

combination of the float, the tubular standard, the open compass card, the main and auxiliary magnetic needles, and the sets of U-magnets.

No. 13,167. Trough and Gutter Former.

(*Moule à auge et gouttière.*)

David Johns, Exeter, Ont., 25th July, 1881; for 5 years:

Claim.—1st. The combination of the frame pieces A B, and hinges C C. 2nd. The combination of the frame piece B, slotted arms G G and tubular bar H.

No. 13,168. Abrasive Belt. (*Courroie rubéfiante.*)

George H. P. Flagg, (Co-inventor with William Gordon.) Boston, Mass., U. S., 25th July, 1881; for 15 years.

Claim.—A sand paper belt, consisting of a strip of sand paper, the ends of which are joined together, the end *a* being derinded of sand, and the end *a'* skived and lapped over, and connected to the end *a*, thereby bringing the outer surfaces of the abrasive coating on a line at the joint.

No. 13,169. Improvements in the Manufacture of Head Coverings. (*Perfectionnements dans la confection des coiffures.*)

Robert Cream and George H. Hastings, Toronto, Ont., 25th July, 1881; for 5 years.

Claim.—A head covering or other article composed of two continuous bands sewn together, so that the whole of the outer band is exposed, while the inner band may be seen between the edges of the outer one.

No. 13,170. Improvements on Generators for Hydro Carbon Engines. (*Perfectionnements aux générateurs pour les machines à hydrocarbures.*)

Israel R. Blumenberg, Washington, D. C., U. S., 25th July, 1881; for 5 years.

Claim.—A combined apparatus for vaporizing bisulphide of carbon, or other hydrocarbon liquid, consisting of a bottom firing chamber or fire box, arranged under a heating chamber containing water or other suitable liquid and a space for steam, and a system of pendant tubes closed below, dipping into the water and open to an upper chamber, in which the bisulphide of carbon is supplied in a spray form to the pendant tubes, and the vapour is carried off by an outlet. 2nd. A cylindrical vessel divided into an upper vaporizing compartment, an intermediate heating compartment, containing a system of pipes dipped into water or other suitable liquid, and a lower fire box heating said liquid. 3rd. The construction of the heating chamber with the pendant tubes. 4th. The revolving spreader or nose as applied to the supply of hydrocarbon liquid to a system of pipes.

No. 13,171. Improvements on the Art of Cleaning and Opening of Spinners' Staple. (*Perfectionnements dans l'art de nettoyer et ouvrir la matière première des filateurs.*)

Chester A. Dresser, Southbridge, Mass., (Assignee of Samuel D. Keene, Providence R. I.) U. S., 25th July, 1881; for 5 years.

Claim.—1st. A separator grill provided with the adjustable bars K K K, in combination with suitable adjusting levers, whereby a rotary adjustment of the bars upon their axes is effected, and the grill as a whole is adjusted toward or from the beater. 2nd. The combination, with separator grill provided with independent adjustable bars K K K, of mechanism for adjusting said grill, both vertically, or nearly so, and laterally, as well as the several bars thereof upon their axes. 3rd. The combination, with the separator grill having bars K K K and the deflector L, of mechanism for adjusting the said grill bolt, vertically or nearly so, and laterally as well as the several bars thereof upon their axes. 4th. The combination, with a separator grill provided with independently pivoted bars K K K, of the form in cross section of right angled triangles with the longest side hollowed out of mechanism for adjusting the said grill, both vertically or nearly so, and laterally, and also the several bars thereof upon their axes. 5th. The above method of treating staple, namely, first forming it into a thick mass on a yielding roll, then allowing the beater to draw it, so as to form an apron which is cleansed by an air current, and finally detaching the staple from this apron by the continued action of the beater.

No. 13,172. Improvements on Churns. (*Perfectionnements aux barattes.*)

Jonah R. Hollis, Acadia Mines, N. S., 25th July, 1881; for 5 years.

Claim.—1st. The combination with a cream chamber A, having two dasher shafts J, of the shaft C, cranked at both ends, pitmans L, and slides F, working in guides G, secured to opposite sides of the churn, and connected by cross heads H to the dasher shafts, whereby the dashers are operated reciprocally. 2nd. The disk J, in combination with the handle K and crank or shaft C, for protecting the hand of the operator. 3rd. The churn cover *a*, provided with an opening covered by slide B.

No. 13,173. Improvements in Means of Supporting and Protecting Wires for Electrical Purposes. (*Perfectionnements dans les moyens de supporter et protéger les fils électriques.*)

The European Electric Company, (Assignee of Charles A. Hussey, New York, U. S., 25th July, 1881; for 5 years.

Claim.—1st. The combination, with a side walk curb, of wires or electrical conductors, and a conduit receiving the wires or electrical conductors, and affixed to the curb. 2nd. The combination, with a side walk curb, of wires or electrical conductors, and a conduit receiving

the wires or conductors affixed to the curb, and having a flat back bearing on the curb, and a convex front. 3rd. The combination, with a side walk curb, of wires or electrical conductors, a conduit receiving the wires or conductors, and affixed to, or in the curb, and branch conduits extending through the curb, and under the side walk to houses or other buildings. 4th. The combination with a side walk curb, of wires or electrical conductors, the conduits H, branch conduits H' and caps H².

