

No. 708,571.

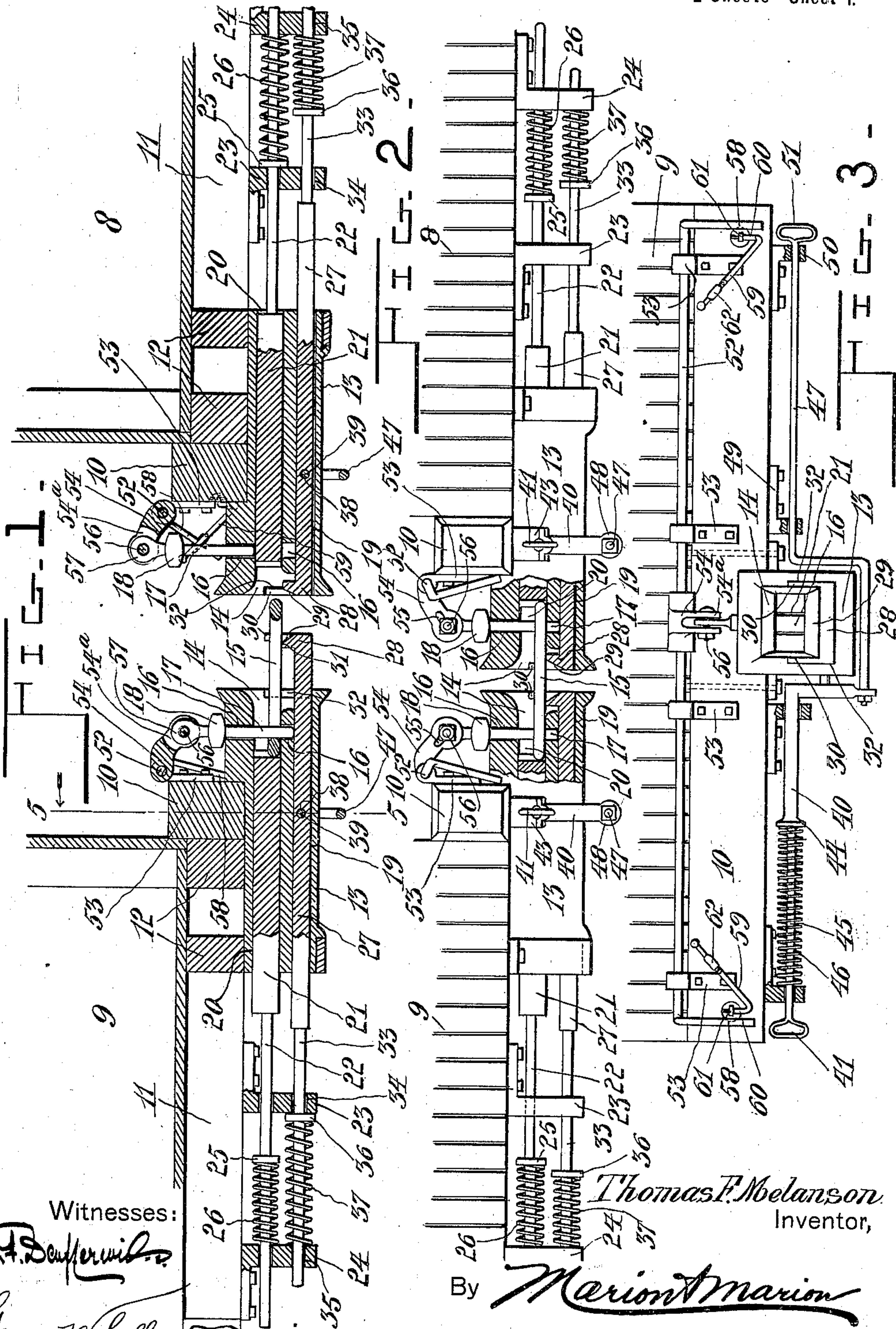
Patented Sept. 9, 1902.

