

escapement on said carrier, contact strips adapted to bear on the series of contacts, respectively, and adjustable with respect thereto, whereby the width of contact surface presented to said strips may be varied, and a lever or key acting in conjunction with the escapement to lock or release the carrier, as set forth. 5th. The combination, with a cable or line of high static capacity and a transmitting battery, of a revolvable frame or carrier provided with two series or rows of contacts of varying width connected to a line and alternately disposed, two contact terminals from the positive and negative poles of the battery adapted to bear on the rows of contacts, respectively, and adjustable with respect thereto, whereby the width of contact surface presented to said strips may be varied, a motor for rotating the carrier, and a key for locking and releasing it, as herein set forth. 6th. The combination, with a submarine cable and a transmitting battery, of stationary and moving contacts adapted to connect the opposite poles of the battery alternately to line, means for adjusting the relative width or extent of the surfaces in contact and consequently the duration of contact for a given movement of the contacts, and a key or controlling device for locking and releasing the moving contacts according to the character of the signals to be transmitted. 7th. The combination of the revolvable carrier or wheel, the contact plates of varying width, the adjustable terminals bearing on the contacts, the two rows or series of escapement pins or stops, one row being insulated from the wheel and the contacts, and the locking and releasing lever adapted to be connected to earth and engaging with the teeth of each row alternately. 8th. In a circuit controlling device, a contact maker revolved by a source of power and having angular contacts, one of the sides of such angles being parallel to the axis of revolution, in combination with connecting contacts adjustable along the line of said angular contacts, as set forth. 9th. In a circuit controlling device, the combination of a movable circuit maker having contacts varying in superficial area, one side of such contacts being a right line, and two connecting contacts forming terminals of opposite poles of separate sources of electrical energy, said connecting contacts being independently adjustable along the line of the movable contacts, as described. 10th. The combination of a contact maker revolving at a uniform speed and carrying angular contact plates, forming one part of an electric circuit, of two connecting strips constituting the terminals of independent sources of electrical energy of opposite polarity and forming alternately the other part of said circuit and adapted to produce successive alternations of polarity occupying equal intervals of time and independently adjustable with respect to said revolving contacts, whereby the duration of their respective engagement may be varied.

No. 42,120. Paper Pulp Digester.

(*Pourrissoir de pâte à papier.*)

Charles Curtis, Newton, Massachusetts, and Nathaniel Morrison Jones, Bangor, Maine, both of U.S.A., 1st March, 1893; 6 years.

Claim.—1st. A pulp digester, comprising a metal shell, a lining of carbonized cement, and an intermediate lining between the cement and the shell, of material which is impervious to the acid solution, whereby the shell is protected in case of leakage through the cement lining, as set forth. 2nd. A pulp digester, comprising a metal shell, a lining of carbonized cement, and an intermediate lining between the cement and the shell, of an acid proof material or composition which is a non conductor of heat, as set forth. 3rd. A pulp digester, comprising a metal shell, a lining composed of sections of carbonized cement, having tongues and recesses at their edges, the recesses of each section being overlapped by tongues on the adjoining sections, and acid proof packings between said tongues, as set forth. 4th. A pulp digester, comprising a metal shell, and a cement lining, composed of an outer and an inner layer, both layers being made of sections formed to overlap at their edges, the joints of the inner layer alternating with those of the outer layer, as set forth. 5th. A pulp digester, comprising a metal shell, and a carbonized cement lining, composed of sections having tongues and recessed at their edges, the sections having their inner surfaces recessed to form packing receiving grooves or seats adapted to hold packings or joint protectors across the seams or joints formed by the sections, as set forth. 6th. A digester shell, having a lining of carbonized cement, as set forth. 7th. A digester shell, having a continuous seamless lining of carbonized cement, as set forth. 8th. The method hereinbefore described, of lining digester shells, the same consisting in applying to the internal surface of the shell, a seamless lining of cement in a plastic condition, then closing the shell practically air tight, and carbonizing said lining while the shell is thus closed, as set forth. 9th. In a digester, the combination with an outer shell of outwardly extended collars thereon, having flanges, inwardly extended cylinders in said collar, concentric with and of a smaller diameter than said collars, said cylinders provided with corrugations to engage the cement lining inserted in the annular space between said cylinders and collars, and flanges screw threaded in the inner ends of said cylinders, whereby a tight joint is made with the surrounding cement lining, as set forth. 10th. In a digester, an outer shell *a*, an inwardly extended collar *b*, having flanges *b'*, inwardly extended cylinder *c*, having flange *c'*, said flange *c'*, provided with openings and plugs *c''*, for the insertion of the cement lining between said cylinder and collar, corrugations *c''*, and flanged, whereby a tighter joint is made with inner lining or

blocks *c*, as set forth. 11th. In a digester, collar *f*, flanged cylinder *g*, having corrugations, flange *f*, and connection such as *i*, for a blow off valve, as set forth. 12th. In a digester, an inner lining composed of blocks or slabs of suitable material, said blocks or slabs having four sides, two adjacent sides thereof having a portion of the edges recessed on one surface, and the other two adjacent edges similarly recessed on the opposite side, thus forming on the four sides tongues and recesses, as set forth.

