(No Model.)

G. W. SMILLIE.

CAR COUPLING.

No. 361,459. Patented Apr. 19, 1887.

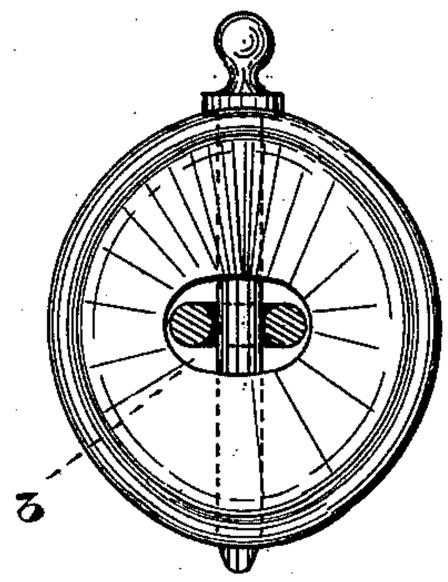


Fig. 3

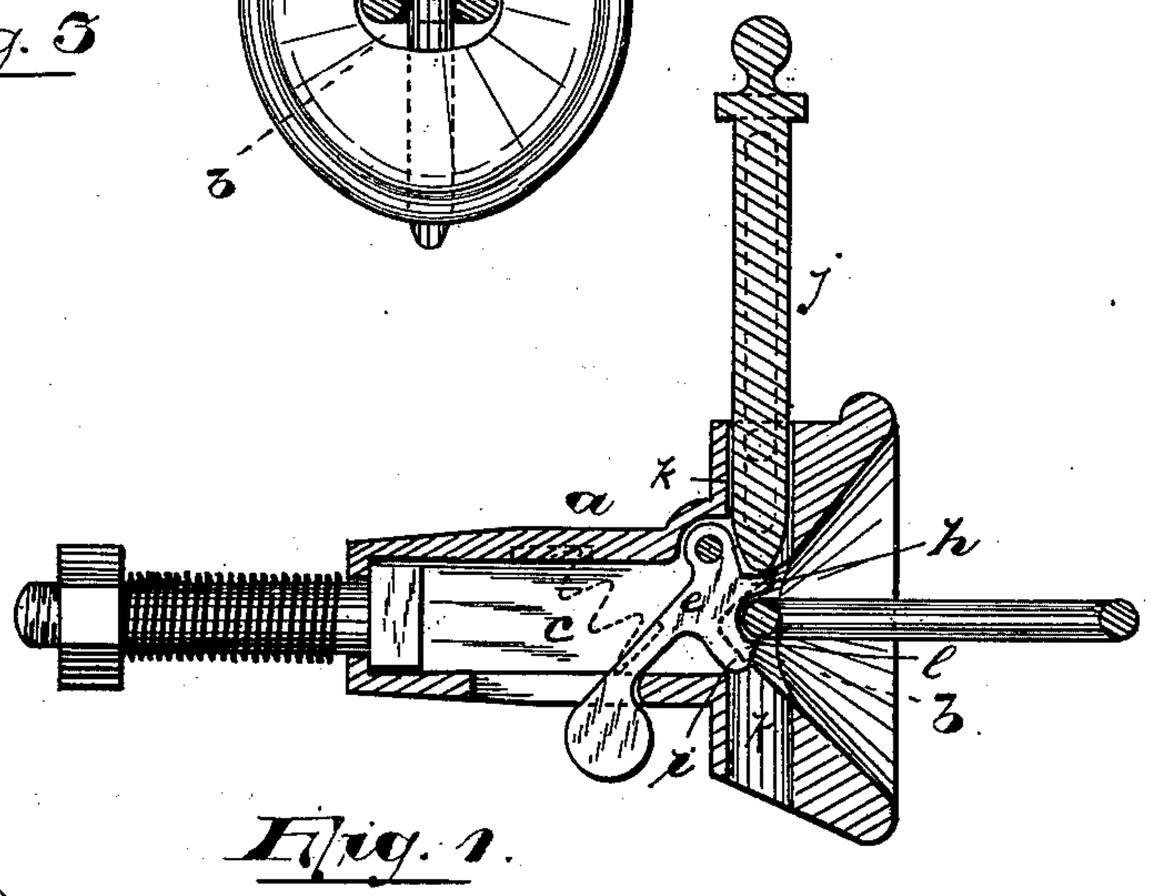
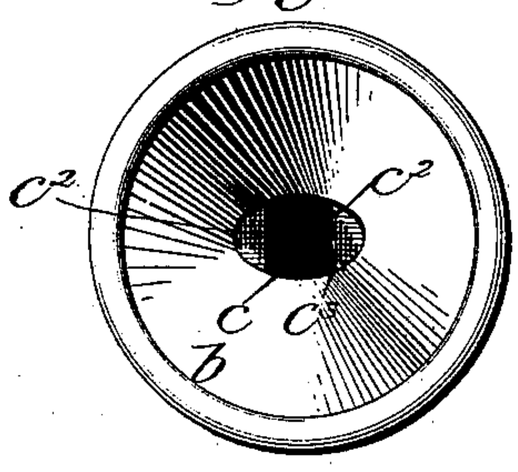


