A.—No. 6A.

FURTHER PAPERS

RELATING TO

MR. VOGEL'S MISSION TO ENGLAND.

PRESENTED TO BOTH HOUSES OF THE GENERAL ASSEMBLY, BY COMMAND OF HIS EXCELLENCY.

WELLINGTON.

1871.

FURTHER PAPERS RELATING TO MR. VOGEL'S MISSION TO ENGLAND.

No. 1.

Messrs. J. Brogden and Sons to the Hon. J. Vogel.

Sir,— 4, Queen Square, Westminster, 14th July, 1871.

We have the honor to inform you that Mr. Morrison showed to our Mr. Alexander Brogden a telegram, which he had received from you, to which we replied as follows:—

"Alexander Brogden, 4, Queen Square, Westminster, London.

"To W. H. Webb, 54, Exchange Place, New York.

"Please wire Vogel I cannot possibly leave this month. If I leave August 23rd can question be deferred until my arrival? Answer wanted immediately."

We have also the honor to acknowledge receipt of a copy of your telegram to Mr. Morrison, as follows:—

"Brogden telegraphs, Can choice between the two contracts remain until his arrival, he leaving August? Cannot give positive answer, beyond believing Government will desire as far as possible to consult his convenience.

"In order to give us power to wait for his arrival, he should give to Mackrell necessary authority, indemnifying us from being prejudiced by delay in deciding between the contracts. See Mackrell, and with him see Brogden; and let Mackrell telegraph me to California, whether he has so arranged that, by delaying decision between the two contracts, we shall not prejudice our full right to decide under arrangement, or prejudice any of the rights under contract."

To this telegram Mr. Mackrell replies as follows, by telegraph, addressed to the Bank of California, San Francisco:—

"Brogden executed duplicates, but 'six' substituted for 'three' months in last recital and clause 1 of agreement. Letter given to Bank. Government may now safely delay.

"If obliged to decide, obtain powers to agree on modifications."

Mr. Mackrell called upon us with the duplicate deeds for signature, and after conference with him we have signed the agreement, extending the time from three months to six months in the last recital and in clause 1 of the agreement.

We have also given a letter to the Bank of New Zealand, advising them of the alteration, and authorizing them to hold the securities placed in their hands.

It is, we regret to say, perfectly impossible at the present time for our Mr. Alexander Brogden to free himself from Parliamentary duties, and other pressing engagements, and so to come out by the mail leaving 27th July, or possibly the following mail, leaving here 24th August.

However anxious we may be to comply with your wishes that Mr. Alexander Brogden should come, there is doubtless some uncertainty about his being able to do so, even at the later date.

One of our firm, however, will come out for the purpose of conferring upon the arrangements.

We find that the views entertained at first as to the issue of the capital have been over sanguine, even in this most favourable state of the money market, as the opinions then expressed are not capable of realization.

We shall, however, trust to your support in favour of a modification of the terms, so as to enable us to carry out the matter to the satisfaction of all parties.

We have, &c.,
Brogden and Sons.

The Hon. Julius Vogel, the Treasurer,
Wellington, New Zealand.

No. 2.

Messrs. J. Brogden and Sons to the Hon. J. Vogel.

Sir,— 4, Queen Square, Westminster, S.W., 27th July, 1871.

We have the honor to confirm our letter to you dated 14th July.

We regret that we cannot yet announce definitely that our Mr. A. Brogden will leave by next mail, the uncertainty of Parliamentary proceedings being such as to prevent any definite conclusion being arrived at. It was expected that an announcement would have been made to-day, as to the future course of public business; but it has been deferred until next Monday. It is however certain either that Parliament will sit for a very long period, or that it will be adjourned for an autumn session. This is a state of matters which we assure you we find highly inconvenient.

In the meantime we should suggest to you to defer the consideration of the agreements by the Assembly, if possible, until the arrival of our Mr. A. Brogden or one of the firm, since it is evident, from our further inquiries as to the terms upon which the issues of the capital for the railways can be made, that a modification of the agreement to render the terms as nearly as possible like those adopted in the case of the Indian railways will be required, in order to make them such as the New Zealand Government and we would work under.

This observation will apply to both agreements; and with regard to the No. 2, contract, it has been observed that the lines may be made in any locality, and the Government are not under

obligation to purchase as in No. 1 contract, so that the guarantee can be regarded as of little more value than an annuity for thirty-five years. This objection can be overcome in different ways, and without any disadvantage to the New Zealand Government.

