

wheel *D*, with the exhaust case *A*, provided with two food and two discharge apertures arranged for purifying two grades of material at the same time and separately discharging the purified middlings thereof. 3rd The combination with the exhaust case, and elevating wheel of the disintegrator *v*, *w*, as set forth.

No. 3896. HENRY J. LINGENFELTER, Glen, N. Y., U. S., 6th. October, 1874, for 5 years: "Portable Furnace." (Fourneau portatif.)

*Claim*.—1st The portable furnace constructed with double walls with an annular air space *B*, between parts *a* for the admission of air to the said air space and parts *c*, in the exit flue *D*, permitting the heated air to escape in the said exit-flue without coming in contact with the fire in the fire-chamber, as set forth.

No. 3897. ALBERT F. ANDREWS, New Haven, Ct., U. S., 6th October, 1874, for 15 years: "Improvements in Annealing and Toughening Iron." (Perfectionnements dans le recuisage et durcissage du fer.)

*Claim*.—1st. The charcoal box *B*, in connection with the narrow tube *G*, and the box or series of boxes *F*; 2nd. The retort *A*, in combination with the charcoal box *B*, narrow tube *G*, and supports *A*; 3rd. The box or series of boxes *F*; 3rd. The construction of the box *F*, in separate or detachable pieces; 4th. The retort *A*, in connection with the charcoal box *B*, and broad perforated tube *G*, for treating bar iron or steel. 5th. The construction of the charcoal receptacle in the form of a series of Boxes *B*, *B*, *B*, as shown in figure 1. 6th. The described treatment of wrought iron and steel, by subjecting it to a slow current of free hydrogen; 7th. The treatment of wrought iron and steel with a mixture of free hydrogen and accompanying permanent gases, and with a small proportion of undecomposed watery vapour; 8th. In combination with a retort *A*, having provision for decomposing steam at the point *H*, and for treating heated iron or steel therewith in another position, the two separate and distinct furnaces *G*, and *P*, arranged and adapted to serve as set forth.

No. 3898. ALEXANDER RODGERS, Muskegon, Mich., U. S., 6th October, 1874, for 5 years: "Device for Moving and Barking Logs." (Appareil à transporter et écorer les billots.)

*Claim*.—1st. The conveying and barking screws *D*; 2nd. The conveying screws *H*, in combination with their operative mechanism; 3rd. The end rest *V*, in combination with the conveying screws; 4th. The arrangement of the log carrying and barking device, and the log turning levers, for continuous operation; 5th. The toothed bar, pivoted at its lower end, and between blocks which are adapted to slide in vertical ways in combination with its operating mechanism as described, whereby the said bar is rendered vertically movable and capable of adjustment to suit logs of different sizes as set forth.

No. 3899. ALEXANDER RODGERS, Muskegon, Mich., U. S., 6th October, 1874, for 5 years: "Grate Bar." (Barre de grille.)

*Claim*.—1st. A grate bar perforated with the conical orifices for the passage of air and otherwise constructed, as set forth; 2nd. The tubular grate bar having alternate sections of its upper and lower sides removed, as described.

No. 3900. PETER K. DEDERICK, Albany, N. Y., U. S., 6th October, 1874, for 5 years: "Improvements in Horse Powers and Hoisting Machines." (Perfectionnements aux manèges et aux élévateurs.)

*Claim*.—1st. The hollow journal or circle *C*; 2nd. The combination of the stationary circle or hollow journal *C*, diagonal shaft *B*, and drive wheel *A*; 3rd. The combination of the hollow journal *C*, diagonal shaft *B*, and drum *F*; 4th. The hollow stationary journal *C*, and returning pawl *M*, in combination with the drive wheel, as specified.

No. 3901. ANSON O. KITTRIDGE, WILLIAM H. CLARK, and WILLIAM J. CLARK, Salem, Ohio, U. S., 6th October, 1874, for 5 years: "Mallet for Smoothing Sheet Metal." (Maillet pour doucir les feuilles de métal.)

*Claim*.—1st. The mallet *C*, consisting of the shell *D*, cap *E*, with or without the adjusting screw *G*, wooden block *E*, and rubber cushion *a*, or its equivalent in the manner described; 2nd. The crank wheel *N*, sliding box *O*, plates *c*, and springs *f*, *f*, in combination with the vibratory beam *H*, as specified; 3rd. The combination of the mallet handle *H*, with or without the side springs *K*, mallet *C*, vibratory beam *H*, sliding box *O*, and crank wheel *N*, as specified; 4th. A wooden block *E*, when the same is operated by a mechanical power for the purpose specified.

No. 3902. JOHN BRADLEY, and WILLIAM H. PEARSON, Lowell, Mass., U. S., 6th October, 1874, for 5 years: "Knitting Machine." (Machine à tricoter.)

