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## INVENTIONS PATENTED.

No. 11,510. Improvements on Feather Dusters. (Perfectionnements aux plumeaux.)
Leonard A. Watson. Ashtabula, Obio, (Assignee of Gilbert M. Richmond, Chicago, Ill.,) U'. S., 19th July, 1880 ; for 5 years.
Claim.-A duster made of feathers with the outer portions of their shafts split, or split and withed, or split, withed and rasped to make them soft and pliable, and the inner or quill portions of their sharts left tubular, that they may stand firmly in the head to hold their plumes outspread, thus combining the firmness of the unsplit feather duster with the pliability of the split feather duster.
No. 11,511. Improvements on Calculators for Interests and Time. (Perfectionneencnts aux calculateurs d'intéréts et de temps.)
William J. Gurd, Saruia, Ont., 19th July, 1880 ; for 5 years.
Claim.--1st. The combination of the two concentric discs $A$ and $B$, one having in concentric circles calculations of interest tor one year of a nuiform sum, at one or more rates, and having a concentric circle numbered with 365 divisions, the other dise baviug names of months and figures of days, and a pointer $C$ transversely subdivided and denominating the concentric circles. 2nd. The combination of the two discs A B overlying each other, having in concentrio circles, calculations of interest for one year of a uniform sum at one or more rates. and a margin having a concentric circle with divisions of days 1 to 36. , and the other disc subdivided to indicate the month and day divisions thereof. both discs attached at the centre by an eyelet or other fastening, whereby they can be revolved. 3rd. The combination of the revolving dises A B, one having 365 divisions consecutively numbered on the margin and the other subdivided on the margin with 12 divisions, named with the months, each subdivision dirided to the number of days in each month and consercutively numbered, whereby by relativel adjasting the dise the number of days from one period to another peried is ascertainable.
No. 11,512. Improvement on Iron Roofing. (Perfectionnement des toitures en fer.)
Griffith B. Thomas, Point Pleasant, W. Va., U. S., 19th July, 1880; for 5 years.
Claim.-In combination with edge $a$ and cap $b$ formed by the extended edge of the sheet $A$, the clips $B$, one end fastened to the sheathing under the sheet having cap $b$, while the other is carried under and over the outside of the cap to fasten it to the edge $a$ and thus firmly secure the two together.

## No. 11,513. Improvements in Blasting Powder.

(Perfrctionncments dans la poudre a miner.)
Charles Felboen, New York, U. S., 19th July, 1880; for 5 years.
Claim. -The composition of matter consisting of the component parts of common gunpowder mixed with nitro-naphthaline.
No. 11,514. Improvements on Waggon Racks. (Perfectionnements aux rateliers des wagons.)
Sylvester Day, Otterville, Ont. (Assignee of Cyrenus Graham, Sturgis, Mich., U. S.), 19th July, 1880 ; for 5 years.
Claim.-lst. The bent pieces $A$ in combination with the end framing $B$ \& C and the centre piece D. 2nd. The sides or wings $\mathrm{E} E$ hung to bottom by hinges $F$, and kept in position by bars $G \& H$.

## No. 11,515. Improvements on Car-Couplings. (Perfectionnements aux attelages des chars.) Alexander Bartlett, Chatham, Ont., 19th July, 1880; for 5 years. <br> Claim.-The combination of draw head A, hinged weight F, link $C$ and bolt $D$, the whole forming a convenient, simple, strong and effective automatic car-coupling.

No. 11,516. Improvements on Bed Bottoms. (Perfectionnements aux fonds des lits.)
Dallas Knowiton, Brantford, Ont., 19th July, 1880 ; for 5 years.
Claim.-1st. The slat $H$ having the two outside slats $F$ fastened to it, and the others passing under it, and worked by springs $\mathbf{E}$, kept in position by guide K, the ends of the slats being coloured with magenta. 2nd. The combination of bruce $M$, with bar $B$.
No. 11,517. Improvements in Wrenches. (Perfectionnements aux clés a ecrous.)
Francis S. Gilbert, Oshawa, Ont., 19th July, 1880; for 5 years.
Claim. -The combination of the two jaws A A with the plates B B, flanges C C, teeth D D, slats E I, toothed handle I, gaide pin K, and washers Ki Kr arranged to operate both the upper and lower jaws of the wrench simultaneously.
No. 11,518. Electric Signalling Apparatus for Railways. (Apparcil d signaux electriques de chem ins de fer.)
Frank L. Pope, Elizabeth, N. J., U. S., 19th July, 1880; (Extension of Patent No. 5:011.)

## No. 11,519. Improvements on Pads tor Horses' Hoofs. (Perfectionnements aux bourrelets pour les sabots des chevaux.)

Andrew J. Lockie, Martin J. Hurd and Thomas H. Titus, Rochester, N.Y., U. S., 19 th July, 1880 ; for 5 years.

Claim-Tbe combination, with the shoe $A$, of sheet $B$ and elastic pad or sponge $C$, and stiffening piece $D$. 2nd. Shoe $A$, having lugs $A$, in combination with sheet $B$ and stiffening piece $D$, both of which are attached to said lugs. 3rd. A sheet B, stiffening piece $D$ and brace $E$, with suitable packing tor the pocket in ssid sheet. 4th. The stiffening piece D, placed on the top of sheet $B$, and attached thereto or to lugs $a a$.

## No. 11,520. Improvements on Electric Lamps. (Perfectionnements aux lampes électriques.)

Thomas A. Edison, Menlo Park, N. J., U. S., 19th July, 1880 ; for 10 years.
Claim-1st. The method of forming electric lamps, consisting in separately forming the enclosing globe and the supporting bulb for the incandescent conductor attaching the wires and incandescent conductor thereto, and then hermetically uniting the parts prior to the formation of the vacuum. 2nd. The method of hermetically sealing a vitrified vacnum chamber which consists of, first sealing in vacuo and then sealing in the air. 3rd. The clamps and wires, made of platinum or metals of the platioum group or conductors of electricity not affected by influences within the lamp. 4th. In a system of generation distribution and translation of electricity for purposes of light, the method of diminishing the amount of metal required in agiven length of main conductors by increasing the resistance of the lamps. 5th. An incandescent conductor formed of several separate conductora joined together. 6th. An incandeacent conductor fermed of a long strip doubled ap on itself, so as to increase the resistance and maintain a given radiating surface. 7th. An incandescent covductor formed of a single carbonized fibre. 8th. An incandescent conductor having a body formed of a single fibre, with enlarged ends made of paper wrapped upon the ends of the fibre and carbonized. 9th. A separate electric lamp adapted to be readily removell from, or placed or replaced upon or within a suitable holder. 10th. The combination of a separate removable electric lamp and a suitable holder. 11th. The combination of a separate removable lamp, a suitable holder and electric conductors which complete the circuit, when desired, to said lamp, but are not attached thereto. 12th. An electric lamp consisting of a globe substantially of one piece of glass her-

