

sengers to and from India; and it will be of comparatively small service to sailing vessels of any considerable tonnage. The railway already supplies the wants of Indian passengers better than the Canal is likely to do. In point of time, the railway will always have a great advantage over the Canal, as Alexandria is reached nearly a day sooner on the route from Europe than Port-Said, and the journey by railway occupies little more than half the time likely to be required by the Canal. All that the Canal can save passengers is transhipment, and to those who have been weeks at sea, and have weeks of sea before them, landing is a pleasure, and a day or two in the famous land of Egypt is a coveted advantage. The difficulty as to sailing is, that they cannot safely navigate the Red Sea, where many of the channels or fairways are too narrow and tortuous to admit of tacking. The traffic through the Canal is likely, therefore, to be confined chiefly to cargo carrying steamers. That class of vessels, however, is rapidly on the increase, and we are soon likely to see a greatly extended use of vessels using steam only as an auxiliary in a degree and manner suited to overcome the difficulties of the Red Sea navigation.

A main objection of Robert Stephenson and others twenty-five years ago was, that the Canal would not be largely available even for steamers, because a steamer from any British port to Bombay or any Indian port, could not carry coal sufficient for consumption. This was to a very great extent true at the time. It was (and is) also true indeed that steamers from this country make the much longer voyage round the Cape, and coal at ports by the way; but, from particular circumstances, coals at least used to be had very much cheaper on the long than on the short voyage. Sailing vessels to India, round the Cape, taking out finished goods and bringing home raw material, had often not much more than one-third freight on their outward voyages; and so their filled up with coal, carried at a rate in itself quite unremunerative. It is much the same through many parts of the East—as Java, to which Dutch vessels bring cargoes of bricks for nothing. This advantage was not enjoyed by the short overland route—so that there was a great deal in the objection that the short route was much more practicable for steamers than the long one. The objection, however, has now lost more than half its force, because steamers do not require now half as much coal as they did when the objection was made. Within these twenty or twenty-five years, there has been an improvement in marine steam-engines, gradual, silent, almost unobserved by the ordinary public, but so great in its results, as to amount almost to revolution in that department of the shipping trade. That improvement was not made at once nor by any one person—it grew slowly, and was tended by several hands. The latest if not also the largest contributions to the result have been made by the firm of Randolph & Elder, of Glasgow. That result is, that steamers fitted with those new engines, in their most improved form, can obtain equal results by a consumption of coal only one-third or even one-fourth of that required for the unimproved engines. The adoption of those engines is not yet very far from general, largely owing to the unimproved engines with which all but a few existing steamers have been supplied having become unsaleable; but ere long steamers as a rule are likely to be propelled at a third of their present or recent cost. It is this which will give the Suez Canal an advantage of which it had neither possession or prospect when its feasibility was put in question. The advantage, however, may be easily overrated, at least as to cost. Take for instance cotton—likely to be hereafter the chief freight from India to England; probably that commodity will not come home much cheaper by the Canal than by the Cape, but it will come more quickly—and in such matters time is generally money, and often more than money.

This, however, must be mentioned, that not only the mercantile but the maritime English mind remains immovably of the opinion that the Canal will prove a failure, both as to stability and profit. The officers of the Peninsular and Oriental Company, who ought to know something of the matter, are strong and unanimous in holding this opinion, and it is certain that the Company are not at present contemplating any change in their existing system. In a year or two, either the French shareholders will be poorer, or the British prophets will be wiser, men.

PATENTS OF INVENTIONS.

DEPARTMENT OF AGRICULTURE.

PATENT BRANCH.

Ottawa, 20th October, 1869.

HIS Excellency the Governor General has been pleased to grant Letters Patent of Inventions to be in force in the Dominion of Canada, for a period of *Fourteen Years* from the dates thereof, to the persons whose names are included in the following list.

