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RAIL-ROAD NEWS.

Pittsburg and her Railroads.

Pittsburg will soon be the focal point of some of the most important thoroughfares in our country. In the enumerated list are the Central Railroad, running to Philadelphia, Baltimore, and New York; the Ohio and Pennsylvania Railroad running towards Chicago and St. Louis; the Cleveland and Pittsburg Railroad, running to Cleveland, and connecting with the Lake-shore roads running East and West; the Erie and Pittsburg Railroad, running to Beaver, and thence to Erie; the Pittsburg and Rochester Railroad, running up the Allegheny river, and across from its head waters to Rochester, N. Y., a flourishing city of nearly 50,000 inhabitants;—the Pittsburg and Steubenville and Steubenville and Indiana Railroads, presenting a direct continuation of the Pennsylvania line, and also of the Allegheny river line, through Columbus to Cincinnati.

Ohio and Pennsylvania Railroad.

The work upon the Ohio and Pennsylvania Railroad is progressing with great energy. The entire line between Pittsburgh and Massilon, 107 miles, is graded; 40 miles of it is in operation and the rails are being laid on the rest—all of which will be completed in January. To Alliance the road will be opened next month, which completes a railroad communication between Pittsburgh and Cleveland. The grading between Massilon and Wooster is completed, except four sections. In January next there will be a railway communication between this city and Cincinnati, via Philadelphia, Pittsburgh, Cleveland, &c., for the entire distance, except some 45 miles next east of Pittsburgh.

Twenty-eight miles more of this road are to be opened this week for travel, about fourteen miles between Brighton and Enon Valley, and about the same distance between Salem and Alliance. Stages will be run between Enon Valley and Salem. It is reported that passengers will be carried through to Cleveland, by this route, in less than twelve hours.

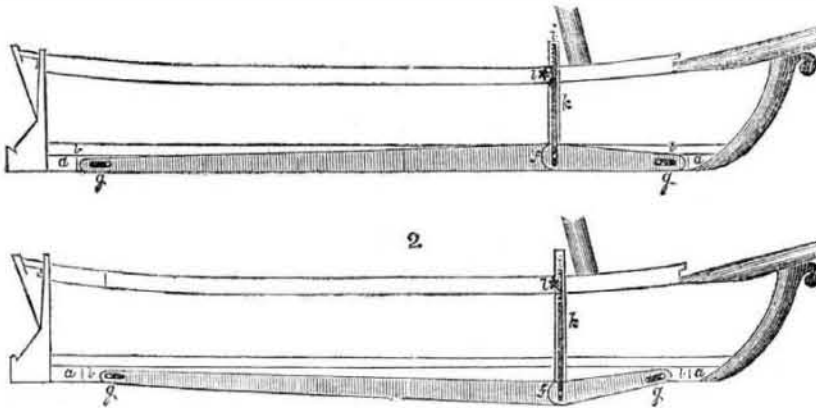
Great Western Railroad of Canada.

We may state, (says the Quebec Gazette), from undoubted authority, that Mr. Atcheson, the agent of the Great Western line of railway, has succeeded in raising, in the English market, all the money required to complete the road, and that more might have been had, if it had been necessary. It is understood that the very strong support given to the scheme in Manchester had the effect of bringing it in favor in the London market. The Colonies of Great Britain appear to be alive to the importance of railroads; they are exhibiting a praiseworthy spirit of enterprise.

Great Railroad Engineering.

On the line of railroad now building from Konigsburg to the Lake of Constance, over the Alps, there are 13 tunnels, and 25 viaducts; 13,000 laborers and 2,000 horses are continually employed on it.

PATENT CENTRE-BOARD.—Fig. 1.



The accompanying engravings represent an invention of Mr. T. Maskill, Franklin, St. Mary's Parish, La., and which was patented in October, 1849. As considerable has been said in the papers lately, more especially the English press, since the America's triumph, about Centre Boards, we presume a knowledge of this patent will excite some interest in the public. Figure 1 and figure 2 are vertical longitudinal sections, showing the centre-board in two positions.

A is the centre-board; it is made of metal and jointed at *f*; it is let into a recess, *b b*, in the false keel, *a a*, to which it is secured on pivot pins, *g g*; it is secured to a metal rod, *k*, near the joint, *f*. This rod has a rack, *i*, on its upper end, into which a pinion, *l*, works this pinion has a shaft and crank handle inside of the boat, by turning which, the rod, *k*, is elevated or depressed, and the centre-board is thus drawn up close in its recess in the false keel, or projected below the keel, to a depth in accordance with the length of the centre-board, whatever that may be, according to the size of the vessel. The rod, *k*, works through the keel in a stuffing box, so there can be no leakage, and although this centre-board, when applied to large vessels, in a stormy sea, were

