

117

1854-5.

VICTORIA.

SCREW STEAMER

AND

DREDGING VESSEL.

FURTHER CORRESPONDENCE

WITH

COPY OF DRAWING, SPECIFICATION, &c.

LAI'D UPON THE COUNCIL TABLE BY THE COLONIAL SECRETARY,

BY COMMAND OF

HIS EXCELLENCY THE LIEUTENANT GOVERNOR,

AND

CORRESPONDENCE AND SPECIFICATION ORDERED BY THE COUNCIL TO BE PRINTED,

AND DRAWING TO BE LITHOGRAPHED,

17th APRIL, 1855.

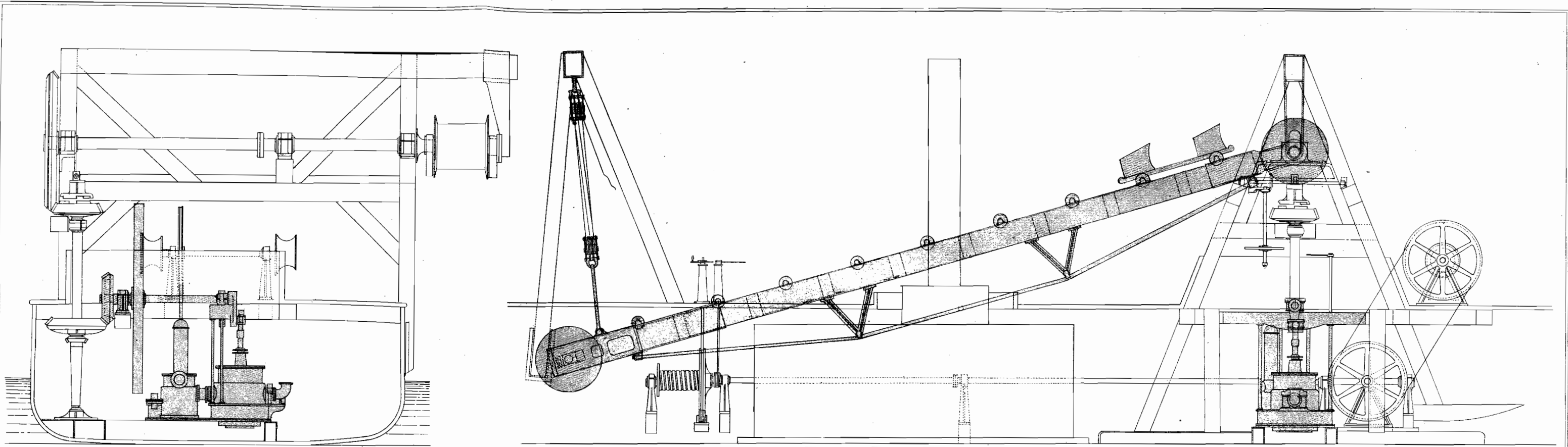
By Authority:

JOHN FERRES, GOVERNMENT PRINTER, MELBOURNE.

A.—No. 79, a.

SCHEDULE OF CORRESPONDENCE.

- No. 1.—Commander Lockyer to His Excellency the Lieutenant Governor reporting that Tenders had been applied for, 22nd December, 1854.
- No. 2.—Same to same, transmitting list of machinery, &c., for dredging vessel, and of men engaged to put up the same, shipped on board the *Olivia* for this Colony 2nd January, 1855.
- No. 3.—Same to same, enclosing specification and drawing of dredging vessel and mud punt, 2nd January, 1855.
- No. 4.—Same to same, transmitting the specification for the building of the screw steamer, 3rd January, 1855.

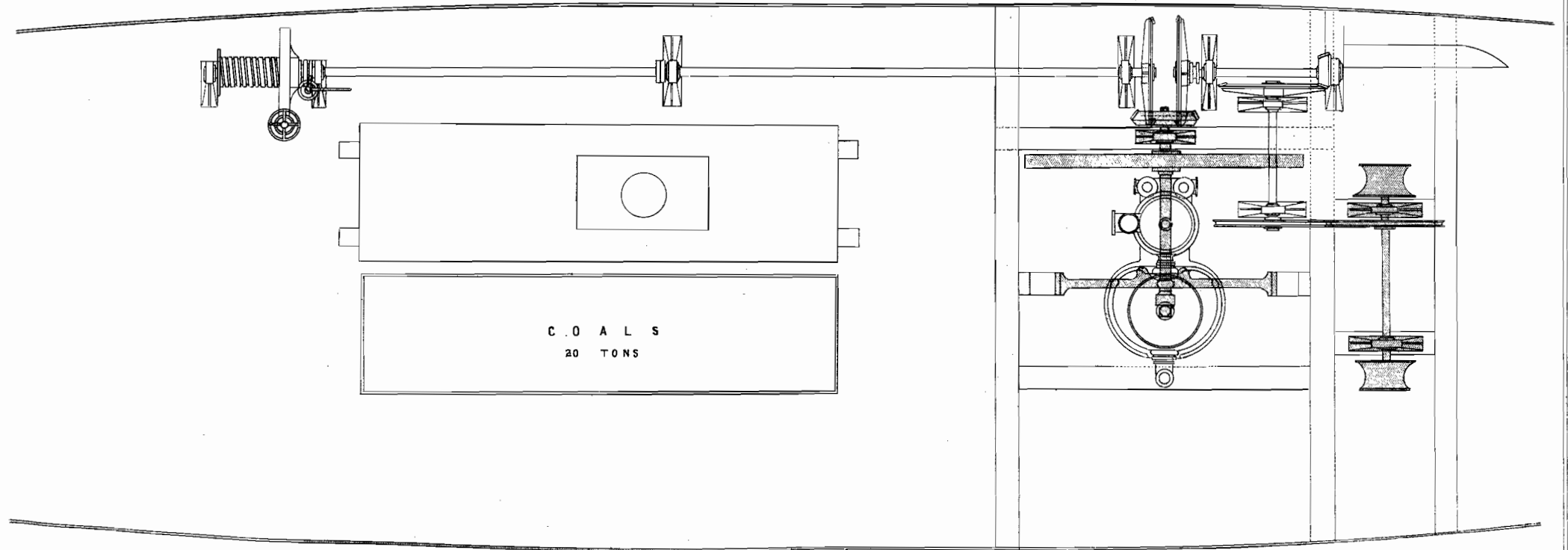
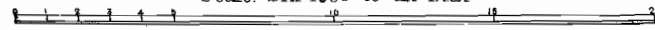


DREDGER FOR VICTORIA

(SIGNED) GEORGE RENNIE & CO LONDON.
DECEMBER, 1854.

Length 90 feet
Breadth 23 "
Draught of Water 4 "

Scale: Six feet to an inch



Lithographed at the Surveyor General's Office Melbourne May 3rd 1855.
by W^m Austin, Draftsman.

No. 1.

5, Cannon Row, Westminster,
22nd December, 1854.

SIR,

I have the honor to report to your Excellency that, in accordance with the intention expressed in my letter by the last mail, I started for Pembroke on Saturday, 9th December, and remained there until Thursday, the 14th December, having on the morning of that day concluded all the necessary arrangements with Mr. Lang about the internal fittings of the steamer. Having since received from Mr. Lang a scheme of scantling and a sufficiency of drawings to send out for tenders, I have requested Mr. Barnard to do so, and the tenders were desired to be sent in by to-morrow; but, as the builders requested a longer time to go minutely into the specification, Mr. Barnard has extended the time to Thursday, 28th December. By the next mail I hope to send your Excellency an account of the tenders, and a copy of the specification, &c.

Mr. Lang has promised to let me have a set of drawings to send out to your Excellency, which I will forward by the earliest mail after they reach me.

(Signed)

I have, &c.,
W. N. LOCKYER,
Commander, R.N.

To His Excellency Sir Charles Hotham.

