2 Sheets—Sheet 1.

N. H. DOLSEN.

CAR-COUPLING.

No. 184,350. Patented Nov. 14, 1876.

Fig. 1.

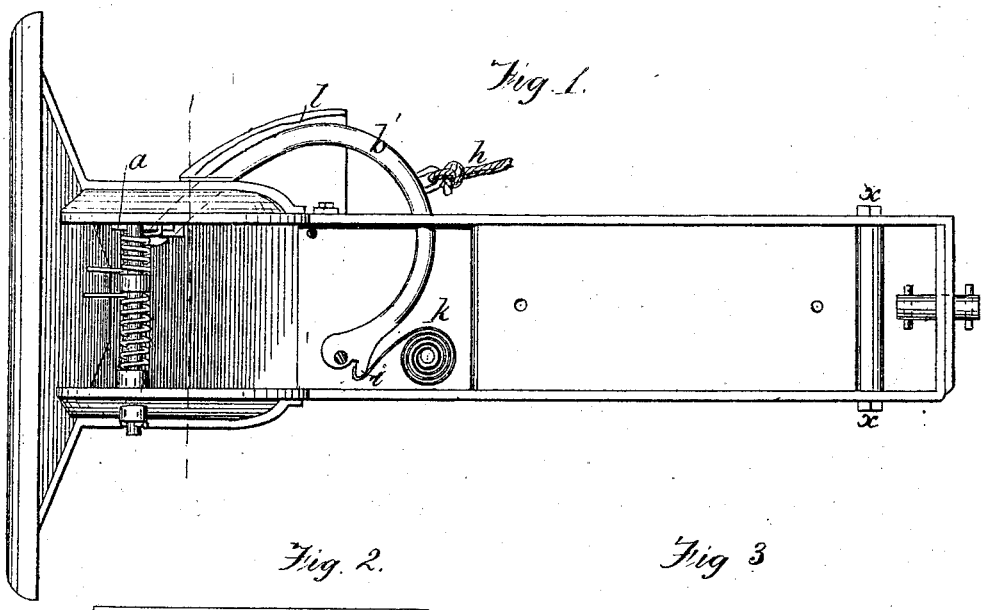


Fig. 2.

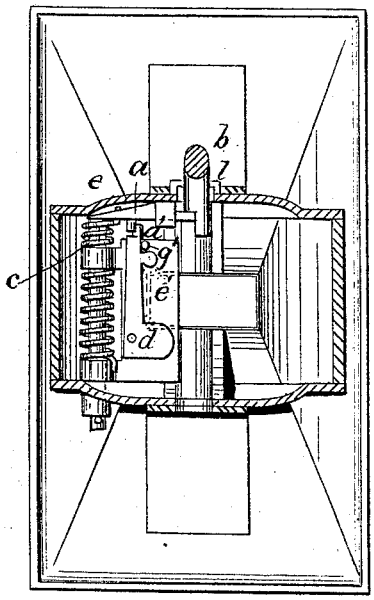


Fig 3

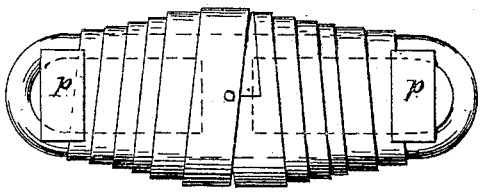
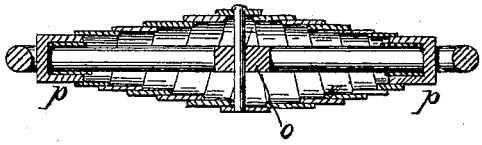


Fig. 4.



Witnesses;
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By Hill, Ellsworth & Spear
His Attys

2 Sheets—Sheet 2.

N. H. DOLSEN.

CAR-COUPLING.

No. 184,350. Patented Nov. 14, 1876.

