Paragrams.

Mr. George Humphries, inventor of the Patent Safety Scaffold Bracket, has sold his Australian patent rights for £1 500.

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It is reported that Messrs Holmes & Allen have recently received an offer of £50 000 from the Continent, for the patent rights of their Automatic Non-fouling Trolley Head.

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The Dunedin City Council has received £91 200 in subscriptions for the Waipori electric loan of £30,000 at 4½, varying from par to 102, and £30,000 up to 12s. 6d. premium.

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A proposal to borrow £100 000 for the purpose of increasing the plant at the pumping station and extending the sewage system was recently submitted to the people of Christchurch by the local drainage board. The ratepayers by more than the required majority indorsed the proposal.

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Mr. Hutchinson's milking machine, patent rights for which are held by the Hydraulic Hand Milker Co., Ltd., is now in marketable condition. Several foreign capitalists have approached the company with a view to acquiring the foreign patents. Shares are being enquired for, buyers offering £10 10s. for £1 shares. Only a few shares, however, have changed hands at that figure, as the shareholders prefer to hold for a much higher price.

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At a meeting of Auckland citizens recently, proposals for the expenditure of the following sums were indorsed —Town Hall, £80,000, including £13,000 for the purchase of a site and £60 000 for the building itself; replacement of cemetery foot bridge with a traffic bridge at a cost of £30,000, and a foot bridge costing £2000; pavilion at Victoria Park, £2000; completion of refuse destructor, £7000; electric lighting plant, &c., for the city, £25,000.

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The following tenders were received by the Mines Department for the supply of boilers for the coal briquette-making works at Westport —Anchor Foundry Company, Nelson, £1150; Griffiths and Co., Birchfield, £1194; Dispatch Foundry Company, Ltd., Greymouth, £1400, S. Luke & Co., Ltd., Wellington, £1494; Massey Bros., Ltd., Auckland, £1495; James J. Niven & Co., Napier, £1548; Andersons Ltd., Christchurch, £1565; Seagar Bros., Auckland, £1774; George Fraser and Sons, Ltd., £1783; A. & T. Burt, Ltd., Dunedin, £1792.

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The aggregate tonnage of the vessels of the Hamburg-American Line amounts to 811,943 register tons, as against 764,555 register tons a year ago, showing an increase of 47,392 tons. In 1886 the entire tonnage of the fleet was only 65,257 register tons. The tonnage has doubled during the last seven years, and increased by more than twelve times its original amount during the last twenty years. Nevertheless, the company were again compelled last year to charter other vessels in order to cope with the traffic.

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The disaster at San Francisco has more than a friendly or sympathetic interest for the people in this part of the world. It is beginning to affect us commercially, and may yet affect us industrially. Our Auckland correspondent informs us that Messrs. John Burns & Co., of that city, have forwarded a consignment of plain and corrugated galvanised iron to San Francisco for building purposes. For the rebuilding of the smitten western city we have material to spare, but we can scarcely afford to be drawn upon for men to put it together.

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A trade-winning idea has been adopted by Mason Struthers & Co., of Christchurch, In one of their show windows—they have no less than nine—they have placed a large table lamp bearing a ticket showing that the price is 80s., and intimating that this is subject to a reduction of 5s. a week until the lamp is sold. At the middle of the month, when our correspondent wrote, two reductions had been made. This is not their first trial of the idea. Some weeks ago a 50s. lamp, subject to half-crown reductions, was shown in the same way, and ultimately sold for 32s. 6d.

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What is probably the highest dock in the world has recently been completed at Port Florence, on the Victoria Nyanza, in Uganda, at an altitude of 3,700ft. above the sea level. The dock has been constructed to accommodate the Nyanza fleet plying on the lake in conjunction with the Uganda railroad It measures 250ft in length by 48ft wide and 14ft deep. It was excavated out of the solid rock by native labour, and it occupied 12 months in construction at a cost of nearly £5000. Plague visitations seriously interfered with the work.

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The New Zealand Iron and Steel Co., Ltd , is being formed in London the prospectus having been issued, according to cable advice, at the end of May. It was stated that the subscription of the capital (fixed at £650,000) was assured, provided the Government suspended a clause of the lease of the Parapara properties Under this clause the Government has the right to resume the possession of all the company's works at the end of 14 years. The capital originally suggested was £500,000, and the increase has been decided upon in order that works may be started at New Plymouth simultaneously with those at Parapara, where the company is obliged by the Government conditions to commence operations

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Some further marvels of radium were explained in a lecture on the "Corpuscular Theory of Matter," delivered at the Royal Institution by Professor J. J. Thompson. It was known, he said, that in the course of an hour one gramme of radium would give out sufficient heat to raise a gramme of water from freezing point to boiling point. On the average a radium atom lived for more than a thousand years, and it was only when the atom became unstable that its energy was liberated Professor Thompson expressed his own opinion that this was due to the loss of equilibrium in the systems which were rotating in the atom, in the same way as a top fell when the speed of its rotation was not sufficient to preserve equilibrium The energy of radium displayed itself only at the deathbed of the radium atom.

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A new method of taking current from the line for electric railways, devised by Herr E. Huber, of the Oerlikon Company, has been tested on the Seebach-Wettingen line, 20 kiloms. long. This railway is supplied from the line with current at 14,000 volts, 50 alternations, single-phase. Owing to the difficulty in constructing a high-tension single-phase motor to take current at this voltage and so high a frequency, the voltage is reduced on the locomotive by means of a single-phase motor coupled to a 750-volt direct-current generator, from which latter the driving motors, one of 200 horse power to each four-coupled bogie truck, are supplied. The weight of the locomotive is 42 tons. The form of trolley comprises a wire hinged at one end and fastened there to a supporting parallelogram which can be controlled vertically and laterally.