No. 2.

5, Cannon Row, Westminster,
2nd January, 1855.

SIR,

I have the honor to report, for the information of your Excellency, that the ship *Olivia*, having on board the machinery of the Dredging Vessel, and the engineer and men who have been engaged to put them together in the Colony, sailed for Melbourne, the 31st December, 1854. Lists are enclosed of the men and of all the articles shipped in the *Olivia*. There are a few things connected with the Dredge not quite ready to send, but they will be forwarded as soon as possible, and will be in the Colony before they are wanted to complete the vessel. I trust that the Dredging Vessel, the Machinery, and the Punts, will turn out well and to the satisfaction of your Excellency.

(Signed)

I have, &c.,
W. N. LOCKYER,
Commander, R.N.His Excellency Sir Charles Hotham, K.C.B.,
&c., &c., &c.

(Copy.)

PARTICULARS of Dredging Machinery, Engine, and Extras, shipped on board the *Olivia* by George Rennie and Co.,
1st January, 1855.

Nos.								Tons.	cwts.	qrs.	lbs
65	1	Shoe for ladder, with strap, gib and key	...	...	...	...	...	0	10	3	0
66	1	Hanging frame, with half brass cap, bolts and nuts	...	...	...	...	...	0	16	2	0
67	1	Reel, complete	...	...	...	...	...	1	16	0	0
68	1	Shaft for lifting gear	...	...	...	...	...	0	9	0	14
69	1	Ditto ditto	...	...	...	...	...	0	8	1	14
70	1	Shaft and pinion for advancing gear	...	...	...	...	...	0	4	1	0
71 & 72	2	Shafts for ditto	...	...	...	...	...	0	6	1	0
73	1	Vertical shaft	...	...	...	...	...	0	17	2	0
74 to 76	3	Plummer blocks with brasses, caps, bolts, and nuts for driving shafts	...	...	...	...	...	0	18	2	0
77	1	Inner hanging plate for ladder	...	...	...	...	...	0	8	0	0
78 & 79	2	Sole plates for plummer blocks of driving gear	...	...	...	...	...	0	6	0	0
80 & 81	2	Driving shafts	...	...	...	...	...	3	7	3	0
82 to 87	6	Brackets with brasses, caps, bolts, and nuts, complete for advancing gear	...	...	...	...	...	0	18	0	0
88	1	Barrel, with friction cone for lifting gear	...	...	...	...	...	0	19	2	0
89	1	Step with brass and set screws, steel toe piece for vertical shaft	...	...	...	...	...	0	5	2	0
90	1	Cylinder with bottom, cover, gland, bush slides, slide casings, and covers complete	...	...	...	...	...	1	12	1	0
91 & 92	2	Halves of fly wheel	...	...	...	...	...	5	5	3	0
93 & 94	2	Capstan heads for advancing gear	...	...	...	...	...	0	12	0	0
95	1	Shoe with strap, gib, key, and bolt for ladder	...	...	...	...	...	0	11	0	0

PARTICULARS of Dredging Machinery, &c.—Continued.

		Tons. cwt. qrs. lbs.		
96 & 97	2	Bottom shoes for ladder, with caps, studs, nuts and bearing blocks	...	2 12 3 0
98	1	Sole plate and plummer block for crank shaft, with brasses, cap, bolts and nuts	...	0 10 0 0
99	1	Plummer block with brasses, cap, bolts and nuts, for driving gear...	...	0 3 3 0
100 to 103	4	Brackets with brasses, caps, bolts and nuts for advancing gear	...	0 11 0 0
104	1	Bevel wheel for vertical shaft	...	0 11 2 0
105	1	Case containing—4 columns, 1 eccentric rod with strap bolts and nuts for slide, 1 ditto for feed and bilge pump, 1 shaft with cone and wheel for lifting clutch of vertical shaft, 1 pinion and shaft for ditto, 1 shaft and lever for clutch of break gear, 1 shaft for break, 1 shaft and lever for advance gear, 1 air pump rod and joint with nut, 2 copper waste water discharge pipes, 3 ditto steam pipes and 18 bolts and nuts, 2 ditto internal steam, 2 ditto for blow-off, 2 ditto for hand pump, 5 ditto feed pipes, 1 ditto for bilge suction, 1 ditto for bilge discharge, 1 ditto for injection, 2 ditto for waste steam, 1 starting lever, 1 rod lever and joint for safety valve, 1 rod and handle for ditto, 1 spanner for friction cone, 1 wheel for break lever, 1 clutch and joint for advancing gear, 2 packing screws for shoes, 1 lever for advancing gear, 1 ditto for lifting gear, 2 spanners for shoes, 2 safety valve weights, 1 stud for lifting clutch, 1 spanner for piston, 1 spanner for head stock bolts, 1 ditto for columns, 1 box spanner for air pump, 1 ditto for piston, 2 rings, 2 dowells and 4 keys for fly wheel, 1 brass eccentric for working air pump, 1 spare bucket, and guard for air pump, 1 pricker, 1 rake, 1 slice	...	1 15 2 0
106	1	Bevel wheel and friction cone for driving gear	...	0 12 1 0
107	1	B | M wheel for ditto	...	1 6 2 0
108 & 109	2	B | T wheels for advancing gear	...	0 10 2 18
110	1	B | T wheel for lifting gear	...	0 5 1 9
111 & 112	2	chain pullies for ditto	...	0 7 0 0
113	1	Entablature	...	0 8 0 0
114	1	Sling with 2 pins and keys for ladder	...	0 2 2 0
115	1	Bearing frame with keys for trunnion bolts, holding down bolts for air pump glands and bushes for feed and bilge pumps with bolts and nuts complete	...	0 14 3 0
116 & 117	2	Sides of reel for ladder	...	0 19 1 0
118	1	B | T pinion for vertical shaft	...	0 10 2 0
119	1	Clutch for ditto	...	0 5 2 0
120	1	Air vessel with 4 $\frac{1}{2}$ -bolts and nuts	...	0 4 2 0
121	1	Case containing 4 bolts for stay to head of governor spindle, 2 ditto to step of vertical shaft for clutch gear, 2 ditto for bracket at head of vertical shaft of clutch gear for advancing motion, 1 ditto for step of vertical shaft for clutch gear, 4 ditto for chains to horizontal shaft for clutch gear, 4 ditto for bracket to head of vertical shaft for clutch gear, 4 ditto for chains to horizontal shaft of safety valve gear, 16 ditto for holding down standards of advancing and winding up gear, 2 ditto for middle bed plate for cast iron shaft bearing, 2 ditto for bed plate for main engine shaft bearing, 2 ditto for plummer block of vertical shaft, 12 ditto for bed plate and wood step to ditto for main bearing of C.I. shaft next mortice wheel, 3 ditto for cap bolts for plummer block of vertical shaft, 2 ditto for main bearing of engine shaft, 8 ditto for bottom of bed plate for main bearing of engine shaft, 5 ditto for face of main bracket next ladder, 8 ditto for ends of bed plate for engine shaft main bearing, 2 ditto for bottom of main bracket next ladder, 8 ditto for deck standards of advancing gear, 2 ditto for overhanging frame, 2 ditto for strap to blocks of lifting tackle, 8 ditto for ends of headstock, 2 holding down ditto for main plummer block of C.I. shaft next mortice wheel, 12 holding down bolts, 16 ditto for standards of break gear, 91 bolts and nuts for A. frame, 4 straps for ditto, 1 lever and 1 joint for lifting gear, 2 brackets for ditto, 2 clutches or lifting and advancing gear, 1 bracket and joint for ditto	...	0 16 2 0
122	1	Plummer block with cap brasses, bolts and nuts for vertical shaft	...	0 4 2 2
123	1	Air pump and cover with bolts and nuts, bucket and guard, foot and delivery valve, seats and guards...	...	0 14 0 0
124	1	Shaft and crank with nut for engine	...	0 7 1 0
125 to 128	4	Bars for reel	...	0 8 0 0
129	1	B | T pinion for advancing and lifting gear	...	0 0 2 0
130	1	Case containing 1 piston rod	...	0 2 2 0
131	1	Case containing—1 lathe with tools complete, 2 rivet forges complete, 1 pair bellows with frame and rackstaff for smith's forge, 1 vice, 5 bottom tools, 3 dollys, 3 fullers, 5 top tools, 3 sets hammers, 3 punches, 2 flatters, 8 rod chisels, 6 pair tongs, 1 rake, slice, and pricker, 6 pair rivet tongs, 24 drills, 24 caulking tools, 24 hand chisels, 6 rod chisels, 1 shifting spanner, 6 rhymer, 2 wrenches, 1 gross washers assorted, 11 hand tools, 12 rivetting hammers, 6 hand hammers, 2 smith's hammers, 5 flogging hammers, 3 falls for blocks, 3 pair blocks, 3 sledge hammers, 3 holding up hammers, 12 shovels, 1 pot and ladle, 3 lamps, 2 ratchet braces, 2 crank ditto, 1 drill post, 1 set of spanners, 1 oil tank, 3 tire irons for forge, 1 set stocks and dies, 1 $\frac{1}{2}$ cwt. borings, 14 lbs. iron and brass wire assorted, 2 half brasses for connecting rod, 4 valves for feed and bilge pumps, 4 half brasses for trunnions, 56 lbs. sheet iron, 21 lbs. mercury, 24 rivet plates, 1 screw jack, 120 bolts and nuts assorted, 9 vulcanized India rubber valves for air pump	...	1 18 0 0
132	1	Case containing—1 piston, 1 safety valve casing, 2 feed and bilge pump plungers, 1 trunnion steam pipe, 1 feed valve, 2 balls for governor, 2 brackets for ditto shaft, 2 oil cups for main bearings, 1 piston rod nut, 1 gland for cylinder cover, 1 bracket for lifting gear, 2 ditto for safety valve shaft, 1 ditto for advancing shaft, 1 column for break gear, 1 ditto for throw out gear, 1 air pump trunk, 1 eccentric for air pump, 1 ditto for slide, 1 ditto for feed and bilge pump, 1 strap and pulley for lifting gear, 2 springs for relief valves, 1 feed valve box, 1 crank shaft bearing with bolts and nuts, 1 stud and lever for feed and bilge pump, 1 B | T wheel for governor, 1 hand wheel for break, 1 guide for valve motion, 1 injection cock and index plate, 4 standards for governor gear, 6 levers for ditto, 1 handle for ditto, 2 brackets and rod for throttle valve, 1 spindle with joints, brasses, rods, and pinion for governor gear, 1 Kingston valve with stop cock for injection, 1 blow off ditto, 1 hand pump ditto, 1 bilge valve box, 2 trunnion bearings and caps with bolts nuts and oil cup covers, 1 cock for feed pump, 2 ditto for slide casing, 3 gauge cocks, 2 rods and handles for cocks to slide casing, 1 set water gauges, 1 cock for cylinder, 2 relief	...	

