tions 84, and perforated as at 82, for adjustable connection with the arm 66, and of the counter shaft 54, mounted in the bearing 52 and provided with a cam 69, substantially as specified. 12th. The combination, with the lever 85, pivoted in the block 86, and having the rods 87 connected with the bell crank 88, of the screen 71, the pivoted arms 66, and the connecting rod 68, the arm 66 being loosely connected with the bell crank 88, which is bent, as at 89, for that purpose, substantially as specified. 13th. The beams 1, having the recesses 3, in combination with the ribs 4 and the angle-arms 6 carrying the sides 7, the arms, ribs, and beams being bound together by the bolts 8, and forming the channel 73, for the reception of the sprocket chains, said channel being further provided with the guides 75 and pulleys 74, mounted on binding bolts 67, over which run the sprocket chains 72, substantially as specified.

No. 35,988. Improvements in the Art of Building. (*Perfectionnements aux bâtisses.*)

George Fitch, Lenox, Massachusetts, U.S.A., 14th February, 1891: 5 years.

Claim.—1st. In a building, the combination, with the floor-joist, provided with longitudinal brace-pieces, of the independent ceiling-joist, also provided with longitudinal braces, and arranged between the floor-joists and projecting slightly below the latter, substantially as described. 2nd. In a building, the combination, with the longitudinally trussed floor-joists, of the independent ceiling-joists arranged between the floor-joists, the floor-joists being isolated by sound-deadening devices, substantially as described.

No. 35,989. Bridge. (*Pont.*)

Benjamin Bear, Doon, Ontario, Canada, 14th February, 1891: 5 years.

Claim.—1st. In a bridge, the top chord constructed of timbers to form an inverted channel, and consisting of a web c and flanges c^1, connected by bolts c^{11}, in combination with a non-corrosive sheet metal covering c^{111}, substantially as set forth. 2nd. In a cross beam of a bridge, the combination of the timbers F, placed side by side, the bolts f, connecting the two pieces laterally, the truss rod F^1 passing through the cap plate E^{11}, and under the cross-bar, the cross-bar F^{11} under the centre of said beam held by the truss rod, the cap plate E^{11} overlapping the upper angles of the ends of said beam, and the non-corrosive sheet metal covering c^{111}, substantially as set forth. 3rd. In a bridge, the combination of a cap plate E^{11}, having lugs with eyed hubs e^{11}, a shoe E^1 standing upon said cap-plate, and having a beveled top to receive the lower end of the truss post, and having eyes to receive an eye-pin, a stirrup E^{111} suspended from an eye-pin passing through the shoe E^1, and the shanks of which pass through the hubs in the cap-plate, and provided with a cross-bar e^{111}, held on the threaded ends by nuts, an eye-pin D^{11} passing through the shoe E^1, and engaging the stirrup E^{111}, eye-bars D, oblique suspension rods H, and vertical tie rods e, substantially as set forth. 4th. In a bridge, the combination of the abutment shoe B, adapted to hold the end of the main beam, and a pin engaging the eyebars, the strut end of the top chord C, butting on the shoe B, eyebars D, engaging the pins D^1, D^{11}, the post E upon the shoe E^1, and supporting the web c, of the top chord, the vertical tie-rods e at the sides of said post engaging the pin in the shoe E^1, and passing through the top chord, the pin D^1 in the abutment shoe, engaging the eye-bar D, the pin D^{11} in the shoe E^1, engaging the eye-bars D, tie-rods e, oblique suspension rods and stirrup E^{111}, the cap plate E^{11}, supporting the shoe E^1, and the cross-beam F, held in said stirrup, substantially as set forth. 5th. In a bridge, the combination of the cross-beams F, cap plates E^{11}, having eyed hubs e^{11} and the diagonal braces G, having eyed nut g, engaging said hubs e^{11}, substantially as set forth. 6th. In a bridge, the combination of the top chord C, bottom chord formed by the eye-bars D, pins D^{11} engaging said eye-bars, truss-posts E^1 connecting said chords, tie-rods e at the sides of said posts, shoes E^1 carrying said posts and holding the pins D^{11}, cap-plates E^4 on the top chords over the posts E, receiving the upper ends of the rods e and oblique suspension rods H, engaging the pins D^{11}, and the cap plate E^4, substantially as set forth. 7th. In a bridge, the combination of the top chords C, posts E supporting said chords, tie-rods e, connecting shoes and top-chords, shoes E^1 supporting said posts and holding the pins D^{11}, cap plates E^4, having eyed hubs e^4, angular eyed hubs e^5 and bolt I^1, the flanged washers e^1 securing the upper ends of the tie-rods e, and supporting the tie beams I, supported upon the flanged nuts e^1 and held by the bolt I^1 angle braces I^{11} and diagonal braces J engaging the hubs e^4, substantially as set forth.

No. 35,990. Lantern. (*Lanterne.*)

Charles Jesse Higgins, Hallowell, Maine, U. S. A., 14th February, 1891; 5 years.

