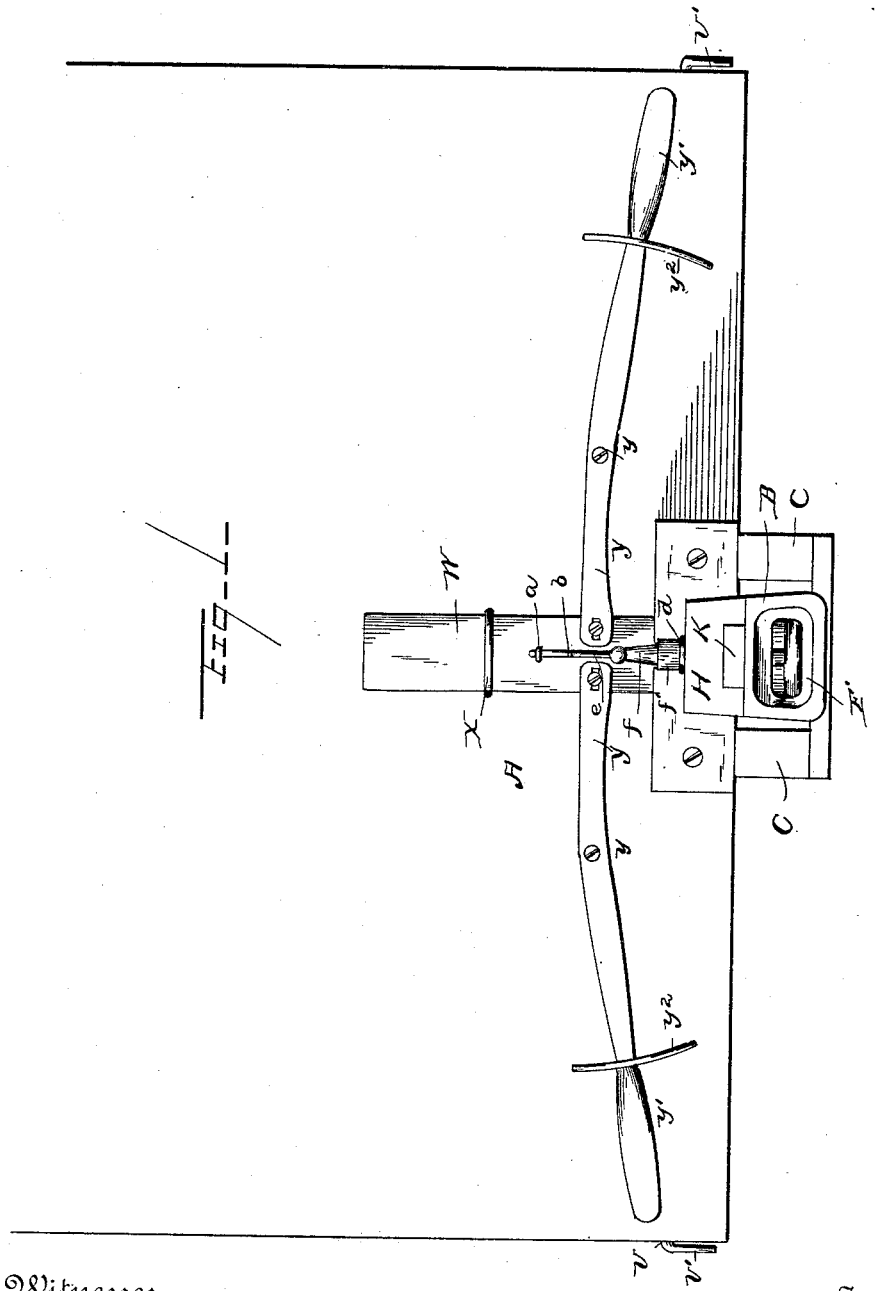
(No Model.)

2 Sheets—Sheet 1.

G. W. COUNTRYMAN.

CAR COUPLING.

No. 345,771. Patented July 20, 1886.



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(No Model.) 2 Sheets—Sheet 2.