T. F. MELANSON.
CAR COUPLING.

(Application filed June 2, 1902.)

(No Model.)

2 Sheets—Sheet 1.



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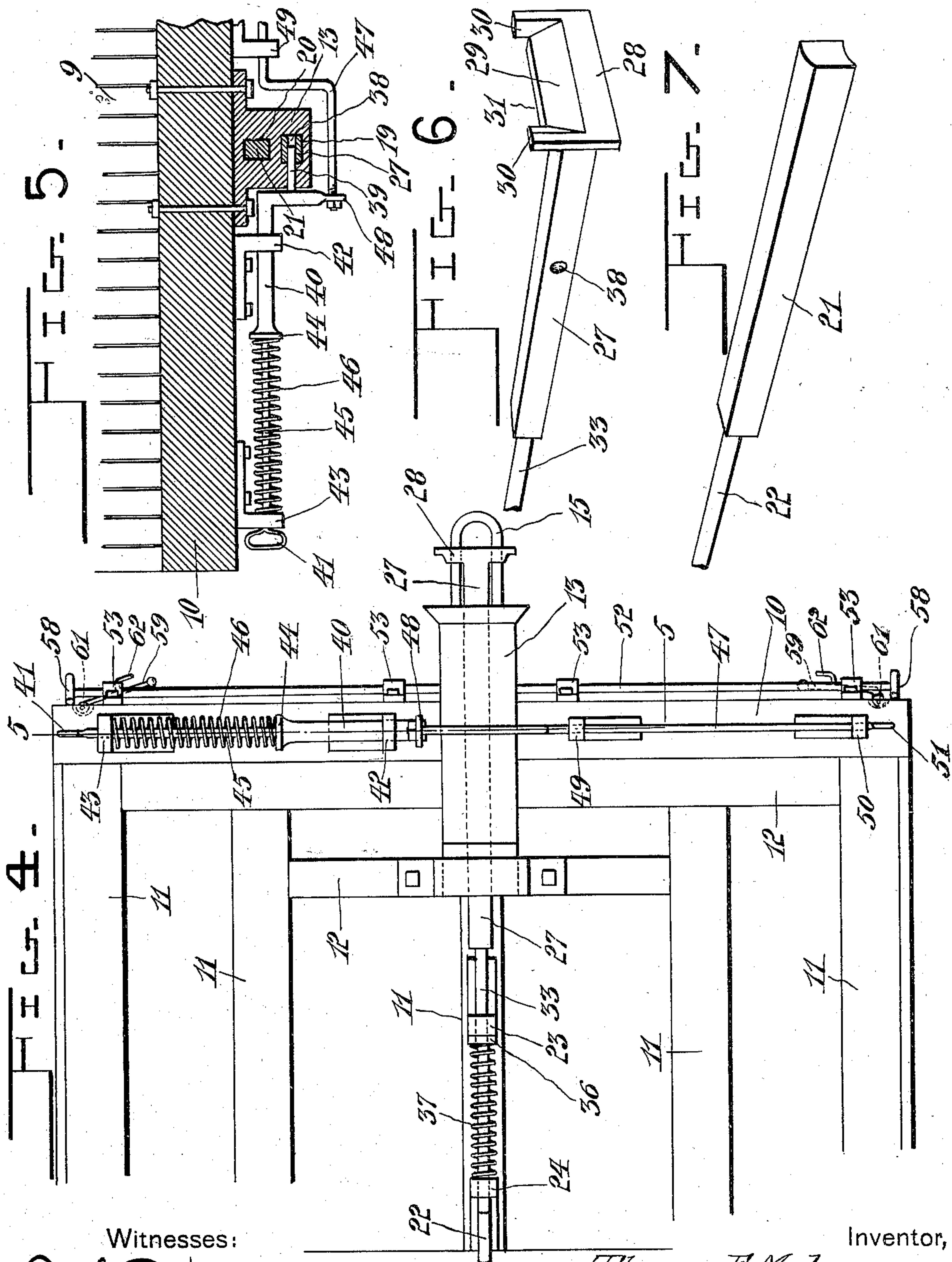
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2 Sheets—Sheet 2



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS FABIEN MELANSON, OF UPPER CHARLO, CANADA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 708,571, dated September 9, 1902.

