

the back and top pieces B. C. secured to the side bars, and the tablet K, consisting of wire cable returned to and fro from opposite directions alternately, and laid closely side-by-side and the edges of said tablet formed by the returns of the cable inserted in said grooves as set forth.

**No. 37,359. Process for the Separation of Copper, Nickel, and Silver from Matte or Alloys Containing These Ores, and Treatment of the Residues.** (*Procédé pour la séparation du cuivre, nickel, et argent de la matte ou alliage contenant ces minerais, et le traitement des résidus.*)

Jules Strap, Paris, France, 11th September, 1891; 15 years.

*Claim.*—1st. In an electrolytic process for the separation of copper, nickel, solder, and silver, from matte or other alloys, in combination, or otherwise, with several other metals or metalloids, consisting in passing an electric current in an acidulated bath of sulphate of copper, varying in richness from 125 to 250 grammes to the litre of water, according to the quantity of matter to be treated, these previously cast into plates, forming the anode, while the cathode is formed of a thin plate of copper, substantially as described. 2nd. In a combination with the above described electrolytic process for separation, the separation of the nickel from the matte or alloy containing it in a state of sulphate of nickel by the action of sulphuric acid liberated by the current, this acid attacking the metallic nickel contained in the matte or alloy, thus forming sulphate of nickel, which is afterwards concentrated, crystallized or decomposed electrolytically, with, or without previous neutralization by ammoniac, substantially as hereinafter described. 3rd. In combination with the herein-above described electrolytic process for the separation of copper, nickel, and silver, from matte, or other alloys by the addition to the primitive bath of an excess of acid, to increase the proportion of sulphate of nickel formed, and prevent the decomposition by the current, this acid attacking the nickel of the anode, substantially as described. 4th. In combination with the herein above described electrolytic process for the separation of copper, nickel, and silver, from matte, or other alloys, the extraction of the sulphur contained in the sludge, after the electrolysis, in a state of condensed sulphuric acid, substantially as described. 5th. In combination with the herein-above described electrolytic process of separation, in the case of an alloy containing copper, lead, and solder, a bath of sulphate of copper containing about 125 grammes of sulphate of copper, per litre plus 5 per cent. of sulphuric acid, in which the matte to be decomposed forms the anode, the cathode consisting of a plate of copper, on which the copper, and solder are deposited, which is afterwards separated electrolytically, in a bath of azotate of copper, the lead separates in a state of sulphate of lead with the other foreign mineral matters, substantially as described.

**No. 37,360. Bicycle.** (*Bicycle.*)

Goolde Bicycle Company, (assignees of Henry Phillips), all of Brantford, Ontario, Canada, 11th September, 1891; 5 years.

*Claim.*—The combination in a bicycle main frame A, and the triangle frame B, the manner, and form in which the main frame A, coupling the wheels C, C, together, the frame B, is attached at the rear end to the frame A, or to the clip or axle G, carrying the frame B, at that end, which carries the seat L, shaft I, journaled in a bearing in the frame B, and treadles D, D, attached to shaft I, chain wheel F, chain E, springs K, and J, secured to the main frame A, carrying the hinged frame B, having the propelling gear secured to the frame B, substantially as shown and for the purpose specified.

**No. 37,361. Sulky Plow.** (*Charrue à siège.*)

Moses Trotman, and Orrin R. Baldwin, both of Detroit, Michigan, U.S.A., 11th September, 1891; 5 years.

*Claim.*—1st. In a wheel plow, the combination of a frame, a plow, a lever to elevate and lower the plow point and a fastening device to hold the point in a desired position, substantially as set forth. 2nd. In a wheel plow, the combination of a frame, a plow, a lever to elevate and lower the heel of the plow, and a fastening device to hold the heel in desired position, substantially as set forth. 3rd. In a wheel plow, the combination of a frame, a plow, a lever to independently elevate and lower the plow point, a lever to independently elevate and lower the heel of the plow, and fastening devices to hold the point, and the heel in a given position, substantially as set forth. 4th. In a wheel plow, the combination of a frame, a plow, a plow beam, constructed with elongated slots *b, b'*, levers C, D, fulcrumed on said frame, and engaged in said slots respectively, and fastening devices to hold said levers in desired position, substantially as set forth. 5th. In a wheel plow, the combination of a frame, a plow, a lever to elevate and lower the heel of the plow, a bracket F, engaged upon the frame, with which the plow has a movable engagement, and a fastening device to hold the plow in a given position, substantially as set forth. 6th. In a wheel plow, provided with a rear wheel, having a swiveled engagement in a frame, the combination therewith of a plow, a lever to elevate and lower the plow point, and a movable fastening device connected with said lever to hold the swivel of said wheel from turning in the frame, said fastening released simultaneously with the lifting of the plow point, substantially as set forth.

**No. 37,362. Attachment for Printing Machines.** (*Attache pour machines à imprimer.*)

Francis F. W. Oldfield, No. 31 Elm Grove, Peckham, and William W. Head, and Henry Robert Mark, both of London, all in England, 11th September, 1891; 5 years.

