

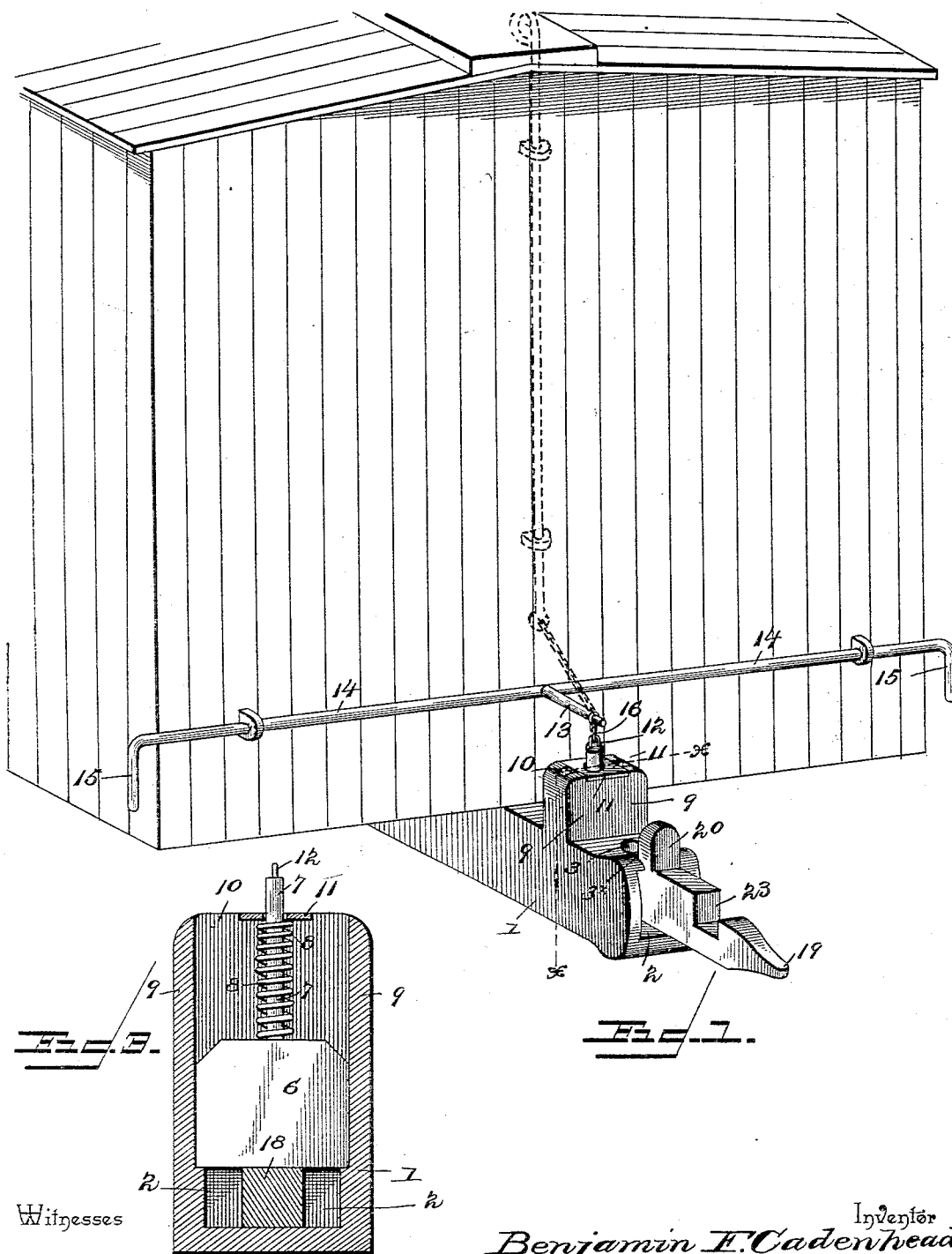
(No Model.)

2 Sheets—Sheet 1.

B. F. CADENHEAD.
CAR COUPLING.

No. 504,556.

Patented Sept. 5, 1893.



E. H. Stewart.
Chas. S. Hoyer.

By *H. V. S.* Attorneys,

Calnow & Co.

