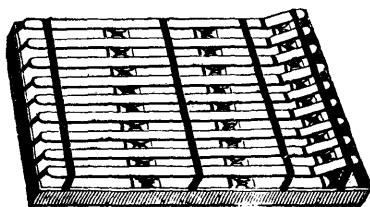
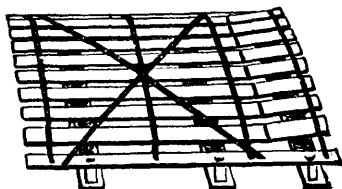
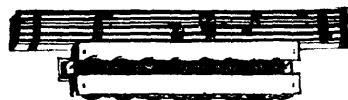
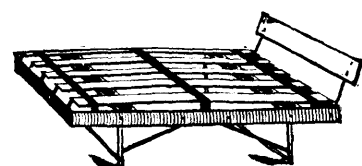


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Among the many articles in this line exhibited at the late Ontario Provincial Exhibition at Ottawa, there was nothing that we saw equal in point of durability and comfort to

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Pat. 31 JULY 1874.
wishing to send orders, we may state that the address is H. WHITESIDE & Co., College street, Montreal.

NEW CABLE TO AMERICA.—A new and powerful competition threatens the Anglo-American Telegraph Company. It is that a French Company is being formed, and it is expected that next year will see the opening of a fresh telegraphic line to the United States.

THE VANGUARD.—Attention has recently been called to the fact, hitherto overlooked, that the double bottom of the Vanguard, which ought to have added materially to her buoyancy, really helped her to the bottom. When the ship made her steam trial in 1870 she was so crank as to be unsafe, heeling 17 deg. without a rag of sail being spread, in a good breeze. To give her stability, the space between her outer and inner bottom was filled up to a great extent with bricks and cement. The Vanguard is not the only ship afloat in the same condition, and they are thus deprived of a protection against foundering which it was expressly intended they should possess.

CIRCULAR vs. BAND SAWS.—The German industrial papers are discussing the question of the disadvantages of circular saws as compared with band saws: 1st. Circular saws are very dangerous to the workmen; 2nd. They require a much greater power to drive them than any other kind; 3rd. They make a much wider cut, producing more waste, and thus fewer products from a given amount of material. The only advantage is, that the first cost of procuring a circular saw is less than that of a band saw; but, notwithstanding, the Mechanics' Association of Muehlhausen have already published in their yearly report the advice to abolish their use wherever it is practically possible to do so; and this is of course the case in a great majority of circumstances.

ALLAN'S FLOATING CABIN.

(See page 29.)

This year has witnessed the failure of two noteworthy attempts to overcome the horrors of the Channel passage, to which the public at large had for a long time looked forward with much anxiety and hope. The *Bessemer* and *Castalia* have both been tried and found wanting. The latter vessel, indeed, is steady enough and comfortable enough, but as we were always afraid she would be, she is so excessively slow that she is practically useless for the service for which she was designed; and the swinging saloon of the *Bessemer*, apparently, will not swing. At all events, an ominous silence has been preserved upon the subject, which has culminated at last in a decided confession of failure by the vessel being advertised for sale. We must confess that we never quite understood how a single man, transcendent genius though he might be, could possibly anticipate the movements of a vessel when he had not the slightest means of knowing beforehand what they were going to be. The action of waves is, unfortunately, by no means regular, and when we add enormous bilge-keels to our ships, as was done with the *Bessemer*, we get extraordinary jerks and stoppages when we least expect them that any system which depends upon apparatus worked by human skill alone for taking out of a swinging cabin the roll which it would naturally have, contains so few inherent elements of success, and presents so many natural difficulties to contend with, that we very much doubt its ever being satisfactorily accomplished. It may be that too many cooks have spoiled the broth, as we might be led to infer from the tone of the correspondence on the subject which has been carried on in the columns of one of our contemporaries by the principal parties concerned. Whoever may be to blame, the ship is for sale, and the question of the Channel passage remains *in statu quo*. It may possibly be solved by means of the projected tunnel; but that cannot be completed for a long time to come, and meantime sufferers are every day crying out for immediate alleviation. Possibly, however, they will not have to cry out long, for there is some evidence that the problem has at last been solved by Mr. Alexander Allan, of Scarborough, the well-known inventor of the straight link-motion.

Mr. Allan takes advantage of the natural tendency of a vessel containing a fluid, when set in motion, to rotate round the fluid, which will keep its proper level so long as no wave is generated in it, as would necessarily be the case with any body of water having a large horizontal surface. Mr. Allan, however, though he deals with a large body of water, by giving it a small exposed surface prevents any independent movement being set up in it. The plan he proposes is shown in the engraving, and consists of a hemispherical dock fitted in the ship, and containing water, in which floats another hemispherical vessel of such a diameter as only to leave a space of some three or four inches between it and the outer vessel or dock. The inner vessel is weighted down to its required water-line by means of ballast, sufficient allowance being made for the extra weight of the passengers whom it is to carry. As the ship pitches and rolls, the water between the floating cabin and the deck always maintains its horizontal level—for there is not surface enough for it to set up an independent roll—and the floating cabin therefore also remains level, being kept by an arrangement of a pillar and universal joint from being projected against the sides of the dock. The entrance to the cabin is by means of a circular staircase, leading from the upper deck to the centre of the floor of the cabin, to which it is fixed. It is evident that there is practically no limit to the number of things which may be kept steady by this system in a passenger ship, so long as there is room for fitting the hemispherical dock. Thus a single sleeping berth or a platform with a table and seats may be supported in this way. In theory, there is no doubt that there is nothing to prevent this system being perfectly successful. Mr. Allan, however like Mr. Bessemer, was not satisfied with mere theory, but determined to put this idea to a practical test; but whereas Mr. Bessemer's hydraulic apparatus required him to make his experiments on a large scale, and then necessitated his confining himself to imitating the roll of a ship with his well-known working model in his own garden at Denmark Hill, Mr. Allan's principle did not cramp him to a similar extent, but allowed him to make his trials with a working model at sea. Considering that the most crucial test of its efficiency would result from experiments with a small model, since the bigger it was the more natural inertia it would possess, and therefore the less tendency to partake of any of the movement of the vessel rolling about it, Mr. Allan constructed a model of which the outer hemisphere was only ten inches in diameter. The difference between this and the inner