Application filed June 2, 1902. Serial No. 109,883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS FABIEN MELANSON, a subject of the King of Great Britain, residing at Upper Charlo, county of Restigouche, Province of New Brunswick, Canada, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare that the following is 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.

My invention relates to an automatic car-coupler especially adapted to be used on freight-cars.

The object of my invention is to produce a car-coupler of this type which shall be simple, cheap, and effective, which shall enable the use of the ordinary draw-link commonly used on freight-cars and shall retain the well-known superior strength of this form of connection, while at the same time embodying the automatic feature of the common knuckle-joint connection, whereby two cars are arranged to automatically couple themselves together without any supervision of any kind from employees.

To these ends my invention consists, substantially, in a draw-head of the usual type, having an end recess therein adapted to receive a link, in combination with a link-pin adapted to pass through a transverse aperture in the draw-head and to engage the link. These, while the main features of my improved car-coupler, as well as those of the ordinary draw-head and link connection, are not the essential features of my invention; but the latter consist in means for automatically holding the said link-pin in raised position when the car is uncoupled ready to receive a link from an adjacent car, means for automatically dropping the said link-pin into engagement with the link when the latter is pushed into the draw-bar by the coming together of the two cars, means for automatically sustaining a loose link carried by the draw-head in position to be inserted into the recess of the adjacent draw-head, and, finally, means for permitting the said sustaining means for the link to be pushed back out of the way when the cars are coupled and re-

tained in the withdrawn position, so as not to be liable to fracture or injury.

My invention further and more specifically consists in the provision of a pair of reciprocating spring-bolts which are arranged to reciprocate longitudinally in suitable passage-ways formed longitudinally in the draw-head, the uppermost of which, being in line with the recess for the draw-link, is arranged to be pushed forward into the said recess when the draw-link is not engaged with the pin, so as to be pushed across the aperture in the draw-head through which the link-pin is adapted to pass and to prevent the latter from falling across said aperture. This bolt is kept resiliently pushed forward into this position by a spring at the rear end of the draw-head or otherwise located, so that when a link on an adjacent car or held in the hand is pushed against the bolt the latter is pushed back and the link allowed to enter the recess, whereupon the link-pin, resting in the aperture above the said recess, is permitted to fall through the recess into engagement with the link, and when the said pin is raised manually or otherwise the link is forcibly ejected from said recess by the forward pressure of said bolt. The other or lower bolt above mentioned is a separate and coacting part of this invention, whereby the free end of the link is adapted to be supported in horizontal position ready for engagement with the draw-head of an adjacent car, and it carries a bracket-lug on its end for this purpose, and this bolt, too, is kept pressed resiliently forward by a spring, so that when the draw-head of an adjacent car is pushed up against it it gives way and is pushed backwardly as the link becomes engaged with the said draw-head. I further arrange this supporting-bolt with a latch, whereby the same after having been pushed back by the advancing of a draw-head on an adjacent car is retained in retracted position by means of a horizontal latch-bolt engaging with a recess in the same, so that the supporting-bolt being no longer needed to support the link is prevented from becoming bent or broken or from other injury, and I arrange a transverse handle-bar leading from the latch to each side

of the car and arranged to be manually engaged when the car is uncoupled, so as to release said supporting-bolt on the car in which the link is left and to permit it to be held
5 raised ready for another coupling operation.