PARTICULARS of Dredging Machinery, &c.—Continued.

		Tons. cwt. qrs. lbs.			
valves for ditto, 1 grease cup for ditto, 2 glands for slide spindles, 18 tubes for oil cups, 1 oil cup for eccentric, 1 oil cup cover for main bearings, 1 exhaust pipe, 2 weigh shaft levers with brackets, studs, and oil cups, 2 blocks for sweeps, 2 safety valves, 2 guide brackets for slide spindles, 2 ditto spindles, 1 counter balance for ditto, 1 stud and nut for starting lever, 1 ditto for eccentric, 1 starting link, 1 throttle valve and seat, 1 shifting valve, 1 feed pump valve box, 1 piston-cross head, 1 hand pump and lever, 1 gland for air pump cover, 1 bracket for governor spindle, 1 spanner for blow off, 1 quadrant for starting lever, 1 mercury gauge, 1 pipe with cock for ash pit		1	15	2	16
133	1 Grindstone and frame	...	...	...	0 2 1 0
134 & 135	2 Casks of red and white lead	...	...	...	0 4 1 0
136	1 Forge	...	...	...	0 2 3 0
137	1 Anvil	...	...	...	0 2 3 18
138 & 139	2 Ash buckets and 4 pails	...	...	...	0 1 1 0
140 to 145	6 Spare buckets	...	...	...	1 0 3 0
146 & 147	12 Ditto links in 2 bundles	...	...	...	0 5 0 0
148 & 149	2 Spare sides of reel	...	...	...	0 19 2 0
150 to 153	4 Ditto bars for ditto...	...	...	...	0 8 0 0
154 to 156	3 Bundles of ditto iron	...	...	...	0 6 2 0
157	1 Treddle and board for lathe	...	...	...	0 0 2 0
158	1 Bundle of two pieces of break band	...	...	...	0 1 0 0
159	1 Cask containing—1½ cwt. spun yarn, 1 bear and punches, 6 shackles for anchors, 2 boxes of pins and punches for ditto, 1 bag of pins for spare dredging buckets, 1 cwt. of steel assorted	...	...	...	0 7 0 0
160 & 161	2 blocks for lifting ladder	...	...	...	0 4 1 0
162 & 163	2 Anchors	...	...	...	1 0 0 0
164	1 Kedge	...	...	...	0 3 0 0
165	1 Crab	...	...	...	0 8 0 0
166 & 167	2 Chains	...	...	...	3 15 0 0
168	1 Case containing—3 planés, 12 tools for turning wood, 1 breast brace and bits, 4 chisels, 1 gouge, 2 screw tools, 1 hand saw, 1 axe, 1 adze, 1 frame saw and blades, 3 soldering irons, 1 rabbit plane, 3 bradawls, 3 gimlets, 6 augurs, 1 pair pincers, 1 pair plyers, 2 pair compasses, 1 gallon measure, 1 quart measure, 1 Salter's spring balance, 4 hydrometers, 2 thermometers, 1 Bourdon's gauge, 1 tallow pint syringe, 1 copper tallow kettle, 28 lbs. spelter solder, 8 lbs. borax, 7 lbs. sulphur, 2 lbs. of sal-ammoniac, 8 lbs. long hemp, 12 gauge glasses, 36 files, 7 lbs. solder, 2 lbs. borax, 1 hand vice	...	...	...	0 3 0 0
169 & 170	2 Bundles spare plate	...	...	...	0 10 0 0
<hr/>					
49 16 0 7					

List of men engaged by Edward Barnard, Esq., Agent General for Crown Colonies, to proceed to Victoria to put together the Dredging Vessel and her machinery, and the six Mud Punts.

James Bremner, engineer, Foreman
Peter Porter, engineer
Lambert Weston, smith
William Coates, hammerman

L. Warren, boilerman
E. Barry, "
E. Wood, "

(Signed)

W. N. LOCKYER,
Commander, R.N.

No. 3.

5, Cannon Row, Westminster,
2nd January, 1855.

SIR,

I have the honor to enclose for the information of your Excellency the copy of the specification of the Dredging Vessel and her machinery, and the specification of the six Mud Punts. I also beg to enclose a *drawing of the machinery of the Dredging Vessel.

(Signed)

I have &c.,

W. N. LOCKYER,
Commander, R.N.

To His Excellency Sir Chas. Hotham, K.C.B.

* Plan detached for facility of reference.

SPECIFICATION of Steam Engine and Dredging Machinery for the Government of Victoria, in Australia.