*Claim.*—1st. In a printing machine, the combination of the impression cylinder, the reciprocating table or platform 1, provided with one or more adjustable inking surfaces 33a, and carrying the form 2, inking rollers, arranged to receive colour from such inking surfaces, one or more colour troughs 10, 11, partitioned into separate compartments for various colours, ductor rollers 12, 13, and vibratory rollers 14, 15, for conducting the colour from said troughs to said inking surfaces, and distributing rollers 17, for distributing the colour thereon, as shown and described. 2nd. In a printing machine, an ink trough, divided by adjustable partitions into separate compartments, in combination with inking surfaces, provided or not with notched or serrated edges, and capable of being readily adjusted in position, or of being removed from the machine, and replaced by others to suit different widths or positions, of the lines of type or characters to be inked with different coloured inks, by the means hereinbefore described. 3rd. Printing rollers, consisting of separate sections of metal tubing carrying composition, and threaded upon a spindle, or shaft of polygonal, or other suitable cross section, that will prevent the sections turning thereon, the sections of metal tubing which carry composition being separated by sections of metal tubing, forming distance pieces unprovided with composition, substantially as hereinbefore described. 4th. Discs of metal, with plain or serrated edges, threaded upon a spindle, or shaft of polygonal, or other suitable cross section alternately, with sections of metallic tubing carrying composition, substantially as hereinbefore described.

**No. 37,363. Art of Forming Matrices.**

(*Mode de former les matrices.*)

The Chicago Matrix Machine Company (assignees of Casper Lavater Redfield), all of Chicago, Illinois, U.S.A., 11th September, 1891; 5 years.

*Claim.*—1st. The process of forming matrices for stereotype plates, which consists in impressing dies in sequence into a matrix body, and compressing material at the sides of the path of the type faces, and forming offsets in the walls of the impressions, substantially as set forth. 2nd. The process of forming matrices for stereotype plates, which consists in forming the impressions, successively, by dies, and compressing the matrix material unequally at both sides, varying offsets in the walls, substantially as set forth. 3rd. The process of forming matrices for stereotype plates, which consists in forming the impressions successively by dies compressing the matrix material unequally at both sides of the path of the type face to form offsets in the walls of greater width and depth, at the front, than in rear of the character face, substantially as set forth. 4th. The process of forming matrices for stereotype plates, which consists in forming the impressions successively by dies, and compressing the matrix material unequally at both sides of the path of the type face to form offsets in the walls, of greater depth at the front, than in rear of the character face, substantially as set forth. 5th. The process of forming matrices for stereotype plates, which consists in forming the impressions successively by dies, and compressing the matrix material unequally at both sides of the path of the type face to form offsets in the walls, of greater depth at the front, than in rear of the character face, substantially as set forth. 6th. The process of forming matrices for stereotype plates, which consists in forming the impressions in succession by dies, and compressing the matrix material at both sides of the path of the type face, to form shoulders in the walls adjacent to the hair lines of the character faces, substantially as set forth. 7th. The process of forming matrices for stereotype plates, which consists in forming impressions by successively impressed dies, and compressing the matrix material, both laterally and parallel to the path of the type face to form sloping walls and forming offsets therein, substantially as set forth. 8th. The process of forming matrices for stereotype plates, which consists in forming the impressions therein, successively by dies, and making the stems of the character faces slightly convex in transverse section, substantially as set forth. 9th. A matrix for stereotype plates, having its impressions wider than the character faces, and their walls provided with offsets, substantially as set forth. 10th. A matrix for stereotype plates, having the walls of its impressions sloping outward, from the character faces, and provided with offsets, substantially as set forth. 11th. The method of forming matrices for stereotype plates, which consists in compacting in downward direction matrix material, adjacent to the character impressions.

**No. 37,364. Machine for Making Dentures.**

(*Machine pour faire les dentures.*)

Robert E. Zellers and Edward Caspersoun, both of Philadelphia, Pennsylvania, U.S.A., 11th September, 1891; 5 years.

*Claim.*—1st. In an apparatus for making dentures, the combination, with suitable burners, connected with a source of heat supply of a two-part flask, within one of said burners, having air canals, or passages, formed therein, air tubes communicating with said canals for exhausting the air therefrom, a crucible with the other burner, and a passage therefrom to the interior of the mold, substantially as herein described. 2nd. In an apparatus for making dentures, the combination, with suitable burners, connected with a source of heat supply of a two-part flask, within one of said burners, having openings *b, c*, in its upper wall, an air canal, or passage, formed in the flask, having canals, or passages, leading to the mold within the flask, a crucible, in the other burner having an outlet, leading to said mold air tubes let into the openings *b, c*, and connected with means for exhausting the air, and creating a vacuum in the mold, substantially as herein described. 3rd. In an apparatus for making dentures, the combination, with burners, and means for supplying heat thereto of a two-part flask within one of said burners, a crucible within the other burner, formed integral with one of said parts, means for locking the sections of the flask together, the air tubes communicating with the interior of the flask for exhausting the air therefrom, and a passage leading from the crucible to the mold, substantially as herein described. 4th. In an apparatus for mak-