

combined nut and pipe wrench, having a stationary upper jaw, and a concave recess formed below the upper jaw, in combination with an adjustable lower jaw having a cap slipped on to the outwardly tapered top end of it, the top of the cap having teeth formed on it, substantially as specified.

### No. 36,040. Electrical Cable.

(*Câble électrique.*)

The Bell Telephone Company, Montreal, Quebec, Canada, assignees of John C. Reilly, Brooklyn, New York, U.S.A., 23rd February, 1891; 5 years.

*Claim.*—The method, herein described, of constructing electric cable, which consists in insulating a series of conductors, arranging them in concentric rows, applying a suitable sheathing, dividing them into a series of longitudinal sections, arbitrarily designating the terminals of each conductor of each section in regular succession with consecutive numerals, and then connecting each conductor of one section to a conductor of the next succeeding section by the formula  $c, b$ , unless and until  $c, b$  exceeds  $m$ , when  $n$  is substituted for  $c$ , substantially as described.

### No. 36,041. Wire Frame. (*Cadre métallique.*)

R. E. Dietz Company, New York, State of New York, U.S.A., assignee of Charles Lyman Betts, of New York, aforesaid, 23rd February, 1891; 5 years.

*Claim.*—1st. The combination with a wire ring, constructed with undercut overlapping end portions, whereby the end portions are interlocked against longitudinal movement on each other, of a sleeve or clasp which embraces the overlapping ends, and whereby the latter are firmly secured together without solder, substantially as set forth. 2nd. The combination, with a wire ring constructed with undercut overlapping end portions, of an upright wire arranged adjacent to the overlapping end portions, and a clip provided with sleeves which embrace the overlapping ends of the ring, and with sleeves which embrace the upright wire, substantially as set forth.

### No. 36,042. Trimmer for Sewing Machines.

(*Machine à garniture pour machines à coudre.*)

Joseph Simpson, assignee of Daniel Maus, both of Toronto, Ontario, Canada, 23rd February, 1891; 5 years.

*Claim.*—In a sewing machine, a rotary trimming disc, circular in form, and having a series of sharpened teeth or serrations extending around the entire periphery of the disc, the said disc being arranged to revolve at a much more rapid rate than that in which the cloth is fed into the machine, as specified.

### No. 36,043. Manganese Bronzes and Alloys.

(*Alliages de bronze et de manganèse.*)

Alfred Hutchinson Cowles and Eugene Hutchinson Cowles, both of Cleveland, Ohio, U.S.A., 25th February, 1891; 5 years.

*Claim.*—1st. The process, which consists in forming alloys of manganese and adding a small percentage of aluminium to such alloys, as herein described, prior to casting, as set forth. 2nd. The process, which consists in forming alloys of manganese and adding from a trace to five per centum of aluminium to such alloys to increase their strength, elasticity and facility of casting, and diminish their tendency to corrosion, and to add to their silver-like lustre and whiteness, substantially as set forth.

### No. 36,044. Stiffener for Boot and Shoe Soles. (*Shank en acier pour chaussures.*)

Edmond Jacques, Montreal, Quebec, Canada, 25th February, 1891; 5 years.

*Resume.*—Le procédé d'employer le shank en acier dans les chaussures à simple semelle ou dites retournées, tel que cidessus décrit et pour les fins indiquées.

### No. 36,045. Heating Apparatus for Railway Cars. (*Appareil de chauffage des chars.*)

Charles Millard Pratt, assignee of Edwin Adebort Leland, both of Brooklyn, New York, U.S.A., 25th February, 1891; 5 years.

*Claim.*—1st. A railway car heater, consisting of an external jacket, having at its lower end a cap containing a water inlet, and at its upper end a cap containing a central hot-water outlet to communicate with the car radiators, a cylinder located within the jacket and arranged to provide a surrounding water space between it and the interior of the external jacket, a series of tubes extending through the interior cylinder for the upward flow of the water, a steam inlet pipe entering the lower cap of the jacket, and extending upward into the interior cylinder, and a condensed steam outlet pipe also entering through the lower cap of the jacket and provided with a perforated pipe rising within the interior cylinder for the escape of the condensed steam, substantially as described. 2nd. A railway car heater, consisting of an external jacket, having at its lower end a cap containing a central water-inlet, and at its upper end a cap containing a central hot-water outlet to communicate with the car-radiators, a cylinder located within the jacket, between the upper and lower caps, and arranged to provide a surrounding water space between it and the external jacket, a series of tubes extending through the interior cylinder for the upward flow of the water, a steam inlet pipe passing through the lower cap of the jacket and rising upwardly within the interior cylinder to deliver the steam at

or near the centre thereof, and a condensed steam outlet pipe, also extending through the lower cap of the jacket, and having a perforated pipe or extension rising upwardly within the interior cylinder for the escape of the condensed steam, substantially as described. 3rd. A railway car heater, consisting of an external jacket, provided at its lower end with a water inlet, and at its upper end with a hot water outlet to communicate with the car-radiators, a cylinder arranged within the jacket and provided with a series of tubes for the upward flow of the water, a steam-pipe section having right and left-hand screw-threads engaging the lower end of the interior cylinder and the lower head of the external jacket, a steam delivery pipe connected with the screw-threaded steam pipe section and rising within the interior cylinder to deliver the steam at or near the center thereof, and a condensed steam pipe section having right and left screw-threads engaging the lower end of the cylinder and the lower head of the external jacket, and provided with a perforated pipe or extension rising within the interior cylinder at a point opposite the steam inlet pipe section for the escape of the condensed steam, substantially as described.

