(No Model.)

B. BIRD.

CAR COUPLING.

No. 305,418. Patented Sept. 23, 1884.

FIG. 1.

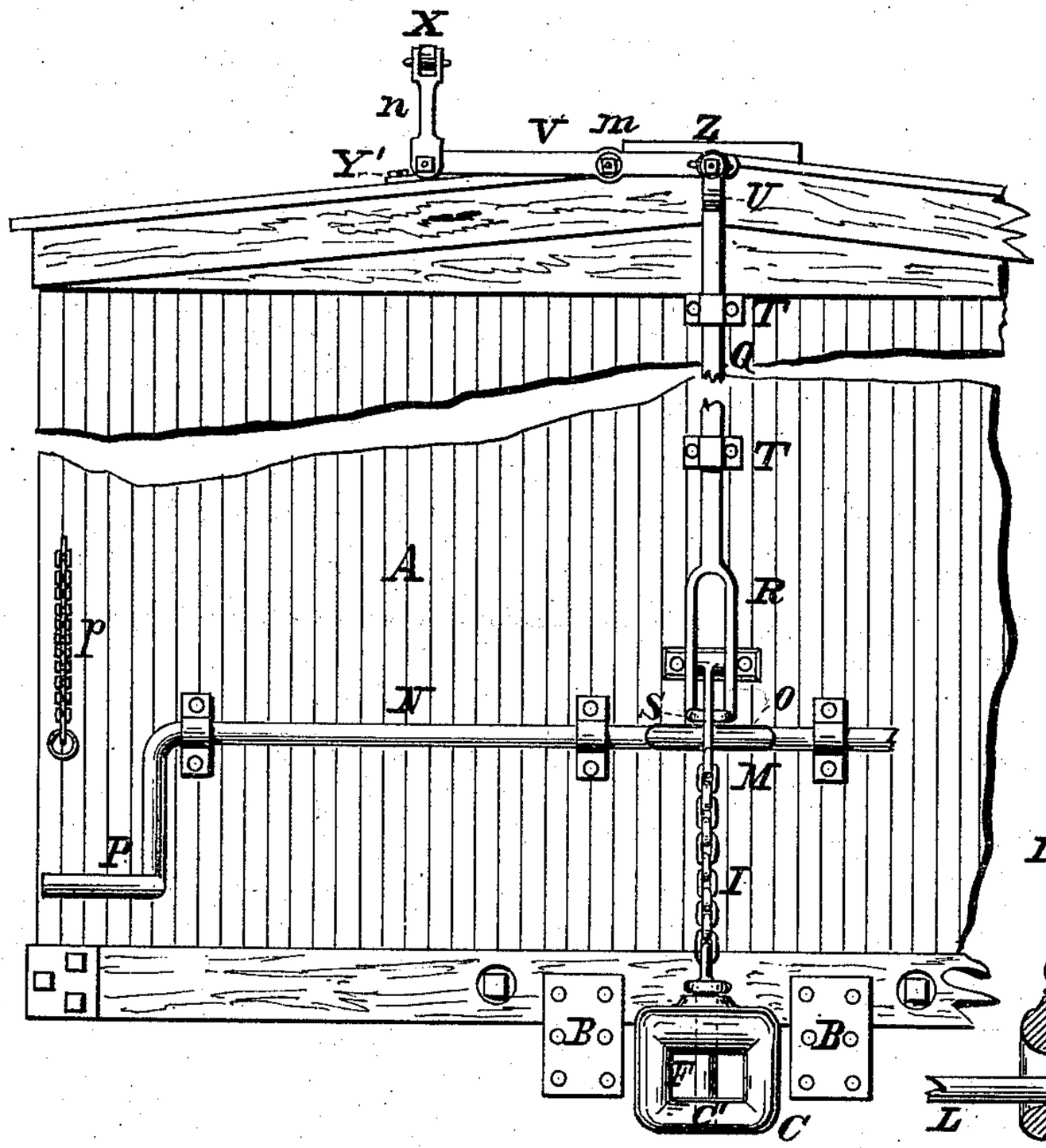


FIG. 2.