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The advantages of tail rods have seen a practical demonstration in the power plant of the Camden and Suburban Railway Co., Eng., says *Power*, at which station there are two cross-compound condensing Corliss engines direct connected to 800-kilowatt generators. One of these engines is equipped with tail rods, and the other is not. The former engine has, in the three years' service, worn out two sets of bull rings, and the low-pressure cylinder has worn down 1-16th in. The latter engine, in two years of service, has cost nothing for repairs, the bull rings have not been changed, and the tool marks are still visible on the bottom of the cylinder. The engine with the tail rods has also shown greater steam economy, and can be run at about 10 per cent. greater capacity.

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There is a curious astronomical phenomenon known to observers as the "green flash at sunset." Just as the solar disc is lost to view the parting ray is a brilliant emerald green. It is not certain that this is always so, for many persons have seen the sun set without noticing the green colour; on the other hand, there are abundant records of its having been observed. It has been suggested that there is no objective reality, but that the seeming green is a reactionary effect after looking at the sun's red disc. Dr. Rambaut, the Radcliffe observer, Oxford, controverts this view, and he has published his observations made on an expedition with the British Association last autumn. He looked for the flash many evenings in vain, but after September 27 he saw it frequently, and also at sunrise, which disposes of the fatigue theory. Dr. Rambaut adds that the phenomenon is best seen, not when the disc is red, but when it is yellow. He suggests that the effect is due to refraction—the different colours of the spectrum vanishing in order of the refrangibility At the seaside, where the sun can be seen on the horizon, the flash may often be observed.

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The human body as a wireless telegraph transmitter and receiver was tried recently at the electrical show in Madison Square Gardens, New York, Professor Ovington, of Boston, Mass., performing a number of experiments with high potential and high-frequency currents The body of the lecturer's assistant was submitted for the usual vertical conductor, and the current from the machine passed through the body, whence the energy was radiated as waves in the ether The messages were sent in this way from the small demonstration hall at the extreme western end of the building, and were received by a De Forrest receptor set up and furnished with the usual wire antennæ, situated in about the middle of the main auditorium. The potential and frequency of the oscillations were very much in excess of those employed commercially, and hence the waves radiated were exceptionally short It was Professor Tommasini, of Geneva, who first demonstrated that the human body could be successfully substituted for an aerial of the same length and capacity. The body is not, of course, as good a conductor as are the metals, but it is offset by the fact that a current of high frequency penetrates the skin only a very small fraction of a millimetre. M. Emile Guarini, of Brussels, actually sent messages through space by connecting one human body to the positive side of a spark-gap, and another body to one terminal of the coherer.

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After more than five years' work the map of the oceanic world, which was begun under the auspices of Messrs. Sauerwein and Tollemer at the expense of the Prince of Monaco, has been published and a copy presented to the Academie des Sciences. In a review of it attention has been called to the resemblance which the bed of the ocean bears to an earth surface in the possession of hills plains, mountain peaks, valleys, and ravines. The Atlantic Ocean, for example, covers two vast valleys; one of these passes between the Cape Verde Islands and the Azores, and is of great depth. It runs close up to Europe and comes to an end at the British Isles, where the ridge or crest of land separates it from the North Sea. The other valley runs principally parallel to the first, from which it is separated by an elongated strip of land, of which the Azores form an above-sea continuation. Above this strip the water is never as much as two miles deep, and its own height above the surrounding ocean floor is about 6500ft to 7000ft. The first of the valleys which we have mentioned is very deep. Its bottom is at a depth of four miles. Passing along South America and leaving the Bermudas to the west, it passes along Newfoundland and Labrador, finally ending just south of Greenland. The sub-Atlantic landscape then consists of two parallel valleys separated from each other by a mountain range. Further north the land lies higher, and the sea is relatively shallow. Between Greenland and the Continent due to Iceland and the islands of the Channel there is a huge plain free from any depressions worthy of mention. None of the greatest depths can be found in the Atlantic. The most noticeable are the 30,000ft. ravines off the coast of New Zealand.

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The petrolite lamp, which combines patented inventions of an Edinburgh doctor of science and a London civil engineer, and which is controlled commercially by Petrolite Ltd., of 106 York road, Lambeth, London, S.E., is being brought under notice of the people of Adelaide. Early in the year Mr. E. E. Nesbit visited London, and was so struck with the lamps exhibited in the company's show rooms that he applied for and secured the sole agency in South Australia and Western Australia, with a conditional promise of Victoria also. This lamp consists of four parts, the lamp body or outside receptacle, the container or bowl, the burner tube, and the burner itself, any chimney and globe being added to complete the outfit. The most noteworthy of these four parts is the container, which consists of a highly absorbent and incombustible stone. So high and rapid is the absorbing power of this stone that there is no free liquid in the lamp. Combined with the construction of its other parts this, it is claimed, makes explosion an impossibility. The stone does not deteriorate or break, and can be recharged for years. If overturned the lamp goes out. There is no wick no smoke, no smell, no need of cleaning. Although a "petrolite mantle" is obtainable, any mantle can be used with the lamp, and it is affirmed that mantles last longer than is the case with other fuels owing to the pure character of petrol gas. Special stands or cradles for charging the lamps with petrol, as well as special safety cans for containing the spirit, are provided, but of course, the lamps can be charged apart from these with the assistance of a funnel and the exercise of reasonable care. The principle is applied to lamps of all kinds—table, bracket, hanging, standard, pillar, and others. At his address, The Motor House, Victoria square, Adelaide, Mr. Nesbit has twelve of the lamps on exhibition.