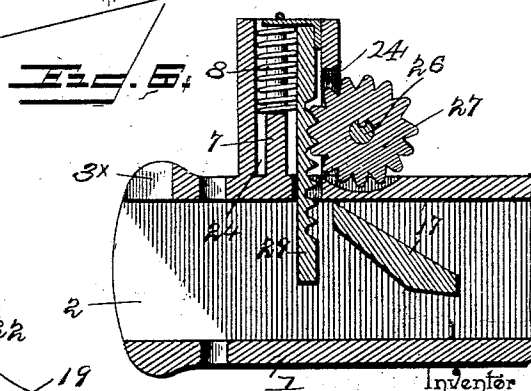
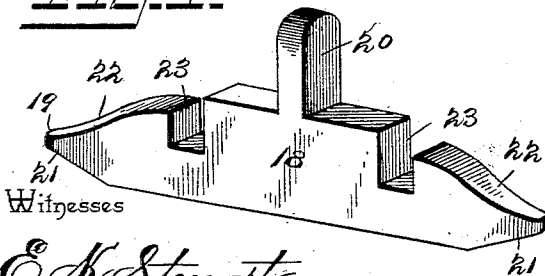
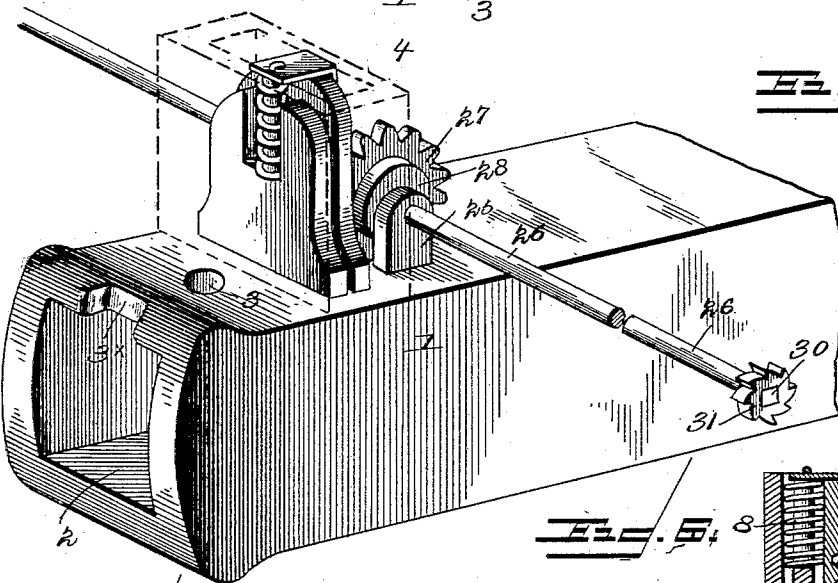
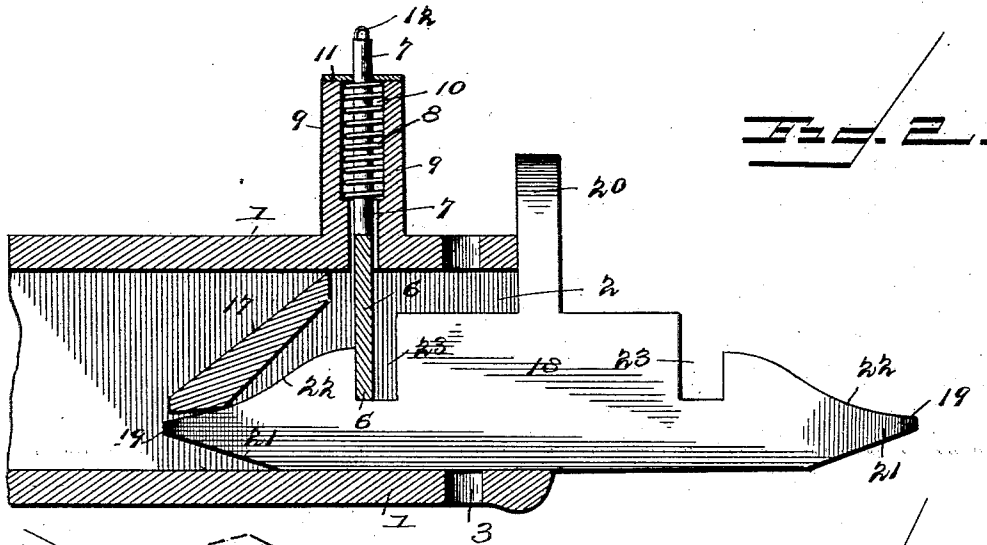
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Witnesses

Inventor

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Benjamin F. Cadenhead,

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UNITED STATES PATENT OFFICE.

