wheel on the tumbler-shaft, and the speed of the table is about equal to the speed of the vertical shaft.

The dredged material is lifted to a height of 24ft. above water-level and dumped on the hopper, which shoots all the material on to this travelling-table; a portion of the water from the centrifugal pump comes in to the hopper and then on to the travelling-table, washing the dredged material, and carrying all the fine sand through the perforations in the belt, while the coarse stuff, shingle and stones, are carried away by the belt or table, and when it passes over the end pulley the coarse material is shot into an inclined chute, into which a stream of water from the pump is brought to convey the waste material away clear of the stern of the dredge, while the fine material falls on an inverted $\wedge$ slide placed directly under the travelling-belt, which causes about an equal quantity to fall into a longitudinal chute on each side, and thence from this chute the material and water is distributed on to the gold-saving tables. The stone and gravel chute is made in semicircular form of iron plates, and carried on light trestle-work placed on a floating platform at the stern of the dredge. This platform is supported by a number of casks and barrels, lashed together, and by this means the waste material is deposited about 120ft. beyond the stern of the dredge. With regard to this floating platform it is of a primitive construction, and does not give full satisfaction; as, for instance, when a block takes place in the stone chute, the extra weight of material at this particular place sinks the platform and consequently the chute, and therefore it becomes more difficult to clear. The effect of the chute being supported on a flimsy floating platform, is that it cannot be kept at a uniform grade, but wherever the most weight is in the chute it buckles in places, producing the same effect that a heavy load does in passing over a bridge with very light beams.

The washing-tables are similar to those constructed by Mr. S. Brown, of Wellington, on the dredge in the Saltwater Creek at Paroa. There are six tables on each side on stern end of the tumbler-shaft, each 14ft. long by 4ft. wide, and five tables on each side of the bow end of the tumbler-shaft 11ft. long. Although the latter is constructed they are not used; it is found difficult to get the firm material equally distributed so as to utilise the tables on the forward part of the hull. The area of the tables used is 672 square feet. The material is very evenly distributed, and there being nothing but fine stuff passing over them they ought to save a fair percentage of the gold.

The whole of the machinery is driven by a compound steam-engine having cylinders of 11in. and 22in. in diameter respectively, and the minimum pressure of steam entering the high-pressure cylinder has to be 68lb. to the square inch, the stroke of the engine being 22in., and the engine-shaft travelling ninety revolutions per minute. The water is supplied for washing purposes by a centrifugal pump, which was said to be discharging 2,000 gallons per minute.

With regard to this dredging-plant there is a considerable improvement in the washing appliance over any hitherto adopted in dredging; and although it is somewhat crude as regards the mechanism, Captain Parker has given the right idea to separate the material, and no doubt many of the dredges in the future will be provided with a similar system of separating the sand from the coarse shingle and stones; but Captain Parker's travelling-table is not long enough to carry away the material over the stern of the dredge unless a chute is used of a considerable length, and this seems the most objectionable part of his appliance. The travelling-belt or table should be long enough to convey the wash material over the stern of the dredge with a short chute at the end on a steep incline, which would require no water to be used to carry any coarse material away clear of the dredge. This dredge is working at the head of the Saltwater Lagoon, on the north beach, Greymouth; it had only been at work for a few days prior to my visit, and it was not then known whether the ground would prove remunerative for working or not.

Hokitika.

Kanieri Dredge.—This dredge is working in the Hokitika River, opposite the Kanieri Township. Some rich claims were worked on the bank of the river in the early days, and the gold was traced and worked as far into the river as could be done with the pumping appliances then used—namely, Californian pumps. It is thought that the same lead found behind the Kanieri Township goes across the river to Woodstock; but be that as it may, there is a rich auriferous gravel deposit in the bed of the river which is now taken up as a dredging-claim by the Kanieri Dredging Company. The wash-drift contains a large amount of boulders, and is cemented together to a great extent, so that at the time of my visit they were blasting the wash-drift in order to loosen the ground, so that the dredge could lift it. Previous to adopting this system they tried to make the buckets sink a hole in the drift, but they merely revolved, skidding off the hard cement, and coming up almost empty. In some of the wash-drift that came up in the buckets coarse specks of gold could be seen, and if the difficulty of breaking it up can be got over the company ought to have a valuable property. Instead of having all buckets, there requires a certain number of skeleton-buckets with hooked steel prongs placed on the ladder to loosen the material; but it then becomes a question whether the engine is of sufficient power and the other portions of the machinery strong enough to admit of this being done. Latterly the dredge has been getting fair returns.

The dredge is what is known as a centre-bucket dredge, the hull being 90ft. long, and 18ft. of beam, having a depth of 4ft. The tumbler-shaft is 19ft. above water-level, and the bucket-ladder can dredge to a depth of 25ft. below the water. The buckets are placed 3ft. apart, and have each a capacity of 3 cubic feet, and travel at the rate of from ten to twelve buckets a minute. The water is supplied for washing purposes by a centrifugal pump of 3ft. 9in. in diameter, having a discharge-pipe of 15in. in diameter, which is driven at a speed of 200 revolutions per minute. There are two compound steam-engines used for driving the machinery, both of which have cylinders of 7in. and 14in. in diameter respectively, the engine working the dredging appliance having a 14in. stroke, making 120 revolutions per minute, which is equal to a piston speed of 280ft. per minute; while the engine for driving the pump has a 12in. stroke, making 200 revolutions per minute, being a piston speed of 400ft. per minute. The minimum pressure of steam in both instances entering the