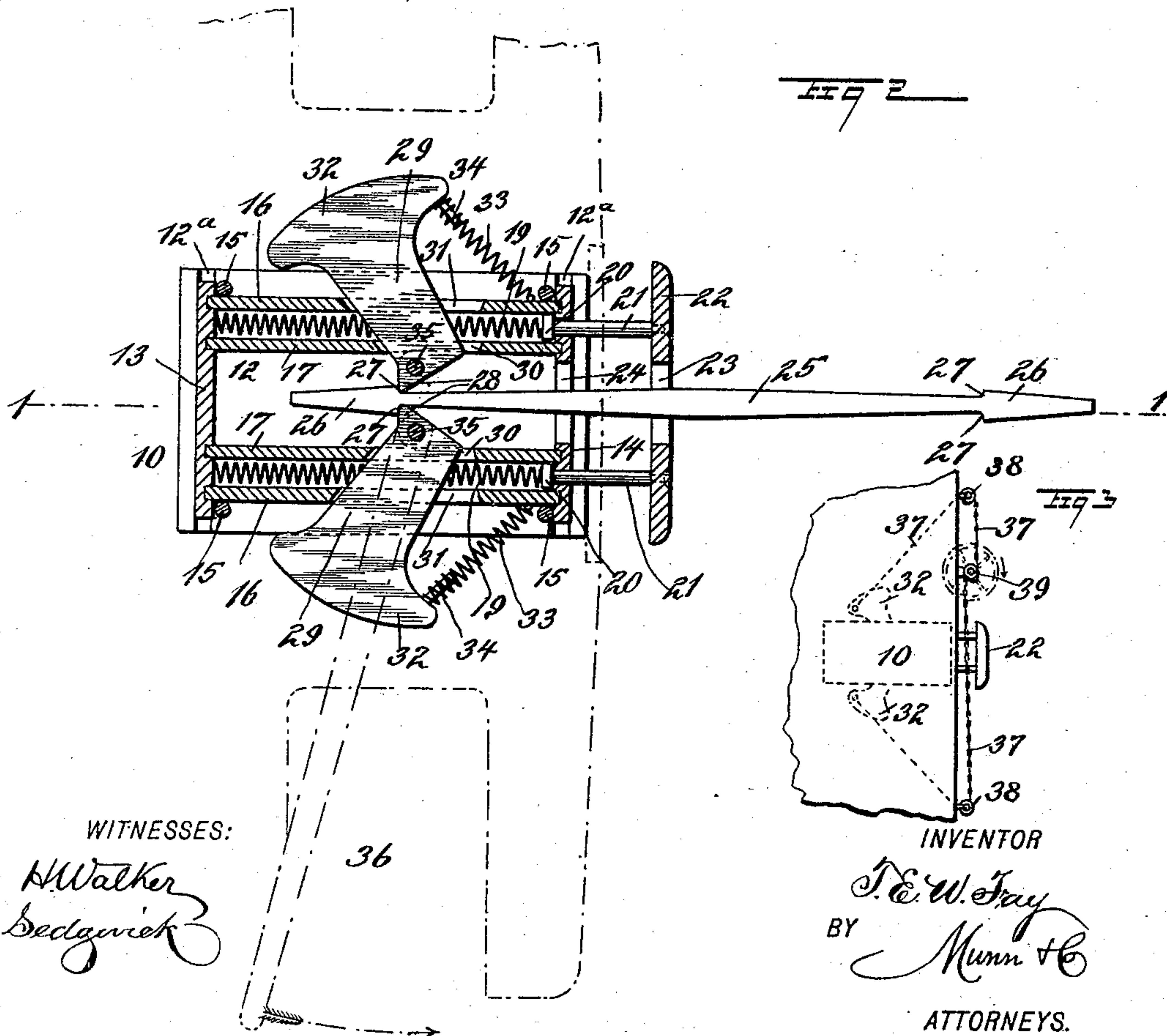
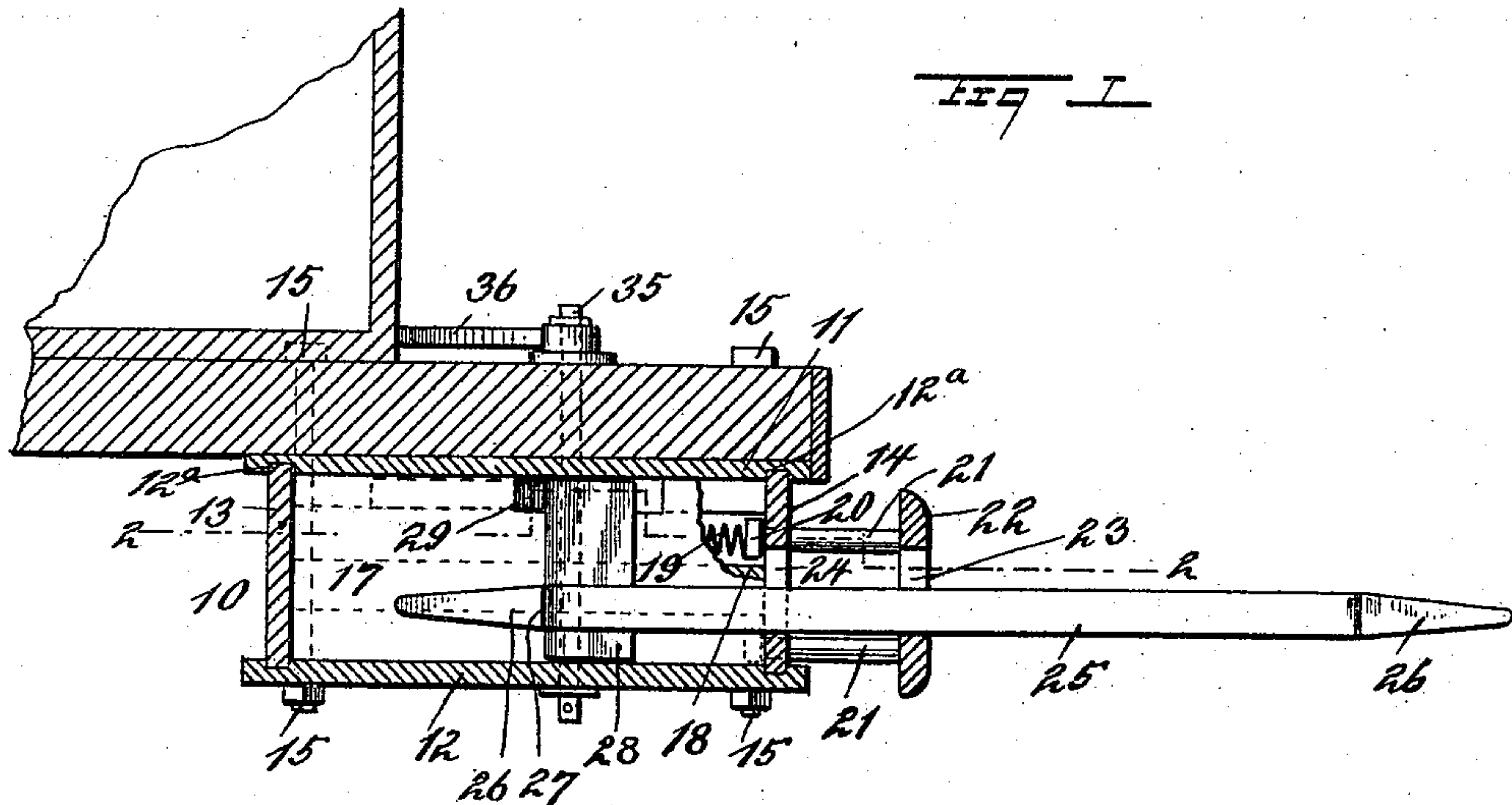