Necessarily we were hurried in the consideration of the details of the contracts, and we find several points suggested for modification as being unusual obligations upon companies, and applicable more to contractors. These we are now studying, and Mr. Mackrell has promised his assistance, so that we hope to have the whole business in the best state of preparation possible for our Mr. A. Brogden to bring with him.

We have the honor to renew our assurance that, in carrying out these undertakings, we shall endeavour to do so to the entire satisfaction of the Government.

We learn that Dr. Featherston has arrived in England, but none of our firm have yet seen him. We shall hope to hear of your safe arrival in New Zealand.

We have, &c.,
JOHN BROGDEN AND SONS.

The Hon. Julius Vogel, the Treasury,
Wellington, New Zealand.

No. 3.

The Hon. J. VOGEL to the Hon. W. GISBORNE.

SIR,— General Government Offices, Wellington, 19th October, 1871.

I have the honor to forward to you herewith copy of specification and estimate for the "Eel River and Humboldt Bay Railroad" in the United States. Those documents are likely to be studied with interest. They show the estimated cost, and the nature and mode of construction of a light railway, intended, as I was informed, to open up a tract of country supposed to possess agricultural and mineral capabilities.

The average cost per mile of the railway, inclusive of rolling-stock, a deep water wharf, and warehouses, is moderate when the high price of labour and materials in the Western States is taken into account.

The gentleman who was kind enough to procure the documents for me, informed me that the projected railway is a fair sample of the kind constructed by private individuals when they desire to improve large tracts of country of which they have become possessed, which is indeed the object in the present case.

It is noticeable that an undertaking which in a British Colony would be considered very large, and which would probably require Parliamentary and other preliminary action, should in the United States be regarded as merely an ordinary improvement of property.

I have also the honor to forward to you an estimate for a cloth (or tweed) dressing establishment, supplied by Messrs. W. Kempe and Co., of Leeds, and information respecting Sisal hemp, which has been procured from the firm of William Wall's Sons, New York.

I have, &c.,
JULIUS VOGEL.

The Hon. the Colonial Secretary.

Enclosure 1 in No. 3.

HUMBOLDT BAY and EEL RIVER RAILROAD SPECIFICATIONS.

Description.

The "Eel River and Humboldt Bay Railroad Company" propose to build a narrow-gauge railroad from "Gingley's Ferry" on Eel River, following the general contour of the Bluff, at about two feet above extreme high water-mark, to a point on Hawk's Slough, known as "Hawk's Landing;" thence crossing Table Bluff at its lowest summit, and running by the most practicable route to deep water, at a point near the mouth of Hookton Slough—a distance of eight and one-eighth miles.

Specifications.

The railroad shall be built to conform to the lines, grades, and cross-sections fixed by the Engineer of the Railroad Company, and according to his directions and to his satisfaction. The gauge of the railroad is to be three feet.

Earthwork.

The width of excavations at the sub-grade line shall be 10 feet, with side slopes of 1 to 1, and of embankment, 8 feet, with side slopes of $1\frac{1}{2}$ horizontal to 1 vertical. Good ballasting material—to be approved by the Engineer—shall be placed on the whole length of the road bed to the depth of 1 foot and to the width of 7 feet, at 1 foot above sub-grade.

Pile Bridging.

The pile bridge shall be built according to the general plan hereto annexed and marked "A," each part thereof being of the dimensions thereon marked, and will be 4,000 feet (more or less) in length. The bents are to be 14 feet apart, and two piles to each bent. The caps are to be 12 by 12 inches in size, and 8 feet long, fastened to the piles with $\frac{7}{8}$" × 24" drift bolts—two bolts to each cap. The stringers are to be 12 × 12 inches, notched for the cap, and bolted to the caps with $\frac{7}{8}$ × 22" drift bolts; all the stringers to have one bolt to each cap, excepting at the joints, where two bolts will be required. The tie planks are to be 3 inches by 8 inches, and 6 feet long, notched for the stringer, and to be placed two feet apart. The diagonal braces—to be used at slough crossings only—are to be of 3 × 10-inch plank, and are to be properly fastened to both piles. The piles to be straight and sound, of the best "pine" or "fir" lumber, and not less than 12 inches in diameter at the point, and of such length as the Engineer may deem necessary—to be driven and cut to his satisfaction. The piles will probably average 23 feet in length. The lumber to be of the best pine or fir, free from bad knots, sap, warp, wind, or wanes.

Wharf.