My invention further consists of an arrangement in combination with the above whereby the link-pin may be automatically raised to uncouple the cars by means of a transverse
10 shaft extending across the end of the car and having a forwardly-projecting rock-arm to which the pin is connected, and each end of this transverse shaft carries a lever, by rocking which the pin may be raised to uncouple
15 the car without danger to employees and others passing between said cars.

My invention further consists in the construction and combination of parts, which will be hereinafter described, and more particularly pointed out in the claims.

In the drawings accompanying this specification I have shown the preferred form of my invention embodying all my improvements, and herein—

25 Figure 1 is a longitudinal central section through the ends of two adjacent cars carrying draw-heads, showing the operation of coupling the cars. Fig. 2 is a side elevation showing the adjacent ends of two cars after
30 being coupled, parts of the draw-heads thereof being shown in central longitudinal section. Fig. 3 is an end elevation of a car carrying my improved coupler. Fig. 4 is a bottom plan view of a car having my coupler
35 mounted thereon. Fig. 5 is a transverse section of the coupler and a portion of the car, taken on the lines 5 5 of Figs. 1 and 4. Fig. 6 is a perspective view of the link-supporting bolt. Fig. 7 is a similar view of the pin-sup-
40 porting bolt.

The same numerals of reference denote like parts in all the figures of the drawings.

8 and 9 represent portions of two car-bodies, which are provided with buffer-beams 10 and
45 longitudinal and transverse sills 11 and 12 and draw-heads 13 secured thereto. Each draw-head 13 is provided in its front or outer end with a longitudinal recess 14 of suitable form and size to receive the end of a draw-
50 link 15, and it is further pierced with a transverse aperture 16, in which is adapted to be seated the link-pin 17, having a collar 18, adapted to rest on the upper surface of the draw-head to prevent it from descending too
55 far into the aperture 16. The aperture 16 does not pass all the way through the draw-head, but ends at a longitudinal passage-way 19, which is formed axially through the lower part of the draw-head and is adapted for the
60 purpose hereinafter named. There is also another passage-way 20, which is also axial with the draw-head and is in line with the recess 14, which receives the link, and in this passage-way 20 is reciprocally mounted a pin-
65 supporting bolt 21, whose rear end is reduced to a round section, as shown at 22, and pro-

jects through a pair of bearing-brackets 23 and 24. Just behind the front bearing-bracket 23 the rod 22 has formed thereon a collar-lug 25, which is adapted to abut against
70 the rear face of the bearing-bracket 23, while between the lug 25 and the bracket 24 is mounted on the rod 22 a coiled spring 26, which is adapted to keep the bolt 21 pressed resiliently in its forward position, as is shown
75 in the case of the right-hand draw-head in Fig. 1, adapted to project across the aperture 16 and prevent the pin 17 from falling across the recess 14. In the lower passage-way 19 is likewise reciprocally mounted a link-sup-
80 porting bolt 27, which has formed on its front end an upwardly-projecting bracket-lug 28, this lug being preferably of the form shown in Figs. 3 and 6—that is to say, being cham-
85 fered at its ends, as at 29—and having a pair of upwardly-projecting side lugs 30, so that the link which rests on the lug 28 is adapted to fit in the recess 31, whereby the free end of said link is prevented from sidewise motion and is guided into the recess 14 of the draw-
90 head of the adjacent car, the recess 31 being of the same width as the recess 14. The forward end of the draw-head is preferably recessed, as shown at 32 on the left of Fig. 1, to receive the bracket-lug 28, so that the latter
95 is shielded against injury when not in use. The bolt 27 is also reduced at its rear end to a round section, as shown at 33, and this portion of the bolt reciprocates likewise in aper-
100 tures 34 and 35, formed in the brackets 23 and 24, and is also provided with an integral thrust-collar 36, which is adapted to form an abutment for a spring 37, coiled around the rod 33 and resting at its rear end against the
105 face of the bracket 24, and the bracket 23 also forms an abutment for the collar 36 to limit its forward motion and that of the bracket 28.