BENJAMIN FRANKLIN CADENHEAD, OF UNION GROVE, ASSIGNOR OF ONE-THIRD TO EMMETT GILBREATH, OF GUNTERSVILLE, ALABAMA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 504,556, dated September 5, 1893.

Application filed April 28, 1893. Serial No. 472,219. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN FRANKLIN CADENHEAD, a citizen of the United States, residing at Union Grove, in the county of Marshall and State of Alabama, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to automatic car-couplings, and has for its object to provide such form of coupling which will couple the cars together and enable them to be uncoupled without going between the same, and wherein the parts are of simple and effective construction and operation, strong and durable, and readily and easily applied.

With these and other objects in view, the invention consists of the construction and arrangement of the parts thereof as will be hereinafter more fully described and claimed.

In the drawings: Figure 1 is a perspective view of the improved coupling shown applied to the end of a car. Fig. 2 is a longitudinal vertical section of the coupling. Fig. 3 is a transverse vertical section on the line $x-x$, Fig. 1. Fig. 4 is a detail perspective view of the coupling-pin disconnected. Fig. 5 is a detail perspective view of a different form of mechanism for raising the gate. Fig. 6 is a central longitudinal section of the device as shown by Fig. 5, on a smaller scale.

Similar numerals of reference indicate corresponding parts in the several figures of the drawings.

Referring to the drawings, the numeral 1 designates the draw-head, which approximates the ordinary form and is provided with a link-entrance opening 2, and pin-openings 3, for employment with the ordinary coupling pin and link in order that said form of coupling may be employed at any time found necessary, and when making connection with a car using the same. The upper front part of the top of the draw-head is constructed with a recess 3^x, of suitable size and shape, and in rear of the said recess the top of the draw-head is formed with a vertical slot 4, that extends therethrough and whose opposite ends align with vertical recesses or slots 5, on the inner opposing faces of the said draw-head. Within the slot 4, and the recesses or slots 5, is movably mounted a ver-

tically-positioned gate 6, that has a stem or post 7 extending upwardly from the top thereof, which is encircled by a coiled spring 8. The said coiled spring tends to force the gate downwardly in a normal closed position, and it and the stem or post are located above the upper part of the draw-head proper and enclosed in a housing 9, formed integral with or otherwise connected to the top of the draw-head and provided with an upper slot 10, with a cross-plate 11, through which the stem or post projects and against which the upper end of the coiled spring contacts and resists the upward movement of the gate.

On the upper end of the stem or post of the gate is a loop or eye 12, which is connected to a crank 13, of a crank-shaft 14, movably attached to the adjacent part of the end of the car and which has handles or operating grips 15 on the opposite ends thereof that project slightly beyond the opposite sides of the car. The connection between the loop or eye on the upper end of the stem and the crank-arm or crank of the crank-shaft is in the form of a chain 16, but it will be understood that other analogous means may be readily employed.

By means of the crank-shaft and its connection with the coupling-gate, the latter may be operated from either side of the car to raise the same in uncoupling cars without necessitating a passage between the cars by the operator or trainman.

If desirable, lever mechanism may be extended to the top of the car either alone or in connection with the crank-shaft set forth, as will be readily understood and appreciated by those skilled in the art, and to thereby provide convenient means for operating the coupling from the top of a box car, all as clearly shown in dotted lines in Fig. 1. By reason of the fact that the gate is normally held down by the coiled spring acting thereagainst, the operation of the same becomes automatic because after engagement by the coupling link or bar it will always be forced back into coupling position.

In the rear part of each draw-head is located a guard 17, which extends from the top of said draw-head downwardly at a rear incline some distance over the sides or interior op-

posing faces of the said draw-head. This guard is provided to prevent the coupling link or bar from being forced backwardly too great a distance into the draw-head, and also to hold the same in proper horizontal position to insure an accurate engagement with an opposite draw-head in coupling two cars.