Steam Engine.—The steam engine to have one cylinder of 31 inches diameter and 2 feet 6 inches stroke on the oscillating principle, the piston to have metallic packing and the cylinder to have two slides, revolutions of engine shaft per minute 32. The main shaft, piston rod, crank and air pump connecting rod to be of wrought iron. The air pump to be of brass as also the bucket, foot and delivery valves, the valves to be fitted with vulcanized India rubber. The feed and bilge pumps to be fitted with brass plungers and valves. The hand pump for filling the boiler and pumping on deck to be of brass. The steam feed, bilge, and other pipes to be of copper.

Boiler.—The boiler to be made of the best Staffordshire iron on the return flue principle. The thickness of plates to be as follows, viz.: shell 3-8, flues 5-16, furnaces top 3-8, sides 3-8, bottom 3-8. The total firegrate surface to be 22.5 square feet. The total heating surface 450 square feet.

Machinery.—The first motion wheel to be of cast iron, pitched and turned; the wheel to be 3 feet 10 inches diameter, geared with horn beam; the pinion to be 3 feet 2½ inches diameter, to be fitted with a friction cone. The second motion wheels to be pitched and turned; the wheel to be geared with the best horn beam; diameter of wheel 8 feet 3½ inches, the pinion 3 feet 1½ inches diameter. The vertical shaft to be of wrought iron turned and fitted with brass bearings. The tumbler shaft to be of cast iron with a cast iron reel. The ladder to be supported by wrought iron slings, and fitted at the lower end with tumbler and shaft of cast iron. Two 3-inch set

A.—No. 79. b.

SPECIFICATION of Steam Engine and Dredging Machinery.—*continued.*

screws with gun metal nuts and bushes, the rollers on the ladder to be of cast iron; the bearings to be turned. Length of ladder to be 47 feet to dredge in a depth of water of 20 feet. The buckets to be of wrought iron, with wrought iron chains; all the holes to be bored and bushed with hardened steel. The pins to be of steel and hardened. The buckets to deliver about 80 cubic feet per minute. The blocks for lifting the ladder to be fitted with 3 and 4 turned cast iron sheaves, and furnished with proved $\frac{3}{4}$ -inch chain. The crab for lifting the ladder to be fitted to work by the vertical shaft and provided with a clutch and break wheel with suitable levers on deck. The wheel and pinion for advancing the ship to work in the rough; the diameter of wheel 4 feet 10 inches. The pinion 1 foot 6 inches. The advancing motion to be worked by the vertical shaft with suitable clutches for disconnecting.

SPECIFICATION of an Iron Dredging Vessel.

Dimensions.—Length between perpendiculars 90 feet, length of keel for tonnage 75 feet, width of beam 23 feet, depth of hold 8 feet 6 inches, burthen in tons 218, 62-94.

Frames.—The frames to be of angle iron, 3 x 2 $\frac{1}{2}$ to be placed 18 inches from centre to centre.

Keel Stem and Stern.—The keel stem and stern to be formed of $\frac{1}{2}$ -inch plate.

Rudder.—The rudder to be made of $\frac{1}{2}$ inch plates and the post to be 3 inches diameter.

Plates.—All the plates to be of best Staffordshire iron, the first two strakes to be $\frac{3}{8}$ -inch thick from stem to stern, the third and fourth strake to be 5-16 inch thick, the remainder to be $\frac{1}{2}$ -inch thick, except the wale strake, which is to be $\frac{3}{8}$ inch thick. All the plates to be as near 8 feet long as possible and the joints to be carefully broken. Sleepers for supporting engine and boiler to be made of 5-16-inch plates. The cast iron hawser pipes to be eight in number, 5 inches in the bore, let into the stanchions and well fastened with bolts flush outside and nut inside.

Ladder.—To be made of the best pine.

Bulkheads.—One forward and one aft, the bottom plates to be $\frac{1}{2}$ -inch and the top 3-16 inch thick, to have No. 3 = 2 x 2 x $\frac{1}{4}$ -inch angle irons worked diagonally across each bulkhead, the whole of the frames and plates to be punched fitted and put together, to be marked painted and packed ready for shipment, with the requisite quantity of bolts, nuts, rivets, cotters, and pins for putting them together.

SPECIFICATION for six iron Mud Hopper Punts.

Each punt to 50 feet long, 17 feet beam, 6 $\frac{1}{2}$ feet depth, to be capable of containing 30 tons of mud. The frame to be 18 inches apart from centre to centre of angle iron 2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ inches. The whole of the plates to be not less than $\frac{1}{4}$ -inch thick. The well to be made of $\frac{1}{4}$ -inch plates strengthened by angle iron. The whole of the frames and plates to be punched fitted and put together, to be marked painted and packed ready for shipment, with the necessary quantity of bolts, cotters, pins, and rivets for putting them together.

The following articles to be also supplied to each Hopper Punt.

- 1 Cast iron trap
- 1 Single purchase crab, with sufficient chain to shut trap
- 4 Wood towing bits
- 4 3-inch tow ropes, 60 fathoms
- 2 Anchors
- 4 Poles, 20 feet long
- 2 Pairs of sweeps
- 2 Chains, 30 furlongs, 5-8 inch

Two of the punts to be also fitted each with a hand dredging bucket or spoon, with the necessary tackle for the same.

EXTRA List of Tools and Spare Gear for Dredging Machinery.

- | | |
|---|---|
| 6 Buckets | 1 Set of spanners |
| 6 Steel cutters or mouth-pieces for buckets | 1 Handsaw |
| 12 Double and 12 single links | 1 Axe |
| 1 Reel complete | 1 Melting pot and 1 ladle |
| 1 Set of brasses for connecting rod | 3 Soldering irons |
| 1 Bucket and guard complete for air-pump | 1 Oil tank and tap |
| 1 Vulcanized India rubber foot valve | 1 Copper kettle |
| 1 Ditto bucket. | 4 Wrought iron pails |
| 1 Ditto delivery valve | 2 Anchors 10 cwt. each |
| 1 Set of feed and bilge pump valves | 1 Kedge |
| 1 „ of fire-bars and bearers | 150 Fathoms of 1-inch chain |
| 1 „ of trunnion brasses | 28 lbs. Spelter |
| 2 „ of India rubber valves for one engine | 8 „ Borax |
| | 7 „ Sulphur |
| | 2 cwt. White lead |
| | 2 „ Red lead |
| | $\frac{1}{2}$ „ Cast iron borings |
| | 2 lbs. Salammonia |
| | $\frac{1}{2}$ cwt. Spun yarn |
| | 8 lbs. Long hemp |
| | 56 „ Sheet lead |
| | 14 „ Quicksilver |
| | 12 Shovels, trimming and firing |
| | 56 lbs. Shear steel |
| | 5 cwt. Round iron |
| | 2 Thermometers |
| | 4 Hydrometers |
| | 2 Ash buckets |
| | 6 Hand hammers |
| | 3 Planes, viz : 1 jack, 1 trying, and 1 smooth |
| | 3 Gimlets, 3 bradawls, 3 chisels |
| | 1 Engine room lamp |
| | 2 Gauge glass lamps |
| | 1 Adze |
| | 6 Augers, 1 pair pincers, 1 pair plyers, 1 pair compasses |
| | 1 Gallon measure |
| | 1 Quart ditto |
- Tools and Stores.*
- 1 Set of taps and dies
 - 1 Smith's hearth complete with tools
 - 3 pair of blocks and falls, viz. :—
 - 1 3 ton ditto ditto
 - 1 2 ton ditto ditto
 - 1 1 ton ditto ditto
 - 1 Screw jack
 - 1 7-inch lathe with back motion, iron bed, slide rest, &c.
 - 1 Bench vice, 1 hand vice
 - 1 Crank and 2 ratchets
 - 1 Double purchase crab
 - 1 Grindstone and frame
 - 3 Dozen of files various
 - 3 Hammers
 - 10 cwt. of Plates
 - 100 Hornbeam cogs
 - 120 Bolts and nuts various
 - 144 Washers
 - 12 Tubes for gauge glasses
 - 12 Steel chisels
 - 12 Steel drills
 - 1 Shifting wrench

EXTRA List of Tools and Spare Gear.—*continued.*

1 Salter's spring balance	6 Pairs rivet tongs
1 Pint syringe	12 Hand chisels
14 lbs. Iron and brass wire assorted.	6 Rod ditto
	24 Caulking tools
	6 Rhymers
	2 Wrenches
	24 Rivet plates
	12 Drills
	1 Crank brace
	1 Ratchet ditto
	2 cwt. Shear steel and round iron assorted.

