sheer to the left, lodged upon the piles and bridging under the draw, forming an acute angle with the baggage car. The first passenger car dove, as it were, down between the smoking and baggage cars, the car behind it striking and splitting it in pieces, and partly running over the roof. This second passenger car was, in turn, broken in pieces and crowded over the piles, by the other cars in the rear, one-half of it falling into the draw and partly upon the car ahead of it. The engineer has been put in prison to await the result. The only excuse he makes is that he thought he saw the safety signal up. The scene was heart-rending, and the loss of life, we believe, is greater than has ever taken place by one railroad accident in our country. When will there be more morality in our public carriers.

Breaking up of an Iceberg.

When the immense iceberg commences to tumble to pieces and change its position in the water, the sight is really grand—perhaps one that can vie with an earthquake. Masses inconceivably great, four times the size of St. Paul's Cathedral or Westminster Abbey, are submerged in the still blue water to appear again at the surface, rolling and heaving gigantically in the swelling waves. Volumes

of spray rise like clouds of white vapor into the air all around, and shut out the beholder from a scene too sacred for eyes not immortal. The sound that is emitted is not second to terrific peals of thunder, or the discharge of whole parks of artillery. The sea, smooth and tranquil, is aroused, and oscillations travel ten or twelve miles in every direction; and if ice should cover its surface in one entire sheet, it becomes broken up into detached pieces, in the same manner as if the swell of an extensive sea or ocean had reached it, and before a quiescent state is assumed probably two or three large icebergs occupy its place, the tops of some of which may be at an elevation of upwards of two hundred feet, having, in the course of the revolution, turned up the blue mud from the bottom, at a depth of two or three hundred fathoms.

Copper and Diamonds in North Carolina.

We are informed by Prof. C. U. Shepard, says the “Charleston Courier,” who has just returned from a fortnight's exploration in the counties of Mecklenburg, Union, Cabarrus, and Rowan, that the prospect of an abundant supply of copper ore is afforded by the indications presented in the mines of those counties. The great metaliferous region known as Gold Hill, in Rowan, and which, next to the famous Dorne's Mine in this State, is the most productive deposit of the precious metal in the United States—is, perhaps, the most promising repository for copper thus far brought to light. Other places may hereafter prove equally rich; but the gold veins at Gold Hill, being already worked to a depth of three hundred and fifty feet, afford the most favorable opportunity in the country for judging of the character of that spot for copper—a metal which rarely shows itself in much richness at the top of the ground. Already, from the depths referred to, tons of merchantable copper ore are daily raised; and the indications are such as to lead the professor to predict that Gold Hill will very speedily acquire a character for copper as distinguished as that which it has long since established for gold.

The professor, while in Charlotte, was presented with a diamond, by Dr. Leventhorpe, a late graduate of our Medical College. That gentleman had lately discovered it on his estate at Pioneer Mills, and this is the second specimen of this precious gem found within the year in the county. Hitherto no special search has been made for the diamond, these specimens having been discovered in a manner purely accidental.

Unequaled Sailing—Short Passage.

The clipper ship Sovereign of the Seas arrived at this port on the 6th inst., in 82 days from Honolulu (Sandwich Islands), it usually requiring four or five months from these Islands. Besides this speed for the whole passage, portions of the time show a more remarkable performance, as the following items will show:—

The run from Honolulu to Cape Horn, a distance of 8,634 miles, was accomplished in 37 days. In 26 of those days, consecutively, the ship run 6,489 miles, and one of those days was distinguished by an extraordinary run of 430 miles. This is the greatest sailing recorded, the nearest approach to it being that of the Flying Cloud, which run in 26 consecutive days an average of 227 miles per day, while the daily average of the Sovereign of the Seas was 249 4.13 miles, or 22 miles a day more than the Flying Cloud. The best day's run of the Flying Cloud was 374 miles. There is no doubt of the above run of the vessel, as it appears from the Sights and Calculations entered at large on Capt. McKay's Journal. A speed of 18 miles an hour for 24 hours—greater than was ever done under canvas.

Red Cedar for Hedges.

The “Rural New Yorker” has a correspondent who recommends red cedar for farm hedges, for the following qualities:—It bears pruning well. It is not subject to any disease. Thin, poor land is as good for its growth as better. Drought does not hurt it nor the coldest weather. Grain grows freely near it. It would furnish protection to our exposed fields from the winter's wind. It would yield a pleasant shade for cattle!

in summer, and would beautify the landscape. Nearly every one of these statements is contrary to our experience and well-known facts.

Barrow's Propeller.

Ebenezer Barrows, Esq., of this city, has taken measures to secure a patent for an improved mode of propelling vessels, and which is adapted for canals, as well as for river and ocean steamers; the mode adopted is as follows: a long rectangular trussed frame, with an octagonal stationary wheel hung in each end, is constructed upon each side of the boat to be propelled, and an engine attached to the shaft of one or both of these wheels, to propel them; passing over the entire circumference of this frame, and around upon each side of these octagonal wheels, is a series of smooth circular propelling rollers, made water-tight and hung at each end in bearings in an endless chain, which revolves around the rectangular frame; these propelling rollers are constructed in two parts with friction rollers between them, which friction rollers are set at a distance apart to correspond with the octagonal wheels at the end of said frame. Nearly one half of each rectangular frame is immersed in water upon each side of the vessel, and the boat is thus driven ahead by the action of the series of propelling rollers upon the water.

New Safety Whiffletrees for Carriages.

A new method of connecting whiffletrees for carriages, whereby the horses may be disengaged from the carriage by the driver at any time he may wish to do so, has been invented by Elisha Harvey, of Whately, Mass. The method employed by the inventor is the following. An additional short whiffletree or bar is attached in the usual manner to each end of the double whiffletree. The arms of these two bars or levers are of unequal lengths from the place where they are attached, the short heavy end of each bar extending but a short distance beyond the farther end of the whiffletree, where it forms a hook to which the single whiffletrees are attached; the longer ends of these bars extend nearly to the centre of the double bar, at which place they form a fulcrum upon a slide bolt or lock, which bolt passes through the whiffletree in front of the ends of the bars, and is retained there by means of a strong helical spring.—When it is desired to liberate the horses from the carriage, the slide bolt is raised by the driver by means of a cord or other convenient device, and the opposite end of the bar allowed to swing round upon an axis at the end of the double bar, and thus disengage the horse by liberating the single whiffletree from the hook.—Mr. Harvey has taken measures to secure his invention by patent.

Improvements in Saw Mills.

T. L. Jones, of Natchez, Miss., has invented certain improvements in mills for sawing logs. Mr. Jones has a method of communicating power from the wheel or crank to the saw sash, by which considerable friction is avoided, and the mill rendered far more portable. The manner in which this is accomplished is by using a short pitman attached to the crank of the driving shaft, by means of an elbow or bent connecting rod. This prevents the pitman, although much shorter than those of the usual construction, from moving but a very short distance out of line with the saw sash. Mr. Jones has also taken the power to give the feed motion to the carriage directly from the driving shaft, instead of taking it from the saw sash, in the usual manner. This prevents the lateral motion frequently given to the sash, by attaching the feed to it, and, at the same time, gives an effectual and regular motion to the log. Measures have been taken to secure a patent.

Peruvian Guano.

The Board of Managers of the Maryland State Agricultural Society have appointed a committee to call the attention of the State Department of the national government to the present condition of the guano trade with Peru, and to adopt other measures with a view to throwing open the trade to unrestricted competition, in order to render the supply abundant, and secure a reduction in the price of Good.