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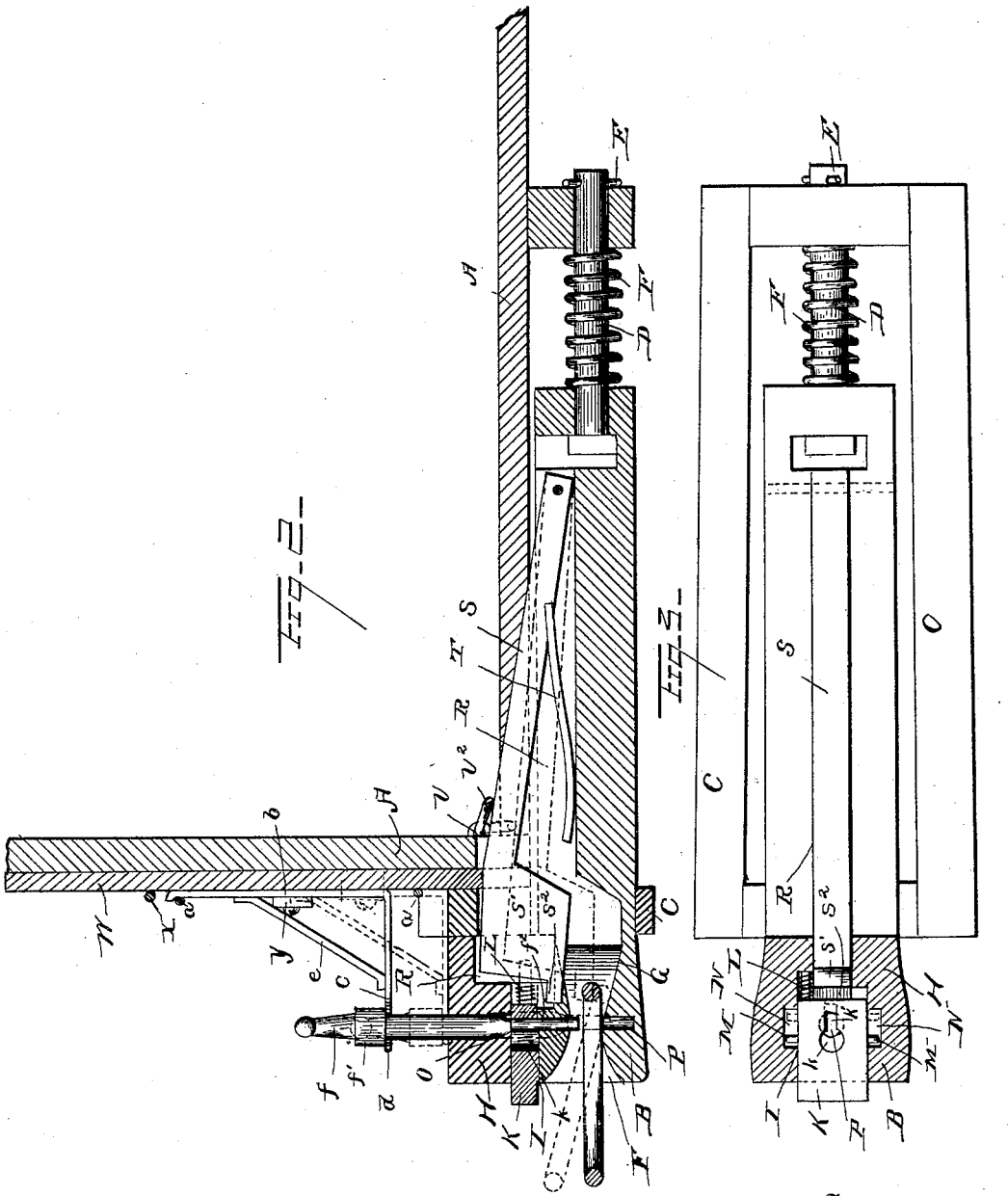

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UNITED STATES PATENT OFFICE.

GEORGE WASHINGTON COUNTRYMAN, OF BIRMINGHAM, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 345,771, dated July 20, 1886.

Application filed May 29, 1886. Serial No. 203,647. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WASHINGTON COUNTRYMAN, a citizen of the United States, residing at Birmingham, in the county of Van Buren and State of Iowa, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

My invention relates to an improvement in car-couplings; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is an end elevation of a car provided with my improved form of car-coupling. Fig. 2 is a vertical longitudinal sectional view of the car-coupling. Fig. 3 is a transverse sectional view of the same.

A represents a car, which is provided with a draw-head, B. This draw-head is fitted in a rectangular frame, C, which is secured under the car at the end thereof. From the rear end of the draw-head projects a shank, D, the front headed end of which is swiveled in the rear end of the draw-head, and the rear end of the said shank passes through the rear side of the frame C, and is secured thereto by a transverse pin, E.