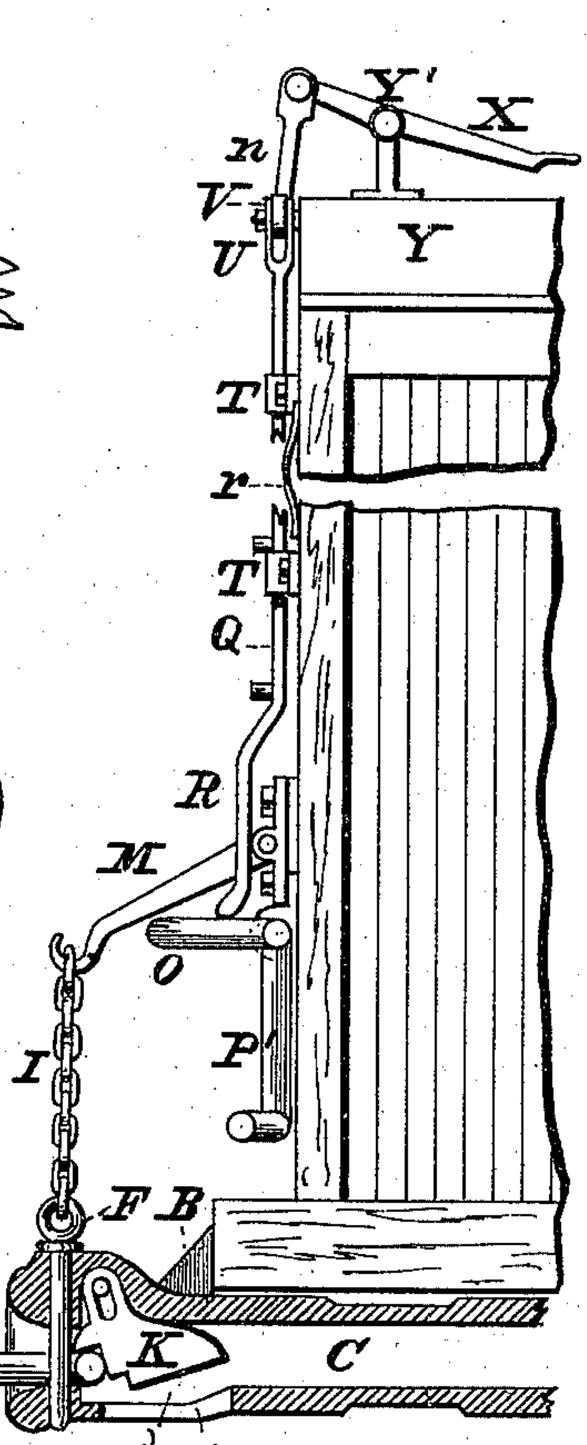
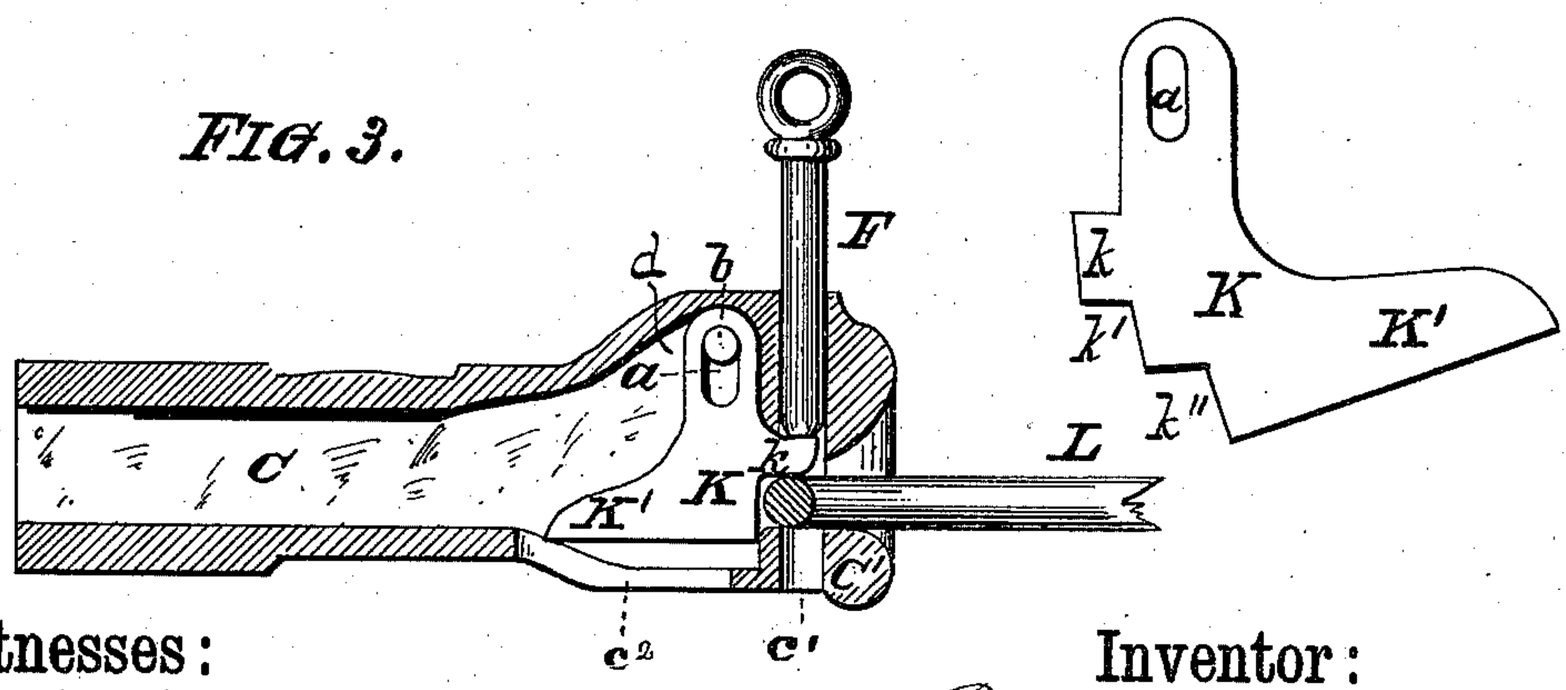