No. 13,174. Improvements on Churns. (*Perfectionnements aux barattes.*)

John Campbell, Almonte, Ont., 27th July, 1881; (re-issue of Patent No. 4,177.)

Claim.—1st. A churn consisting of a chamber swung or oscillated so as to direct the flow of the cream to and fro in the form of a figure eight. 2nd. A swinging or oscillating churn to the chamber A having its end contracted to, or nearly to a point. 3rd. In an oscillating swinging or pendulously operating churn, the air openings or ducts D E. 4th. In combination with the chamber A, the cream braker F. 5th. In combination with the chamber A, and cream braker F, the knife G. 6th. In combination with the chamber A and air opening D E, the paddle wheel or fan H. 7th. The chamber A, suspended and swung in a plane horizontal to, or parallel with the points of suspension.

No. 13,175. Improvement on Manual Powers.

(*Perfectionnements aux machines à bras.*)

Jasper Bates, Thornbury, Ont., 25th July, 1881; (Extension of Patent No. 11,181.)

No. 13,176. Improvements on Steam Engines.

(*Perfectionnements aux machines à vapeur.*)

William Monk, Henry Monk, Hadlow Cove, and Charles W. Carrier, Levis, Que., 26th July, 1881; for 5 years.

Claim.—1st. In a steam engine having a second cylinder, for the purpose of utilizing the exhaust steam from a first cylinder, a valve L having two openings, in combination with five steam ports *a b c d e*, two of which connect with the first cylinder, two with the second cylinder and the fifth for the exhaust steam. 2nd. A valve L having the openings, in combination with five steam ports *a b c d e*, two of which connect with the first cylinder, two with the second cylinder, and the fifth of which is for the exhaust. 3rd. In two cylinders of different dimensions, the steam ports, steam ways and slide valve, which are arranged in such a manner that the steam, in the inoperative end of the second and larger cylinder, is conveyed to the operative end of the second and larger cylinder, for the purpose of increasing the power of the engine.

No. 13,177. Improvements on Soldering Machines. (*Perfectionnements aux machines à souder.*)

Charles R. Merriam and Lafayette Smith, Dover, Del., U. S., 26th July, 1881; for 5 years.

Claim.—1st. The combination of the following elements, to wit: a receptacle for holding the molten solder, a horizontal plate placed over said receptacle, and having an opening through which the angular edge of the can may dip to the solder, and a plate standard for steadying at the required angle to the solder. 2nd. The combination of the following parts, viz: a receptacle for holding the molten solder, a plate placed over the said receptacle, and having an opening through which the angular edge of the can may be passed, shoulders for steadying the can against lateral movement, and a plate or standard for steadying the can at the requisite angle to the solder. 3rd. The combination of the following elements, namely: the body A having the central flue *a*, a melting pot having a plate or cover, formed with a crescent-shaped opening *e*, and the products of combustion around, or in contact with the exterior of the melting pot. 4th. The combination of a melting pot, composed of the two parts *c c*, connected by a passage *a*, the flue *a* and package *f*. 5th. The combination of the adjustable hinged plate C, with the melting pot B having the crescent-shaped opening *e* in its top, whereby the angle of the can, with reference to the said opening and to the contents of the melting pots, may be regulated. 6th. The combination of the following elements, to wit: a heating or combustion chamber having an inlet or inlets for the admission of air to support combustion, and an outlet for the escape of the gaseous products of combustion, a melting pan composed of a casting constructed with a receptacle for holding the molten solder, and placed over the heating or combustion chamber, and an inclined plate C, for holding the can at the requisite angle with regard to the receptacle, for holding the molten solder. 7th. The combination of a burner, a heating or combustion chamber having inlets and outlets, a melting pot composed of a casting having a receptacle to hold the molten solder, and an inclined plate C, for holding the can in the requisite relation with the said receptacle. 8th. The combination of a heating or combustion chamber, having the air inlets *b* and *a* and the outlet B, a melting pot composed of a casting, having the receptacle *e* and the downwardly extending circumferential walls *c*, the inclined plate C and a burner. 9th. The combination of the adjustable inclined plate C, the set screw *n*, slotted slide *E n*, set screw *u*, and a melting pot composed of a casting constructed with a receptacle for holding the molten solder. 10th. The device consisting of a block of copper, or other suitable heat retaining material having a recess *e*.

No. 13,178. Improvements on Machines for Breaking and Crushing Stones.

(*Perfectionnements aux machines à casser et écraser les pierres.*)

Philetus W. Gates, Chicago, Ill., U. S., 26th July, 1881; for 5 years.

Claim.—1st. A machine for breaking stone, crushing metal ore, or other like substances providing the shaft which carries the crushing head with a ball and a socket fulcrum bearing the interior wearing surface of which is chilled. 2nd. The revolving eccentric bearing box