

No. 4537. LOUIS SCHWENDLER, Calcutta, India, 23rd March, 1875, for 5 years: "Duplex Telegraphy." (Télégraphe à double courant.)

*Claim*—1st. The double balance method of Duplex Telegraphy; 2nd. The ratios and the magnitudes of the resistances to be employed in the double balance method; 3rd. The method of simultaneous adjustment by means of a regulator, and the apparatus designated "regulator;" 4th. The method of adjustment by means of an indicator and the apparatus designated "indicator;" 5th. The method of automatic adjustment by means of an "operator" and the apparatus designated "operator;" 6th. The method of adjusting in the battery branch, and the special apparatus for effecting it; 7th. The constant resistance key with spring and double battery; 8th. The use of any cable in connection with the *a*, branch of the arrangement; 9th. The application of a shunt for the receiving instrument in the *b*, branch and the use of such a receiving instrument in the *b* branch.

No. 4538. JOHN A. McMARTIN, Montreal, Que., 27th March, 1875, for 5 years: "Improvements on Pumps." (Perfectionnements aux pompes.)

*Claim*—1st. In combination with the pipe I, the cylinder K' provided with two side chambers M, M', the chamber M, communicating with the cylinder K, at its upper end, and the pipe I, at its lower end, the chamber M', communicating at its upper end with the pipe I, and at its lower end through the reservoir O, with the lower end of the cylinder K, all working together and in combination with the other parts; 2nd. The packing of the piston L, composed of a rubber ring or Tube T, with or without flange or flanges T.

No. 4539. GEORGE W. SCRIBNER, Chatham, Ont., 29th March, 1875, (Extension of Patent No. 323) for 5 years: "Improvements in Reed Organs." (Perfectionnements aux orgues à anches.)

*Claim*—The tubes B., with or without the tuning slides D made of wood, metal, or any suitable material, and the application of them to reed organs, melodeons and similar instruments, whether applied horizontally or vertically, and having openings for the emission of the sound, either on the top or any other position which circumstances may render expedient.

No. 4540. JOHN H. BARBARICK, Casco, Me., U.S., 31st March, 1875, for 5 years: "Improvements in Slates." (Perfectionnements aux ardoises.)

*Claim*—1st. The channel made in the slate frame as illustrated at *a*, together with the cut or bar *b*, the said bar being removable and secured when in place by an elastic or other band; 2nd. The combination of the incision *d*, and cap *c*. 3rd. The slate constructed as described, that is having the recesses and the other devices as set forth.

No. 4541. EBENEZER W. PHELPS, JOSIAH GREGORY and NATHAN BOSTWICK, Newark, Ohio, U. S., 31st March, 1875, for 5 years: "Machine for Grinding the Knives of Mowing and Reaping Machines." (Machine à affûter les couteaux des faucheuses-moissonneuses.)

*Claim*—The guide handle *m*, in combination with the swinging frame and guide-plates O, and P, P.

No. 4542. JOHN SUGDEN and JAMES P. GAFFNEY, Lawrence, Mass., U. S., 31st March 1875, for 5 years: "Improvements in horse checks." (Perfectionnements aux appareils à contrôler les chevaux qui s'emportent.)

*Claim*—The combination with the axle A, and the wheel L, the gears I, and J, shaft G, loose reel E, clutch flange F, shifting lever C, ratchet N, and cord K, or their mechanical equivalent.

No. 4543. THADEUS HODGSON, Amherst, N. S., 29th March, 1875, (Extension of Patent No. 317) for 5 years: "Circular Saw Guard." (Garde-seie circulaire.)

*Claim*—1st. The plate B, so arranged as to occupy the space cut in the lumber immediately behind the saw whether supported beneath the table, or suspended from above or both; and 2nd. The part C, so arranged as to turn upon the joint at D, whether to make room for thicker lumber or to admit of the tilting of the saw.

No. 4544. JOHN SMITH, Brantford, Ont., 1st April, 1875, (Extension of Patent No. 340,) for 5 years: "Improvements in Stove and Fire Grates." (Perfectionnements aux grilles de poeles et de loyers.)

*Claim*—The combination and arrangement of the heating space C, and air chamber B, having inlet air pipes I and K, and perforations G, apertures H, perforated top E, with apertures I, or their equivalent, and descending and return smoke flue D, when constructed and applied to the fire chamber A, of a grate and stove.