(No Model.)

T. E. W. FAY.
CAR COUPLING.

No. 491,839.

Patented Feb. 14, 1893.



WITNESSES:

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THORNTON EUGENE WEBSTER FAY, OF PHILADELPHIA, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 491,839, dated February 14, 1893.

Application filed October 14, 1892. Serial No. 448,898. (No model.)

To all whom it may concern:

Be it known that I, THORNTON EUGENE WEBSTER FAY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Car-Coupling and Bumper, of which the following is a full, clear, and exact description.

My invention relates to improvements in car couplings and bumpers, and the object of my invention is to produce a strong, simple and easily operated car coupling, which is adapted to automatically engage the draw-bar of an opposing coupling, which is constructed in such a way that it permits the necessary movements of connected cars, which is not likely to get out of order, and which is protected against snow and ice; also to combine with said coupling, a bumper plate which is adapted to receive the thrust of the car, which is backed by springs in such a way that when two cars come together the shock is absorbed by the springs without shaking up the passengers in the car, or disturbing the freight if it is a freight car, and to construct and arrange the bumper plate so that it will in no-wise interfere with the action of the coupling.

To these ends, my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal section of the car coupling, on the line 1—1 in Fig. 2, as applied to a car; Fig. 2 is a sectional plan on the line 2—2 in Fig. 1; and Fig. 3 is a detail sectional plan of a preferred form of mechanism for releasing the coupling jaws.

The drawhead of the coupling consists of the rectangular box 10, which has parallel top and bottom pieces 11 and 12, and suitable end pieces 13 and 14, which fit in grooves 12^a in the top and bottom plates. The plates are held together by bolts 15, which extend downward through the top and bottom plates and also through the platform or cross-head beams of the car, and the box or drawhead is thus held securely in position. The box has side

pieces 16 which are also held in grooves in the top and bottom plates and in the end plates 13 and 14, as shown in Fig. 2, and inside of the box are longitudinal vertical partitions 17, which are arranged near opposite sides and parallel with the side pieces 16. The side pieces 16 and partitions 17 hold horizontal partitions 18 which are arranged near the center, and consequently four compartments are formed in the sides of the box two on each side, and in each of these compartments is a strong spiral spring 19, which presses against the back end of the box and also against the head 20 of one of the bolts 21, which slide in the front end piece 14 of the drawhead or box, and are reduced at their outer ends and screwed firmly into the bumper plate 22, and by reducing the ends of the bolts their shoulders take the thrust of the plate so as to relieve the threads from strain.

