(No Model.)

C. P. WILLSON.

CAR COUPLING.

No. 254,754. Patented Mar. 7, 1882.

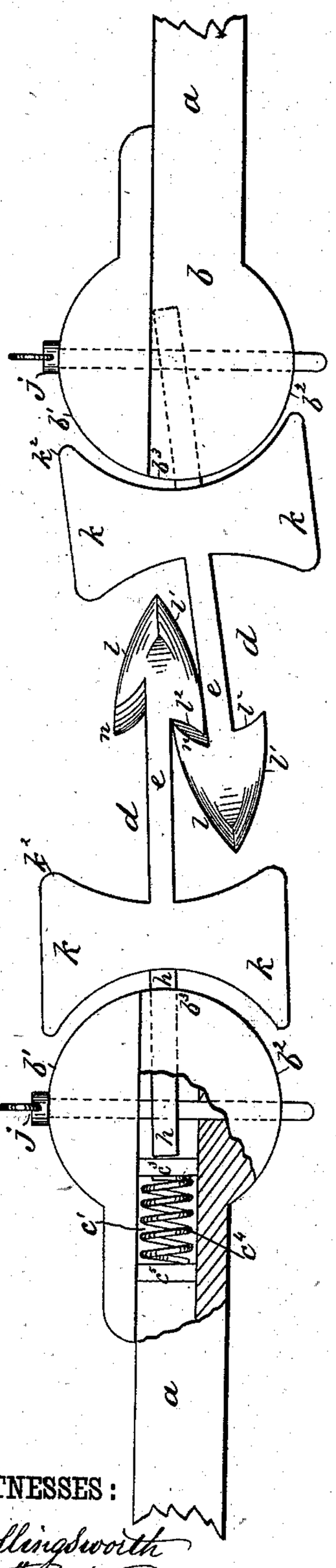

Fig. 1.

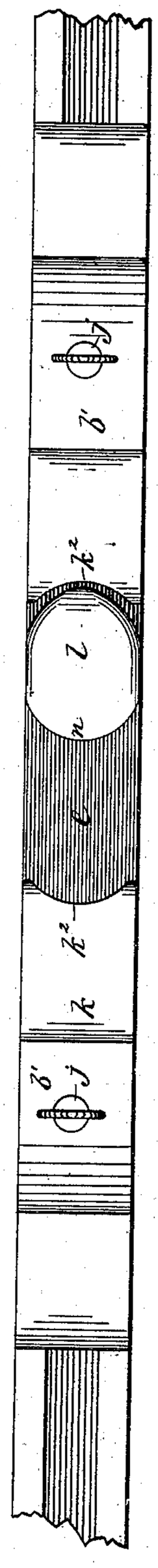

Fig. 2.

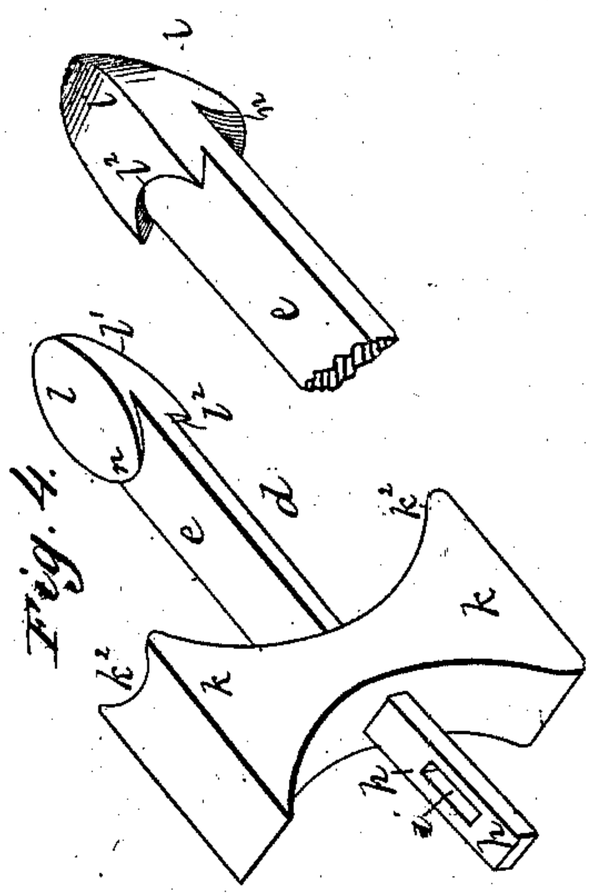

Fig. 4.

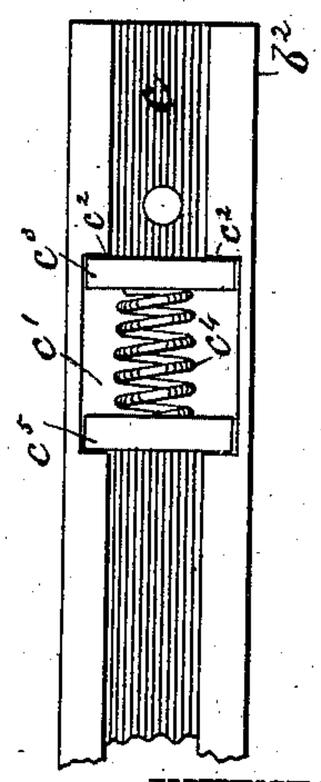

Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES P. WILLSON, OF SUMMIT POINT, WEST VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 254,754, dated March 7, 1882.