No. 42,121. Advertising Device. (*Mode de publicité.*)

Charles Eissner, Montreal, Quebec, Canada, 1st March, 1893; 6 years.

Claim.—1st. As an advertising device a balloon displaying advertisements and connected with the car of an elevator so as to have a corresponding movement with same, as set forth. 2nd. As an advertising device a balloon displaying advertisements, illuminated by incandescent electric lamps arranged within it, and connected with the car of an elevator so as to have a corresponding movement therewith as set forth. 3rd. As an advertising device the combination of the captive balloon D displaying advertisements, central rope *G* in same suspended ring *G*; electric lamps *F* suitably guarded; feeding wires *F'* to said lamps; and an automatic take-up for said wires as set forth.

No. 42,122. Furnace for Boilers. (*Foyer de chaudières.*)

James S. Harkins, Minneapolis, Minnesota, U.S.A., 1st March, 1893; 6 years.

Claim.—1st. The combination in a furnace, of a fire pot having its walls formed hollow and connected to the outer air and provided with a series of openings leading from the hollow wall into the fire pot, a corrugated inner lining forming diving flues with similar corrugations on the inner wall of said fire pot, the grate bars 18 and the smoke flue 33, substantially as described and for the purpose specified. 2nd. The combination in a furnace, of a fire pot, an enclosing hollow wall, a series of openings from said hollow wall into said fire pot, openings leading into said hollow wall from the outer air, a steam pipe adapted to deliver a spray of steam in said fire pot and the draft openings 17, grate bars 18 and smoke flue 33, substantially as described. 3rd. The combination in a furnace, of the fire box 23 having the walls 25 and 26 on the sides formed "U" shaped, the walls 27 and 28 at the rear formed "U" shaped and of a less height than the side walls and said walls being closed at the top forming a hollow space between them, said hollow space being connected by suitable openings with the outer air and by a series of holes with the fire pot 23, the damper 50, and the smoke flue 33, substantially as described and for the purpose specified. 4th. The combination in a furnace, of the fire pot 23 having the side walls 25 and 26 and the rear wall 27 and 28 provided with the openings 39, a corrugated lining 30 forming with similar corrugations on the walls 25 and 27, diving flues, the grate bars 18, damper 50, and smoke flue 33, substantially as described. 5th. The combination in a furnace, of the fire pot 23, the walls 25, 26, 27 and 28 having the series of openings 39, and the openings 37, damper 50, steam pipe 40, diving flue 19, grate bars 18, ash box 4, draft openings 17, and smoke flue 33, combined and constructed substantially as described and for the purpose specified.

No. 42,123. Arc Lamp. (*Lampe à arc.*)

Max Adolf Naeck and Richard Wilhelm Ludwig Holsten, Leipzig, Saxony, 1st March, 1893; 6 years.

Claim.—1st. An electrical differential arc lamp having two movable guiding tubes B and D, for the carbon holders *a*, *b*, connected by chains or flexible material to a drum upon the axis of a rocking lever E, attracted at one end by an electro-magnet wound in the main circuit, and at the other end by an electro-magnet wound in a shunt circuit. 2nd. An electrical differential arc lamp having the arrangement of a feed magnet in the shunt circuit, and a vibrating contact piece thereon J, adjusted by the lever in spring *k*, and screw *c*, and carrying a pawl at its upper end, in combination with a bent contact piece L, to effect a certain positive feed of the carbons towards one another, when the main current is diverted in considerable quantity through the shunt circuit.

No. 42,124. Toilet Paper. (*L'papier de toilette.*)

Edgar Jerome, Norwalk, Connecticut, U.S.A., 1st March, 1893; 6 years.

Claim.—1st. A roll of toilet paper, consisting of a web having transverse cuts from the margins inward, determining the units for use and leaving bonds whose margins substantially coincide with the lines of strain between the bonds under stress, and the point of application of the thumb and finger. 2nd. A web of toilet paper having a narrow bond between the sheets, and cuts from the margins toward the center at an inclination to the margins, said cuts leaving a re-entrant angle on one sheet, and a salient angle on the other, all substantially as described. 3rd. A roll of toilet paper formed of sheets connected by bonds, and having the contiguous ends of the sheets formed of reversed contour, substantially as and for the purpose set forth.