The bumper plate 22 is arranged parallel with the end of the box or drawhead, and produced centrally in it is a hole 23, which is arranged opposite the mouth 24 of the box or drawhead, and this mouth extends into the central portion of the box, which portion consists of a large compartment produced between the partitions 17. The hole 23 in the bumper plate is adapted to receive the draw-bar 25, which also extends into the box or drawhead 10, and this drawbar has at its ends inclined heads 26, terminating at their inner ends in shoulders 27, which are adapted to engage the oppositely-arranged locking jaws 28, which swing centrally in the middle compartment of the drawhead or box, and which are formed on horizontally-swinging and outwardly-extending plates 29, these moving in slots 30 and 31 in the partitions 17 and 16, and the outer ends of the plates 29 are enlarged to form heads 32, which counterbalance the jaws 28.

The heads 32 are normally pressed rearward so as to throw the jaws 28 into position to interlock with the heads of the drawbar by springs 33, which are arranged around the guide pins 34 on the front portions of the heads 32, and the opposite ends of the springs are secured to the sides of the box or drawhead 10, near the front end thereof. The jaws 28 are swung so as to release the drawbar by

means of a lever or levers 36, secured to one or both of the jaws by means of a bolt 35, which extends downward through the jaws and through the car platform or the cross-head beam of a freight car, or preferably by means of chains 37 attached to the rear ends of the "jaw plates" 29 by bolts and extending along outwardly toward the ends of the cross-head beam and passing over and around guide pulleys 38 secured upon the under side of the platform or cross-head beam, the chains returning and extending along the beam to one side of and at or near the head end of the coupling box or drawhead, and being secured to the lower end of the shaft 39 of an ordinary "wheel hand-brake," extending upright upon the platform or cross-head beam, the shaft extending downward through to wind the chains upon, which, when operated, will move forward, simultaneously, the ends 32 of the jaw plates, which will release the drawbar. The ends of the chains attached to the jaw plates 29 have each an open end link, made something like a two-tined fork, upon the outward ends of which are formed eyes for the bolts to extend through them and the jaw plates, either upward or downward, the links (fork shaped) straddling the jaw plates, they corresponding with the thickness of the jaw plates.

The operation of the coupling and bumper is as follows: When two cars come together, the drawbar 25, carried by one of the couplings enters the mouth of the opposing coupling, and when the head 26 enters between the jaws 28, it swings the jaws backward and the plates 29 and heads 32 forward, so as to permit the head 26 to pass, and as soon as the head passes the springs 33 push the jaws back to place, and they engage the shoulders 27 of the head so as to prevent the withdrawal of the drawbar. When a drawing strain is produced on the drawbar, the jaws 28 are thrown forward and the plates 29 come in contact with the rear walls of the slots 30 and 31, thus effectually preventing the removal of the drawbar. To uncouple the cars the lever 36 is thrown forward when the head 26 of the drawbar is in the rear end of the coupling, and the jaws 28 are thus turned outward so as to permit the withdrawal of the bar. After the drawbar has entered the coupling, the bumper plates 22 of the opposing couplings strike one another and the springs 19 are compressed gradually, until by the time the bumper plates are pushed back against the

ends of the couplings, the cars will have stopped, and this without excessive vibration.

By reference to the drawings it will be seen that sufficient space is left in the hole 23 and mouth 24 of the coupling to permit any necessary movement of the drawbar so that coupled cars may pass easily around a curve or up a grade. It will be noticed that the operating mechanism of the coupling is entirely concealed, so that there is no danger of the filling up of the drawhead with snow or ice.

It will be understood that a greater or less number of compartments may be made to receive the springs 19 and the bolts 21, without departing from the principle of the invention. It will also be observed that in operation, the bumper plate 22 does not in any way interfere with the working of the coupling, but it rather assists, as it serves as a guide and support for the draw-bar.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent,—

1. A combined car coupling and bumper, comprising a box-like drawhead having a central coupling compartment with an open mouth, oppositely-arranged jaws held to swing in the middle compartment of the coupling, the jaws having outwardly-extending spring-pressed plates which move in slots in the sides of the drawhead, a draw-bar having an inclined head with shoulders which engage the locking jaws, compartments arranged in opposite sides of the drawhead, and a perforated bumper plate having rearwardly-extending spring-pressed bolts which slide in the said compartments of the drawhead, substantially as described.

2. A car coupling, comprising a box-like drawhead having a central recess therein and compartments in its opposite sides, oppositely-arranged horizontally-swinging jaws arranged centrally in the coupling and adapted to engage a drawbar, spring-pressed plates secured to the jaws and extending outward through slots in the sides of the drawhead, the plates having enlarged heads at their outer ends, and a drawbar having an inclined head with shoulders at its inner ends to engage the locking jaws, substantially as described.

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Witnesses:

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