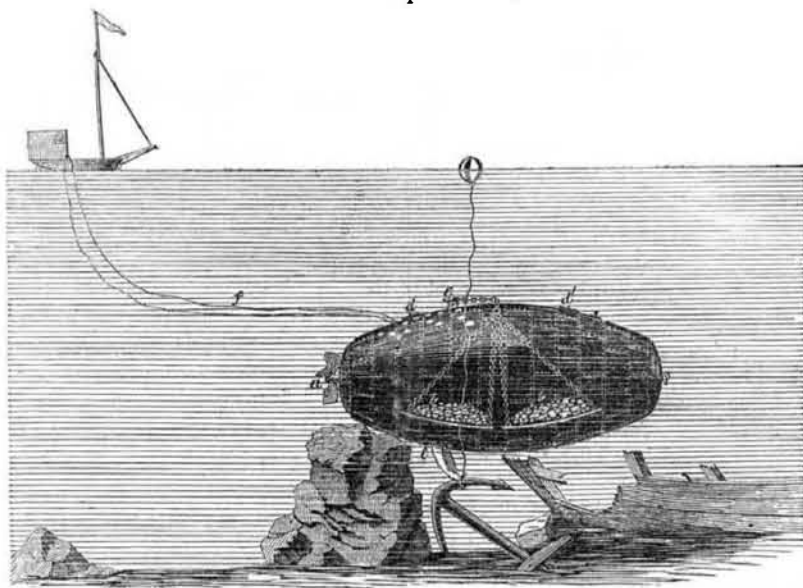
carried away by accident, no injury to cargo or leakage could result. It will be understood that the centre-board is let into a tight recess in the false keel. The board is rounded at the ends, and has a mortise at the joints, *g g* to allow the ends to draw forward when the board is pushed down, as represented in figure 2.

By this invention the keel is not weakened, the floor and other timbers, are not cut into, and the vessel will not be strained in a storm, and will "lay to" better than by the old plan. The centre-board can be made either of wood or metal.

We have the model of this invention in our office; it is worthy of the attention of ship-builders. If it will not answer a good purpose, Mr. Maskill desires no pay; he desires it to have a fair trial,—nothing can be more candid, open, and fair—honest inventor-like. The following is the claim of the patent:—

"I claim a jointed centre-board, constructed substantially as described, having its two ends connected with the false keel, into which it is recessed, and its centre portions jointed and connected with a rod which passes up into the vessel, by which it can be worked up and down for the purpose described."

SUBMARINE EXPLORER.



The accompanying engraving represents the new submarine exploring vessel, built at Messrs. Pease & Murphy's engineering works, this city, for the Submarine Exploring Co. This submarine vessel is wholly constructed of the best boiler iron, and is of an egg shape, and is very strong. It is thirty feet long and ten feet in its greatest diameter. It weighs 20,000 lbs. It has a capacity of 36 tons displacement. It has a number of holes—as shown by the light spots—in which are fitted strong glass eyes, to give light to the interior. It has man-holes, *d d*, above, which are closed when the vessel is submerged, and it has one

e, below, which is now open. *a* is a propeller blade, which is worked inside by a crank handle, and which propels the submarine vessel at a moderate speed by hand. The apparatus is exhibited at work getting up an anchor. The person inside has just fastened a rope around it, through the man-hole, *e* through which his arms are projecting. To the rope is attached a hollow copper ball, which serves for a water float or ball-oon. A number of these are carried inside. It always tells where the anchor or whatever object it may be is to be found. On each side are placed upon strong hinged

metal platforms, two safety ballast supporters, *b b*, which are suspended by chains to a strong swivel hook, *c*. This ballast partly sinks the vessel, and by throwing off the ballast it will rise at once to the surface. This can be done in a moment, for the hook, *c*, can be turned round from the inside, when the chains will at once drop back, and the hinged supports, *b b*, drop flat alongside the vessel tumbling out all the ballast. The interior is divided into compartments. The place which the submarine explorers occupy is about two-fifths of the vessel, in the other part are two large reservoirs all made of plate iron, into which are fitted two pairs of pumps having different functions, either for air or water. The object of the duplicating pumps is to guard against those accidents which might render one unservicable. Each pump has four cocks to produce alternately the expansion and compression of the air, and the expulsion or supply of water in such a manner that they may throw off or compress a supply of air or water at pleasure, to the reservoir spoken of inside. The whole operation of this vessel depends upon the displacement of a certain quantity of condensed air, and in taking in or throwing off a body of water more or less by working the pumps. Thus if it is desired to descend from the surface, the crew before closing the top man-holes, will force into the air reservoir, the supply of air necessary to balance the weight of the column of water, proportioned to the depth it is desired to descend; the deeper the descent, the more air is condensed in the reservoir; this prevents the water from coming in below, according to the laws of equilibrium of fluids. Having obtained a sufficient supply of air, the man-hole above is closed, and the submersion of the vessel effected, by using pumps to pump water into the water reservoir. When the vessel has arrived at the bottom, the lower holes are opened, and the persons within can either fish for anchors or gold. A valve communicates with the air reservoir and the apartment of the operators. To ascend, all that has to be done is simply to pump out the water, which before was pumped in; the ballast is only to be thrown off in emergencies.

The atmosphere inside becomes impure, charged with carbonic acid gas, by the breathing of the persons inside; this is kept pure by a pump continually forcing it through caustic lye, which abstracts the carbon and returns pure oxygen. This vessel can safely descend to any depth, from 10 to 100 feet with or without direct or indirect communication with the exterior. This is altogether the reverse of the diving bell, which receives its air always through a tube from the surface of the water. From three to seven men can remain in it for seven hours. The pressure of the air in the apartment in which the men operate, is never above 2½ atmospheres, it therefore can be supported without fatigue: this is also different from the diving bell, the pressure being so great upon the lungs in it as to be oppressive, and oftentimes force the blood from the nose and the ears. A small boat follows the submarine vessel, and communicates with it by telegraph, the wires, *g*, of which are shown. This vessel will be very useful about our harbor, it is the invention of M. Alexander, a French gentleman, and it has been effectually tried in that country. We believe it to be a very excellent and ingenious invention. A company has been formed in this city, named "The Submarine Exploring Company." The gentleman who superintended its construction here, and the owner of it, in the United States, we suppose, is from France. With such a vessel as this, no enemy's fleet could be safe on our coast. In our opinion, it is safe, and will accomplish all that has been claimed for it.