

the central ribs *d*, the lugs *f*, *f* and the depression *g*, of the interchangeable and reversible rail sections and the lateral bolts, substantially as described. 6th. In combination with a railway chair and the rail sections *A*, supported thereby, the lateral bolts *E* passing through the rail sections and having their ends turned at an angle, substantially for the purpose set forth.

### No. 20,527. Culvert and Trap for Sewers.

(*Ponceau et Trappe pour Egouts.*)

Alfred Medcalf, Toronto, Ont., 7th November, 1884. 5 years.

*Claim.*—1st. A culvert and trap constructed with a cylindrical, or other form of receiver, having a flange cast around its inner circumference for supporting a funnel which rests thereon, the said funnel having its lower end dipping in water retained in a basin formed by an overflow pipe leading to the sewer and the bottom of the receiver, as shown and described. 2nd. The reservoir *A*, with flange *ar* and bottom *E* forming a basin *b*, the combination of the funnel *B* with eye-bolts *F*, *F*, the sewer pipe *c* with ball and socket joint *c* and grate *D*, the whole constructed and arranged and operating substantially as set forth.

### No. 20,528. Dredging and Excavating Machine. (*Machine à Draguer et Creuser.*)

Hale E. Hawk, Minerva, Ohio, U.S., 7th November, 1884; 5 years.

*Claim.*—1st. In combination with an oscillating truss frame in an excavating or dredging machine, and a sliding carriage arranged in suitable guides within said frame, a bucket carrier frame attached to said carriage and moving upon a suitable track-way within the truss frame, and adapted to be extended beyond, and in a corresponding direction with said frame, as described. 2nd. In combination with an oscillating frame of an excavating and dredging machine, a longitudinally slotted guide-bar pivoted at its lower end to the supporting carriage, and a pin attached to said oscillating frame and arranged to play in the slot in the guide-bar, as shown and described. 3rd. In combination with an oscillating frame of an excavating and dredging machine, a longitudinally slotted guide-bar pivoted at its lower end to the supporting carriage, and having a pin arranged to play in the slot in said guide-bar, which pin is attached to the oscillating frame, and a raising and lowering device attached to the said frame and operating in suitable guides upon the guide-bar in connection with the driving-shaft upon the machine, substantially as set forth and described. 4th. In combination with a bucket-carrier frame for an excavating and dredging machine, having longitudinal supporting beams and transverse girders attached thereto, the arms arranged at right angles to said beams and in connection therewith, and supporting the track-rails in a parallel relation to each other, said arms being arranged at an inclination toward each other from their point of attachment to said beams, as shown and described. 5th. An excavator bucket, provided with ends which are constructed in a plane described from two opposite points of curvature intersecting in one direction or at the point of the bucket, and having suitable sides conforming to said ends, for the purpose specified. 6th. In combination with the bucket-carrier frame of an excavating and dredging machine, provided with oppositely arranged wheels and an endless linked chain upon said wheels, an excavating bucket of the form of meeting curves, as described, pivoted longitudinally to said chain between the centre of curvature and at the gravitating point of the bucket, for the purpose specified. 7th. An excavator bucket, provided with a shaft for the operation of a cleaner therein, and operating mechanism therefor outside the ends of the bucket, and a flange attached to the side of the bucket and extending a suitable distance beyond, and at right angles to the ends of the same, for the purpose specified. 8th. An excavator bucket, having a swinging back pivoted to the ends, and a tripping lever attached to said pivot upon the exterior of the end of the said bucket and provided with one or more jointed extensions of the same, which are pivoted to said bucket, for the purpose described. 9th. In combination with a rotary supporting shaft located upon a dredging or excavating machine, and provided with a plate rigidly secured thereto, a material conveyor having its pivotal end provided with a movable flanged cap engaging with the plate upon said shaft, for the purpose set forth. 10th. In combination with the sliding carriage frame, of an excavating and dredging machine having depending supports attached to said frame, and a rotary supporting shaft attached to said supports, a plate secured to said shaft and provided with a movable flanged cap which is adapted to fit over and engage with the plate on said shaft and support the end of a material conveyor, as shown and described. 11th. In combination with an oscillating truss-frame, of an excavating and dredging machine provided with a bucket carrier frame, which is arranged to slide in suitable guides upon said truss frame, the transmitting arms attached respectively to the driving shaft upon the bridge frame and to the driving shaft upon the bucket-carrier frame, and having their opposite ends independently connected together by a suitable shaft, whereby their lateral extension shall be permitted in the elevation and depression of the machine, as shown and described. 12th. In combination with an oscillating truss-frame, of an excavating and dredging machine provided with a bucket-carrier frame, which is arranged to slide in suitable guides upon said truss frame, the transmitting arms attached respectively to the driving shaft upon the bridge frame and to the driving shaft upon the bucket-carrier frame, and having their opposite ends independently connected together by a suitable shaft and a pulley attached to said shaft, the operating belts connected with the pulley upon the driving shaft on the bridge-frame of the machine and the driving shaft on the sliding carriage frame, and also with the pulley attached to the shaft on the independent ends of the transmitting arms, as shown and described. 13th. In combination with a rotary platform, in an excavating and dredging machine, which is adapted by suitable frame-work to support the truss and bucket-carrier frames, and the driving shaft conveying power to and operating the said frames, the vertical shaft arranged centrally through, and operating independently of the rotary platform, and provided with suitable bevel gear which meshes with, and operates the driving shaft on the carriage frame and a suitable shaft connected therewith, and also with the engine, whereby the entire operation of the plat-

form simultaneously with the machine may be effected in any direction and in an independent relation to the machine, as specified.

