

(No Model.)

2 Sheets—Sheet 1.

D. BOYER.
CAR COUPLING.

No. 520,842.

Patented June 5, 1894.

Fig. 1.

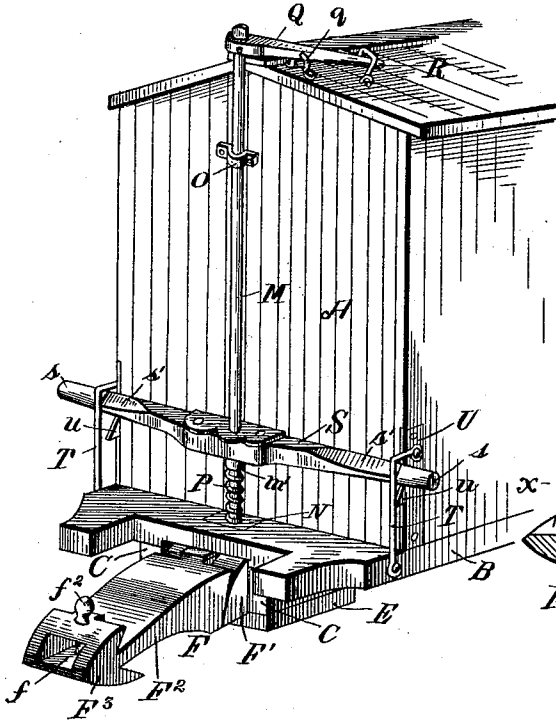


Fig. 2.

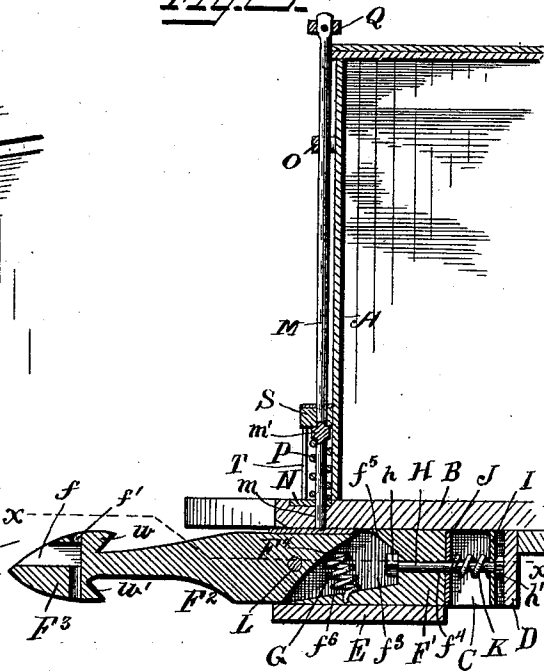


Fig. 3.

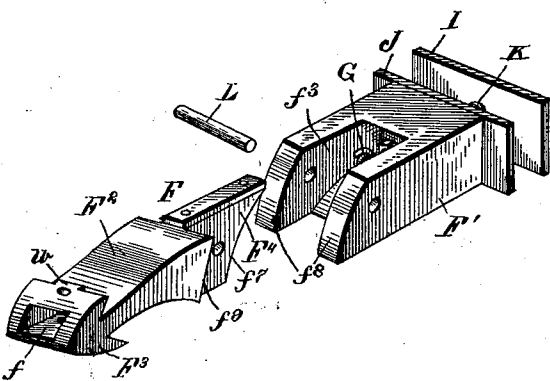
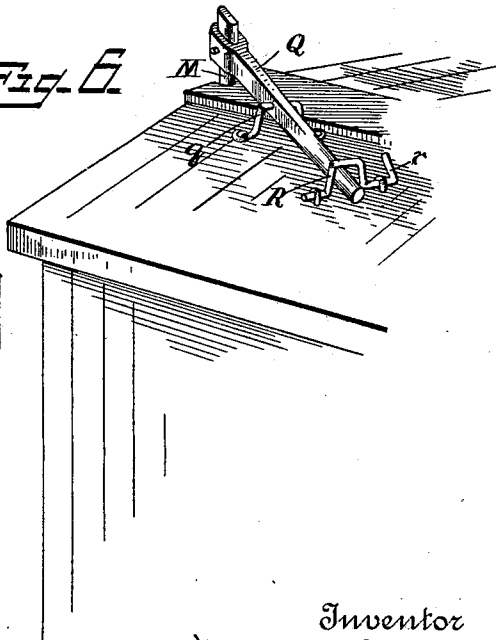


Fig. 4.



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Fig. 5.

