given temperature will be imparted to it and a determined volume and pressure of vapour obtained for a motor; 2nd. The use of bi-sulphide of carbon for a motor for operating machinery, the method or applying heat to the bi-sulphide of carbon, so that a given volume and pressure of its vapour will be obtained for a motor, and not increased or diminished by augmenting the quantity of bi-sulphide of carbon in the evolving chamber; 3rd. In an apparatus for utilizing the bi-sulphide of carbon for a motor for operating machinery, the combination of a heat-receiving and distributing chamber, regulating valve or valves and an evolving chamber; 4th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of two or more heat-receiving and distributing chambers, a regulating valve or valves and evolving chamber; 5th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of a heat-receiving and distributing chamber, regulating valve or valves and an evolving chamber enclosed in a casing for surrounding it with an uninflammable liquid or vapour; 6th In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of two or more heat-receiving and distributing chambers, regulating valve or valves and an evolving chamber enclosed in a casing for surrounding it with an uninflammable liquid or vapour; 7th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of a steam or heat generator, steam or heat-receiving and distributing chamber, regulating valve or valves and evolving chamber; 8th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of a steam or heat generator, two or more steam or heat-receiving and distributing chambers, regulating valve, or valves, and evolving chambers; 9th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of a steam or heat generator, a steam or heat-receiving and distributing chamber, regulating valve or valves and evolving chamber enclosed in a casing for surrounding it with an uninflammable liquid or vapour; 10th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of a steam or heat generator, two or more steam or heat-receiving and distributing chambers, regulating valve or valves and evolving chamber, enclosed in a casing for surrounding it with an uninflammable liquid or vapour; 11th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of a furnace surrounded with a water chamber communicating with two boilers, communicating with a single breeching and smoke stack, a steam dome communicating with said chamber and boilers and evolving chamber; 12th. In an apparatus for utilizing bi-sulphide of carbon for a motor, the combination of a furnace surrounded with a water chamber communicating with a single breeching and smoke stack, and evolving chamber enclosed in a casing for surrounding it with an uninflammable liquid or vapour; 13th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of a furnace surrounded with a chamber communicating with two boilers furnished with flues communicating with a single breeching and smoke stack, a steam dome communicating with said chamber and boilers, and evolving chamber having a steam-receiving and distributing chamber; 14th. In an apparatus for utilizing bi-sulphide of carbon for a motor, the combination of a furnace surrounded with a water chamber communicating with two boilers having flues communicating with a single breeching and smoke stack, a steam dome communicating with said chamber and boilers, and evolving chamber enclosed in a casing for surrounding it with an uninflammable liquid or vapour, said evolving chamber having two or more receiving and distributing chambers communicating with each other; 15th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of the regulating valves f g_1, adjustable tension spring k_1 a steam generator and evolving chamber l having steam or heat-receiving and distributing chambers n o; 16th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of the water chamber b_{11} with the chamber q, around the evolving chamber l and a steam generator; 17th. In an apparatus for utilizing bi-sulphide of carbon for a motor for operating machinery, the combination of a condenser consisting of a series of shallow chambers, arranged one above the other, and communicating with each other, and a reservoir for bi-sulphide of carbon communicating with said shallow chambers, the whole enclosed in a casing and surrounded with water; 18th. In an apparatus for utilizing bi sulphide of carbon for a motor for operating machinery, the combination of a condenser consisting of a series of shallow chambers, arranged one above the other and communicating with each other, a reservoir for bi sulphide of carbon, a collecting chamber, said chambers and reservoir communicating with each other through the pipes 7 8, and the whole enclosed in a case and surrounded with water; 19th. In an apparatus for utilizing bi sulphide of carbon for a motor, the combination of a condenser consisting of chambers 1 2 3 4 5 6 and 9, reservoir x_1, communicating by pipes 7 and 8, steam siphon r_1, casing s_1 and an air blast device; 20th. In a bi sulphide of carbon engine, a cylindrical slide valve arranged on a valve stem with carriers provided with spiral packing recesses; 21st. A chamber for evolving bi-sulphide of carbon into a vapour for a motor, said chamber furnished with a vapour dome, and chamber and dome enclosed in a casing for surrounding it with an uninflammable liquid or vapour; 22nd. In a bi-sulphide of carbon engine, the method described for lubricating the working surfaces of the cylinder, piston, valve or valves and their seats, and preventing said surfaces from oxydation, viz.: by mixing finely pulverized black lead or plumbago with oil, and introducing it into the valve chamber or chambers and cylinder of the engine.

No. 10,816. Improvements on Sun Dials.

(*Perfectionnements aux cadrans solaires.*)

Lycurgus Thurston and Jay Vandenburg, Findlay, Ohio, U. S., 17th January, 1880, for 5 years.

Claim.—1st. The combination of a hinged gnomon with a spring; 2nd. The box A having cover a, face B suitably marked with hour and minute points, spring d and hinged gnomon.

No. 10,817. Improvements on Skates. (*Perfectionnements aux patins.*)

George McCord, New York, U. S., 17th January, 1880, for 5 years.

Claim.—1st. In combination with an ice or parlor skate, an auxiliary spring cushioned sole plate above the rigid sole plate; 2nd. The combination of the auxiliary sole plate that is permanently attached to the heel plate, and supported by cushioning springs on the sole plate proper; 3rd. The combination of an auxiliary spring cushioned sole plate with a guide and stop device, connecting the same at the front end with the supporting sole plate of the skate; 4th. The combination of an auxiliary spring cushioned sole plate that is permanently attached to the heel plate, and supported above the sole plate with front clamping and fastening devices secured thereto.