Published by command,

J. C. TACHE,
Deputy of the Minister of
Agriculture.

60. James Brecknock Palmer Steacy, of the city of Hamilton, in the county of Wentworth, Province of Ontario, cabinet maker, for a machine for washing clothes, to be called Steacy's excelsior clothes rubber. Dated Ottawa, 15th September, 1869.
61. William Augustus Leggo, of the city of Montreal, in the Province of Quebec, photo-electrotypist, for a certain improvement on the photographic camera now in ordinary use to be called Leggo's improved photographic camera. Dated Ottawa, 15th September, 1869.
62. Robert Beedle, of the township of Dunwich, in the county of Elgin, Province of Ontario, blacksmith, for a certain improvement on the hinges now in ordinary use for hanging gates, to be called Beedle's improved gate hinge. Dated Ottawa, 15th September, 1869.
63. Thomas Thomas, of the town of Bowmanville, in the county of Durham, Province of Ontario, blacksmith, for a certain improvement on a certain instrument now in ordinary use for holding oil, to be called the economic oil can. Dated Ottawa, 18th September, 1869.
64. David Sines Cornell, of the township of Warwick in the county of Lambton, Province of Ontario, yeoman, for a certain improvement in gate hanging, to be called Cornell's self-closing and adjusting gate hanging. Dated Ottawa, 18th September, 1869.
65. Richard Eaton, of the city of Montreal, in the Province of Quebec, mechanical engineer, for a certain new and useful art of cleaning or filtering petroleum oil, for lubricating purposes, and apparatus for performing the same for the economical and perfect manufacture of lubricating oil, to be called Eaton's art and apparatus for manufacturing lubricating oil from petroleum. Dated Ottawa, 18th September, 1869.
66. John Benjamin Pike of the township of Raleigh, in the county of Kent, in the Province of Ontario, machinist, for a certain improvement in inserted saw teeth, now in ordinary use for sawing lumber, to be called or known as J. B. Pike's Imperial inserted saw tooth. Dated Ottawa, 18th September, 1869.
67. William Augustus Leggo, of the city of Montreal, Province of Quebec, photo-electrotypist, for a certain new and useful improvement in the art of photography, to be called Leggo's granulated photography. Dated Ottawa, 18th September, 1869.
68. Charles McCallum, of the city of Toronto, in the county of York, in the Province of Ontario, machinist, for a certain new and useful improvement on chopping mills for chopping and grinding corn for feeding of stock, for domestic use, coffee, spices, &c., to be called the Dominion chopping mill. Dated Ottawa, 18th September, 1869.
69. Mathew Gardner, of the village of Hespeler, in the county of Waterloo, in the Province of Ontario, yeoman, for a certain new improvement for the furnaces of steam engine boilers, to be called Gardner's steam generator and sawdust burner. Dated Ottawa, 18th September, 1869.
70. Huzh Baines, of the city of Toronto, in the county of York, in the Province of Ontario, railroad contractor, for certain new improvements in re-working old railway iron or rails or bars, the object of which is to restore the requisite amount of carbon to the iron of the old rails or bars so as again to give it the requisite quality and make it sufficiently hard for use, to be called Baines' process for restoring carbon to deteriorated wrought iron. Dated Ottawa, 18th September, 1869.
71. Clement Hollands, in the village of Mitchell, in the county of Perth, in the Province of Ontario, miller, for an improvement in the construction of rotary engines, to be used for the purpose of driving or working machinery, to be called Hollands' improved rotary steam engine. Dated Ottawa, 27th September, 1869.
72. Israel Kinney, of the town of Woodstock, in the county of Oxford, in the Province of Ontario, carriage maker, for certain improvement in the manufacture of bolt heads, nuts and washers for railways and other purposes, to be called Kinney's gravitating bolt head nuts and washer compounded washers. Dated Ottawa, 27th September, 1869.
73. Joseph Woodley, of the city of Quebec, in the Province of Quebec, manufacturer, for new and useful improvements on boot and shoe heels, with mould, &c., for forming the same, for producing or manufacturing that part of the boot or shoe with greater facility or economy, to be called the Woodley's boot and shoe heel. Dated Ottawa, 27th September, 1869.
74. John Price, of the township of Bayham, in the county of Elgin, in the Province of Ontario, lumber dealer, for a certain new improvement on machines for cutting straw and feed for cattle and horses, to be called the Ontario feed cutter. Dated Ottawa, 27th September, 1869.
75. Charles Myers, of the village of Oshawa, in the county of Ontario, in the Province of Ontario, builder, for a certain new improvement on churns for the use of dairies, to be called the dairy Queen. Dated Ottawa, 27th September, 1869.
76. Francis Culham, of Widder Station, in the township of Bosanquet, in the county of Lambton, Province of Ontario, carpenter, for certain new and useful improvements on a thrashing machine, to thrash grain, to be called the Ontario thrashing machine. Dated Ottawa, 27th September, 1869.
77. John Salles, of Little Britain, in the township of Mariposa, in the county of Victoria, in the Province of Ontario, carpenter, for a certain new and useful machine for bending timber for slat runners, or any similar thing that bent timber is required for, to be called Salles's bending press. Dated Ottawa, 27th September, 1869.
78. Frederick John Gooding of the city of Montreal, in the district of Montreal, Province of Quebec, mechanical engineer, for a certain new and useful improvement in the art of drying pea fuel and picket for same, for the more speedy and economical manufacture of pea fuel, to be called Gooding's art and picket for drying pea fuel. Dated Ottawa, 27th September, 1869.
79. William Milner, of the village of Strathroy, in the county of Middlesex, in the Province of Ontario, waggou-