Claim.—1st. The combination, with the lantern frame and the movable globe support, of a hinge and guide which permits the globe support and the globe attached thereto to be tilted or to be raised and lowered at desire, substantially as set forth. 2nd. The combination, with the lantern frame and the movable globe support, of bars or rods secured to the lantern frame and having lateral portions on which the globe support can be tilted, and upright portions on which it can be raised and lowered, substantially as set forth. 3rd. The combination, with the lantern frame and the movable globe support, of a hinge connection which permits the globe support and the globe attached thereto to be tilted, and a back stop against which the upper surface of the globe support rests when tilted, substantially as set forth. 4th. The combination, with the lantern frame and the movable globe support, of a hinge and guide which permits the globe support to be tilted or raised and lowered, and stops formed on the inner side of the lantern frame by which the globe support is locked in its normal and in a raised position, substantially as set forth. 5th. The combination, with the oil pot, an air chamber secured thereto, tubes connected with the air chamber, and a wick tube attached to the oil pot, of a movable globe supporting plate provided with a downwardly projecting annular bead formed integral with said plate, and a burner cone attached to said plate within said bead, substantially as set forth. 6th. The combination, with the lantern frame and the movable globe support arranged in said frame, of a globe provided at its upper end with a bead having its portions opposite the side parts, of the lantern frame removed or flattened, substantially as set forth. 7th. The combination, with the oil pot having a filler opening, of a float arranged in the oil pot on one side of the filler opening, and provided with an indicator or pointer underneath the filler opening, substantially as set forth. 8th. The combination, with a tubular lantern frame provided with a fixed top of a globe supporting plate capable of moving up and down in the tubular frame, a globe, and a globe frame which is attached to said plate and which holds the globe on said plate independent of the lantern top, substantially as set forth. 9th. The combination, with a tubular lantern frame provided with a top adapted to receive the upper end of the globe when raised, of a globe supporting plate independent of the lantern top capable of moving up and down in the tubular frame, a globe, and a globe frame which is attached to said plate, and which holds the globe with its upper end normally below the lantern top, and raises the upper end of the globe into the lantern top upon raising the globe plate from the burner, substantially as set forth. 10th. The combination, with a tubular lantern frame, provided with a top adapted to receive the upper end of the globe when raised, of a globe supporting plate independent of the lantern top, guides on which the globe plate can be moved up and down in the tubular frame, a globe, and a globe frame which is attached to said plate, and which holds the globe with its upper end normally below the lantern top, and raises the upper end of the globe into the lantern top upon raising the globe plate from the burner, substantially as set forth. 11th. The combination, with a tubular lantern frame, of a movable globe supporting plate, a frame attached to said plate whereby the globe is held on the same, and side guides and rear guides on which the globe plate and frame are moved toward and from the burner, and whereby the globe plate is steadied between the tubes and in rear of the tubes, substantially as set forth. 12th. The combination, with the oil pot having an elongated opening in its top, of a flat wick tube seated in said opening, an air chamber secured to the oil pot and surrounding said elongated opening, air supply passages communicating with said air chamber, and a burner cone surmounting said wick tube and air chamber, substantially as set forth. 13th. In a tubular lantern, the combination, with the oil pot, of an elongated socket attached to the oil pot, and a removable elongated wick tube seated in said socket, whereby the wick tube is kept from turning, substantially as set forth. 14th. In combination, with an oil pot having an elongated opening in its top, an elongated wick tube arranged therein, said wick tube carrying a shaft, and ratchet wheels for raising the wick, an air chamber formed by the top of the oil pot side walls, and the cone with its supporting plate said wheels being inclosed and protected therein, air tubes entering the said air chamber and the globe surmounting the said air chamber, substantially as set forth. 15th. In a tubular lantern, the combination, with the oil pot having an elongated opening in its top, of an elongated wick tube arranged therein, whereby the position of said wick tube is kept in its proper relation with the air tubes, and the other parts of the lantern, an air chamber on top of the oil pot and surrounding said opening, air tubes connected with said air chamber, and a burner cone surmounting said air chamber, substantially as set forth.

No. 35,991. Clasp and Buckle. (*Agrafe et boucle.*)

Vertex Fastener Company, (assignees of James A. Turnbull), all of Newark, New Jersey, U.S.A., 16th February, 1891; 5 years.

Claim.—A fastening device, comprising a tape having a ring or loop secured to one end thereof, and a detachable cross-bar, consisting of a closed link with a cross-bar across its centre in a direction transverse of the tape, and loosely mounted on the tape, the cross-bar adapted to be passed through the ring, or loop and secured, substantially as described.

No. 35,992. Radiator. (*Serpentin.*)

Edward Gurney, (assignee of Charles Levey and Charles William Peniston), all of Toronto, Ontario, Canada, 16th February, 1891; 5 years.

Claim.—1st. A radiator loop having an elbow formed integral with the said loop, and communicating with a chamber connecting the vertical legs of the said loop, substantially as and for the purpose specified. 2nd. A radiator loop having an elbow formed integral with the said loop, and communicating with a chamber connecting the vertical legs of the said loop, and with a steam or hot water supply pipe, in combination with a valve located within the elbow and arranged so that it may be employed to cut off communication between the supply pipe and loop, substantially as and for the purpose specified. 3rd. Two angular annular recesses formed opposite to each other in the two parts to be jointed together, in combination with a compressible ring placed between and in the said recesses, so that when the two parts are drawn together the edges of the angular annular recesses embed themselves in the compressible ring, substantially as and for the purpose specified. 4th. Two angular annular recesses correspondingly formed opposite to each other in the two parts to be jointed together, a compressible ring placed between and in the said recesses, in combination with bolts made so that they will not revolve when in position, each bolt being provided with a nut bedded on a washer, and designed to draw the parts together, substantially as and for the purpose specified. 5th. Two angular annular recesses correspondingly formed opposite to each other in the two parts to be jointed together, a compressible ring placed between and in the said recesses, and fingers arranged to act as guides for bringing the two parts together, in combination with bolts made so that they will not revolve when in position, each bolt being provided with a nut bedded on a washer and designed to draw the parts together, substantially as and for the purpose specified.