No. 10,818. Improvements on Animal Traps.

(*Perfectionnements aux pièges à vermine.*)

Ogle Carss, Smith's Falls, Ont., 17th January, 1880, for 5 years.

Claim.—1st. The vertical arm H rigidly attached to the tilting shelf F and terminating in a hook I, in combination with the gravitating platform D.

No. 10,819. Metallic Fastening for Under Garments and Supporters. (*Agrafe de jupon et de bretelle.*)

Clinton E. Brush, Toronto, Ont., (Assignee of Christopher C. Shelby, New York, U. S.,) 17th January, 1880, for 5 years.

Claim.—A metallic attachment for garments and supporters provided with the cleating lugs C.

No. 10,820. Improvements on Motors. (*Perfectionnements aux moteurs.*)

William S. Colwell, Pittsburg, Penn., U. S., 17th January, 1880, for 5 years.

Claim.—1st. A motor for operating machinery, consisting of bi-sulphide of carbon, water and plumbago or black lead charged into a vessel, and heat applied thereto; 2nd. A bi-sulphide of carbon, water and plumbago or black lead charged into a vessel enclosed in a case and surrounded with an uninflammable liquid or vapour; 3rd. Bi-sulphide of carbon, or other liquid, evolved into a vapour for a motor, conveyed from a generating chamber to the piston of an engine through the medium of a pipe enclosed in a case and surrounded with an uninflammable liquid or vapour; 4th. The cylinder of a bi-sulphide of carbon engine and its valve chamber communicating directly with the case A and chamber A_1 through the pipes E w_1, wherby steam of the same temperature as that used for evolving the bisulphide of carbon will surround said cylinder, valve chamber and pipe w_1; 5th. In combination with a bi-sulphide of carbon engine, a condenser consisting of the chambers D t_1, pipes u u_1, perforated diaphragm and a blast device; 6th. The employment of a liquid from which a given pressure can be obtained from a given quantity of the liquid used, the combination of a chamber for evolving said liquid into a vapour, and a valve that can be adjusted to regulate the flow of said liquid into said chamber, in quantity corresponding to the pressure desired, and automatically cut off the flow into said chamber when the pressure of the vapour in it becomes greater than that desired; 7th. In combination with a reservoir for bi-sulphide of carbon, or a compound thereof, a vapourizing chamber, adjustable valve or valves that will open and close automatically by a fixed pressure, a supply pipe having a return branch and a force pump, said reservoir and vapourizing chamber communicating with each other through the medium of said supply pipe and its branch; 8th. In a bi-sulphide of carbon engine the combination of the double throttle valve or valves I_1, with the pipes E w_1 communicating with the chambers A A_1 B_{11} and the steam ports of the cylinder B_1; 9th. Bi-sulphide of carbon evolved into a vapour and transferred to the condenser, by means of valve m and pipe l, and condensed and collected in reservoir F_1; 10th. The combination of a cylinder B_1 and reservoir F_1 communicating with each other by means of coiled pipe i_1, the latter passing through a condenser.

No. 10,821. Improvements in Book Binding.

(*Perfectionnements dans la reliure.*)

Francis Hadley, Toronto, Ont., 17th January, 1880, for 5 years.

Claim.—A metal cover A hinged to the back B, in combination with the fasteners or rivets D passing through the book C.

No. 10,822. Improvements in Stuffing Boxes.

(*Perfectionnements aux boites à étoupes.*)

John Kennedy, Toronto, Ont., 17th January, 1880, for 5 years.

Claim.—The box A having its interior bored in the shape of a frustrum of a cone, in combination with a gland C fitting the spindle B.

No. 10,823. Improvements on Hand Scrubbers. (*Perfectionnements aux brosses à frotter.*)

Horace A. Ste. Marie, Montreal, Que., 17th January, 1880, for 5 years.

Claim.—The rubber composed of block A, in combination with mat C; 2nd. The block A having projection D, in combination with mat C.

No. 10,824. Compass for Scribing Ellipses.

(*Compas pour tracer les ellipses.*)

Cyrus McBean, Toronto, Ont., 17th January, 1880, for 5 years.

Claim.—1st. A compass leg E connected to the sleeve D, in combination with a bar B hinged to the plate A; 2nd. A scribing point or pencil connected to a sleeve sliding on an adjustable bar.

No. 10,825. Improvements in Horse Powers.

(*Perfectionnements aux manèges à chevaux.*)

Duncan Carmichael, jr., Mariposa, Ont., 17th January, 1880, for 5 years.

Claim.—1st. A crown wheel C, with its teeth upwardly directed, and the crown wheel C_1, set in the reverse direction, in combination with the line shaft H, set at such an angle that the plane of the line of action of both crown wheels, respectively on their respective pinions, shall be on a parallel line with the plane of the master wheels, while, at the same time, the bevel pinions I I_1 shall mesh with the said crown wheels, on the inside of their respective centres; 2nd. The crown wheel C, with its teeth upwardly directed, and the crown wheel C_1, with its teeth pointed in the reverse direction, in combination with the bevel pinions I I_1, both on the line shaft H and gearing with, and on the inside of the centre of the crown wheels C C_1, respectively.