### No. 36,046. Ballot Box. (*Boîte à scrutin.*)

George Adolphus Cline and William Trimble, both of Toronto, Ontario, Canada, 25th February, 1891; 5 years.

*Claim.*—1st. In a ballot-box, a lever for locking the voting mechanism, actuated by the key-rods, substantially as and for the purpose set forth. 2nd. In a ballot-box, a lever for locking the voting mechanism, provided with apertures and actuated by the key-rods passing through the said apertures, substantially as and for the purpose set forth. 3rd. In a ballot-box, a lever for locking the voting mechanism, provided with apertures, fitted with pivoted latches, and actuated by the key-rods passing through the said apertures, substantially as and for the purpose set forth. 4th. In a ballot-box, a lever for locking the voting mechanism, made in sections and sliding in suitable guides, each section being provided with an aperture, fitted with a pivoted latch, key-rods passing through said aperture and actuating said lever, substantially as and for the purpose set forth. 5th. In a ballot-box, a lever for locking the voting mechanism, made in sections, sliding in suitable guides, provided with apertures and actuated by key-rods passing through said apertures, substantially as and for the purpose set forth. 6th. In a ballot-box, a pawl operating lever W, consisting of a series of sections  $w$ , sliding in guides  $D$ , having apertures fitted with outwardly working pivoted latches  $E$ , provided with a returning spring  $F$ , key-rods  $G$ , passing through the said apertures, and actuating said pawl operating lever, substantially as and for the purpose set forth. 7th. In a ballot-box, a pawl operating lever W, consisting of a series of sections  $w$ , having apertures through which pass the key-rods  $G$ , the centre of the apertures being eccentric to the centre of the key-rods, the said key-rods actuating the said lever, substantially as and for the purpose set forth. 8th. In a ballot-box, a key-rod, having hinged to its inner end a pawl, fitted with a series of prongs to correspond to the number and engage with the indicating numeral wheels, and suitable mechanism for operating pawl actuating lever W, substantially as and for the purpose set forth. 9th. In a ballot-box, a key rod, fitted with a dog for operating the numeral wheels, and suitable mechanism for operating pawl actuating lever W, substantially as and for the purpose set forth. 10th. In a ballot box, a key-rod having pivotally connected to its inner end, a pawl, to engage with the ratchet teeth formed on the side face of the numeral wheels, guides  $i$ , cams  $l$ , lock  $L$ , and grooves  $g$ , substantially as and for the purpose set forth. 11th. In a ballot-box, a key-rod, fitted with a pawl, pivotally connected to its inner end, guides  $i$ ,  $t$ , and cams  $l$ , keeper  $k$ , guides  $i$ ,  $t$ , moveable collars and cushioning washer, substantially as and for the purpose set forth. 12th. In a ballot-box, a key-rod, fitted with a pawl pivotally connected to its inner end guides  $i$ ,  $t$ , cam  $l$ , lock  $L$ , a moveable collar  $L$ , fitted with a set screw  $P$ , a second moveable collar  $L'$ , fitted with a set screw  $P'$ , cushioning washer  $M$ , grooves  $g$ ,  $g'$ , recoil spring  $M'$ , and button  $g''$ , substantially as and for the purpose set forth. 13th. In a ballot-box, a ratchet wheel, having cut on its periphery a suitable number of teeth, and provided on one of its faces, with a stop, to engage with one end of the trip-block, the opposite end of the trip-block engaging with a locking bar F, substantially as and for the purpose set forth. 14th. In a ballot-box, a releasing lever, having cut in one of its edges a number of niches, to engage with and correspond to the number of bolts  $N$ , and operated by the releasing key-rod, substantially as and for the purpose set forth. 15th. In a ballot-box, a releasing lever having cut in one of its edges a series of niches and fitted on its upper face with a U-shaped pin, operating the pawl releasing lever  $n$ , substantially as and for the purpose set forth. 16th. In a ballot-box, a releasing lever having cut in one of its edges a series of niches, fitted on its upper face with a U-shaped pin operating the pawl releasing lever  $n$ , and fitted on its lower edge with a downwardly extending pin, engaging with the trip end of the recoil pawl  $C$ , substantially as and for the purpose set forth. 17th. The combination of the ratchet wheel C, fitted on its upper face with a stop D, the pawl  $C'$ , trip-block E, and locking bar F, substantially as and for the purpose set forth. 18th. In a ballot-box, an indicating register consisting of a suitable number of numeral wheels provided on their side faces with ratchet teeth, the ratchet tooth opposite the two on the units wheel being four times the depth of the remaining teeth on the said wheel and the depth of the ratchet tooth opposite the two on the ten's wheel being twice the depth of the remaining teeth on the said wheel, so that on every revolution of the units wheel, the prong and pawl opposite the ratchet teeth on the said wheel may drop into the increased depth and move the units and ten's wheels one space together, and on every revolution of the ten's wheel the prongs opposite the ratchet teeth on the units and ten's wheel, may drop into the increased depth and move the units, ten's and hundred's wheel forward one stop together, substantially as and for the purpose set forth. 19th. In a ballot-box, the numeral wheels in the indicating register, having counter sunk bearings provided with a pin to engage with an outwardly projecting pin on the periphery of the spindle, for the purpose of returning the said numeral wheels back