Tools for putting together Punts and Dredging Vessel.

1 Bear
2 Rivet forges complete
12 Rivetting hammers
3 Hand hammers
3 Flogging ditto
3 Holding up ditto
3 Dolleys

No. 4.

5 Cannon Row, Westminster,
3rd January, 1855.

SIR,

I have the honor to enclose for the information of your Excellency a copy of the specification for the Screw Steam Sloop. The tabular form for the standing and running rigging, blocks, &c., I am unable to send by this mail, but will do so by the first opportunity.

(Signed)

I have &c.,
W. N. LOCKYER,
Commander, R.N.To His Excellency Sir Chas. Hotham, K.C.B.,
&c., &c., &c.SPECIFICATION for building a Screw Steam Vessel to be named the *Victoria* of the following dimensions, viz. :—

Length between the perpendiculars 166 feet, keel for tonnage 149 feet 9½ inches, breadth extreme 27 feet 2 inches, breadth for tonnage 27 feet, ditto moulded 26 feet 3 inches, depth in hold from lower side of deck to upper side of skin 16 feet, burthen in tons No. 580.

SCANTLINGS, &c.

Keel.—English elm, sided in midships as shewn on the section, forward and aft 7 inches, moulded as shewn on the section.

False.—Keel 3 inches deep.

Keelson.—Teak sided, 1 foot 2 inches moulded, 1 foot 3 inches, bolted with copper bolts of ¾-inch diameter not more than 18 inches apart.

Stem.—English oak, sided at the head 12 inches, at the heel 7 inches, moulded as shewn on the drawing.

Stemson.—English oak, as shewn on the drawing.

Stern Post, after.—One teak, sided at the head 12 inches, moulded as shewn on the drawing. The foremost, stern and inner posts English oak, as shewn on the drawing and sketch.

Floor Timbers.—English oak, sided in midships, 12 inches forward, and aft 6 inches, moulded at the throat 12 inches, at the head 5 inches, to be 2, 3, and 4 feet apart from centre to centre as shewn on the drawing, the ship to be filled in solid high enough to run the water to the timbers the whole length of the engine room.

Bent Timbers.—Wide in midships, 8 inches forward and aft 6 inches; thick in midships, 6 inches forward and aft 6 inches; forward and aft 5 inches to be placed midway between the floors and to be of sufficient length to work from keel to gunwale.

Rough Tree Timbers.—Teak; sided at the gunwale 6 inches, at the rough tree rail 4½ inches; moulded at the gunwale 4½ inches, at the rough tree rail 3½ inches; those for ports and boat davits to be sided at the gunwale 8 inches, at the rough tree rail 6 inches, and to be African oak.

Diagonal Plank.—Mahogany. Two thicknesses 1½ inch each thickness, the outer thickness to be fastened to the inner one with copper nails well clenched on washers, and to be caulked before the plank of the bottom is brought on. Oiled paper well coated with white lead to be placed between the two thicknesses of diagonal planking. The keel in midships to be worked in two thicknesses as shewn on the section to allow of the diagonal plank passing under the bottom.

Bottom Plank.—Mahogany. Thick, 2 inches; hair felt, the thinnest made, to be placed between the bottom plank and the outer diagonal thickness.

Wales, Sheerstrake and Topside.—Mahogany, thick 3 inches, to taper forward and aft to 2 inches. All the fastenings (except the up and down bolts in the iron knees, which may be of iron) to be of copper, driven through and clenched on rings or washers, the nail fastening in the wales' bottom and top sides to be not more than 12 inches apart, and to have such intermediate fastenings as may be deemed necessary, the nail holes and heads of bolts to be properly stopped with cement and the bottom to be planed before coppering.

Gunwale Waterway.—And binding strake as shewn on the section, Dantzic oak or teak.

Upper Deck.—Thick 3 inches, Dantzic fir, the strakes not to exceed 7 inches in width, to be free from knot or shake, well seasoned and no sap to be worked in the edges of them. 4 strakes on each side in the range of the chain cables and the 3 strakes next the waterway to be Dantzic oak crown plank. The deck to be fastened with iron nails to be punched down ¾ inch, marine glue to be run in on the heads of them, and plugs cut with the grain of the deck, driven into the holes, the deck to be paid with Jeffrey's marine glue for 14 feet round the binnacles, the deck to be fastened with mixed metal nails.

Upper Deck Shelf-piece.—Wide 15 inches, teak, to taper forward and aft to 12 inches deep, 10 inches bolted with copper bolts of ¾ inches diameter, not more than 18 inches apart. Clamp &c., under shelf as shewn on drawing.

Lower Deck.—Dantzic fir, thick forward 2½ inches, abaft 2 inches, the strakes not to exceed 7 inches in width, to be dry, well seasoned, free from sap, and fastened with iron nails punched down ½ inch, lower deck beams 5 inches square.

Lower Deck, Shelf-piece.—Teak, as shewn on the section. Clamp under shelf, ditto.

Upper Deck Beams.—Fir, teak, and mahogany, sided 6 inches, moulded 9 inches, and space as shewn on the drawing.

Iron Knees under Beams.—To be about ¾ cwt. each and spaced as shewn on drawing.

Catheads.—Sided 13 inches, moulded 13 inches, English oak, to be fitted with iron whiskers with rollers for guys as may be required by Commander Lockyer, R.N.

Engine Room Bulkheads.—Teak, two thicknesses, diagonal ¾ inch, each thickness to be screwed to the vessel's side, bottom, &c., as shewn on the section, dry hair felt, the thinnest made, to be placed between the two thicknesses of bulkhead and to be well coated with white lead, the fore bulk head to be made water tight, engine and boiler bearers, teak, as required by the engineers.

The vessel to be docked after launching at the builder's expense, and to be coppered with 24 oz. copper to the copper line, as shewn on the profile, the copper on the stem to be 60 ozs. The capstan to be fitted on Brown and Harfield's Patent, with their patent deck stoppers, and to have riding bits on the Honorable Admiral Elliott's plan, and compressor to the beam, as used in H.M. Navy, and to have such stopper bolts, ring, eye and other bolts, cleats, &c. as may be pointed out by Commander Lockyer, R.N.

Boats.—Two 28 feet life boats, one whale boat of 24 feet, one gig of 25 feet, and one dingy of 12 feet. All boats to be fitted with such oars, masts, sails, &c., as may be required by Commander Lockyer, R.N.

Pumps.—Downton's Patent, one of 7 and two of 5 inches diameter, to be fitted as fire engine and wash deck pumps, and to communicate with each separate compartment of the ship for the purpose of pumping out the holds and drawing water from the tanks.

Water Closets.—Downton's patent, three in number, and seats in the head for the crew as usual.

Tanks.—In forehold 4 of 210 gallons each, and 4 wing tanks, 1 tank 100 gallons on deck, and 2 tanks in the run abaft, and such oil, tallow, and paint tanks, as may be required by Commander Lockyer, R.N.

Tube Scuttles.—Lang's, 5 inches diameter, one in each cabin, and on the lower deck forward, as shewn on the drawing.

Rudder.—To be fitted with Rapson's patent slide tiller, pintles, and Lang's tiller abaft the rudder, in case of the rudder head being carried away, also to have one spare tiller.