maker, for a certain new and useful improvement to waggons, for holding the waggon box to the bowster, to be called the milner's cast waggon stake. Dated Ott. 27th September, 1869.

80. Robert Brown, of the town of Stratford, county of Perth, Province of Ontario, millwright, for a certain new and useful machine, for the purpose of preventing jarring in machinery worked by a single engine, to be called Brown's elastic shafting to prevent back lash. Dated Ottawa, 27th September, 1869.
81. William Dyson, of the city of London, county of Middlesex, Province of Ontario, tin and copper smith, for a certain new and useful art or method of heating vats and their contents in the manufacture of cheese, and also a new and useful machine or apparatus for carrying out and effecting such art, the said machine, or apparatus to be called Dyson's steam generator and cheese vat. Dated Ott. 27th September, 1869.
82. Alexander Muir Mc Kay, of the town of Woodstock, in the county of Oxford, Province of Ontario, grocer, for a certain new and useful washing machine, to be called Woodstock washing machine. Dated Ottawa, 27th September, 1869.
83. Patrick Butler, of the township of Walsingham, in the county of Norfolk, in the Province of Ontario, yeoman, for a certain new and useful improvement on a certain machine now in ordinary use for hanging doors and gates, for closing doors and gates without the intervention of any other force, to be called the loose-jointed spring butt hinge. Dated Ottawa, 1st October, 1869.
84. Alexander A. McCallum, of the village of Tweed, in the county of Hastings, Province of Ontario, miller, for a new and useful machine for making ship masts, for preserving cheese in, to be called or known as the patent paper cheese box. Dated Ottawa, 1st October, 1869.
85. John Grenville, of the village of Thorold, in the county of Welland, in the Province of Ontario, blacksmith, for a certain new and useful improvement or art for tanning for doors, &c., &c., to be called the Grenville door and gate fastener. Dated Ottawa, 1st October, 1869.
86. Israel Kinney, of the town of Woodstock, in the county of Oxford, in the Province of Ontario, carriage maker, for a new and useful improvement in manufacture of springs for buggies, buck boards and other wheeled vehicles, to be called Kinney's wooden buggy spring. Dated Ottawa, 1st October, 1869.
87. George Scott, of the city of Montreal, in the district of Montreal, in the Province of Ontario, miller, for a certain new and useful machine for grinding sand, round to be called Scott's horizontal grinding machine. Dated Ottawa, 1st October, 1869.
88. Alexander McArthur, of the village of Elora, in the county of Wellington, in the Province of Ontario, machinist, for a certain new and useful improvement on Wool's self-raking machine (a certain machine for raking grain by horse power) to be called McArthur's self-raking regulator. Dated Ottawa, 1st October, 1869.
89. Henry Carter, of the township of Malahide, in the county of Elgin, in the Province of Ontario, yeoman, for certain new and useful improvements in ditching machines, the object of which is to lessen the labour of the operator and increase the efficiency of the machine, to be called Carter's improved ditching machine. Dated Ottawa, 1st October, 1869.
90. Charles Horatio Waterous, of the town of Brantford, in the county of Brant, in the Province of Ontario, machinist, for a certain new and useful machine for accurately setting any thickness of lumber or timber for sawing, to be called Waterous set gauge. Dated Ottawa, 1st October, 1869.
