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INVENTIONS PATENTED.

NOTE—Patents are granted for 15 years. The term of years for which the fees have been paid, is given after the date of the patent.

No. 21,198. Waggon or Vehicle Spring.

(*Ressort de Wagon ou de Voiture.*)

Edgar P. Carter, East Smithport, Pa., U. S., 4th March, 1885; 5 years.

Claim.—1st. A side spring composed of the foundation leaf *a*, reaching from one end support to the other, one or more long leaves *b* and the short leaves *c*, *c'*, the clips *d*, *d'*, one of which is attached to one leaf or more, and the other to one or more different leaves of the spring, the long leaves being united in the centre, so that the long leaves have independent action through the clips to lengthen or shorten, all substantially as specified. 2nd. In buggies or waggons, the combination of cross springs on which the buggy body is fastened, and side metal springs *A*, *A'*, and fastened together by the same clip, substantially as heretofore explained. 3rd. The cross spring *C*, having its ends bent over into a *C*, leaving the tops flat, forming the attaching part to the side springs substantially as specified. 4th. The end springs *D*, having the two lugs or ears *m*, *m* constructed on, or forming part of the foundation leaf, to receive the ends of the side springs, substantially as specified. 5th. The cross spring *C*, constructed of the two separate end pieces *n*, *n'*, attached to the piece *p* by bolts or clips, as and for the purpose specified. 6th. The bevelled top saddle clip *B*, constructed as described, and in combination with the side springs *A*, *A'*, or side springs and cross springs, substantially as and for the purpose set forth.

No. 21,199. Combined Car Brake and Coupler.

(*Frein et Accouplage de Chars Combinés.*)

Edward B. Meatyard, Lake Geneva, Wis., U. S., 4th March, 1885; 5 years.

Claim.—1st. A draw-bar, in combination with a brake-bar, a system of levers connecting the draw-bar to the brake-bar, and springs arranged in the usual gap at the rear end of the draw bar, adapted and adjusted to maintain the said draw-bar in a normal position intermediate between the extremes of its range, and, at the same time, in this position, to keep the brakes set up, and also adapted and adjusted to yield nearly the whole of their elastic range under a pull or thrust of traction due to the resistance of a single moving car, to thereby take off the brakes, substantially as described. 2nd. The buffer, provided with laterally projecting rings, in combination with traction springs, to keep slack between said rings and the end of the car, and auxiliary springs filling part of the slack, to meet excessive buffing shock as the traction springs are compressed, and mechanism connecting the rear of the draw-bar with the brake. 3rd. The toggle *K*, arranged substantially as described, the hanger *u* suspended above the knee of the toggle, so as to admit of oscillation lengthwise of the car, the bar *N* vertically pivoted at the lower end of the hanger, extending a little way below the pivot, and having the part above the pivot equal in length to the hanger, and bent slightly toward the inner end of the truck, the chain *O* connecting the upper end of the draw-bar to the hand wheel, means for communicating the motion of the draw-bar to the lower end of the hanger, and means for communicating to the knee of the toggle the upward and downward motion of the lower end of the bar, all in combination substantially as and for the purpose described. 4th. The brake bar *L*, in combination with two stiff connecting bars *K*, to which the brake-bar is readily fastened, and which converge near the centre of the truck, and are there attached to an independent and substantially level support, whereby

the brake-bar is held from rocking and the brake-shoes prevented from rubbing the wheels, substantially as and for the purposes set forth. 5th. The two toggle hangers *P*, the toggle *K* and the connecting bars *K*, all constructed and arranged substantially as and for the purpose described. 6th. In a traction car-brake, the bifurcated toggle arms *K* and *K'*, connected with, and arranged to operate two or more brake-bars, in combination with readily-yielding draw-bars, and mechanism for connecting the knuckle of the toggle arms with the draw-bars, substantially as and for the purpose described.

No. 21,200. Railway Car. (*Char le Chemin de Fer.*)

Edward B. Meatyard, Lake Geneva, Wis., U. S., 4th March, 1885; 5 years.

Claim.—1st. In a railway car, the longitudinal girder *A*, in combination with the transverse floor joists *B* and the truss-bars *B'*, the floor joists *B* having their ends sprung down to a deflection within a safe limit of elasticity, before being fastened to the ends of the truss-bar *B'*, to prevent vibration of the joists, while the car is moving empty and when the car is loaded, so as to take a portion of each joist load directly to the top flange of the girder *A*, by means of the stiffness of the joist, and the other portion of each joist laid down the truss bar to the bottom flange of the girder *A*, substantially as described and shown. 2nd. In a railway car, the V-shaped bolster *C*, rigidly secured to the main floor beams at its ends, and pivotally suspended from the cross-beams in the middle, and composed of two parallel pairs of downwardly-convergent bars, rigidly connected at their convergent ends, the bars of each pair being also connected by cross-braces, substantially as and for the purpose described. 3rd. The two part channel or angle-arch bar *E*, in combination with the two part angle truss bar *E'*, and vertical braces *E''*, provided with heads at each end, firmly clamped between the component parts of both the arch-bars and truss-bars, substantially as and for the purposes set forth. 4th. In a railway-car, the arch-bar *E*, truss-bar *E'*, the connecting bar *G*, longitudinal girder *A*, V-shaped bolster *C* and pivotal suspension hanger *D*, in combination with I-beam transoms *G*, of the minimum depth, to permit the car floor to be as low as possible, substantially as described. 5th. In a railway car, the arch bars *E* and truss bars *E'*, constituting the truss spanning the distance between the two axle boxes on each side of the truck, in combination with the transoms *G*, the brace bars *E''* and the lateral brace bars *E'''*, fastened to the transoms *G* at one end, and at the other to the brace bars *E''*, near the outer quarter of the bars *E* and *E'*, substantially as and for the purposes set forth. 6th. The combination of the arch bars *E*, the truss bars *E'* and the horn plates *F*, all constructed and arranged substantially as and for the purpose described. 7th. The vibration springs *H*, in combination with the car body and the truck cross beams, whereby the car body is tied down to the ends of the truck cross beams, substantially as and for the purpose set forth. 8th. The transverse floor joists, in combination with the longitudinal floor plank, and the channel beams *O* fastened to the end of the joists, and also the edges of the floor plank, substantially as and for the purposes set forth. 9th. The axle box, in combination with the rods *L*, the triangular bell-crank *M*, and the arms *K*, arranged and operating substantially as and for the purpose set forth. 10th. In a railway car, an angle bar *P*, in combination with a sheet metal strip or strips, bent or flanged at the edges, to meet the sides of the angle-bar, and a U-shaped strip *R*, inclosing and clamping together the angle bar and edges of the sheet. 11th. A car axle, in combination with an independent tubular bearing of oval shape, and hardened metal shrunk on the axle, substantially as and for the purposes set forth. 12th. In combination with the running board, the casting *Q*, bent at the ends, to enclose the board, and having one of the bent ends prolonged to form a support *Q'* for a hand rail.

No. 21,201. Hay Stacker. (*Meulonneuse.*)

Albert Cooley, Osceola, Iowa, U. S., 4th March, 1885; 5 years.

Claim.—In a hay stacker, the combination, with the frames *A*, *B*, connected together, and one having hooks or recess *S* at its upper end, and a bottom board *C* of the rake *H*, *I*, *J*, *K*, having rearwardly projecting teeth, and the ropes *O*, *O*, connected to the cross bar *J* of the rake, in the rear of the cross bar *I* thereof, the lower outer ends of the teeth of the rake resting upon the board *C*, and the ropes acting upon the under side of the rake head, as shown and described and for the purpose set forth.