The wharf at the end of the pile bridge is to be 100 feet long and 60 feet wide. The bents to be 10 feet apart. There are to be eight main piles to each bent; snubbing piles 30 feet apart along the face of the wharf, to project 4 feet above the surface of the wharf, and to be securely fastened with 2″ × ½″ wrought-iron plates, either to a main pile or cap, in such manner as the Engineer may determine. There are to be "fender piles" placed at the end of each bent along the entire front of the wharf, bolted to the outer 12 × 12 stringers with ⅞″ × 22″ drift bolts, and also to be fastened to the caps with ⅞″ nut bolts. The piles are to be straight and sound, of pine or fir lumber, not less than 14 inches in diameter at the head where cut off when driven, and of such length as the Engineer may determine; each and every pile to be ringed when driven, and are to be driven to the satisfaction of the Engineer as regards depth, movement, line, and grade, and are to be cut off at such elevation as he may direct. (Piles will average about 40 feet in length.)

The caps are to be 12 × 12 inches in size; each cap to be one piece of timber if obtainable, or of such lengths as to have but one joint in each bent, which must be upon a pile head, and must break joints with others adjoining. They are to be fastened to the piles with ⅞″ × 24″ drift bolts—one bolt to each pile, excepting at joints, where two bolts will be necessary. The ends of the caps to be sawed off to conform to the outer line of the sides of the wharf.

There are to be four main stringers, 12 × 12 inches, and twenty-five stringers, 4 × 12 inches, each extending the entire length of the wharf, and in lengths of not less than 30 feet. The joints to come upon the centre of the caps. The stringers to be sawed off at the outer end of the wharf to conform to its line. The two outer main stringers to be bolted to the caps with ⅞ × 22″ drift bolts; all the main stringers to have one bolt to each cap, excepting at the joints where two bolts will be required. The 4 by 12 stringers are to be bolted at their ends and to each alternate cap with ⅝″ × 18″ drift bolts.

A guard timber, 8 × 10 inches, to run around the edge of the wharf upon the top of the planking, and fastened to the main stringers with ¾″ × 18″ drift bolts, driven at least every 10 feet.

Blocks of timber, 8″ × 10″, to be fitted closely between all the fender piles, and to be fastened with ¾″ × 18″ drift bolts to the stringers at the sides of the wharf, and to the cap at the end of the wharf—two bolts to each piece.

The wharf is to be covered with plank 3 inches in thickness and not less than 8 inches in width there are not to be more than three lengths in the width of the wharf, and these must break joints with each other; they are to be laid at right angles to the centre line of the wharf, and fastened with 6-inch wrought boat spikes for each plank, at least two spikes at each end, and one spike at each and every stringer, driven alternately from side to side of plank.

The wharf is to be securely braced with double diagonal braces 6 × 10 inches to each bent, fastened with ⅞″ nut bolts extending through both braces and piles. The lumber to be of the best pine or fir, free from bad knots, sap, warp, wind, or wanes.

Trestle Work.

The trestle work is to be built according to plans to be furnished by the Engineer in charge; the general dimensions of which will be:—Mud sills, 12″ × 14″; caps, 12″ × 12″ × 8 feet; posts and brace-posts, 12″ × 12″; stringers, 12″ × 12″; tie planks, 3″ × 8″ × 6 feet; transverse braces, 3″ × 10″; longitudinal braces, 4″ × 8″; bents, 14 feet apart.

The mud sills are to be of sound redwood, and of sufficient length to project 2½ feet beyond the brace-post mortice. The mud sills and caps are to be morticed to receive the tenons of the brace-posts and posts, and each and every joint shall be securely fastened with bolts or pins.

The brace-posts are to have a batter of one horizontal to four vertical.

The stringers are to be 12 × 12 inches, fastened to the caps by ⅞″ × 22″ drift bolts, one bolt through each stringer to each cap, except at joints, were two bolts will be necessary.

The brace-planks are only to be used on trestles of 20 feet or more in height, and then are to be notched, and securely bolted to the posts with ⅞″ nut bolts, as the Engineer may direct.

Culverts.

The culverts are to be constructed of 3-inch redwood planks, securely nailed, according to plans to be furnished by the Engineer.

Structures.

All structures to be made in accordance with detail plans furnished by the Engineer, subject to his direction, and finished to his satisfaction.

Ties.

The ties for the roadway are to be 6 × 6 inches, and 6 feet long, with the exception of the joint ties, which shall be 6 × 8 inches and 6 feet long, of sound redwood lumber, well seasoned, and free from bad knots, warp, wind, or wanes, and to have two flat and parallel sides.

Iron.

Thirty-pound iron and fish joints are to be used.

Track Laying.

The ties are to be placed two feet apart, and thoroughly tamped their entire length and width; also spotted, where necessary, to give the iron a true bearing. The iron is to be properly connected by the "fish-bar joints," with bolts and nuts, and spiked on each side of each rail to each tie, at the proper gauge.