In order to keep the link-supporting bolt 27 in retracted position when not in use, I provide it with a transverse aperture 38, which
110 is adapted to receive a transverse latch-bolt 39, mounted on and forming part of an angular bar 40 at the side of the draw-head, said bolt 39 being arranged to reciprocate in a suitable aperture formed in the body of the
115 draw-head at the side of the passage-way 19. The bar 40 extends transversely of the car to the outer side thereof, where it is provided with a suitable releasing-handle 41, and it is supported in this position by two hangers 42
120 and 43, fixed to the bottom of the car. The bolt 40 is also provided with a shoulder 44 intermediate of said hangers and a reduced portion 45 beyond the collar, around which
125 reduced portion is mounted a coiled spring 46, which is seated against the hanger 43 and the shoulder 44, thus keeping the bar 40 and the latch-bolt 39 pressed against the link-supporting bolt 27, so as to engage the aper-
130 ture 38 thereof when the bolt is pushed back into the position shown on the right of Fig. 1. The latch-bolt may also be manually oper-

ated from the other side of the car by means of a bent rod 47, which is attached at its inner end to an ear 48, depending from the end of the rod 40, and the said rod 47 is arranged to slide in hangers 49 and 50 and is provided at its outer end with a handle 51, whereby the latch-bolt 39 may be released by pushing on the handle 51 or by pulling on the handle 41, according to the side of the car on which the operator happens to be.

When the draw-head is not provided with a link, the parts are arranged to be in the position shown, as in the case of the right-hand draw-head in Fig. 1, the bolt 21 being pushed forward, so as to support the pin 17 in raised position, and the bolt 27 is pushed back, so as to be engaged with the latch-bolt 39, and thus is shielded against injury. When it is desired to engage a link with the draw-head, either manually or by the car-coupling operation, the end of the link is pushed into the aperture 14, whereupon the bolt 21 is pushed back, allowing the pin 17 to drop into the aperture and through the link to be engaged therewith, as shown on the left of Fig. 1. If this is done manually in order to put the car into position to be engaged with an adjacent car not carrying a link, then the supporting-bolt 27 for the link must be released by drawing on the handle 41 or pushing from the handle 51, whereupon the spring 37 causes the said supporting-bar 27 to be projected forward, so as to support the free end of the link 15 in raised position, ready for engagement with an adjacent draw-head. The parts when thus arranged are in the position shown in Fig. 1. When the two cars come together, the projected bolt 27 will be automatically retracted, so as to permit the latch-bolt 39 to be engaged with the aperture 38 thereof, and thereupon it is held in retracted position, and at the same time the link 15, carried by one of the draw-bars, projects into the recess 14 of the opposite draw-bar and is thereupon automatically coupled with the pin 17 in the manner just described.

In uncoupling the cars the pin 17 on one of the cars is raised, whereupon the link 15 is projected and the spring 26 causes the bolt 21 to be automatically projected across the aperture 16, so as to prevent the pin 17 from again falling across said aperture until it is caused to do so by the entrance of a link. At the same time the latch-bolt 39 of the other car is released by operating one of the handles 41 51, so as to project the link-supporting bolt 27 into forward position ready for the next coupling operation.

In order to avoid all necessity of entrance between the two cars during coupling on the part of the operative, I have provided a transverse rock-shaft 52, which is supported in bearing-brackets 53 on the buffer-beam of the car, and on this shaft is centrally fixed a rock-arm 54, which is forked at its ends, as shown at 54^a, and the forked ends have transverse slots 55, adapted to receive a transverse

pin or bolt 56, which is carried by an eye 57, formed in the head of the pin 17. The rock-shaft 52 has its ends bent to form hand-levers 58 at the sides of the car, so that by turning said hand-levers the shaft 52 is rocked and the pin 17 is enabled to be raised from the side of the car, thus placing the operating-handles of the pin and releasing-bolt in convenient juxtaposition to each other.