*Claim*.—1st. A filling wheel *a*, provided with irregular oblique teeth *b*, *c*, having a vertical groove *r*, and a horizontal notch or groove *s*, and operating so as to divide the needles *e*, *e*, *e*, and deposit the thread or yarn in front of one needle and then behind several so as to form wide and narrow stripes; 2nd. A knitting machine provided with a filling wheel *a*, having regular oblique teeth *b*, in combination with two plain ribbed loop-wheels *p*, and *q*, and two guides *r*, and *u*, operating with a circle of needles *e*, clearing wheel *m*, presser-wheel *n*, landing wheel *c*, and knock over wheel *d*, with the other usual devices of a knitting machine, so as to produce various mixed and striped fabrics, cloth or hosiery constructed and arranged as described; 3rd. The plain loop wheel *p*, with diagonally curved teeth, in combination with a loop wheel *u*, having a series of diagonally curved teeth formed with a notch or recess *z* and placed alternately between a series of diagonally curved teeth formed with ribs and operating in connection with a series of short bearded needles *e*, *e*, *e*, arranged alternately between a series of long bearded needles *e*, *e*, attached to a circular head, and with the other usual devices connected with the machine so as to form either a plain or mixed coloured upright stripe in a stocking or other article specified.

No. 3903. AUGUST SCHULTE, and MYER STERN, New York, U. S., 6th October, 1874, for 5 years: "Head Protector." (Couvre-tête.)

*Claim*.—Envelope *A*, with opening *B*, said opening being one or subdivided, as set forth.

No. 3904. HENRY J. HATCHKISS, Rock Island, Que., 6th October, 1874, for 5 years: "Mop Wringer." (Tordeuse de torchon.)

*Claim*.—1st. A cone frame a wringer composed of the wring *A*, and spiral bars *B*, terminating in a socket, as set forth; 2nd. A holder formed of the stud *C*, brick *t*, *D*, clip *L*, and thumb-screw *F*, for removably attaching the wringer to a barrel or tub, as set forth.

No. 3905. JOHN C. FORD, and HUBERT R. IVES, Montreal, Que., 6th October, 1874, for 5 years: "Carriage Jack." (Chèvre à voiture.)

*Claim*.—1st. An improved carriage-jack having the out-casting *A*, cast in two pieces *E*, *F*, with projections and opening *W*, *W*, and constructed in the form described; 2nd. The combination of the slide bar *G*, cast in one or two pieces, provided with the friction roller *J*, at the lower extremity and with the lifting bar *L*, having projections *e*, *f*, and grooves *X*, *X*, to receive the lock-cam *P*; 3rd. The lock-cam *P*, secured to the collar *I*, of the slide bar *G*, to hold up the adjustable bar *L*, at the height required; 4th. The combination of that part of the lever *Q*, from the axle to the toe *U*, with the roller *J*, to equalize the strain upon the lever *Q*, and lessen the friction; 5th. The concave notch *V*, in the toe *U*, of the lever *Q*, which acts in combination with the roller *J*, as a stop to hold down the handle or lever *Q*, while the jack is in use; 6th. The friction roller *J*, placed in the lever end of the slide-bar *G*, acting in combination with the lever *Q*, and notch *V*; 7th. The projection boss *K*, acting in combination with the slot *W*, and the projections *e*, *f*, on the adjustable bar *L*, to prevent the same from being entirely withdrawn.

No. 3906. FRANK G. JOHNSON, Brooklyn, N. Y., U. S., 6th October, 1874, for 5 years: "Railway Snow Remover." (Chasse-neige de rail-route.)

*Claim*.—The combination of a blast generating and snow disintegrating wheel, conducting tube supporting truck, and driving engine or engines with locomotive, in the manner specified.

No. 3907. ALEXANDER RODGERS, Muskegon, Mich., U. S., 6th October, 1874, for 5 years: "Balance Slide-valve." (Tiroir à vapeur d'équilibre.)

*Claim*.—1st. The valve provided with the pin *d*, cast thereon, in combination with the spring *K*, and piston *E*; 2nd. The valve provided with the cylindrical case *c*, in combination with the piston *E*, packing ring *f*, and junk ring *o*; 3rd. A balance valve having its various parts constructed and arranged for joint operation, as described.

No. 3908. JAMES D. FRASER, Pictou, N. S., 6th October, 1874, for 5 years: "Propeller for Vessels." (Propulseur de vaisseaux.)

*Claim*.—1st. The combination of a vertical crank shaft *C*, arms *D*, and *F*, and hinged buckets *E*, the said arms being arranged to shift the arms *F*, and provided with devices for so shifting them, as specified; 2nd. The combination with the hollow crank shaft *C*, and arms *D*, of the pinion *G*, toothed bats *H*, and adjusting nuts *K*.