Buildings.

There are to be constructed on the line of road:—1 warehouse, 60 × 100 feet, on wharf; 1 warehouse, 100 × 200 feet, at Hawke's Slough; 1 warehouse, 100 × 150 feet, at Eel River; 1 car house and repair shop; 1 engine house; 2 turntables.

ESTIMATE.

Road Bed.

Excavation, 13,420 cubic yards, at 20 cents	$2,684 00	
Embankment, 53,170 cubic yards, at 20 cents	10,634 00	
Ballast	4,000 00	
		$17,318 00

Bridges.

Pile Bridge and Wharf	$5,500 00	
Trestle Bridges	2,500 00	
Box Drains	200 00	
		8,200 00

Superstructure.

387 Tons Iron, at $85	$32,895 00	
Fish Bars	1,341 00	
19,500 Ties, at 18 cents	3,510 00	
21,463 lbs. Spikes, at 6 cents	1,288 00	
Side Tracks, Switches, &c.	1,500 00	
Labour	1,600 00	
		42,134 00

Buildings.

1 Engine House	$500 00	
1 Car House and Repair Shop	400 00	
1 Warehouse, on Wharf	1,800 00	
1 Warehouse, at Hawke's Slough	3,700 00	
1 Warehouse, at Eel River	3,000 00	
2 Turntables	1,600 00	
		11,000 00

Equipment.

2 Engines, at $6,000	$12,000 00	
20 Platform Cars, at $500	10,000 00	
5 Box Freight Cars, at $600	3,000 00	
		25,000 00
Contingent		10,365 00
Total		$114,017 00

Average per mile, $14,025.

JULIUS H. SMITH, C.E.,
72 Montgomery Block, San Francisco.

Enclosure 2 in No. 3.

MESSRS. W. KEMPE and Co., to the Hon. J. VOGEL.

Estimate for Cloth-Dressing Establishment.

DEAR SIR,— Holbeck Mills, Leeds, 24th August, 1871.

By to-day's post, we beg to hand you the particulars of the dressing machinery for tweed cloth.

We think that we have given all the information you will require; but if there is anything further, if you will kindly let us know, we will endeavour to forward it to you.

We shall be glad to receive your orders as soon as the matter is decided.

We have, &c.,

The Hon. J. Vogel, Wellington, New Zealand. W. KEMPE AND Co.

Sub-Enclosure 1 to Enclosure 2 in No. 3.

Description of Machinery for Dressing Tweeds.

THIS sheet is accompanied by a sheet with sketches of the machines, figured respectively 1, 2, 3, 4, and 5:—

1. Raising-gig. The raising is the first process in dressing. This machine has a cylinder, to hold twenty-four wrought-iron frames for the teasels, making 100 revolutions a minute. The cloth passes over certain rails and round an "expanding roller," in order to be made quite straight before it is presented to the action of the teasels. It is drawn over the teasels by rollers, passed over the top of the machine, the two ends skewered together to form an endless piece, turned over and carried forward by our patent "scray" and thus continues to be drawn over the teasels as described until it is sufficiently raised. A pair of raising-gigs will dress about 500 yards of tweed cloth per day of ten hours.

Price, packed ready for exportation £45 each. Teasel-rods extra 50s. a set, four sets required for each gig-mill. As a rule, only the strong tweeds are dressed at the gig-mill.

2. Tentering-machine. From the gig-mill the cloth is taken to the tentering-machine, to be dried and stretched to the required width. The "lists" of the cloth are pricked on steel pins carried by two endless chains which travel through the machine in tiers as shown in the sketch. Between the tiers of cloth are rows of steam-pipes for producing the required heat. The machine is driven by a small engine

fixed to the framing, so that the speed can easily be raised to suit the wetness of the cloth. The sketch shows the side elevation of a machine to hold 100 yards of cloth and dry over 1,500 yards per day. The range of stretch is from 27 to 66 inches.

Price, packed ready for exportation, £475. We make both larger and smaller machines when required.

3. Brushing and steaming mill with two brush cylinders coupled by a mortice-wheel. The bristles drawn in with copper wire. From the tentering-machine the cloth is taken to the brushing and steaming mill, and has a few rounds to prepare it for the shearing process.

Price, 66″ wide, packed for exportation, £74.

4. Shearing machine with setting up and straightening brushes, all complete, will finish 500 yards of tweed cloth per day.

Price, 66″ wide, packed for exportation, £67 10s.

