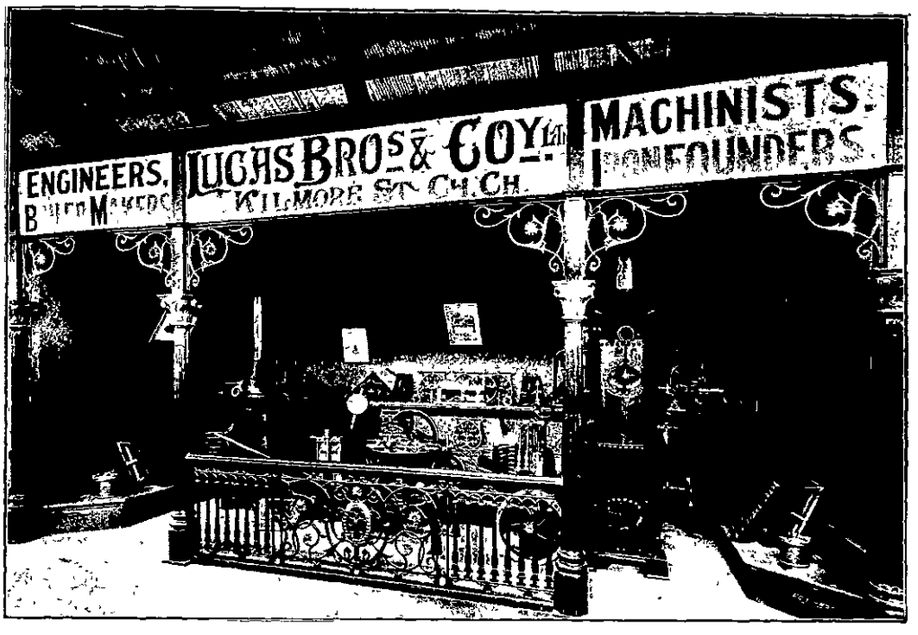
corner bars with Corinthian capitals, and polished black. During the fourteen months in business the firm have had twice to enlarge their factory, and have just put down the latest and most up-to-date machinery for this class of work.

The Union Company.

IT is difficult to associate in one's mind large undertakings with small places, and yet some great industries are carried on in spots whose existence is only known through their being the birth place of some great article of commerce. This thought naturally occurs to one when visiting the court of the Union Steam Ship Company in the Exhibition.

It is only just over thirty years ago since this Company began its operations in Dunedin with a fleet of three steamers whose gross tonnage aggregated 724 tons, and whose round of services covered no great distance; and now its flag is to be seen flying in great centres of commerce in Asia, America and Australasia. Its steamers have carried troops to South Africa, and have been stopped by Russians in the eastern seas. It was the first Company to build steamers of steel,—it was the pioneer of electric lighting in the colonies, and to its order was built the first ocean steamer fitted with turbine machinery.

To enumerate its regular services is to make one sigh to use them Visions of passing delicious days in the sunshine of the South Sea Islands, surrounded by all that is beautiful in nature and interesting in uncivilised men, cross our view as we read that every four weeks you can make trips in splendid steamers fitted with up-to-date luxuries to the fair archipelago of Fiji—the seductive groups of Samoa and Tonga—and the enchanting Islands of Tahiti and Raratonga. Of its fast growing fleet—at present comprising sixty steamers—the pick run services every few days to Australia and Tasmania, and a large number trade between Australia and Tasmania alone. On the coast of New Zealand—east and west—the red funnel of their boats is to be seen in every port nearly every day, and every month steamers under their management carry the mails from Sydney to Vancouver, calling at Brisbane, Fiji and Honolulu on the way. The opportunity of comparing the fjords of Norway with the famous West Coast Sounds of New Zealand is given by their annual summer steamer cruises to that wonderful region. In their handsome court at the Exhibition are to be seen beautiful models of their splendid steamers, and a glance at these in our illustration will make one really understand why the boats of the Union Company of New Zealand enjoy the reputation they do for safety, comfort, and speed. The Company have five new steamers building at Home at the present time—one of which, a fast turbine steamer of large capacity, is to run a ferry service between Lyttelton and Wellington, bridging the two islands of the colony in a few hours.