In the case of flying switches it is necessary to provide some means for holding up the pin 17 until after the uncoupled cars have left the train on account of their momentum and because the link at the uncoupling-point does not leave the recess in the draw-head immediately, and thus the pin 17 would fall back when raised unless otherwise supported. To provide for this, I have arranged a pivoted swinging bar 59, which is bent upwardly and vertically at its lower end, as shown at 60, and pivoted in a bracket 61, so as to swing about a vertical axis. The oblique arm 59 is arranged to extend upwardly at right angles to the handle 58 when the latter is raised to withdraw the pin 17, and a bracket 62 is provided near its upper end to form a socket for the handle 58 to be disposed therein. When the pin 17 is withdrawn in case of a flying switch or in case certain cars are being uncoupled while the train is on a siding or otherwise at a standstill, after raising one of the handles 58 the arm 59 is swung around until its outer end strikes against the side of the handle 58, when the latter is lowered into the socket formed by the bracket 62, and thus the pin 17 is sustained out of connection with the link until after the link has been withdrawn. One of these swinging arms 59 is arranged at each side of the car to coöperate with the respective handles 58.

While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit myself to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or utility of my invention, and I therefore reserve the right to make all such modifications as are included within the scope of the following claims or of mechanical equivalents to the structures set forth.

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

1. A car-coupler comprising a draw-head having a recess in its forward end adapted to receive a link, a pin slidable in a transverse aperture across said recess to engage the link, and link-supporting means comprising a normally projecting bolt longitudinally slidable in said draw-head beneath said recess, said bolt being adapted to directly sustain the link and to be pushed back flush with the end of said draw-head, and a spring adapted to hold said link-supporting bolt resiliently pressed into its projecting position.

2. A car-coupler comprising a draw-head

having a recess in its forward end adapted to receive a link, a pin mounted in a transverse aperture in said draw-head and adapted to be shot across the said recess to engage the link, a bolt slidable in a longitudinal passage-way in said draw-head coaxial with said recess, a spring mounted at the rear end of said bolt and adapted to hold the same pressed into its forward position with its front end across said aperture for the pin, a link-supporting bolt mounted to reciprocate in a longitudinal passage-way in said draw-head beneath said recess, a second spring mounted on the rear end of said link-supporting bolt to retain the same in forward or projecting position, and a latch-bolt adapted to be projected across the path of said link-supporting bolt to engage the same when retracted and hold it in retracted position.

3. A car-coupler comprising a draw-head having a recess in its forward end adapted to receive a link, a pin mounted in a transverse aperture in said draw-head and adapted to be shot across the said recess to engage the link, a bolt slidable in a longitudinal passage-way in said draw-head coaxial with said recess, a spring mounted at the rear end of said bolt and adapted to hold the same pressed into its forward position with its front end across said aperture for the pin, a link-supporting bolt mounted to reciprocate in a longitudinal passage-way in said draw-head beneath said recess, a second spring mounted on the rear end of said link-supporting bolt to retain the same in forward or projecting position, a latch-bolt adapted to be projected across the path of said link-supporting bolt to engage the same when retracted and hold it in retracted position, a rock-shaft mounted transversely of the car at the end thereof, a rock-arm keyed centrally to said rock-shaft, a bolt connecting the end of said rock-arm with the link-pin, and lever-handles formed on the extremities of said rock-shaft, whereby said pin may be raised from the side of the car, substantially as described.

4. In a car-coupler, a supporting means for the free end of a link held in the same draw-head comprising a bolt adapted to reciprocate in a longitudinal passage-way formed in the draw-head, a bracket-lug formed on the forward end of said bolt and rising to a level with the under side of the link when in horizontal position, and vertically-upstanding side lugs formed on said bracket-lug to confine said link against horizontal movement.