Fig. 1.

Fig. 4.



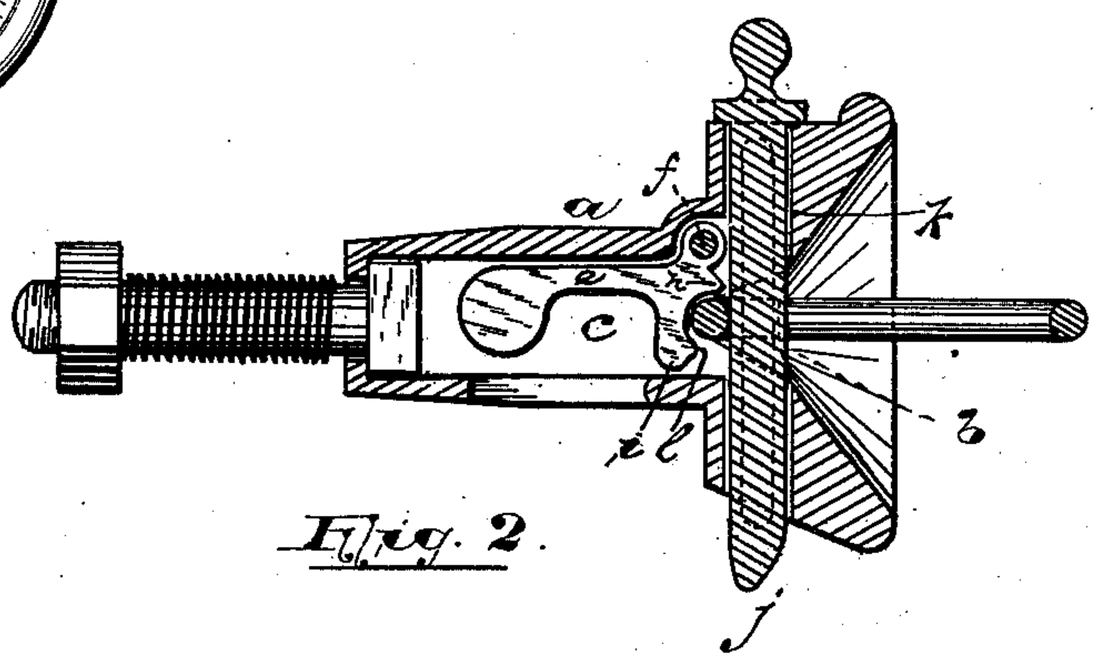


Fig. 2.

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UNITED STATES PATENT OFFICE.

GEORGE W. SMILLIE, OF NEWARK, NEW JERSEY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 361,459, dated April 19, 1887.

Application filed May 19, 1886. Serial No. 202,622. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. SMILLIE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Car-Couplings; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to increase the durability and effectiveness of the car-coupling; and it relates to that class of couplings represented by that shown in Patent No. 301,633, in which a device for projecting the link, narrower than said link, works in a draw-head having recesses at the sides of the chamber in which said projecting device works to receive the wider link and hold the same in a horizontal position, so that it will readily engage the co-operating draw-head when the two are brought together.

The invention consists in the peculiar arrangements and combinations of parts, substantially as will be hereinafter set forth, and finally embodied in the claim.

Referring to the accompanying drawings, in which like letters indicate corresponding parts in each of the several figures, Figure 1 is a central vertical section of a coupling-head, showing the same as the link is about to enter into a coupled relation thereto. Fig. 2 is a similar section showing the parts in said coupled relation, and Fig. 3 is a front elevation of said head. Fig. 4 is another front elevation of the draw-head, showing more clearly a chamber for the gravity device and recesses formed to receive the sides of the link, to co-operate with the gravity projecting device to hold the said link in a horizontal or approximately horizontal position away from the flaring surfaces of the draw-head, so that they properly engage the co-operating draw-head.