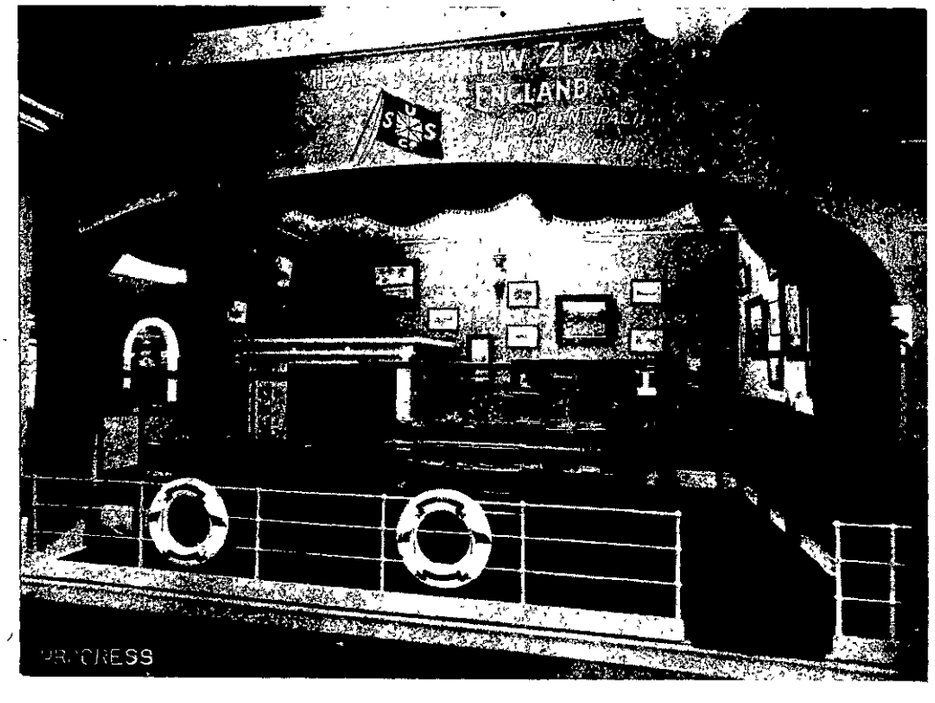
LUCAS BROS. STALL IS A NEAT AND EFFECTIVE DISPLAY.

Messrs. J. Wilson & Co., Ltd.

THE manufacture of concrete and hydraulic lime, which is now carried on very largely in the colony, forms the greater part of Messrs. Wilson's business. The firm shows a specimen of a ferro-concrete pile used in the Auckland wharf by the Ferro-Concrete Co. of Australasia, and which is made of Messrs. Wilson's "Star" Portland cement; while the exhibits generally demonstrate the strength that is possible of attainment with reinforced concrete. There is a section of the Rachael bath at Rotorua, made in 1898 of four parts Rotorua pumice, two parts pumice sand, and one part Wilson's Portland cement. There are also flooring sections for all purposes shown, together with the different methods of laying floors so as to obtain the best results at a minimum outlay. Blocks of concrete made from pure clay, pumice, scoria, river shingle, broken metal, shell coral from Tonga, and coke breeze are placed prominently in Messrs. Wilson's section, as also are some exhibits of raw material indicating the various stages in the making of Portland cement.

The works at Warkworth, near Auckland, have a capacity of 20,000 tons of Portland cement per annum, which can be rapidly extended when required, in addition to large quantities of hydraulic lime—said to be the best quality obtainable. The manufacture of Portland cement carried out at Warkworth, commences with the extraction of the Blue Lias stone from a quarry adjacent to the works. After quarrying the raw materials are mixed in the required proportions, the whole is dried and reduced to a very fine powder, after which it is conveyed to hoppers and fed automatically into the rotary kilns. The coal used in the process is also ground to very fine powder and fed by means of a blast into furnaces, the ignition being instantaneous and complete These furnaces revolve slowly, and the incineration of the powder is very thorough The mixture next comes out in the form of clinker, and is passed through a cooling tube and conveyed to more hoppers to wait for the final grinding process, which is effected by a tube mill, where it is so finely ground that it is possible to pass all but about 5 % through a sieve of 10,000 meshes to the sq. in The finished Portland cement is deposited into bins and allowed to mature before being put on the market. When bagged and delivered to customers it is ready for any work in which the highest efficiency of material is required. Messrs. J. Wilson & Co. make the claim that for fineness and tensile strength, and uniformity of quality, their "Star" brand Portland cement is equal to the best imported article. Tons of "Star" cement have been used in the ferro-concrete works at the Auckland Railway Wharf. Part of the Auckland Harbour Board's large scheme for the improved wharfage accommodation is to be carried out with Messrs. Wilson's Portland cement.

The Company also produce agricultural lime at Tekuiti in the King Country, and are breaking metal for roads.



THE UNION S.S. CO. SHOW MODELS OF THEIR STEAMSHIPS, AND THE EXHIBIT IS CONSIDERED TO BE ONE OF THE BEST IN THE NAUTICAL SECTION.

Messrs. Andrews & Beaven, Ltd.

MESSRS Andrews & Beaven, Ltd, of the Canterbury Machine Works, Christchurch, make a very good representative exhibition of their specialities.

The line of chaffcutters as made by them includes some hundred different combinations, and it is manifestly impossible to show even a fraction of their different machines They therefore show the largest, the "Empire," and the smallest, a No 1 "Zealandia" The "Empire" is fitted with every possible labour-saving improvement that the experience of 27 years can suggest. The "Zealandia" is the smallest machine the firm make.

Mssrs. Andrews & Beaven were the original makers of the screw press Self-Bagging Chaffcutter, making them eight years before any other firm. Theirs are the standard machines for the purpose in Australasia.

The largest of the two chaffcutters shown, the "Empire," is the outcome of the experience, not only of the firm as manufacturers, but of 2000 customers working their machines—every part of the machine being the best adaptation of the engineer's art to the purpose required. The machine is very strongly constructed of the timbers that have been found best adapted for the purpose required of them; New Zealand, Australia, and America are all represented, the best being selected from each country.