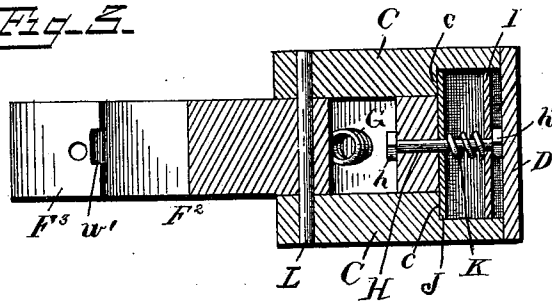


Fig. 4.

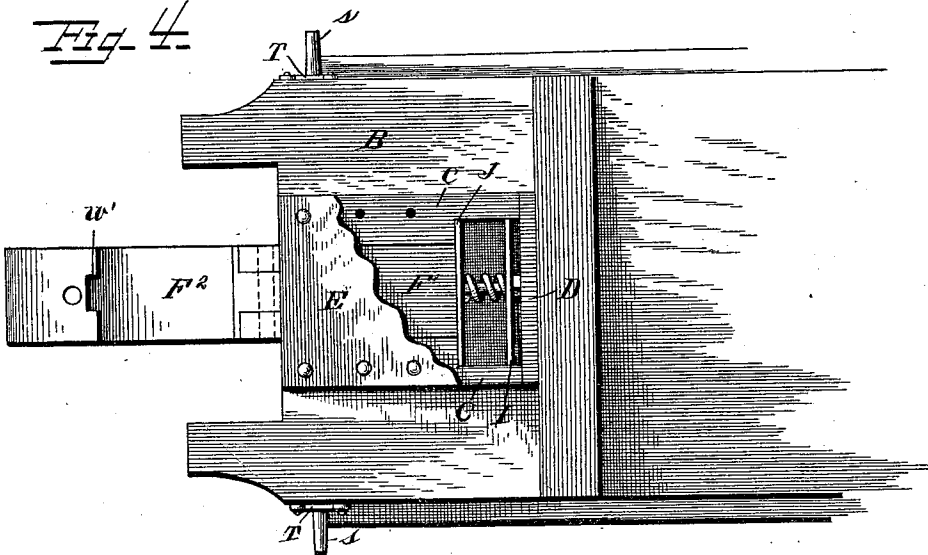
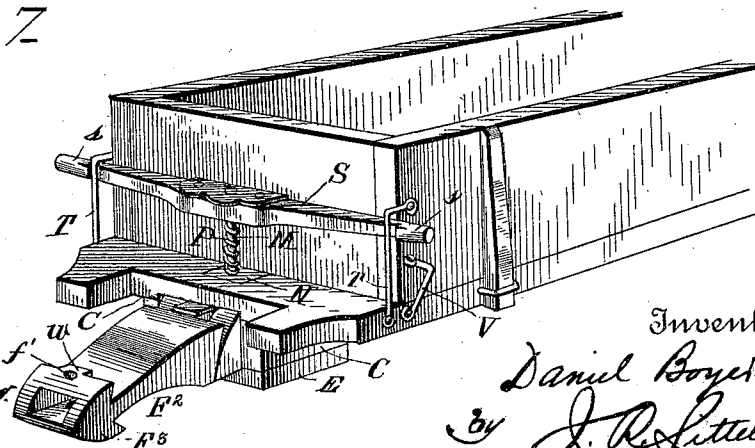


Fig. 7.



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UNITED STATES PATENT OFFICE.

DANIEL BOYER, OF CRESSONA, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 520,842, dated June 5, 1894.

Application filed February 26, 1894. Serial No. 501,543. (No model.)

To all whom it may concern:

Be it known that I, DANIEL BOYER, a citizen of the United States, residing at Cressona, in the county of Schuylkill and State of Pennsylvania, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to that class of automatic car couplings which embody a vertically-moving spring-actuated arrow-shaped draw-head, and the object of my invention is to provide a simple and improved car coupling of this class, which will possess advantages in point of convenience, inexpensiveness, ease and facility and safety in operation, effectiveness, durability, and general efficiency.

My invention consists in certain improvements in the construction, arrangement, and operation of parts, substantially as herein-after described and particularly pointed out in the claims.

In the drawings:—Figure 1 is a perspective view of a car coupling embodying my improvements, the end of a box car being shown. Fig. 2 is a vertical longitudinal sectional view. Fig. 3 is a horizontal sectional view, on the line $x-x$, Fig. 2. Fig. 4 is a bottom plan view, parts being broken away to show the interior construction. Fig. 5 is a perspective view, showing the parts of the draw-head detached. Fig. 6 is a detail perspective view, illustrating the operating devices on top the car. Fig. 7 is a perspective view showing the end of a flat car and illustrating detail modifications in the mechanism for controlling the operation of the draw-head.