91. William Baker, of the village of Annapolis, in the county of Kent, in the Province of Ontario, for a certain new machine for moulding and carrying bricks, to be called Baker's brick press and setter. Dated Ottawa, 19th October, 1869.
92. Charles William Mulderidge, of the city of Hamilton, in the county of Wentworth, in the Province of Ontario, machinist, for a certain new and useful improvements in the manufacture of brooms and brushes, and a new and useful machine for carrying out and effecting such improved manufacture, the broom and brush so manufactured to be called or known respectively as the Spanish grass broom and the Spanish grass scrubber, and the machine the broom grass splitter. Dated Ottawa, 9th October, 1869.
93. Miles Deane, of the township of Walsingham, in the county of Norfolk, in the Province of Ontario, mechanic, for an improvement on a certain machine now in ordinary use for harrowing or pulverizing the soil, to be called Price's improved rotary harrow. Dated Ottawa, 9th Oct., 1869.
94. William Muir, of the city of Montreal, in the Province of Quebec, merchant, for certain new and useful improvements in multiple sewing machines, for the more economical and efficient working of the same, and by which an number of needles may be employed simultaneously, with the view of producing any desired pattern of stitching, to be called Muir's improved multiple sewing machine. Dated Ottawa, 15th October, 1869.
95. George Groom, of the town of Brockville, in the county of Leeds, Province of Ontario, lithographer, for certain new and useful improvements in churns, the improved churn to be called the Canada farmer's churn. Dated Ottawa, 17th October, 1869.
96. Frederick Baynton Sparkes, of the city of Toronto, in the county of York, Province of Ontario, gentleman, assignee of George Whitney Sylvester, of the town of Dundas, in the county of Wentworth, Province of Ontario, oil manufacturer, for a new and useful machine or apparatus for deodorizing and decolorizing crude petroleum, oil and other oils, and saturating liquor remaining therein, to be called Sylvester's apparatus for extracting from and cleansing any filtering or macerating medium remaining therein. Dated Ottawa, 17th October, 1869.
97. Frederick Baynton Sparkes, of the city of Toronto, in the county of York, Province of Ontario, gentleman, assignee of George Whitney Sylvester, of the town of Dundas, county of Wentworth, Province of Ontario, oil manufacturer, for a certain new and useful machine or apparatus for burning animal charcoal and other carbons, and for re-burning the same after use, to be called Sylvester's medium or otherwise, to be called Sylvester's carbon burner and re-burner. Dated Ottawa, 17th October, 1869.
98. Frederick Baynton Sparkes, of the city of Toronto, in the county of York, Province of Ontario, gentleman, assignee of George Whitney Sylvester, of the town of Dundas, county of Wentworth, Province of Ontario, oil manufacturer, for a new and useful machine or apparatus for extracting from and cleansing any filtering or macerating medium remaining therein, to be called Sylvester's apparatus for extracting from and cleansing any filtering or macerating medium remaining therein. Dated Ottawa, 17th October, 1869.
99. Antoine St. Jacques, of the parish of Yamachiche, in the county of St. Maurice, in the Province of Quebec, coach builder, for a certain new and useful composition of matter for the treatment and cure of sore throat, to be called le résolutif Canadien. Dated Ottawa, 17th October, 1869.