5. In a car-coupler, a supporting means for the free end of a draw-link adapted to hold the same in horizontal position comprising a longitudinal bolt adapted to reciprocate in a passage-way formed in the draw-head beneath said link, a bracket-lug formed on the front end of said bolt and adapted to support the pin, and a spring mounted on the rear end of said bolt and adapted to keep the same resiliently pressed into projecting position.

6. In a car-coupler, a supporting means for the free end of a draw-link adapted to hold the same in horizontal position comprising a longitudinal bolt adapted to reciprocate in a passage-way formed in the draw-head beneath said link, a bracket-lug formed on the front end of said bolt and adapted to support the pin, a spring mounted on the rear end of said bolt and adapted to keep the same resiliently pressed into projecting position, a latch-bolt adapted to be projected across the path of said supporting-bolt to engage and hold the same when retracted, a spring acting on said latch-bolt to project it into engagement with said supporting-bolt, and a pair of handle-bars projecting to opposite sides of the car and connected with said latch-bolt, whereby to enable the same to be released and projected forward by said first-named spring.

7. A car-coupler comprising a draw-head having a recess in its forward end adapted to receive a link, a pin adapted to slide in a transverse aperture in said draw-head and to be projected across said recess to engage the link, a rock-shaft mounted transversely of the car above said draw-head, a rock-arm centrally keyed on said rock-shaft and connected with said pin, cranked handles formed on the extremities of said rock-shaft to enable said pin to be raised from the side of the car, a bolt slidable in a longitudinal passage-way formed in said draw-head in line with the link, a spring connected with the rear end of said bolt and adapted to hold the same pressed resiliently forward across the path of said pin to hold the same in raised position, a link-supporting bolt slidable in a longitudinal passage-way parallel with said first-named bolt and directly beneath the same, a supporting-lug formed on the front end of said link-supporting bolt adapted to receive and hold said link, and a spring connected with the rear end of said link-supporting bolt to hold the same resiliently pressed into forward position.

8. A car-coupler comprising a draw-head having a recess in its forward end adapted to receive a link, a pin adapted to slide in a transverse aperture in said draw-head and to be projected across said recess to engage the link, a rock-shaft mounted transversely of the car above said draw-head, a rock-arm centrally keyed on said rock-shaft and connected with said pin, cranked handles formed on the extremities of said rock-shaft to enable said pin to be raised from the side of the car, a bolt slidable in a longitudinal passage-way formed in said draw-head in line with the link, a spring connected with the rear end of said bolt and adapted to hold the same pressed resiliently forward across the path of said pin to hold the same in raised position, a link-supporting bolt slidable in a longitudinal passage-way parallel with said first-named bolt and directly beneath the same, a supporting-lug formed on the front end of said link-sup-

porting bolt adapted to receive and hold said link, a spring connected with the rear end of said link-supporting bolt to hold the same resiliently pressed into forward position, a
5 latch-bolt adapted to project across the path of said link-supporting bolt and to retain the same in retracted position, a spring acting on said latch-bolt to project it into engagement with said link-supporting bolt, and a bar slid-
10 ing transversely of the car and connected with said latch-bolt, whereby to enable the latter to be operated to release said link-supporting bolt from either side of the car, substantially as described.

15 9. In a car-coupler, the combination of a link-and-pin connection, a rock-shaft mounted transversely of the car and connected with said pin to raise the same, a pair of crank-
20 rock-shaft, and means arranged to be insert-

ed under said handles when the pin is raised to hold it in raised position.

10. In a car-coupler, the combination of a link-and-pin connection, a rock-shaft mounted transversely of the car and connected with
25 said pin to raise the same, a pair of crank-handles formed on the respective ends of said rock-shaft, and an oblique swinging bar pivoted on a vertical axis to the car-body and having a socket formed in its upper end adapt-
30 ed to receive and support said crank-handle to hold the pin in raised position, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

THOMAS FABIEN MELANSON.

Witnesses:

ALEX. CHISHOLM,
A. J. AISEVEAULT.