Corresponding parts in all the figures are denoted by the same letters of reference.

Referring to the drawings, A designates the end of the car, upon the bottom, B, of which is provided a housing for the draw-head, consisting of downwardly-extending side pieces, C C, having vertical shoulders, c , near their rear ends. The housing also comprises a rear cross piece, D, and a bottom piece, E.

F designates the draw-head which comprises two parts, viz: a main or body portion, F' , and a front pivoted portion, F^2 , the latter having an arrow-shaped projecting front end, F^3 , in the top of which may be formed a cut or recess, f , through which passes a vertical perforation, f' , in which works a vertical pin,

f^2 , to adapt the draw-head for convenient connection with the ordinary pin and link coupling, when desired. The rear or body section F' of the draw-head fits between the side pieces C C of the housing and is supported and inclosed within the latter. In the top of the section F' is provided a recess, f^3 , extending to the front end of the section, as shown, and in the rear portion of this recess is accommodated the head, h , of a bolt, H, passing through an opening, f^4 , in the rear end of the section F' and nutted or headed at its rear end, as shown at h' . The bolt H thus has a free movable connection with the main section of the draw-head, and upon the rear projecting end of the bolt is mounted a rear plate, I, and a front plate, J, between which plates is provided a coiled spring, K, mounted upon the bolt. In the longitudinal movement of the draw-head, the spring K is compressed between the plates I and J, a free spring movement being effected by the loose movable connection of the bolt H with the main section F' of the draw-head. In the forward movement of the draw-head, the shoulders $c c$ of the side pieces of the housing form a stop for the front plate J, while in the rearward movement of the draw-head the rear cross piece of the housing forms a stop, the longitudinal movement of the draw-head in either direction being thus limited. The recess f^3 has the top portion of its rear wall preferably beveled upwardly and forwardly, as shown at f^5 , and is preferably provided with a forwardly inclined or beveled bottom, f^6 , to which is secured an upwardly-projecting coiled spring, G, which bears against the rear tongue of the pivoted front section F^2 of the draw-head and controls the vertical movement of said section. From the rear end of the front section F^2 projects a tongue, F^4 , which is pivotally secured in the corresponding recess f^3 of the main section F' by a transverse pin or bolt, L. The rear edge of the tongue F^4 against which the spring G bears is beveled downwardly and forwardly, as shown at f^7 , and the front edge of the section F' is curved, as at $f^8 f^8$, to correspond to the inclined rear face, $f^9 f^9$, of the pivoted section F^2 . The draw-head thus comprises two parts or sections, the main or rear section F' being snugly inclosed in the hous-

ing and having a spring-actuated longitudinal movement therein, while the front projecting section F^2 is pivotally mounted upon and carried by the main section F' and has
 5 a longitudinal movement therewith as well as an independent spring-actuated vertical movement. The edges f^8 and f^9 of the respective sections abut together, as shown, and serve to limit the downward play of the front
 10 pivoted section F^2 .

To control the operation of the pivoted coupling section F^2 of the draw-head, I provide a vertical moving rod, M , extending to the top of the car and having its lower end
 15 working through an opening, m , in the bottom of the car and bearing against the tongue F^4 of the pivoted section F^2 . The rod M may have a bearing in suitable brackets, O , and is provided near its lower end with a collar
 20 or shoulder, m' , between which and the bottom of the car is mounted a coiled spring, P , the office of which spring is to retain the rod up in normal position. A plate, N , may be provided to receive wear occasioned by the
 25 action of the lower end of the spring P . To the top end of the rod M is pivotally connected a lever, Q , mounted in horizontal position over the top of the car upon a suitable bearing, q , above the top. The free end of
 30 this lever may be engaged by an approximately U-shaped crank, R , pivotally mounted on top the car and having a crank, r , at its end adapted to be engaged by the foot of the operator, to lock the mechanism in position.
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To provide for controlling the operation of the coupling from the sides of the car, a cross bar, S , is mounted upon the rod M above the
 40 said shoulder, as shown. The ends, s, s , of the cross bar S project at the sides of the car through guides or keepers T , and are adapted to be engaged by a tongue or projection, u , projecting from a plate, U , to lock the mechanism in position, a beveled edge, s' , being
 45 preferably provided upon the cross piece S to facilitate this engagement.