The coupling link or bar 18 is constructed, in this instance, with opposite pointed heads 19, and a flat body with a centrally-located vertically-disposed stop-arm 20, that is adapted to engage with either one of the recesses 3^x, to prevent the said coupling link or bar from entering too far within either draw-head. The under edges of each of the heads are slightly beveled upwardly, as at 21, to provide for a ready entrance of the link or bar into the draw-head, and the upper edge of each head is, in a similar manner, beveled downwardly, as at 22, to bear against the under side of the guard for the purpose hereinbefore set forth. The formation of the heads as stated may of course be slightly varied, so long as the principle of the invention is preserved, and the upper part of the body, at the termination of said heads at the rear, is formed with a recess or slot 23, with which the lower edge of the gate in either draw-head is adapted to engage, and thereby lock the link or bar in coupling position and against accidental disengagement. The shape of the link or bar is such that the cars coupled thereby may have free movement in rounding curves or for other well-known purposes, and the entire construction and arrangement of the several parts is such that the coupling operation may be readily accomplished between draw heads of varying elevations, if at any time it is found necessary that such operation should ensue. It will be seen also that passage of train-hands between the cars to be coupled is avoided, and the automatic nature of the said coupling, combining therewith, as it does, simplicity of construction, makes the same a valuable and advantageous addition to the art.

In Figs. 4 and 5 a different means of raising the gate is shown, and in this instance the upper end of the gate is broadened and extended above the top of the draw-head a greater distance than in the preceding construction. The coiled spring is located slightly to one side of the upper end of the gate, but is connected thereto and acts similarly to the coiled spring heretofore set forth. The housing on the top of the draw-head also incloses the upper end of the gate and its mechanism in this instance when the device is in practical operation, and is shown in dotted lines and as provided with a slot 24, extending through the rear side thereof. In rear of the said housing a pair of ears 25 rises from the top of the said draw-head, in which is movably mounted a transverse shaft 26, having a toothed wheel 27 keyed thereon, and located between the said ears, the said toothed wheel being supplied with collars 28, on opposite sides of the same to retain the said wheel in

proper relative position to the slot 24 in the housing through which it extends, and engages a series of notches 29 in the rear side of the upper extended part of the gate. The said transverse shaft is extended to opposite sides of the car and formed with square ends 30, on which are mounted hand-wheels 31 or an equivalent construction of crank-arms or handles. This arrangement of parts provides a very positively-acting means for raising the gate by a small application of power through the leverage instituted by such combination of parts.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described the invention, what is claimed as new is—

1. In a car coupling, the combination of a draw-head, a vertically movable gate mounted therein, a coupling link or bar adapted to be engaged by said gate, and a rearwardly inclined guard located in the draw-head and arranged in rear of the gate, substantially as and for the purpose described.

2. In a car-coupling, the combination of a draw-head having a rear inclined guard, and a slot extending through the top thereof whose opposite ends align with grooves in the opposite sides of the said draw-head, a spring-actuated gate mounted in said slots and grooves and movable vertically therethrough, and a coupling link or bar formed with heads at the opposite ends thereof having upper and lower reversely-inclined edges with slots or recesses in rear of said heads on the upper part of the body of said link or bar and also provided with a centrally-located vertically-disposed stop-arm, substantially as described.

3. In a car-coupling, the combination of a draw-head having a slot extending through the top thereof whose opposite ends align with interior grooves and covered by a housing, said draw-head being also provided with a rear guard and a recess in the front edge of the top of the same, a vertically-disposed gate movably mounted in said slot and grooves and provided with a vertically-disposed stem or post rising through the said housing and having a loop or eye on the upper projecting end thereof, a coiled spring surrounding said stem or post, a crank-shaft connected to said stem or post, and a link or bar having a flat body with a vertically-disposed stop-arm at the center thereof, opposite heads with upper and lower reversely-arranged inclined edges, and slots in rear of the upper parts of the said heads, substantially as described.

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

BENJAMIN FRANKLIN CADENHEAD.

Witnesses:

J. H. SIGGERS,
E. G. SIGGERS.