

## SOME BADLY-NEEDED INVENTIONS.

ACCORDING to the authority of the grave-digger in *Hamlet*, an act has three branches—to act, to do, to perform; and the same may be said of inventing—financially successful inventing, that is. It has three branches. The first is the idea conceived; the second is the idea achieved; and the third, and most important, the idea received—that is, selling on the market. And it is this last-mentioned branch which is usually the difficulty. Many people can, and often do, invent. The bulk of these can possibly make their models or get them made; but it is only a proportion of these two classes combined which can put the resulting invention upon the market. Mostly the reason for this is that the inventors are not hugely circumspect in their inventions and

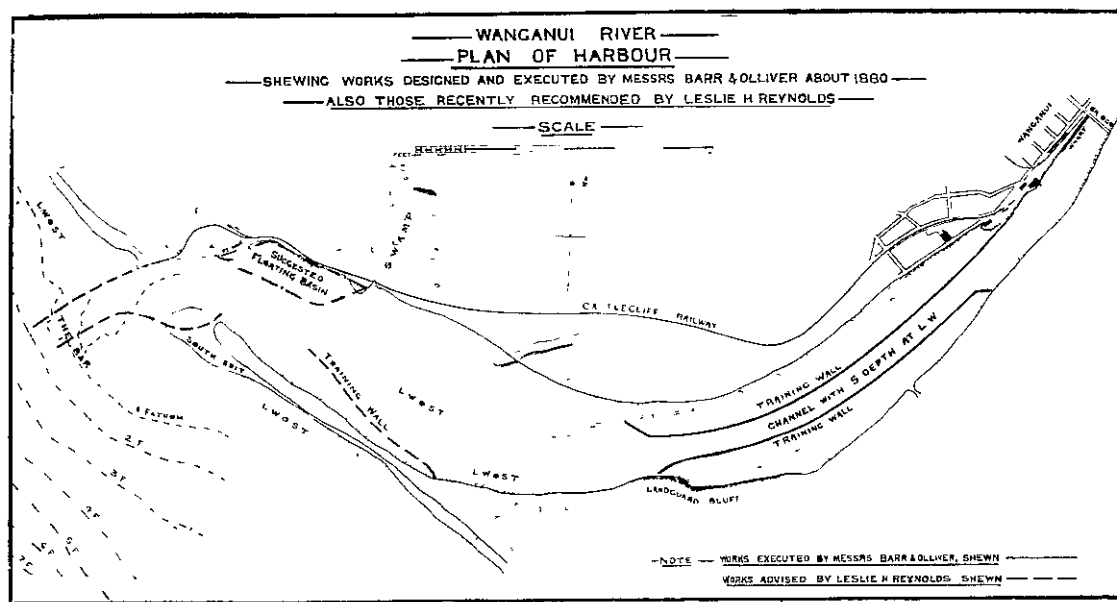
save the carelessness of man. One or two things they lack, however. They need something which will effectually protect the parts under water from barnacles and other fouling pests of the sea, and that for an indefinite period. They need an invention which will warn a ship in a fog of the proximity of other ships, say within a distance of two miles. Not only that, but the warning must be in such a form that each ship will know the exact course that the other ship is steering, so that she can lay out her own accordingly.

In the matter of town improvements, too, there is the much-felt need of a really good permanent roadway. Asphalt is good, when either wet or dry, but a sprinkling of rain makes it as greasy and slippery as ice. Wood blocks have the same objection and wear into holes too quickly. The best roads for horses are, doubtless, the macadamised variety, but unless they are relaid every other day or so the city roads, where there is much traffic,

strontium would accomplish this, but they are too expensive at present. There is, therefore, another alternative, and that is to devise a way of obtaining the strontium salts more cheaply; and to make assurance double sure, houses should be built with a perfectly fireproof brick—a brick which can have a fierce fire built upon it and have its under surface quite cool, although only about an inch in thickness. Such a brick has been an existing fact—is now, but its inventor is dead, and he, and only he, knew what the ingredients of that brick were.

## Tramway Rail Imperfections.

*The Commercial Motor* says.—The English nation is a long-suffering one, so long as no reasonable alternative presents itself the grossest of nuisances are endured. The absence of more forcible and crystallised outward expressions of the deep-seated objections to tramway rails, which undoubtedly exist, has been due to the ameliorating influences of the cheapened travelling facilities which have been provided during the last few years by the adoption of electric traction in so many parts of the United Kingdom. But we have to reiterate our plea for an awakening to a recognition of the fact that times are changing and that the motor omnibus has demonstrated its powers sufficiently to make the advocates of electric traction pause in their contemplated plans for extensions. Why our road surfaces should be delivered up to a system which is fraught with grave inconveniences for the community at large without due and careful deliberation upon the fact that electric traction is no longer unchallenged, is a question which will have to be satisfactorily answered and not evaded. The positive losses which have resulted from so many of these undertakings, and the paucity of the returns from the majority of the remainder, will not be improved now that supporters of electric traction have to face competition with mechanical power, which is very different from the weak opposition of horse-drawn systems, and it is certainly open to question that tramcars will be accepted at all except where they are already established and in possession of the roads.