F represents a coiled extensile spring, which is placed on the shank D, and bears between the rear end of the draw-head and the opposing rear side or end of the frame C. The front end of the draw-head is provided with the usual outwardly-flaring mouth, F', and in rear thereof, on the under side of the draw-head, the mouth is hollowed and inclined, as at G. To the upper side of the front end of the draw-head is attached a removable cap, H, which is bolted to the draw-head, and is provided on its under side with a longitudinal groove or recess, I, in which works a sliding block, K. A spring, L, bears behind the block K and keeps it normally extended out beyond the face or front end of the draw-head, and the limit of movement of the sliding block is confined by projecting pins M, which extend from the sides of the said block and work in grooves N that are made in the cap H alongside the recess I. Through the said cap H extends a vertical opening, O, which aligns with an opening, P, in the lower side of the mouth of the draw-head. The block K is also provided near its rear end with a vertical opening, *k*, the rear side of which communicates with a notch, *k'*. A vertical central groove, R, is made longitudinally in the upper side of the draw-head and in the rear end of the cap H, the said groove communicating at its front end with the mouth of the draw-head. In the rear end of this groove is pivoted an arm, S, the front end of which has a depending head, S', provided at its lower side with a forwardly-extending stud or projection, S^2. The spring T is placed in the groove R and bears against the under side of the arm S, so as to raise its head S' normally in the position shown in solid lines in Fig. 2.

U represents a rock-shaft, which is journaled under the end of the car, and is provided at its outer end with crank-arms U', and at its center with a crank-arm, U^2, which bears upon the upper side of the pivoted spring-actuated arm S.

W represents a vertical slide, which is secured in suitable keepers, X, on the end of the car, and also bears on the arm S. To this slide are attached the inner ends of levers Y, which are fulcrumed to the front side of the car, as at *y*, and are provided at their outer ends with handles *y'*. The play of these arms is limited by curved keepers y^2, which are attached to the end of the car. On the lower front side of the slide W, at the center thereof, are secured vertically-aligned keepers *a*, in which is secured a vertically-movable rod, *b*. From the lower end of this rod projects a horizontal arm, *c*, in the outer end of which is formed a loop, *d*. This arm is connected to the rod *b* by an inclined brace, *e*.

f represents a gravity coupling-pin, which is provided near its upper end with a flanged head, *f'*, and at its lower end with a reduced shank, f^2. This coupling-pin is secured in the loop at the outer end of the arm *c*, and passes down through the opening O in the cap, and the reduced lower end of the said coupling-pin normally engages the notch *k'* in the sliding block K.

The operation of my invention is as follows: When a car, provided with the usual coupling-link, Z, is backed against the car provided with my improved form of coupling, the coupling-link enters the mouth of the draw-head, and the draw-head of the moving car strikes against the block K, thereby moving it rear-

wardly against the tension of its spring and causing its opening *k* to align with the opening O. This instantly releases the coupling-pin, and the latter, by its own gravity, drops in the draw-head and enters the opening P in the lower side of the mouth thereof, thus securing the link in the draw-head and coupling the cars together, as will be very readily understood. In order to uncouple the cars, it is only necessary to move downwardly upon the outer end of one of the fulcrumed levers Y, thereby causing the slide W to move upwardly, carrying the arm *c*, and causing the latter to engage under the head of the coupling-pin and raise the latter in the draw-head to its initial position. (Shown in solid lines in Fig. 2.) When the coupling-link is secured in the draw-head B, and it is desired to couple with a car having its draw-head either higher or lower than the draw-head B, the rock-shaft U is turned, causing the pivoted arm S to move and bear upon the inner end of the coupling-link, and thereby raise or lower the outer end thereof to the proper plane, as will be very readily understood.

A car-coupling thus constructed is automatic in operation, is cheap and simple, is very strong and durable, and permits cars of unequal heights to be coupled together, and is adapted to be used with cars employing the common form of pin-and-link coupling.

Having thus described my invention, I claim—

1. The combination, with the draw-head, of the gravity-pin located therein, and the spring-actuated sliding block projecting normally beyond the front side of the draw-head and supporting the lower end of the coupling-pin, whereby when the cars come together the block K is moved inwardly to release the pin, and the vertically-movable slide W, having the arm *c*, engaging the pin, to raise the latter, substantially as described.

2. The combination of the draw-head, the gravity-pin, the spring-actuated sliding block to engage the pin and support the same when raised, the spring-actuated pivoted arm S, to bear on the inner end of the coupling-link, for the purpose set forth, and the vertically-movable slide having the arm engaging the gravity-pin to raise the latter, the said slide bearing on the arm S, substantially as described.

3. The combination of the draw-head, the gravity-pin, the spring-actuated block K, to engage the pin and support the latter when raised, the spring-actuated arm S, to bear on the inner end of the coupling-link when the said arm is lowered, the vertically-movable slide engaging the gravity-pin and bearing on the arm S, the levers connected to the said slide to actuate the same, and the rock-shaft or means to lower the arm S in the draw-head, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE WASHINGTON COUNTRYMAN.

Witnesses:

JAMES H. GRAHAM,

GEORGE H. SIMMONS.