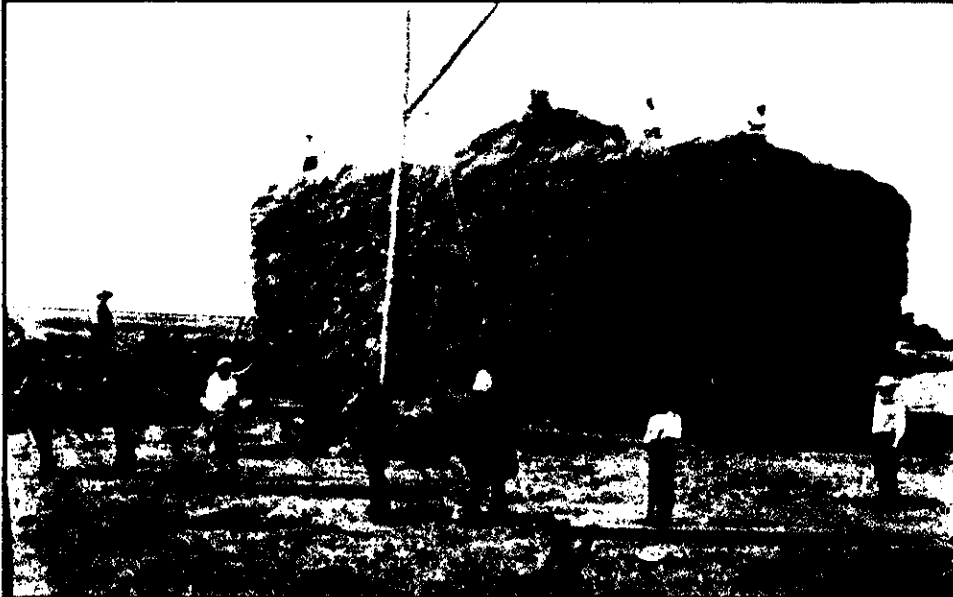
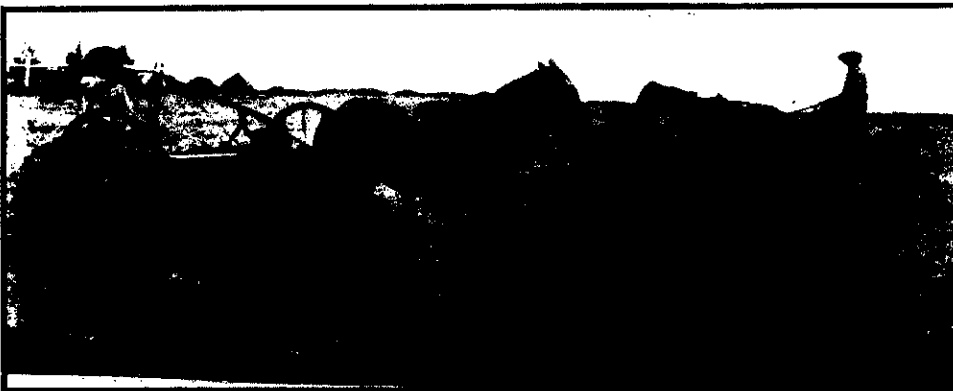


HAYMAKING IN NEW ZEALAND.

ON this and the two previous pages some pictures are given of a New Zealand farm house and of the hay-making season. It is not our province to at length describe the improved methods of making hay adopted on many farms in the North Island. That will doubtless be done in our admirable contemporary, *The Farmer*. But even to the uninitiated there seems to be something surprising that so patent a time-saving appliance as the Derrick was not applied to stack-making months before. For the rest the pictures are their own best explanation, and are extremely interesting and refreshing to we dwellers in the city. There is something very refreshing in pictures like these in this hot and tiring weather. They make us hunger for the country though, but doubtless if we lived there for a month or so the majority of us would want to hurry back to town. The titles of the blocks on this page could not be placed beneath them owing to their size. The first represents a group of haymakers enjoying the 'smoke ho' or rest in the afternoon. The triple picture shows first the rake and 'scratcher,' the latter being the machine which forks the hay. In the next is seen the hay sledge, and in the next the derrick mode of stack building.

The photos from which our blocks are made are by Mr Pegler, of Onehunga, and were taken, with one exception, on Mr Wallace's well-known farm near Auckland.



A MECHANICAL FIGURER.

THE BEST CALCULATING MACHINE INVENTED BY A FRENCHMAN.

A YOUNG Frenchman, Leon Bollee, has succeeded in completing a most wonderful calculating machine of his own invention, which outclasses anything in the way of comptometers, adders and registering machines shown before. The new machine does all the figuring automatically, and no matter whether it is a question of addition, subtraction, multiplication, division, equation, extraction of roots, reduction or differentiation, the result is arrived at with rapidity hard to believe, and is invariably correct. At a recent meeting of the Institute of France, Mr Bollee showed and demonstrated his new machine, and the enthusiasm created by the exhibition was so spontaneous that the members of the institute present immediately addressed a petition to the Minister of the Interior to confer upon the young inventor the cross of the Legion of Honour. As to its work it is simply perfection itself. Examples were given by several mathematicians present, and they figured out some of the results, to test Bollee's new machine, without finding a single error. One lightning calculator tried to beat the machine with the aid of a so-called comptometer, but when Bollee gave the result, the lightning calculator had only just begun to put down the first row of figures. It is almost impossible to explain in writing how the machine works; one example may suffice: It took Bollee a trifle less than three seconds to get correct results of the following multiplication: 6,222,333,444 by 8,888,111,224, which is in figures, 55,304,791,723,086,975,456, or, written out, fifty-five quintillions, three hundred and four quadrillions, seven hundred and ninety-one trillions, seven hundred and twenty-three billions, eighty-six millions, nine hundred and seventy-five thousand, and four hundred and fifty-six.

The machine is not only an arithmetical wonder, but it is equally interesting from the standpoint of mechanical ingenuity. It contains no less than 3,000 different parts of steel or copper. It is divided into two distinct and independent sections—the 'receiver' and the 'calculator.' Leon Bollee is only twenty-five years old, but has an enviable record as an inventor. He is the son of a wealthy bell-founder and manufacturer of steam cars, and had excellent training in the mechanical arts early in life. He began work on the calculating machine just described in 1888 at the age of eighteen, and has accomplished much success in other directions, as there are no less than thirty-seven practical inventions of his now patented. Most of these are improvements and independent novelties referring to the propulsion of boats, bicycles, automobile carriages, printing machinery, measuring apparatus, time-keeping apparatus for factories, and many other useful objects. Among his admirers he has been nicknamed the 'French Edison,' and with his youth and his record up to date there is no telling where he may bring up yet.