PLAN OF WANGANUI HARBOUR IMPROVEMENTS.

patent ideas or invent articles which appeal to so limited a proportion of the public that no manufacturer would risk a halfpenny over them. We might almost say, therefore, that invention has four branches, the extra branch being knowing what to invent, and it is proposed here to deal more particularly with the fourth branch. The general idea that inventions in a small way are exhausted is erroneous, as is likewise the popular impression that inventions of the greater kind need technical knowledge. A man may make a fortune out of a useful penny article or out of an accidental discovery, and that without technical knowledge. No special knowledge of any kind was needed to invent the bent wire safety pin, the inventor of which is supposed to have made a fabulous fortune, nor could it be said that the invention of the anchor with flukes hinged at the middle required either genius or technical knowledge. The idea was the invention, the actual carrying out of it was practically nothing, and both ideas could as easily have occurred to a ploughboy as to an Edison. The mud on our streets, which is removed in hundreds of tons weekly, should be put to profitable use, and once the idea is formulated and is practicable and profitable, it would mean an immense fortune to the inventor.

An article which is wasted hugely is wood. The present method of sawing lumber produces a large quantity of sawdust, only a very little of which is used. Every saw-cut wastes a plank the thickness of the saw and length and breadth of the log whether resulting planks be thick or thin; and the surface so left has in most cases to be planed, which wastes about half as much again as is wasted in sawdust. Now, an invention is badly needed which will obviate this waste. The wood must be cut, not rasped through, so as to leave a clean surface and waste nothing in dust or shavings.

Electricians badly need a perfect insulator. It must stand heat, cold, water, air, and all atmospheric conditions and be quite flexible, have great strength and electrical resistance, and above all, must be cheap. Rubber at present fulfils the bulk of these conditions, but it is worth some 15s. per pound. But then, on the other hand, worn-out rubber is an almost valueless commodity, as it cannot be made up again. This is due to the sulphur used in manufacturing the raw material. An inventor is wanted who can devise a cheap process of extracting the sulphur from the old worn out rubber and rendering it as serviceable as new. Probably an accident will show the method of doing this, and when it does it will be rash to invest in rubber companies. Ships, nowadays, are built so as to defy almost everything,

would soon be as bad travelling as frozen ploughed fields. What is wanted, therefore, is a road with the holding advantages of macadam, and the permanency of asphalt, and the silence of wood. It must be as cheap as any of them, and will therefore be made from the refuse of some manufacture or other, which is practically worthless. We suggested above that worn-out rubber is useless, and that the mud from our streets is useless. Could they be combined in some way so as to make a useful road? The lighting of our roads, too, needs much improvement. The arc lamp at present used is inefficient on account of its flickering—in fact, for many purposes arc lighting cannot be used, because of this fault, although it would be the very best light were it perfect. Therefore invent a perfect arc lamp—oh ye geniuses! Much as it is needed there is no good preservative for iron and woodwork which is exposed to the atmosphere. Paint is but a makeshift, and a poor one



THE OLD ORDER OF THINGS WHICH THE NEW SCHEME IS TO REMEDY. VESSELS AGROUND IN WANGANUI RIVER.

at that, having to be constantly renewed, and the same may be said of all other preservatives save one—cement. We have seen pieces of iron had been embedded in cement for centuries, dug out of the same, without the least suspicion of rust, and still retaining the bluish colour of the forge. What is wanted is the application of this knowledge to air-exposed ironwork. Another kind of paint is needed for inside woodwork. It is one which will render the article to which it is applied unflammable. Some of the salts of

The fact that Mr. Thomas A. Edison has bought a cobalt mine in Ontario (says an American press agency telegram) has led to the disclosure that he is using cobalt in his new storage batteries in place of nickel and lead. This must lead to an unexpected demand for greater quantities of the mineral, and to sudden increase in the value of the land where it exists. A new source of wealth for Canada is thus opened.

The English railway companies have now to face an almost unconscious, but exceedingly sharp, competition, in the form of motor cars, in the conveyance of the rich, and it seems, as if the long-distance first-class passenger—the most remunerative to the railway company—will pass away. For the past half-year the Great Eastern

Railway alone carried 37,235 fewer first-class passengers than in the previous corresponding period; and as this falling-off in number was most noticeable in relation to Newmarket and other sporting centres, the conclusion drawn was that many persons who would otherwise have travelled by train went in their motor cars. At the half-yearly meeting of the company, Lord Claud Hamilton said: "Motor-car competition, I am afraid, is likely in the future to assume very serious proportions."