FIG. 4.

FIG. 3.



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UNITED STATES PATENT OFFICE.

BERNARD BIRD, OF BUFFALO, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 305,418, dated September 23, 1884.

Application filed January 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, BERNARD BIRD, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on Car-Couplings; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

My present invention has general reference to car-couplings; and it consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings already referred to, which serve to illustrate my said invention more fully, Figure 1 is a front elevation of a portion of a railway freight-car provided with my improved car-coupling. Fig. 2 is a side elevation, the draw-head being in section; Fig. 3, a sectional elevation of said draw-head, showing the position of the different parts in the act of coupling. Fig. 4 is a plan of the dog.

Like parts are designated by corresponding letters of reference in all the figures.

A in the drawings indicates the end of a railway-car, having the usual bumpers, B B, between which is placed the draw-head C. This draw-head has the usual pin-aperture, C′, Fig. 3, and behind this pin-aperture a recess, *d*, within which is placed a dog, K, of L-shaped form, having in its upper extremity a slotted aperture, *a*, by means of which and a pin, *b*, said dog is pivoted in the recess *d*, and below said aperture a forwardly-pointing projection, *k*, said projection performing the double function of a pin-and-link supporter, in the manner as hereinafter referred to.

C^2 is an opening on the under side of the draw-head, to permit any water that enters the mouth of said draw-head to pass out. If water were to accumulate and freeze within the draw-head, the ice thus formed would conflict with the free movement of the dog K.

L is the coupling-link, of usual construction, and F the coupling-pin. This pin is manipulated by means of a pivoted arm, M, secured to the ends of the car-body A, said pin being connected with the arm M in any suitable manner by means of a chain or analogous device, I. To the ends of the car-body is furthermore attached a crank-shaft, N, having in its central portion a crank, O, and on both ends crank-handles P, the said lever or arm M being arranged to rest upon said crank O when the parts are in the position illustrated in Figs. 1 and 2.

To the face of the car is movably secured a rod, Q, having on its lower extremity a slotted aperture, R, through which the arm M is passed, and below said slotted aperture a lip, S. This rod Q moves in guides T, and it terminates on its upper end in a double eye, U, engaging a lever, V, fulcrumed at *m* in any convenient manner. This lever V is operated by means of a hand or foot lever, X, pivoted at Y′ in a standard, Y, and connecting with said lever V by means of a connecting-link, *n*.

