

bustion from the fire chamber to the outlet spirally up through the water within the boiler, substantially as described. 2nd. In a boiler, composed of sections, each having a spiral water passage, the combination therewith of extension portions connected by screw-threaded nipples for connecting the spiral passage of each section, thereby forming a spiral passage in a continuous forward and upward direction around the boiler, from the inlet to the outlet, substantially as described. 3rd. A sectional boiler, provided with a spiral smoke-flue for conducting the products of combustion from the fire chamber up, through, or around the boiler, in combination with a spiral water passage for conducting the water between and around the heating surfaces from the inlet to the outlet of the boiler, substantially as described. 4th. In a sectional boiler, a series of sections, duplicates of each other, above the fire chamber, forming a spiral smoke-flue within the boiler, in combination with a spiral water-way surrounding the smoke-flue on all sides except the inlet and outlet, substantially as described. 5th. In a sectional boiler, a boiler section having a spiral recess on each side, forming a portion of a spiral smoke-flue and an intermediate spiral water-way, in combination with an extension chamber, provided with a diaphragm interposed between the inlet and outlet openings to prevent the water from reaching the outlet until after it has made a circuit around the section, substantially as described. 6th. In a sectional boiler, a series of sections having an annular and extension water chambers, provided with diaphragms for causing a circulation of the water, a base portion carrying the grate, and screw-threaded tubular nipples for producing a water-tight joint and securing them together, the whole forming the combustion chamber in combination, with a series of sections, each having a spiral or half spiral smoke-flue on opposite sides, and an intermediate spiral water chamber, communicating with an extension water chamber, having a diaphragm for causing the water, when it enters the section, to pass around it before it passes through the outlet screw-threaded tubular nipples for securing the extension water sections, and bolts for securing the main sections, whereby a combined spiral smoke-flue and water-way is provided, substantially as described.

No. 34,792. Sand Band for Vehicles.

(*Garde sable d'essieu de voiture.*)

John F. Smith, Ionia, Mich., U.S., 1st August, 1890; 5 years.

Claim.—1st. In combination with the hub and axle of a vehicle, the two-part shell made fast to the axle, the coiled spring enclosed in said shell, the enclosing shell slidably coupled to the two-part shell, and having in its face, adjacent to the hub, a flexible washer, for the purposes specified. 2nd. In a sand band for vehicles, the combination of the two-part shell, having the annular flange with notches therein, and coupling shank projecting from the back face of the shell, the enclosing shell having lugs on its inner periphery, and annular recesses in its front face, the washer therein, and the spring located between the shells, as specified.

No. 34,793. Wheel. (*Roue.*)

John S. Young, Defiance, Ohio, U.S., 1st August, 1890; 5 years.

Claim.—1st. In a hub, the combination of the axle box provided at one end with the integral flange, and having at its other end the oppositely-disposed shoulders, the sleeve provided at its ends with flanges adapted to clamp the spokes, and the collar having the central opening and provided with the oppositely-disposed curved notches, substantially as described. 2nd. In a hub, the combination of the axle box provided at one end with the oppositely shouldered projections, and at the other end with the integral flange 2, having radial grooves terminating in recesses, the sleeve having the oppositely-disposed grooves 16, in its opening or bore, and provided at its ends with flanges having radial grooves, the collar provided with the oppositely-disposed grooves, and having shoulders 15, and the screw 14, adapted to secure the collar to the sleeve, substantially as and for the purpose described.

No. 34,794. Nut Lock. (*Arrête-écrou.*)

Pharaoh C. Thompson, Miss., U.S., 1st August, 1890; 5 years.

Claim.—1st. A nut-lock, formed of a single piece of sheet metal having an opening for the bolt, and provided with an elastic outwardly bent tongue locking the nut, and a shoulder carried by said tongue, and bearing upon the rear face of the nut with a permanent elastic pressure, substantially as described. 2nd. A nut-lock, composed of a single piece of sheet metal having an opening for the bolt, one lateral portion of the plate being cleft by a cut forming an outwardly bent tongue having an edge locking the nut, and a shoulder carried by the tongue and pressing against the rear face of the nut, a cut entering the other side of the bolt opening to form a point which, in conjunction with a similar point opposite, is bent inwardly, substantially as described. 3rd. A nut-lock, consisting of a substantially rectangular plate having a non-central opening 2, an elastic outwardly bent tongue 4, and shoulder 5, and inwardly-turned ends 6, and 8, substantially as described.

No. 34,795. Stand Boiler. (*Chaudière fixe.*)

William B. Bruce, Staunton, Va., U.S., 1st August, 1890; 5 years.

