

The combination of the main circuit, the loop circuit, and means operated by the diversion of the current from the loop to automatically both short-circuit and cut-out the loop circuit, substantially as set forth. 4th. The combination of the main circuit, the loop circuit, the terminals of the two circuits which are normally electrically connected, and means operated by the diversion of the current from the loop for automatically breaking the connection between the two circuits, whenever the current is grounded or otherwise diverted in the loop, thereby cutting out the loop and at the same time permitting the terminals of the main line to come together so as to continue the main circuit, substantially as set forth. 5th. The combination of the main circuit, the loop circuit, the terminals of the two circuits which are normally electrically connected, the electro-magnet, the coils of which are included in the loop circuit, and which are so disposed that the current which passes through the coils does not normally energize the magnet, but which does energize the magnet whenever the current in the loop is grounded or otherwise diverted, and the armature of the magnet to which the terminals of the loop circuit are attached, so that, when the magnet is energized by reason of a short-circuit or ground connection in the loop, it will attract its armature, thereby breaking the connection between the terminals of the two circuits and cutting out the loop, substantially as set forth. 6th. The herein-described electrical cut-out apparatus, consisting of the combination of the bed-plate, the terminal springs, the terminal plates normally clamped between the terminal springs, the electro-magnet, the coils of which are wound, as described, the armature, the flexible conductors which connect the coils of the electro-magnet with the terminal plates, the binding posts and the conductors which lead from one set of binding posts to the terminal springs and from another set of binding posts to the coils of the electro-magnet, substantially as set forth. 7th. The herein-described electrical short circuiting and cut-out apparatus, consisting of the combination of the bed plate, the terminal springs, the terminal plates normally clamped between the terminal springs, the electro-magnet, the cores of which are wound, as described, the armature, the flexible conductors that connect the coils of the electro-magnet with the terminal plates, the fixed core of the magnet, its armature, the binding posts and the conductors for electrically connecting the terminal springs with one set of binding posts and the coils of the electro-magnet with another set of binding posts, the conductor for connecting one of the binding posts with the fixed core of the magnet, and the conductor for connecting the armature of the fixed core to another of the binding posts, substantially as set forth.

No. 19,288. Propeller Wheel. (*Roue Propulsive.*)

Harrison C. Pearsons, Ferrysburg, Mich., U. S., 10th May, 1884; 5 years.

Claim.—A propeller wheel blade, sharpened on the after side at the forward or leading edge, and having its forward side constructed with a concave surface, so as to make it tangent to the "line of motion" at the forward edge of the blade, substantially as and for the purpose set forth.

No. 19,289. Prevention and Removal of Scale in Boilers. (*Prévention et Enlèvement des Incrustations dans les Chaudières.*)

George Downie, Saliwas, Cal., U.S., 10th May, 1884; 5 years.

Claim.—The improved method herein described, for preventing and removing scale from steam boilers, consisting essentially in subjecting the interior of the boiler to the action of an infusion or decoction of encalyptus, substantially as described.

No. 19,290. Speed Changing Mechanism. (*Mécanisme de Changement de la Vitesse.*)

Benjamin B. Powell, Petowskey, Mich., U.S., 10th May, 1884; 5 years.

Claim.—1st. In a speed-changing mechanism, the combination, with the shafts L, D and their respective pinions K, C, of the spur-wheel B, the lever E with its pinions O, F, the blind-wheel or disk G and its series of differential gears I, J, the eccentric spur-wheel H and the series of pinions P, Q carried by the blind wheel G, and arranged to engage with the eccentric wheel H and pinion O, substantially as specified. 2nd. In combination with the blind wheel G, having a series of differential gears I, J for operation, as described, in connection with the pinion K and eccentric wheel H, the loosely-fitted lever E made capable of engaging by catch or fastening with the blind wheel at different points and engaging by gears, through a series of pinions on the blind wheel, with said eccentric wheel and with a driving spur-wheel B, essentially as and for the purposes herein set forth. 3rd. The differential gears I, J, fitted in longitudinally sliding spindles c, in combination with the disk or wheel G which carries them, and springs d, the fixed arm or bracket M having inclined guiding-faces e, e, and the pinion K, substantially as described. 4th. The locking-lever N in combination with the sliding spindles c, in which it is fitted to engage the gears I, J, the springs d, and the blind-wheel G, essentially as and for the purposes herein described. 5th. The lever E having sloping guiding faces s, s, in combination with the sliding spindles in the gears Q, P, the springs o, the blind wheel G, the eccentric spur-wheel H and the lever pinion O, substantially as specified.

No. 19,291. Application of Wire Gauze in the Construction of Floors, Partitions, &c. (*Application de Tissu Métallique dans la Confection des Planchers, Cloisons, &c.*)

James McCarroll, New York, N.Y., U.S., 10th May, 1884; 5 years.

Claim.—Walls, ceilings, floors, partitions, or compartments of building, composed of two or more thicknesses or layers of wire gauze, or netting, with a view to preventing the occurrence of the spread of fire, and for the admission of light and air through such walls or partitions hitherto impervious to both.