When my improved coupling is employed upon flat cars (see Fig. 7) the vertical rod M
 50 is shorter and is fixed or secured to the cross piece S , the latter being secured to the top of the rod and the collar or shoulder m' being dispensed with. In lieu of the plates U , I may employ a right angle pivoted catch, as
 55 shown at V , Fig. 7, for engaging the projecting end s of the cross bar S to lock the mechanism in position.

The rear face of the arrow-head F^3 may be provided with vertically-disposed ridges or
 60 grooves, w and w' respectively, adapted to be engaged by corresponding ridges or grooves in the arrow-head of the connecting draw-head, by which construction a locked connection is formed between the draw-heads so that
 65 relative movement or disengagement laterally is controlled.

The operation and advantages of my improved car coupling will be readily understood by those skilled in the art to which it appertains. The improved two-part draw-head has a free spring movement in its longitudinal play and the pivoted front section has also a vertical spring movement, which insures a positive and effective automatic connection.
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By reason of its general construction and arrangement, my improved coupling is especially adapted for effective use upon curves and for cars of varying heights.

It will be understood that metal, wood, or
 80 any other suitable material, may be employed in the construction of the respective parts of the coupling.

Having thus described my invention, I claim and desire to secure by Letters Patent—
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1. An improved car coupling, comprising the housing having the side pieces C provided with the shoulders c , the two-part draw-head embodying the rear or main section and the front pivoted section, the main section F' being provided with a recess receiving a tongue upon the front pivoted section F^2 , the spring G provided in said recess, the bolt H , the plates I and J , and the spring K , substantially
 90 as set forth.

2. An improved car coupling, comprising the housing having the side pieces C provided with the shoulders c ; the two-part draw-head embodying the main or rear section F' and the pivoted front section F^2 , the section F' having the recess and beveled front end, and the section F^2 having the tongue pivotally mounted in said recess and beveled on its under side and being provided with the beveled rear end abutting against the beveled front end of the section F' and with the arrow-shaped head; the spring G bearing against the tongue of the section F^2 ; the headed bolt H ; the plates I and J ; and the spring K ; substantially as set forth.
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3. An improved car coupling, comprising the housing having the side pieces C provided with the shoulders c , the cross piece D , and the bottom piece E ; the longitudinally-moving section F' of the draw-head inclosed within the housing and having the recess f^8 and beveled front ends f^8 ; the spring G ; the bolt H carrying plates I and J and the spring K ; and the pivoted vertically-moving front section F^2 of the draw-head having the arrow-shaped head F^3 , the tongue F^4 , and the beveled rear end f^9 ; substantially as set forth.
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4. In a car coupling, a two-part draw-head having in its entirety a longitudinal spring-actuated movement and comprising a rear or main section having a longitudinal spring-actuated movement and provided with a recess at its front end, and a pivoted front section having a vertical spring actuated movement and provided with a tongue at its rear end pivotally mounted in the recess in the
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main section, and a spring provided in said recess and acting against the said tongue, substantially as set forth.

5 In a car coupling, the herein described improved draw-head having a longitudinal spring-actuated movement in its entirety and comprising the main section F' inclosed in a suitable housing and having a longitudinal movement therein and provided with the recess and with the beveled front end, and the projecting pivoted front section F² having a vertical movement and provided with the arrow-shaped head, the beveled rear end, and the projecting beveled tongue pivotally mounted in the recess of the main section, and the spring G mounted in said recess and bearing against said tongue, substantially as set forth.

6. In a car coupling, the combination, with a vertically moving spring-actuated draw-head provided with a tongue at its rear end, of a vertical rod having its lower end bearing upon the tongue of the draw-head and provided with a spring for retaining the rod up in position, a cross bar connected with the rod to provide for operating the same and having its ends projecting at the sides of the car, and keepers or devices for engaging said ends, substantially as set forth.

7. As an improvement in car couplings, the combination, with a vertically-moving spring-actuated pivoted draw-head, of a vertical rod having its lower end bearing upon the rear end of the draw-head, the spring P, a cross bar connected with the rod and having its ends projecting at the sides of the car, keepers embracing said ends, and devices for engaging the ends of the cross bar to retain the same in position, substantially as set forth.

8. As an improvement in car couplings, the combination, with a vertically moving spring-actuated pivoted draw head of a vertical rod having its lower end bearing upon the rear end of the draw-head and provided with the collar or shoulder *m'*, the spring P, a lever pivotally connected with the top of said rod, devices for locking said lever, a cross bar connected with the vertical rod above the shoulder and having its ends projecting at the sides of the car, and keepers or devices for engaging the ends of the cross bar, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL BOYER.

Witnesses:

OSCAR FIDLER,
F. A. FIDLER.