The operation of this car-coupling is substantially as follows: Suppose the cars are connected and uncoupling is desired. This uncoupling may be done by either lifting the coupling-pin out of the draw-head, (or nearly so,) the operator stepping between the cars for that purpose, or by the uncoupling devices, consisting of the crank-shaft N and the arm M, or the rod Q and arm M, as the case may be, it being readily understood that when the crank-shaft N is partly revolved by the handles P (or either of them) the crank O lifts the arm M, and this in turn withdraws the coupling-pin from the draw-head. It will be further understood that when the hand-lever X is lifted it will cause the rod Q to be also lifted, and that this in turn lifts the pin F in a manner readily comprehended. In entering the draw-head, the link L first engages the dog K at the notch *k*′, Fig. 4, and pushes said dog backward, the pin F resting upon the projection *k* of said dog until the latter has been pushed back far enough to allow the said pin F to pass the projection *k*, and dropping into the link connects the cars automatically.

For coupling, the loose link L is pushed into the draw-head while the cars are yet apart, and the pin caused to drop into the link, as heretofore explained. In this position the link

is supported by the dog K, whose weight is sufficient to balance the said link upon the lower portion of the mouth C′ of the draw-head, so that said link will readily enter the opposite draw-head without any extraneous assistance, and connect therewith automatically, in the manner heretofore explained. In swinging backward, the part K′ of the dog K strikes the upper part of the recess *d*, and thereby prevents the link L from entering the draw-head farther than necessary for making proper connection, while at the same time this portion K′ adds to the weight of the said dog, so as to enable it to retain the link L in position, as heretofore specified.

It will now be readily observed that by the construction of the apparatus as described I derive many useful and novel results not readily attained by any other method of construction, which said results (or some of them) may be briefly stated as follows: first, by means of the coupling mechanism as described cars may be coupled when standing upon a curve, because there is sufficient lateral movement of the link in the draw-head to accomplish this result, especially so in view of the fact that the link being supported and retained in any position by the dog K, it can be adjusted previous to the cars being pushed together, so that it cannot fail to enter the opposite draw-head; second, the operating mechanism for the pin from the top of the car does in no wise obstruct the passage over the roof Z of the car, thereby avoiding dangers to the operator; third, the entire apparatus can be attached to old cars, no change whatever in the draw-timbers, bumpers, and other appurtenances to the car being required; fourth, the cost of a set of draw-heads and accessories exceeds but a trifle that of an ordinary draw-head, the expense of a few pounds of castings (for the dog K) being all the additional cost over such common draw-head; fifth, connection can be made by means of an ordinary link and pin in the usual manner, and cars having common draw-heads may be readily connected with others having my improved draw-head; sixth, cars of different height or spur may be coupled together by means of a crooked or S link in the ordinary manner.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

1. In car-couplings, the combination, with the draw-head C, provided with the opening C^2, of the pivoted dog K and the coupling-pin F, said dog being provided with a projection, *k*, serving on its upper surface as a support for the said pin F, and on its lower surface, *k′*, as a carrier for the link L, said dog being, furthermore, provided with a rearwardly-projecting part, K′, and a stop to limit its forward movement, substantially in the manner as and for the object specified.

2. The mechanism for operating the coupling-pin F, consisting of the arm M, shaft N, having crank O, located beneath the arm M, and the operating-cranks P P′, as stated.

3. In car-couplings, the mechanism for operating the coupling-pin from the top of the car-body, said mechanism consisting, essentially, of the projecting arm M, rod Q, having on its lower end an oblong aperture, R, and a lip, S, engaging said arm M, and means, substantially as stated, for actuating said rod Q, as and for the purpose mentioned.

4. In car-couplings, a dog for supporting the link, consisting of the L-shaped part K K′, having on its upper end a slot-hole *a*, a projection, *k*, and notch, *k′*, said dog being pivoted within the recess *d*, and constructed to operate in conjunction with the stop, as specified, for the purpose stated.

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

BERNARD BIRD.

Attest:

MICHAEL J. STARK,
JOHN C. DUERR.