In said drawings, *a* indicates a casting having at its outer end a flaring or bell-shaped head, which acts as a buffer and guides the link in the act of coupling to a central aperture, *b*. Said aperture, when viewed in front elevation, is horizontally oblong, forming recesses, hereinafter referred to, and is wider than the lever at the forward end, extending laterally sufficiently to receive the sides of the link, and thus hold the said link horizontally or approximately horizontally in position to enter the co-operating draw-head. The said aperture in vertical section is shown to flare, and thus to allow a limited vertical play to the link. The recesses or chambers c^2 at the sides of the gravitating projecting device, when the same is in its forward position, formed in the draw-head by the lateral widening of the chamber *c*, terminate at a point but a little back of the line of the coupling-pin, and at or a little forward of the point at which the outer face of the gravitating lever or device rests when at its farthest repression, thus forming abutments or bearings c^3 at their inner ends, against which the sides of the link bear at the termination of its inward movement before the rising weight of said projecting device arrives at the limit of its upward movement. By this construction the pivotal or fulcrumal bearings and other bearings of the projecting device are protected from undue wear caused by concussion, as will be evident. The recesses cooperate with the gravitating device in holding the link in the horizontal or approximately horizontal position referred to by bearing against the end of the link and holding the latter against the pin, thus giving steadiness or firmness to the link. Said aperture is extended backward, as at *c*, forming a chamber, in which a lever, *e*, above referred to, works, said lever being fulcrumed, as at *f*, on a pivotal pin.

On the forward edge or face of the lever, just below the fulcrum thereof, are forwardly-projecting parts *h* and *i*, the first of which provides a seat for the coupling-pin *j*, to hold the same, as shown in Fig. 1, the said part *h* extending across or into the vertical perforation *k* for the pin when the lever is down at its free end, and, when said free end is uplifted, being drawn back from the line of said perforation, as in Fig. 2. Below said holding projection or seat *h* is the second projection, *i*, which serves to receive the blow of the link as it enters the aperture, and to cause the free end of the lever to be uplifted and the seat repressed from the pin-perforation. This said projection *i* may be provided with a second

projection, *l*, which may extend above or beyond the lower line of the outer surface of the bell-shaped part, as in Fig. 1, to engage the link should it enter the aperture in an inclined position, preventing said link from striking against the lever in a line with the fulcrum.

The inner end of the lever is weighted, so as to drop when the pin is drawn up, this action causing the link to be thrown outward and the seat to be projected into or across the line of the pin-perforation.

For the weight, a spring (outlined in Fig. 1) may be employed to repress the lever; but I prefer the weighted construction, and wish to claim that feature specifically.

In operation, by raising the pin from the position shown in Fig. 1 to that of Fig. 2, the lever is released, so that the weight of the free end causes the projection *i* to push the link from the aperture, and brings the seat into a position to hold the link above the aperture.

In the reverse operation, when the link attached to and projecting from the opposite cooperating coupling-head enters the head of the casting *a*, striking the projection *i* or *l*, it causes the seat to be repressed and the weight to be raised. The pin then drops automatically through the link and holds the parts together.

By the above construction I gain all the advantages obtained by the construction shown and described in my former patent, above referred to, and at the same time avoid the use of a spring, which is sometimes objected to because of its lack of strength and durability.

I am aware that it is not broadly new to provide a draw-head with a pin and a weighted lever, as such a one is shown in United States Patent No. 305,418. In the said device, by the construction there shown, the "dog" must receive the full blow of the incoming link, and should the latter be downwardly inclined it would tend to pass beneath said dog into the chamber in which the latter works, and there be jammed or wedged, so as to cause great trouble in separating the parts.

Having thus described the invention, what I claim as new is—

The improved car-coupling herein described, combining therein a flaring draw-head having the ordinary pin-perforation, a chamber, *c*, for a gravitating link-projecting device, and having therein at the sides of said device, when the same is in its forward position assumed after gravitating, recesses or chambers c^2, into which the sides of the link laterally wider than the said gravitating device enter in the coupling operation, and are limited in their inward movement by the inner contracting walls or bearings, c^3, to protect said gravitating device from undue wear occasioned by severe concussion, and said gravitating device arranged in said chamber and adapted to cooperate with the recesses c^2 to hold the link in a horizontal or approximately horizontal position, and on the withdrawal of the pin to project said link automatically through the agency of gravity, all said parts being arranged and combined substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of May, 1886.

GEO. W. SMILLIE.

Witnesses:
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FREDK. F. CAMPBELL.