5. Hydraulic press, 10″ diameter of the ram, 4 feet traverse, will stand a pressure of three tons on the square inch to 230 tons on the ram. Will press 500 yards of broad tweed cloth per day.

Price, £70 each. Set of pumps to be worked by belt, £45. Pressure gauge, £7 10s. Steam oven, £25 10s. Press-plates, sixty required for each press at 5s. each, £15. Fencings, twenty required for each press at 3s. each, £3. Press-papers 1,600 required for each press, 2,600 lbs. at 8d., £86 13s. 4d.

Note.—The press-pumps, gauge, and steam-oven, are sufficient for six or eight presses. All the machines of the best construction and quality, and packed in strong cases ready for exportation. The tweeds have a few rounds at the brushing and steaming mill, figure 3, both before and after the process of pressing. The tentering-machine, steam-oven, and steaming-mill would require steam equal to nearly ten-horse boiler-room and 40 lbs. pressure on the square inch is a convenient pressure. A gig-mill requires about 1½ horse-power. A steaming and brushing mill, 1½ horse-power. A shearing machine, ½ horse-power. A set of press pumps, ½ horse-power.

W. KEMPE AND Co.,
Holbeck Mills, Leeds.

Sub-Enclosure 2 to Enclosure 2 in No. 3.

THIS sheet contains sketches of machines.

Enclosure 3 in No. 3.

Mr. E. Fox to the Hon. J. VOGEL.

Information as to Sisal Hemp.

SIR,— General Government Offices, Wellington, 17th October, 1871.

When in San Francisco, during July last, you directed me to endeavour to obtain, for the Flax Commissioners, some information respecting Sisal hemp.

Although your stay was very short, I was enabled to ascertain that nothing could be learned in San Francisco. I therefore wrote to the firm of William Wall's Sons, New York, enclosing questions which seemed to be calculated to elicit such information as the Commissioners desired, and I have now the honor to hand to you copy of my letter, together with the reply of the firm.

I must add, that I believe the machine referred to in the reply is the one by Patrullo, a description of which I obtained at the factory of Messrs. Allen and Co., Jersey City, at the time you were on your way to England, and which was forwarded to the Commissioners from New York.

I have, &c.,
The Hon. J. Vogel. E. Fox.

Sub-Enclosure 1 to Enclosure 3 in No. 3.

Mr. E. FOX to WILLIAM WALL'S SONS.

GENTLEMEN,— San Francisco, California, 19th July, 1871.

In March last, I had the pleasure of calling upon you on behalf of the Hon. Mr. Vogel, a member of the Government of New Zealand, and you then supplied me with information as to the probable market value of certain samples of New Zealand flax, which I submitted to you.

The Government now desire information as to Sisal hemp, and they would be much obliged if you could supply answers to the enclosed queries.

I must apologize for thus troubling you, my excuse being that here in San Francisco I have been assured that from no other firm in the United States could the desired information be so reliably obtained.

I have, &c.,
William Wall's Sons, New York. E. Fox.

Sub-Enclosure 2 to Enclosure 3 in No. 3.

Queries as to Sisal Hemp.

1. What is the market value of the fibre, as compared with good average Manilla?
2. Is the fibre much used in the United States as a substitute for Manilla?
3. Is the fibre the product of a stem or a leaf?
4. Is a special machine used in the preparation of the fibre, or are ordinary kinds of the flax and hemp breaker used for the purpose?
5. If a special machine is used, where could one be obtained, and about what amount would it cost?

WM. WALL'S SONS to Mr. E. FOX.

DEAR SIR,— No. 113, Wall Street, New York, 10th August, 1871.

Your favour 19th July came duly to hand.

We now have pleasure of handing you replies to the questions asked, and which we trust may be of service to you.

We have, &c.,

Mr. E. FOX, Wellington, New Zealand. WM. WALL'S SONS.

Queries as to Sisal Hemp.

1. What is the market value of the fibre, as compared with good average Manilla?—About two cents per pound less than Manilla.

2. Is the fibre much used in the United States as a substitute for Manilla?—It is. The entire import of last year was about 3,200 tons, and it was immediately taken by manufacturers, and entered into consumption, and which answered as a substitute for just that much Manilla.

3. Is the fibre the product of a stem or of a leaf?—The product of a leaf.

4. Is a special machine used in the preparation of the fibre, or is the ordinary kind of flax and hemp breaker used for the purpose?—A special machine.

5. If a special machine is used, where could one be obtained, and about what amount would it cost?—It can be obtained of R. L. Allen and Co., agricultural implement manufacturers; the cost is $350 to $700 each.

WM. WALL'S SONS.