Galley.—With a complete set of cooking utensils to cook for 200 men, and to be fitted with Grant's distilling apparatus and tanks to ditto.

Boats Davits.—To have a swivel block, iron bound in the head, and to be placed as shewn on the drawing.

Masts to be fitted with Snow and Harris's lightning conductors, as usual in H. M. Navy.

Dimensions of Masts, Yards, &c.								Length.	Diameter.	
								FT.	IN.	INCHES.
Masts, Fore, from deck to tresseltrees	...	...	...	...	...	...	...	45	0	20
" " head	...	...	...	...	...	...	...	7	0	
" " housing	...	...	...	...	...	...	...
" " whole length	...	...	...	...	...	...	...
" Main, from deck to tresseltrees	...	...	...	...	...	...	...	50	0	20
" " head	...	...	...	...	...	...	...	7	0	
" " housing	...	...	...	...	...	...	...
" " whole length	...	...	...	...	...	...	...
" Mizzen, from deck to tresseltrees	...	...	...	...	...	...	...	34	0	16
" " head	...	...	...	...	...	...	...	5	6	
" " housing	...	...	...	...	...	...	...
" " whole length	...	...	...	...	...	...	...
Topmast, fore and main, from fid-hole to stops	...	...	...	...	...	...	...	23	0	10½
" top-gallant pole	...	...	...	...	...	...	...	10	0	
" royal pole	...	...	...	...	...	...	...	5	0	
" whole length	...	...	...	...	...	...	...	38	0	
Mizzen, from fid-hole to stops	...	...	...	...	...	...	...	23	9	8
" pole	...	...	...	...	...	...	...	4	0	
" whole length	...	...	...	...	...	...	...	27	0	
Yard, fore and main, whole length, yard arms included	...	...	...	...	...	...	...	56	0	13
" yard arms each	...	...	...	...	...	...	...	2	0	
Topsails, ditto, whole length, yard arms included	...	...	...	...	...	...	...	43	0	9½
" yard arms each	...	...	...	...	...	...	...	3	6	
Topgallant, ditto, whole length, yard arms included...	...	...	...	...	...	...	...	25	6	6
" yard arms each	...	...	...	...	...	...	...	1	0	
Gaffs, fore and main, whole length	...	...	...	...	...	...	...	27	0	7½
" mizzen, whole length	...	...	...	...	...	...	...	20	0	5
Boom, mizzen, whole length	...	...	...	...	...	...	...	30	0	8
" fore	...	...	...	...	...	...	...	32	0	9½
" main	...	...	...	...	...	...	...	36	0	10
Gaffs, trysail, fore and main, whole length	...	...	...	...	...	...	...	21	0	7
Bowsprit, without board	...	...	...	...	...	...	...	23	0	17½
Jib-boom, whole length	...	...	...	...	...	...	...	28	0	9

To have topmast and lower studding sail yards and booms, the lower rigging to be wire, to be set up with Rigmalden's, lanyards, plates, and Lang's eye plates to the channels, the rigging to be fitted with iron bound blocks of the best description as is usual in H.M. Navy, to have a purchase winch to the fore and main masts, and a metal spider hoop to the mizzen mast, and such awning hoops, crosstree &c, as may be required by Commander Lockyer.

Anchors.—Two Bower and Trotman's (improved Porter's) patent 14½ cwt. each, one stream 6 cwt., and one kedge 2½ cwt., the stock not included in the weight of the anchor, bouys and bouy rope.

Chain Cables.—Two 1½ inch diameter 100 fathoms each, stream cable ¾ inch, one hempen cable of 9 inches and cablets, one of 6 inches, one of 5 inches, and one of 3½ inches, and one cablet and anchor on grapnel for each boat.

(Signed) O. W. LANG.

Engine Room.—The engine room to be fitted with platforms where required, with store rooms and all requisite cupboards, drawers, desk, vice, cleats, eye bolts, iron goose necks, and with platform for oil tanks &c. Also to provide the necessary apparatus for getting the distilled water, and tanks for holding it.

Catheads.—To be of sufficient length to swing the anchors clear of the bow, they are to be properly hooped and sheaved, an iron whisker must be fitted for jib guys to each cathead with rollers, &c., complete.

Channels.—To have channels with all necessary ironwork for wire shrouds for the lower masts, including dead eyes, eye bolts, preventer eye bolts, backstay bolts, &c, and the number and station of the dead eyes as shewn in the drawing.

Hawse Pipes.—To have two, one hawse pipe in each bow, as shewn in the drawing, to have thick lead underneath properly flanged inside and outside.

Towing Timbers.—To have three pairs of towing timbers on each side, as shewn in the drawing, of African oak, secured in the usual way, each timber having an iron cap over it with a pin through the head.

Gangway and Accommodation Ladders.—The gangway and accommodation ladders to be properly fitted in the places shewn in the drawing.

Deck Fittings.—The decks are to be fitted with all the necessary hatchways, scuttles, carlines, comings, companion, staircases, ladders, sky lights, standard for compass, ventilators, gratings, &c., &c., as in the plan or as may be pointed out, and air scuttles will be fitted in the proper places.

Comings and Headledgers.—The hatchways to have oak or teak comings and headledgers, properly tailed into each other and standing ten inches above the deck, all gratings &c., to be properly fitted and finished with hatch bars and locks where required, and as Commander Lockyer may direct.

Mast Partners.—To have on the upper and lower decks proper and approved mast partners of English oak or E. I. teak, with carlines, cross pieces and corner chocks, all standing three inches above the deck.

Mast Steps.—To be placed as shewn in the draft.

Bowsprit Bitts.—To be fitted as required.

Steering Wheel.—To have double steering wheel of mahogany mounted with brass, placed where shewn in the drawing, strongly and handsomely made, fitted with a proper spindle and all the requisite blocks, chains, or ropes, iron tiller, (spare tiller), and all things necessary to complete it.

Riding Bitts.—Admiral Elliott's.

Capstan.—Capstan to be fitted on Brown and Harfield's patent principle, with their patent check stoppers.

Head.—To have a neat head fitted as shewn in the drawing, with proper seats, urinals, &c.

Figure Head.—The vessel is to be named "*Victoria*," the figure head must therefore be handsome and appropriate, as shewn in the drawing.

Stern.—To be elliptic, with neat plain moulding, like a Sloop of War, as shewn in the drawing.

General Arrangements for Lower Deck and Holds.—The decks will be fitted as shewn in the drawing, subject, however, to any slight deviations that may appear necessary to Commander Lockyer. The after cabins will be fitted in a superior manner, veneered with bird's eye maple and Spanish mahogany stanchion rails and styles, glass door handles and handsome finger plates, and gilt moulding round upper part. Bulk heads to be fitted with mahogany jalousies, shutters, &c., perforated zinc ventilators, &c., pantries, water closets, side cabins, &c., to be fitted according to the direction of Commander Lockyer. Bed berths to be fitted where required. Washstands, shelves, tables, chests of drawers, bookcases, &c., and every requisite fitting. The sofas, side boards, washstands, drawers, tables, &c., in the after cabins must be of a handsome and superior description.

The lower deck forward is to be fitted as shewn in the drawing. Iron cots for twenty-six men are to be provided to hang in the fore part of the deck. Mess tables, stools, &c., to be fitted in the places shewn in the drawing. Cabins are to be built on the after part of the lower deck, before the engine room, as shewn in the drawing, and they are to be completed in all plain fittings under the direction of Commander Lockyer, R.N. There is also to be a platform below the lower deck, as shewn in the drawing, and in the fore part of this are to be fitted store rooms for carpenter's, gunner's, and boatswain's stores, all having the requisite cupboards and shelves, with locks, keys, hinges, &c., complete; also bins must be fitted round the ship's side on this deck for sails, with all requisite locks, keys, and hinges. Reels are to be fixed and fitted in a convenient part of this deck for the lawsers, and a space for the hemp cable. Aft this deck the iron tanks are to be stowed, arranged and fitted to the form of the ship, as shewn in the drawing, so as to take up as little space as possible, and calculated to contain gallons of water; also space will be required for chain and shot lockers.