No. 4545. ERNEST A. HORNOSTEL and EDWARD CARROLL, Guelph, Ont., 1st April, 1875, for 5 years: "Improvements in Wooden Taps." (Perfectionnements aux robinets de bois.)

*Claim*—1st. The cork lining E, in combination with a wooden tap A; 2nd. A non corrosive plug B, having a projection or lip E, in combination with a cap C, having a lip *d*, and projection or guard *a*, and a key D.

No. 4546. FRANK MARSH, Montreal, Que., 1st April, 1875, for 5 years: "Compression, Stop and Waste Cock." (Robinet de compression, d'arrêt et de décharge.)

*Claim*—In combination with any compression cock having a heel or projection G, formed on the compression box E, the waste water valve or cock, composed of the waste H, with seat I, valve spindle L, with spring N, and nut or washer M, and with or without washer M.

No. 4547. GERRY MORGAN, Andover, N. H., U.S., (Co-inventor with and assignee of J. R. Foster) 1st April, 1875, for 5 years: "Improvements on Machinery for Making Wedges." (Perfectionnements aux appareils à faire des coins.)

*Claim*—1st. In combination with a supporting frame A, and reciprocating carriage B, the series 1 of saws, the frustum shaped inclined series 2 of saws, and the cutting off saw F, constructed and acting in co-operative relation with each other; 2nd. The combination of the series of saws 1, frustum-shaped inclined series of saws 2, frustum-shaped inclined series of saws 3, and cutting-off saw F; 3rd. The combination of the two frustum-shaped, and inclined series 2, 3 of saws, arranged in manner for forming wedges; 4th. The combination of the series 1, of saws, and the two frustum-shaped series 2, 3, of saws; 5th. The combination of the two frustum-shaped series 2, 3, of saws, and the cutting-off saw F.

No. 4548. GEORGE B. DIXWELL, Boston, Mass., U. S., 1st April, 1875, for 5 years: "Improvements on Steam Engines." (Perfectionnements aux machines à vapeur.)

*Claim*—The combination of the cooler F, with the superheated steam generator G, the engine cylinder A, their connection pipe H, and a valve *b*, arranged in such pipe, all being as described and shown in figures 1, 2, 3, 4 and 5, of the drawings, in combination with the superheated steam boiler or generator G, and engine cylinder A, and their connection pipe H, the two throttle valves *b, f*, and the cooler F; the combination of the steam alarm or whistle with the superheated steam generator G, and engine cylinder A, and their connection pipe H, the two throttle valves *b, f*, and the cooler F; the pyrometric regulator or governor as described consisting of the gears *a, h, i*, the vibratory shield *n*, the pyrometer I, and the vibratory arm *p*, and its pawls *u, o*, the combination of the said pyrometric governor, with the superheated steam generator G, and engine cylinder A, their connection pipe H, the valve *b, f*, and the cooler F, the cylinder and piston, or either provided with wire gauze *i, k*, applied to, or arranged therewith, in operating a steam engine piston by superheated steam used expansively in the cylinder provided with a variable cut off, or mechanism *r* arresting at different parts of the stroke of the piston, the admission of steam to the cylinder, the new art or method as described, consisting in elevating the temperature of the steam of the generator or superheater, as the cut off may be lessened, and lowering the temperature of the said steam as the cut off may be increased, the same being so as to maintain in the cylinder a high or maximum safety temperature such as will prevent condensation of the steam thereon, and effect other useful advantages; the combination of the pyrometer or heat measure with the steam engine cylinder, its piston, valve chest, valve and a cut off, applied thereto; the combination of the two pyrometers D, E, with the superheater B, and the engine A, to be operated by such for the purpose specified, and shown in figures 6, 7 and 8, of the drawings; the superheater pyrometer provided with cut off indicating marks, with its scale to indicate temperatures; the combination of the adjustable slide *f, g*, with the superheater pyrometer E, and one or more electro-magnetic alarms applied to the slide or slides and to the pyrometer; the combination or use with a steam engine cylinder, the new or improved thermometric apparatus, consisting of the rod B, having the open-bore in that part within the cylinder A, and provided with measuring devices, (viz: the lever, spindle, mirror, slitted plate and the scale.)