### No. 20,529. Car Brake. (*Frein de Wagon.*)

Josiah Harding, Antofagasta, Chili, 7th November, 1884; 5 years.

*Claim.*—1st. The combination of the pivoted hangers *H* at one end of the car, connected near their lower ends by the transverse shafts *B*, with the elbow lever *C* pivoted on said shaft, and connected by its long arm to the screw staff *E*, and by its short arm to the connecting rod *D*, secured to the hangers at the opposite end of the car, substantially as set forth. 2nd. The combination of the pivoted hangers at one end of the car, connected near their lower ends by a shaft *B*, on which is pivoted the elbow lever *C*, with the rod *D* provided at one end with a series of holes for adjustably connecting it with the short arm of the elbow lever, and connected at its other end to clamps *k* vertically adjustable on the hangers on the other end of the car, substantially as set forth. 3rd. The adjustable clamps *k* on bar *ai*, consisting of the plates *i*, carrying screws *k* the plates *j* and the teeth *l* on said plates *i*, *j*, substantially as set forth. 4th. In a car brake for flexible wheel bases, consisting of lever *C* and screw-staff *E* connected to said brakes, as described, the staff *E* suspended from the support *et* by an oval collar *e2*, as set forth. 5th. The bar *ai* for connecting the pull-rod *D* to the hind brakes, connected to the brakes by vertically adjustable clamps, substantially as described.

### No. 20,530. Fire-Escape. (*Sauveteur d'Incendie.*)

Joseph B. Smith, North Buffalo, Penn., U. S., 7th November, 1884; 5 years.

*Claim.*—1st. In a fire-escape, the combination, with a suitably supported longitudinal travelling screw pulley, of a lowering rope coiled about said screw and having depending portions which are respectively clear, and provided with passenger-receiving devices, substantially as described. 2nd. The combination, with the side pieces *A*, *A*, firmly connected together, and provided with threaded bearings, of the traversing screw-pulley arranged in said bearings, and the endless lowering rope provided with the passenger-receiving devices, and having a portion of its length coiled in the grooves of the screw-pulley, substantially as described. 3rd. In a fire-escape, the traversing screw-pulley arranged to operate a lowering rope, and carrying one or more gongs, substantially as described.

### No. 20,531. Shafting and Bearing Therefor. (*Arbre de Couche et Coussinet.*)

Thomas Sutton and George S. Collier, Cheboygan, Mich., U. S., 7th November, 1884; 5 years.

*Claim.*—1st. The shafting constructed, substantially as herein set forth, in sections *1* and interposed journal-sections *2*, *3*, for the purpose set forth. 2nd. The combination, with the journal-sections *2*, of the bearing-rolls *4* and their housings *5* and springs *6*, substantially as and for the purposes set forth. 3rd. The combination, with the journals *3*, of the anti-friction rolls *4*, *9* and *10* surrounding the said journals, so as to support the same, and provided with springs to yield to sudden shocks or strains and restore the journals to their normal position. 4th. The combination, with the journals *3*, of the anti-friction bearing rolls and their housings guided in vertical and horizontal direction, as described, to yield to strains and shocks and restore the journals to normal position. 5th. The combination, with the shaft sections *1* and journals *2*, of collars *20*, *21* and connecting-bolts *22*, as and for the purposes set forth. 6th. The combination, with the shaft-sections *1*, journals *3* and collars *20*, *21*, of springs *24*, *25*, as and for the purposes set forth. 7th. The combination, with the shafting *1*, *2*, *3*, constructed in sections, as herein described, of bearing rolls *26* for supporting the centres of the main shaft-sections, as herein shown and described.

### No. 20,532. Double Embossing Machine. (*Machine à Goufrer Double.*)

Moore R. Fletcher, John M. Fletcher, and Ira A. Foster, Boston, Mass., U.S., 7th November, 1884; 5 years.

*Claim.*—1st. A double embossing machine having, in a suitable frame, a pair of intermeshing rollers, each presenting in its surface a succession of detached independent bosses, with corresponding intermediate depressions arranged in longitudinal and transverse series, substantially as and for the purpose set forth. 2nd. In a double embossing machine, a pair of circumferentially-grooved rollers, each formed of a succession of toothed disks arranged upon a shaft, with each tooth opposite a space in the adjacent disk, for the purpose set forth.

### No. 20,533. Thill-Coupling. (*Armon de Limonière.*)

Milton E. Campney and John W. Strong, Muskegon, Mich., U.S., 7th November, 1884; 5 years.

*Claim.*—In a thill-coupling, the combination, with the coupling-pin *F* provided with the arm *f* at one end, of the block *G* pivoted to the end of the said arm, the hook *H* pivoted to the free end of the block, and the cushion *K* secured to the upper face of the block, substantially as herein shown and described.

### No. 20,534. Lock. (*Serrure.*)

Napoléon J. Côté and Jean B. L. Rolland, Jr., Montreal, Que. 7th November, 1884; 5 years.

*Claim.*—1st. In a lock, the combination, with a direct-acting latch or bolt, a sliding plate forced forward by a spring, and pushed back by knob-spindle, of a central locking-plate normally connecting said bolt and sliding plate, and disconnecting same by action of key, substantially as and for the purpose specified. 2nd. In a lock, the combination of the following elements: the latch or bolt *B* having the pin *b2*, the locking plate *G* rotating on said pin, having the slot *g2*,