Claim.—1st. The combination, with a stand boiler and a stove or range water back, of an endless heating pipe extending through the water back, and through the boiler, substantially as described. 2nd. The combination, with a stand boiler, of the water back of the stove or range, and a water heating pipe extending through the water back and into the boiler, so that the water in the boiler will be heated by conduction from the water in said pipe. 3rd. The combination, with a stand boiler, of a water heating and circulating pipe located therein. 4th. The combination, with a water back, of a stand boiler and water heating pipe, extending from the water back into and through said boiler, so that the water in the boiler is heated without passing into the water back. 5th. A stand boiler, hav-

ing a cold water supply pipe, and a hot water exit, in combination with a hot water pipe extending through said boiler, substantially as described. 6th. A stand boiler, having a water supply pipe, and a hot water exit, in combination with a hot water circulating pipe extending through said boiler, and connected with said supply pipe to form a relief for excess of pressure, and receive a supply of water. 7th. The water back and stand boiler, having a water supply, and hot water exit, in combination with a hot water circulating pipe extending through the boiler, and said water back connected at its upper portion with said supply pipe.

No. 34,796. Grain Car or Wagon.

(*Wagon à grain.*)

David R. Springer, Philadelphia, Penn., U.S., 1st August, 1890; 5 years.

Claim.—1st. A car, its bottom provided with discharge openings arranged in series, pivoted doors arranged to swing within said openings, and means for operating them in unison and for locking all of them simultaneously, substantially as described. 2nd. A car having its bottom provided with discharge openings arranged in series lengthwise of the car, a pivoted door arranged to swing within each of said openings, connecting rods for each of the series, and a shaft journaled transversely across the bottom of the car for operating all of the rods and doors in unison, substantially as described. 3rd. A car having its bottom provided with discharge openings arranged in series, a door for each opening, having an arm on its under side, connecting rods for each series of doors secured to the arms thereof, and a shaft provided with a cross arm for each series of doors, to which the connecting rods are attached, substantially as described. 4th. A car, having its bottom provided with discharge openings arranged in series, a door for each opening, having an arm on its under side, an operating shaft having cross arms secured thereto, an adjustable bolt in the ends of the cross arms and in the arm of the outer doors, and connecting rods secured to said bolts, substantially as described. 5th. A car, having its bottom provided with discharge openings arranged in series lengthwise of the car, a door for each opening, a lock for each door, and sliding bars connected with the locks for the doors for each series, and means for operating the bars and locks simultaneously, substantially as described. 6th. A car having its bottom provided with discharge openings arranged in series lengthwise of the car, a door for each opening, a lock for each door, a sliding bar at the side of the door of each series, an arm extending laterally from the bar at each door, the outer end of which is secured to the lock for that door, and a shaft transversely across the bottom of the car, having cross arms for operating said bars, substantially as described. 7th. A car, having its bottom provided with discharge openings, a door for each opening, a lock for each door, a shaft for operating the locks simultaneously, an arm secured to one end of the shaft, having a curved portion for engaging with the bottom of the car, substantially as described. 8th. A car, having its bottom provided with openings, a door for each opening, a lock for each door, a shaft transversely of the car for operating the locks simultaneously, an arm at one end of the shaft, having a slotted curved portion, an L-shaped lock pivotally secured at one end to one end of the curved portion of the arm, and fitting within the slotted portion with its opposite or bent end, and adapted to engage with means of securement at the bottom of the car, substantially as described. 9th. A car, having its bottom provided with openings, a frame in each opening, having its inner edges provided with beveled and straight portions, and doors pivotally secured within said frame, having their opposite edges provided with straight and beveled portions to correspond with the edges of the doors, substantially as described. 10th. A frame for discharge openings in the bottom of cars, having a keeper on its under side, a door pivotally secured in the frame, and a lock or bolt in the keeper for engaging with the door, substantially as described. 11th. The combination, with a frame for the discharge openings in the bottom of cars, of a door pivotally secured therein by means of trunnions, and a two-part boxing for each trunnion, the base of each of which is provided with a recess and a seat for the trunnion, and the top part fits within the recess and is provided with a seat for the trunnion, the sides of which fit down into the seat in the base, substantially as described.

No. 34,797. Wire Spring Bed.

(*Sommier élastique.*)

Samuel K. Butterfield, Swanton, Verm., U.S., 1st August, 1890; 5 years.

Claim.—1st. In a wire spring bed, the parallel wire main springs A, connected by the coil spring B, with the head and foot rails C, and D, substantially as herein shown and described. 2nd. The combination in a wire spring bed, of the parallel wire main springs A, connected with the head and foot rails by the coil springs B, with the helical springs E, secured to the cross bars F, substantially as herein shown and described.

No. 34,798. Carpet Stretcher. (*Tire-tapis.*)

John R. Eden and Albert Cornell, Berlin, (assignees of Samuel Cavers, Toronto), Ont., 1st August, 1890; 5 years.

Claim.—The combination of the handles A and B, the rod C, the slide E, the castings F and G, the hinge H, the band K, the plate L, the lever M, and the spiral spring O, substantially as and for the purpose hereinbefore set forth.

NO. 34,799. Carriage Curtain Fastener.

(*Suspension de rideau de voiture.*)

The Star Manufacturing Company, (assignee of Samuel P. Scott), Hillsboro, Ohio, U.S., 1st August, 1890; 5 years.

Claim.—In a carriage curtain fastening, the combination of the stationary base A, the button C, having a central bore and a round-