The after hold under lower deck is to have the requisite number of bulk heads, which are shewn in the drawing, to divide into spaces for store room, magazine, shell room (fitted with necessary places for cases and barrels), light room properly fitted with lamp, spirit room, room for dry provisions, and to be fitted with all necessary drawers, lockers, scuttles, bins, cants, &c., that may be required, or as may be otherwise directed; also the after-hold is to be fitted with a hanging deck as required and pointed out, and all necessary hatches, scuttles, &c.

The magazine passages are shewn in the drawing, and must be fitted as required, and all other fittings are to be done that may be required by Commander Lockyer.

Painter's Work.—To paint the ship within and without board, the cabins, the 'twcen decks to the lower deck, the masts, the boats and whatever spars may be wished, four times in the best oil colors; all the cabins before the engine room to be flatted or grained in any plain style that Commander Lockyer may direct.

Plumber's Work.—To find the sheet lead or copper, and lead or copper the galley deck, cants, scuttles, half-ports, companions, and other fixed stairs, bed of bowsprit under catheads. Also find and fix three of Downton's patent pumps, one of 7 inches diameter, discharging on deck and into bath, water closets, cisterns, and communicating with each separate compartment of the ship, for the purpose of pumping out the holds. To find also and fix all necessary piping for drawing water out of the tanks in the hold to supply tank on deck or steward's berth; to find all lead pipes required, and to find and fix three of Downton's patent water closets, with pipes and cisterns complete, and pipes from the boilers to the bath room with all necessary fittings.

Copper Work.—To work stout copper on all the bitt heads, on the top of the upper rail of head, and on the plank sheer at entrance, ports, or gangways, like that used in Her Majesty's Dockyards.

Joiner's Work.—All the wood work to be planed from the top of the rough tree rail to the lower deck, including the under sides and edges of deck planks, the beams, shelf pieces, half-beams, plank sheer, rough tree rail, and fitting caps and cases (reeading) to masts, all customary work about the head and stern.

To case in all pipes both within and without board; to build and fit up, under instructions, carpenter's and other store rooms, sail bins, lined with thin rabbitted deal, steward's rooms and pantries, safes, sheep pens, hen and goose coops, grain bins, arm racks for muskets and cutlasses, handsome binnacles with lamps, signal lockers, handsome end boards for spare spars, racks for engineer's tools, water closets between decks, seats of ease and urinals in the head. To fit up space for crew as may be directed with iron cots, benches, tables, &c., and as many half-inch hooks for hanging hammocks, as may be required on lower and first platform decks. To find and fit all ironmongery, such as smith's forge, locks, bolts, hinges, handles, hooks, finger plates, quadrants for supporting skylights and brass wire over glass, plate the bottom of the stand of the smith's forge with iron, tin the gallery where required, frame and panel round steam chest if necessary. To fit all ladders and companion staircase. To fit up on lower deck all cabins, pantries, water closets, bath-room, &c., and in the fore and after-holds, magazine, shell room, light room, spirit room, bread rooms, store rooms, sail room, wine bins, shelves, lockers, &c., as may be directed. To form air shoots both abaft and forward down to the hold. To find a ship's hearth. Two life buoys with fittings for fixing and letting go (the same as H. M. Navy) and to fit the ship up, fore and aft, as may be necessary, to the satisfaction and under the direction of Commander Lockyer, R.N.

Caulker's Work.—The ship, including all the decks, seams, and butts, to be completely caulked with as many threads of oakum as is usual with vessels in H. M. dockyards, and the seams to be paid with marine glue, and if found not to be properly done, the vessel to be re-caulked when necessary.

Glazing Work.—To glaze skylights and wherever glass may be required with the best plate glass, except the side or deck scuttles or ventilators, which must be of the thickness, &c., usual in the scuttles ordered, which are Lang's tube scuttles, the same as are used in H. M. service.

Sundry Fittings.—Metal spider hoops, with brass belaying pins to each mast, and hoops with hooks and rollers for awnings, a patent winch on fore and main masts, three of Downton's pumps, one of seven inches and two of 5 inches, with sounding tubes and gear complete; pump well, chain cables and shot lockers; galley deck properly covered with sheet copper or lead, cook's tables, &c., fitted. Bell with ship's name and date of year cast on it, and neat belfrey; small bell near wheel, eye plates for funnel stays. Topsail sheet bitts to each mast properly sheaved and fitted. Gallows, bitts, and cross pieces, warping blocks on each bow and quarter with scores in them. Two cast iron hawse pipes abaft; find and fix one of Brown's patent capstans and stoppers in each bow; stopper bolts of sufficient number on each side of the deck, an iron pipe of sufficient dimensions on each side of the deck with cast iron hoods over them for chain cables to pass through, and a compressor to each under the beam next to it; all belaying pins to be of galvanized iron or brass. Iron crutches for spare

spars; bucklers and hawse plugs, iron stern davits, and two pair of iron boats davits on each side with swivel blocks brass sheaved, spans and guys of davits to be chain, iron cranes for hoisting up ashes, iron crutches and goose necks for lower studdsail booms, and for boats to rest upon, as directed by Commander Lockyer. Iron knees on both sides of head knee for bowsprit shrouds, stanchions on knight heads for man ropes, chain slings for lower yards and heel of jibboom, patent trusses to lower yards, iron hoops with rollers on lower masts for topmast rigging, iron hoops round topmast for top-gallant rigging, and an iron hoop above the eyes of topmast rigging for spare blocks, as will be explained and pointed out by Commander Lockyer. Tunnels for mast heads, brass gratings to all skylights, all hinges for doors, flaps, &c., above the upper deck to be of brass. To find and fit a fish davit of sufficient strength with proper tackle and topping lift, anchor shoes, iron plates on plank sheer, and rough tree rail in wake of anchors; cat stopper and shank painter chains, &c.; iron cranks between the beams on lower deck and orlop deck for stowing capstan bars, spare stores, &c., and battens for cutlasses, &c., as will be pointed out; iron awning stanchions where requisite. iron and wooden stanchions in places where required; all requisite ring and eye-bolts for ports, stoppers, round the mast, between each shroud, and wherever else they may be found necessary in fitting the ship, either within or without board, scuppers, water closets, cisterns, wash deck pumps, &c. to be fitted and found by the builder. Iron shot racks round hatchways or wherever required. Complete the fittings for sweeps of pivot guns, both forward and abaft. All ironwork to be galvanized wherever it is possible.

Masts.—Lower masts to be complete in every particular and all fittings to be according to the wish of Commander Lockyer, R.N. All masts to be fitted with Harris's lightning conductor. The other masts to be of Norway red pine or equal thereto in quality. The vessel is to be rigged as a three masted schooner, she is to have topsails and top-gallant sails on both fore and mainmasts, and light courses for either bending or hauling out like a schooner. Crosstrees will be like skeleton tops, with fore part and grating for men to stand on.

Lower yards.—Chain slings, patent trusses, iron jackstays, iron quarter blocks for chain topsail sheets.

Topsail yard.—Fitted with the most approved parrel iron quarter blocks and iron jackstays and as many fittings of iron as possible.

Topgallant yards.—To be fitted with the most approved parrel iron jackstays, and as many fittings of iron as possible.

Gaffs.—The gaffs for the fore and aft foresail, mainsail and driver, will be fitted for bending the sails to them.

Booms.—Fore and main boom as well as a driver boom and a boom for stay foresail.

Trysail Gaffs.—Will be furnished and fitted for all three masts.

Studdingsail Booms.—Studdingsail booms will be fitted on both fore and main lower and topsail yards, and one spare set will be provided.