No. 19,292. Process for Changing Hemlock Tanned Leather to the Appearance of Oak Tanned Leather. (*Procédé pour Changer l'apparence du Cuir Tanné à la Pruche en celle de Cuir Tanné au Chêne.*)

John P. Gurnett, Toronto, Ont., 10th May, 1884; 5 years.

Claim.—The process of making hemlock tanned leather, either before or after being tanned, have the resemblance and appearance of oak tanned leather by using picric acid and pumerick, in the proportions and manner hereinbefore set forth and substantially as described, the use of the said ingredient as aforesaid being my invention.

No. 19,293. Process for Manufacturing Carbons for Electric Lamps. (*Procédé pour Fabriquer les Charbons pour Lampes Électriques.*)

Alexander Bernstein, Boston, Mass., U.S., 12th May, 1884; 5 years.

Claim.—1st. The method or process of manufacturing hollow carbons for incandescent electric lamps, it consisting in cutting suitable organic substances, such as paper, into sheets of suitable size, rolling the same into the desired form and then carbonizing the paper cylinders thus produced. 2nd. The hereinbefore described method of manufacturing hollow carbons for use in incandescent electric lamps, it consisting in rolling sheets of paper into a cylindrical form by means of suitable cores or mandrels, and next withdrawing the mandrels and carbonizing the paper cylinders, substantially as specified. 3rd. The hereinbefore described process of forming or manufacturing hollow carbons for incandescent electric lamps, the said process consisting in cutting textile fabrics or paper into sheets of the desired shape and size, covering one side of the said sheets with suitable carbonaceous cement, and next rolling the said sheets into the desired form, and next carbonizing them, whereby a hollow carbon of great density and homogeneity is produced, substantially as specified. 4th. For an incandescent electric lamp, a tubular light-giving conductor or carbon made of paper, or a textile fabric, and carbonized, substantially as described.

No. 19,294. Mechanism for Warping, Spooling and Recopping Yarn Directly from Cops. (*Machine pour Ourdir, Bobiner et Rebobiner le Fil directement des Bobines.*)

Robert L. Carr, Fall River, Mass., U.S., 12th May, 1884; 15 years.

Claim.—1st. The combination, substantially as hereinbefore set forth, of the beam, its driving mechanism, the tension device and the yarn delivering stand provided with cop supporting spindles, which permit a cop to backwardly rotate thereon or therewith as the yarn is drawn from the cops on its way to the beam, as set forth. 2nd. The combination, substantially as hereinbefore set forth, of the beam, its driving mechanism, the tension device and a yarn delivering stand provided with a series of cop-supporting spindles, which slightly yield under the tension of the yarn and permit cops to be backwardly rotated thereon, or therewith, as set forth. 3rd. The combination, with yarn winding mechanism, of an unwinding spindle which is capable of bodily movement under the tension of yarn from a cop carried by said spindle, substantially as described, whereby, in unwinding a broken or imperfect cop, said spindle may slightly change its position with relation to the line of the yarn leading therefrom, and thereby enabling the yarn to free itself from a "mat" or "snarl" in the cop, as set forth. 4th. The combination, with yarn winding mechanism, of an unwinding spindle rotatively mounted and a yielding head bearing for said spindle, which permits the latter to be deflected under the tension of yarn drawn from a cop mounted on said spindle, substantially as described.

No. 19,295. Bark-Cutter. (*Hache-Force.*)

Jeremiah Daignean, Lowell, Mass., U.S., 12th May, 1884; 5 years.

Claim.—1st. The combination of the lever A provided with the pin holes c and mortise a, through which is a limited knife-holder, and the spring d which claps the log and is held and adjusted to said log by a screw d, the pin at which is a limited through the holes c in the lever A, and unite the lever and the knife-holder, the knife-holder B which is provided with holes b and, when inserted through the mortise a, is held there by the pin a and having also a spring e which is adjusted to the log by a screw e, and the U-shaped knife C which is fastened to the knife-holder B by means of adjustable screws f, which pass through slots g in the knife and through the knife-holder B, all parts being combined, substantially in the manner and for the purpose shown and described. 2nd. In a bark-cutter, the combination of the lever A and the knife-holder B secured to the lever, substantially as described and for the purposes set forth. 3rd. The combination of the lever A, the spring d, adjusting screw d, and knife-holder B, all substantially as and for the purposes described. 4th. The combination of the lever A and the knife-holder B, the spring e and the screw e, all substantially as and for the purposes described. 5th. The combination of the knife-holder B, the knife C and the adjustable screw f, all substantially as and for the purposes described.

No. 19,296. Incrustation Preventive for Steam Boilers. (*Préservatif Contre les Incrustations dans les Chaudières à Vapeur.*)

Frederick Froxel, Danville, Ill., U.S., 12th May, 1884; 5 years.

Claim.—A preparation or compound for extracting lime from water and removing scale from boilers, composed of concentrated lye, resin and alum, in substantially the proportions above set forth.