Application filed January 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES PERRY WILLSON, of Summit Point, Jefferson county, State of West Virginia, have invented a new and Improved Car-Coupling; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly in section, of my improved automatic car-coupler. Fig. 2 is a plan view. Fig. 3 is a detail view, and Fig. 4 is a perspective view of the heads of the draw-hook.

My invention relates to automatic car-couplings; and it consists in the peculiar construction and arrangement of the parts, as hereinafter more fully set forth.

In the accompanying drawings, *a* represents the draw-bar of my improved automatic car-coupling provided with the draw-heads *b b* at its opposite ends, having the usual openings, *c c*, for the reception of the usual links or draw-hooks, *d d*, hereinafter described. The central passage or opening, *c*, in each draw-head is enlarged at its rear end, and is provided with opposite shoulders c^2, against which rests a rectangular plate, c^3, pressed against the shoulders c^2 by the tension of a spiral spring, c^4, one end of which bears against the back face of the rectangular plate c^3, and its opposite end bears against the rear end of the opening c' in the draw-head, whereby an elastic bearing is furnished the link or draw-hook *d* in coupling the cars. Each draw-head *b* is made semicircular on its upper and lower face, as shown at b' b^2, and its front end, b^3, is curved, for a purpose hereinafter described.

d d represent the draw-hooks, similarly constructed, so that a description of one will answer for both. Each draw-hook *d* consists of a rectangular plate, *e*, provided with opposite shoulders near its rear end, and an arm, *h*, adapted to enter the central opening or passage, *c*, in the draw-head, and provided with a slot, *i*, at its rear end for the passage of a coupling-pin, *j*, passing also through suitable holes in the draw-head, whereby the draw-hook *d* is pivoted to the coupling-pin in the draw-head.

k k represent blocks or arms formed with or secured to the upper and lower faces of the plate *e* at the outer end of the arm *h*. The inner faces of the blocks *k* next the draw-head are cut away at *k'* with the same radius as the semicircular projections b' b^2 on the upper and lower faces of the draw-head and the curved end of the draw-head, so that the draw-hooks will be capable of a slight pivotal movement in the arc of a vertical circle on the coupling-pin *j* as a center. The front faces of the arms or blocks *k* above and below the plate *e* are hollowed out and cut away in the arcs of vertical and horizontal circles, as shown at k^2 in the drawings. The forward end of the draw-hook is curved or rounded, and provided on its upper face with a curved plate, *l*, formed with or secured to it, and having a round convex edge, and made convex at its rear end and extending from its upper convex edge, *n*, to the upper edge or face of the plate *e*. The under face of the plate *e* of the draw-hook *d* is provided on its lower face, immediately under the curved plate *l*, with a plate, *l'*, having a concave edge, l^2, and hollowed out inwardly to receive and hold the plate *l* of the other draw-hook. By this construction the curved inner faces of the arms *k* are adapted to turn in arcs of vertical circles on the circular ends of the draw-heads, the draw-hooks on cars of the same or different heights coupling with each other when drawn together, the upper convex plate on the end of the hook riding under the lower concave of the opposite draw-hook, or vice versa, depending on the relative height of the cars, and the outer ends of the hooks being guided into their proper positions by the hollowed front portions of the arms *k*, so that when the cars are drawn slightly apart or separated the convex lower face of one plate of the hook will engage with the hollowed-out concave plate of the opposite hook and the two cars be automatically coupled by their hooks. In case, also, of a falling through a bridge or being thrown from the track the draw-hooks will slip out one from the other and become uncoupled, the front car not drawing the rear car from the track with it. The front ends of the draw-hooks may be raised or lowered, as desired, by a cord secured to the front end of the draw-hook and extending to the top of a car or its platform, by which the front ends

of the draw-hooks may be raised or lowered to couple the cars.

What I claim as my invention is—

1. The draw-hook *d* herein described, consisting of the plate *e*, provided with the rear slotted arm, *h*, arms *k k*, secured to the upper and lower faces of said plate, and having their inner rear faces semicircularly curved and their front outer surfaces hollowed out in arch of vertical and horizontal circles, and having the rounded front end of the plate *e* provided on its upper face with a curved plate, *l*, made convex on the rear of its lower face, and provided on its under face with the plate l', having a concave edge, l^2, and the rear part of its upper face hollowed out inwardly, substantially as described, and for the purpose set forth.

2. The combination, with the draw-bars *a a*, provided with draw-heads *b b* at their opposite ends, having semicircular curves b' b^2 on the upper and lower faces of their ends, of the draw-hooks *d d*, pivoted in the draw-heads and constructed as set forth, substantially as described, and for the purpose set forth.

CHARLES PERRY WILLSON.

Witnesses:
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