Jib-boom and Flying-boom.—Jib-boom and flying jib-boom will be in one.

Spare Spars.—She must have a complete set of spare spars, such as topmast, topsail and topgallant yard, jib boom, a hand mast, and a number of spars of different sizes for conversion into studding booms and yards, boat hooks, &c.

Sails.—Two suits of square and fore and aft sails complete, made of the best unbleached canvas, (double thread) one suit of spare studdingsails, one set of spare trysails. Staysails between the masts are to be fitted where required. All sails are to be fitted with points, earings, &c., ready for bending to the satisfaction and under the direction of Commander Lockyer.

Awnings.—Complete fore and aft, fitted under instructions, side curtains complete. The mode of fitting the awnings will be pointed out by Commander Lockyer.

Windsails.—For each hatchway fitted under instructions from Commander Lockyer.

Tarpaulins.—To be fitted to all the upper deck hatchways, and tarpaulin covers for spare spars, also for lower and topmast studdingsails, double mast coats, and covers for skylights; also painted covers for boats sails.

Rigging.—Lower and all standing rigging to be of wire rope. The topmast backstays, one at least must be of same size, or nearly, as lower shrouds. Topgallant backstay, one the same, or nearly, as topmast shroud. Running rigging to be of best Riga hemp, fully rove as directed, except in such cases as it will be found desirable to substitute chain.

Tackles.—All necessary tackles, luffs, burtons, jiggers, &c., are to be fitted and provided as will be pointed out by Commander Lockyer.

Blocks.—All to be either brass coated or brass sheaved, and iron bound in all practicable cases excepting where otherwise directed.

Tanks.—Iron tanks fitted to form of ship as shewn in the drawing. One to be fitted in some convenient place on upper deck to hold 100 gallons. Two to be fitted in the run, and two in the steward's berth, one for salt water and one for fresh, as well as an iron water filter.

Water Casks.—As many as may be required for watering ship, or as can be stowed conveniently, and of the sort and size to be determined on by Commander Lockyer.

Boats.—To be of the number and description named. They are to be completely fitted and found in every particular to make them ready for service. And it is desired that they may be built at Pembroke under the direction of Oliver Lang, Esq. The masts and yards of all the boats are to be fitted with the necessary rigging, and proper white line stops on yards for making up the sails. Travellers on masts to be leathered, slings of yards to be neatly fitted under instructions; halliards to be fitted double or single with or without whips as may be desired; all necessary iron hoops or goose necks, ring bolts, eye bolts, hooks for sheets, and tacks of sails, either on the masts, stem, bows, or in any places they may be required, and as will be pointed out. Pointed canvas covers for sails,

Oars.—One set and two spare ones for each boat, to be leathered and bound with stripes of copper on blades. crutches and yoke of gig and whale boat to be of brass or copper and iron crutches for other boats; also neat tillers; rudders to have round heads and to be fitted with lanyards; all crutches to be fitted with lanyards; gig and whale boat to have leather fenders, and the other boats sennet fenders; all the boats to be fitted with head and stern sheet gratings, appropriate painters, and each to have a canvas cover fitted under the direction of Commander Lockyer, R.N. The boats are to have two complete sets of oars and boat hooks, and four breakers slung and fitted, and each boat is to have an ensign and pennant staff, and although many small things may not be particularly named here, it is to be understood that the whole is to be completed in the most faithful and efficient manner by the contractor, and to the entire satisfaction of Commander Lockyer.

Armament.—The armament will be supplied by the Board of Ordnance, but the fitting of it on board is to be included in the tender and to be done to the satisfaction of Commander Lockyer.

The steamer is to be built under a shed according to the drawings and dimensions furnished by Oliver Lang, Esq, Master Shipwright of Her Majesty's Dockyard at Pembroke, and the specification appended by Commander Lockyer, R.N. As she will differ considerably from Lloyd's rules, a special survey must be held at the expense of the builder, and a certificate produced.

The builder will be required from time to time to furnish any drawings, tracings, &c., that may be required by the Engineer, the Board of Ordnance or Commander Lockyer.

Payment for the vessel will be made by the Agent General for the Crown Colonies in four equal portions, at the time appointed under the contract, provided Commander Lockyer shall report that the proper amount of work has been done, and done in a satisfactory manner. But it is to be distinctly understood that the payment will not be made if the construction and fitting of the vessel is not faithfully carried out to the satisfaction of the designer, O. Lang, Esq., and of Commander Lockyer.

The final payment will not be made until the certificate of Lloyd's Surveyor shall be produced, Mr. Lang have given his approval of the construction, and Commander Lockyer reported that the contract has been well and faithfully carried out, and that the vessel is complete in all her fittings and ready to proceed to sea. It is also to be

distinctly understood that although many small matters may have been omitted or overlooked and not mentioned in the specification, yet the steamer is in every respect to be well and perfectly fitted with every requisite for a thorough sea going sloop of war. In fact she is required to be a very superior vessel. All her spars, sails, rigging, iron work, and fittings of every sort are to be of the very best description that can be procured, and she is to be completed and ready to go to sea without any extra expense, excepting only such things as are particularly specified and mentioned here below. The contractor will not be required to furnish the armament which will be provided by the Board of Ordnance, but the fitting of on board the vessel will be included in the tender from the builder.

The moveable furniture of the cabins, the cabin stores, plate, bed and table linen, mattresses, nautical instruments, &c., are not to be furnished by the contractor.

No bill for extras will be recognised unless authority to the builder shall be produced in writing under the signature of Commander Lockyer, for such extras. As it is the desire and intention that this contract should be carried out in its integrity, the contractor must be prepared to furnish and fit the vessel in a most efficient and superior manner without depending upon getting payment at last for extras, as is a common practice. The Colonial Government through the Agent General does not bind itself to accept the lowest or any tender.

Security.—The contractor to give security for the due performance of the work as described in the drawings, scheme of scantling and specification, within the period named for the completion of the several works, and to give security for such sums of money as shall be advanced by the Agent General for the Crown Colonies during the progress of the work and assign the ship and such materials as are provided for the carrying on the same to the Agent General for the Crown Colonies for the Government of Victoria.

Penalty.—In the event of the contractors failing to perform the works in the time and according to the tenor of the specification, then the sum of _____ shall be paid to the Colonial Agent General as liquidated damages.

In the event of the works not being completed, and the ship safe afloat ready for sea, by or on the day of _____ then a further penalty of _____ per diem shall be paid by the contractor for each and every day she shall be detained beyond that time until the day of her being declared complete as required by the contract.

Inspection.—The Agent General for Crown Colonies, Oliver Lang, Esq., and Commander Lockyer, R.N., shall have power to inspect the works during their progress, or to appoint any one to inspect the same; and if any defective or improper workmanship or materials shall be found, the same is to be removed and made good at the cost of the contractor.

Alterations.—It is understood that if at any time during the progress of the work the Agent General, Oliver Lang, Esq., or Commander Lockyer, R.N., should require any alteration, that the same shall be made at a reasonable charge, without invalidating this agreement.

In case of Dispute.—In case of dispute between the parties hereto, the same shall be referred to three indifferent persons, one to be chosen by each party hereto, and the third shall be appointed by the two persons so chosen. All matters so submitted shall be decided with the least possible delay, and that decision shall be final and conclusive.

Fees.—The contractor is expressly forbidden to give any fee, gratuity, or reward, to any person or persons in the service of the Colonial Government for any favor shewn to him with regard to this contract, upon any pretence whatsoever.

Payment.—In consideration of the due and faithful performance of the works described, and the completion thereof by the _____ day of _____ the Agent General for the Crown Colonies engages to pay to the contractor the sum of _____ in the following manner:—

First payment—
Second payment—
Third payment—
Fourth and last—

(Signed) W. N. LOCKYER, Commander, R.N.