

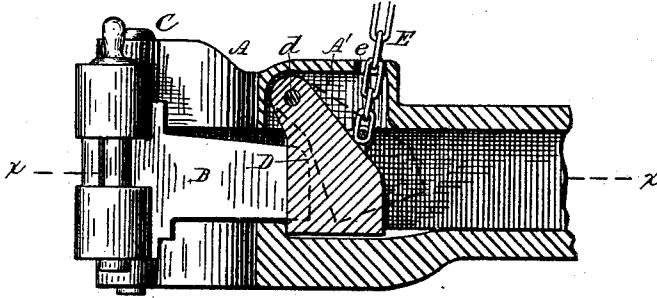
(No Model.)

D. WILLIAMS.  
CAR COUPLING.

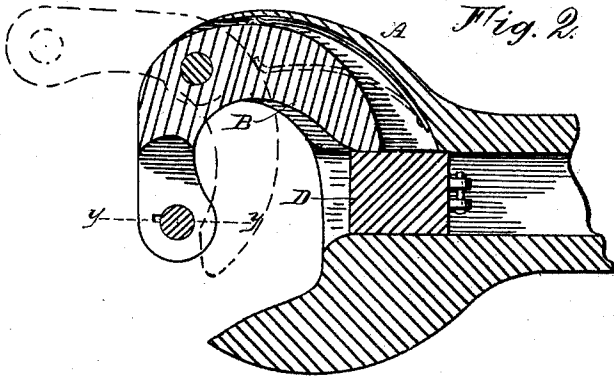
No. 482,445.

Patented Sept. 13, 1892.

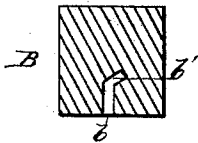
*Fig. 1.*



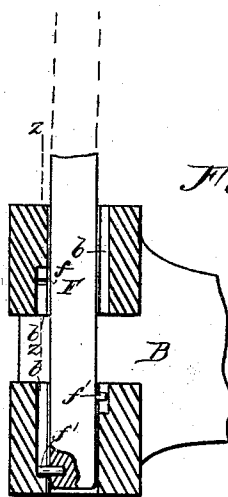
*Fig. 2.*



*Fig. 4.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

DYER WILLIAMS, OF CEDAR RAPIDS, IOWA, ASSIGNOR TO FLORENCE WILLIAMS, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 482,445, dated September 13, 1892.

Application filed September 7, 1891. Serial No. 404,923. (No model.)

*To all whom it may concern:*

Be it known that I, DYER WILLIAMS, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to car-couplers of the "vertical-plane" or "twin-jaw" type; and the object of my invention is to improve the device for locking the knuckle or jaw in position as coupled and the parts of the knuckle which are adapted for connecting with the ordinary link-and-pin coupler.

In the accompanying drawings, forming a part of this specification, Figure 1 is a longitudinal section of the coupler through the center of the draw-head. Fig. 2 is a horizontal section on the line *x x*. Fig. 3 is a sectional view of the outer end of the knuckle and pin in the line *y y*, and Fig. 4 is a fragmentary sectional view of the knuckle in the line *z z*.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the draw-head, which is provided with the usual knuckle B, pivoted on the pin C in one arm of the draw-head.

In the upper part of the draw-head is an open space, preferably a chamber, almost entirely closed on top to exclude dirt and the like. In this chamber A' is mounted on a transverse pin *d* a heavy block D. This block lies close to one wall of the draw-head and bears against it when the knuckle is in locked position with its inner end bearing on the opposite side of the block.

To the inner side of the block is attached a chain E, connecting with a suitable hand-lever for uncoupling, (not shown,) the chain passing out through a hole *c* in the upper part of the draw-head. This construction is designed to utilize the weight of a heavy block for locking the knuckle in the simplest and most effective manner. It will be noticed that all the strain on the block is lateral and there is no strain on the pin at all. The pin serves simply as a bearing on which the block is free

to swing and presents less friction to the block in its movement than any other mounting therefor. The pin should be well forward, as represented, so that practically all the weight of the block is behind it and carries the block down to normal position the instant the knuckle passes it.

In the operation of this type of couplers a common difficulty has been the tendency to bend the pin in the knuckle which connects with the link of a common style of draw-head and thus disable the coupler, the bent pin sticking in its hole and requiring to be straightened before it can be properly operated. To remedy this defect, I provide the pin F with one or more projecting studs or splines *f f'*, adapted to play in suitable grooves *b b* in the knuckle. One of these grooves has a shoulder or turn *b'* therein, serving as a stop for the pin when the stud *f* is elevated to that point and the pin F is turned slightly. The purpose of the other pin or spline *f'* is simply to keep the pin from turning out of its true position in the knuckle as raised by the operator.

The operation of the device will be readily understood. The pin fitting neatly in its hole in the knuckle is raised to the limit of its movement and turned slightly, the shoulder in the groove holding the pin elevated until two draw-heads coming together jar it loose, when it falls of its own weight through the link and into the lower part of the knuckle.

It is to be understood that the bending of pins is due chiefly to the fact that in coupling they are not carefully thrust into the lower part of the knuckle, and being only held by the upper part thereof the consequence is that a good many pins are bent out of shape and a good many knuckles broken and chipped out at the hole.

In this device the pin is fitted to the hole in the knuckle and cannot be disconnected therefrom without the breaking or other removal of the little pin or spline therein. In couplers of this type it is desirable that the knuckle should be automatically thrown forward when uncoupled and held in that position. I therefore provide the draw-head with a half-elliptic spring G, one end of which is attached to the draw-head back of the knuckle and the other end, having a curve *g*, bears against the

back side of the knuckle. The spring is of the simplest form and as applied to the coupler occupies very little space. The action of the spring is clearly indicated by the dotted outline in Fig. 2.

5 Having thus described my invention, I claim—

1. In a car-coupler of the class specified, the combination of the knuckle having one or  
10 more longitudinal grooves in the coupling-pin hole thereof, a shoulder or offset in one of the grooves, and a coupling-pin having one or more studs or splines coinciding with said grooves, the shoulder specified being adapted to hold  
15 the pin by its projecting stud up for the passage of the link and to liberate it by the shock of coupling.

2. In a car-coupler of the class specified, the combination of a draw-head substantially as

described, a locking-block pivoted at its forward upper portion on a transverse pin in the draw-head and adapted to swing down to locking position by its gravity alone, means, substantially as described, for liberating the same, a pivoted knuckle with coupling-pin holes  
25 provided with one or more internal grooves to receive a stud or spline and with a slight offset in one of said grooves, and a coupling-pin having one or more studs or splines fitting loosely in said groove or grooves, substantially as and for the purpose set forth.

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

DYER WILLIAMS.

Witnesses:

FRANK G. CLARK,  
S. W. BRAINERD.