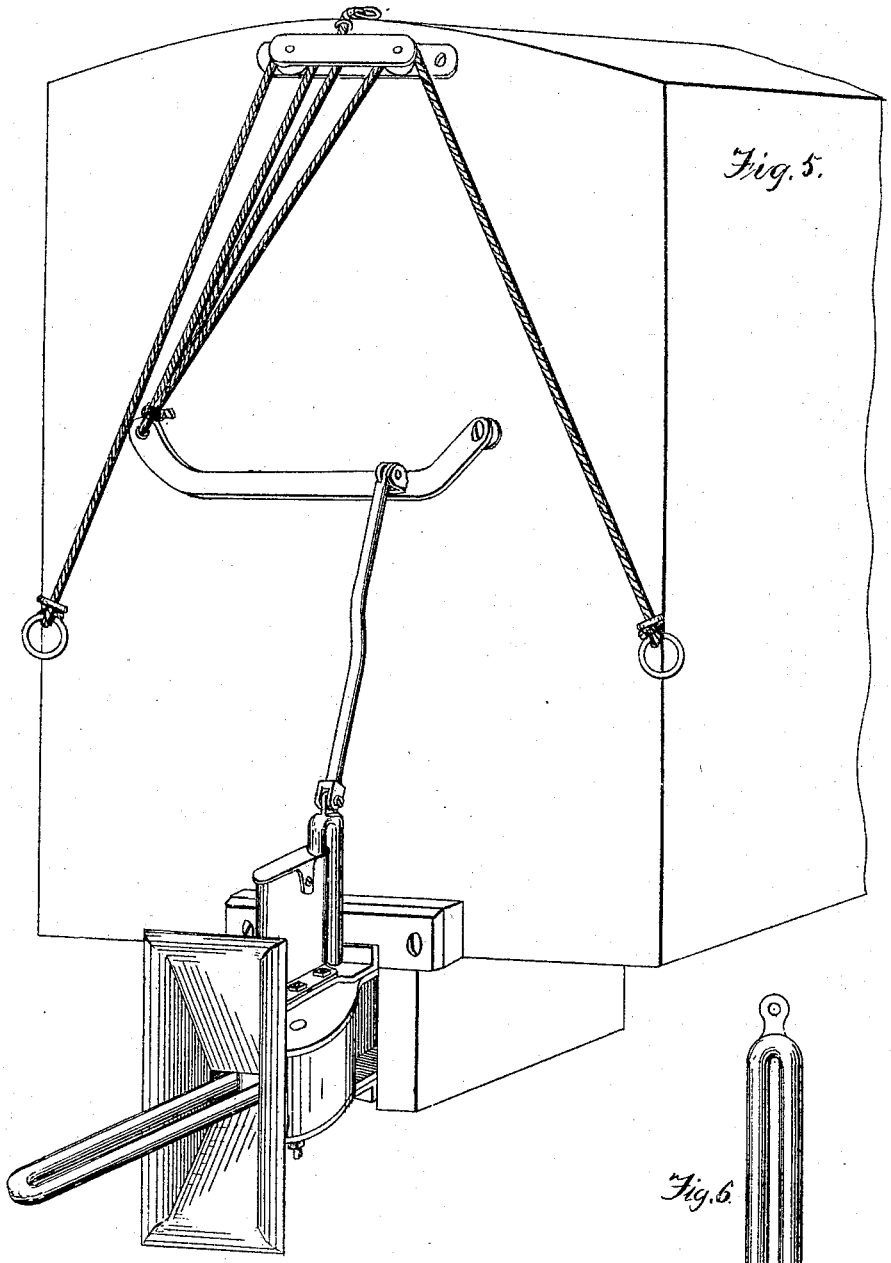

Fig. 5.

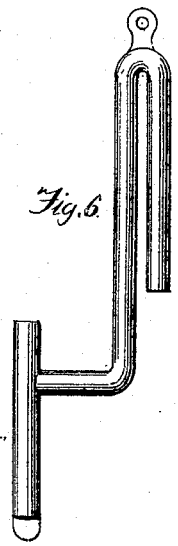

Fig. 6.

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UNITED STATES PATENT OFFICE.

NINIAN H. DOLSEN, OF CHATHAM, ONTARIO, CANADA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **184,350**, dated November 14, 1876; application filed October 31, 1876.

To all whom it may concern:

Be it known that I, NINIAN H. DOLSEN, of Chatham, in the Province of Ontario and Dominion of Canada, 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 same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to car-couplings, and more particularly to improvements upon the car-coupling for which Letters Patent were granted me by the United States, dated October 10, 1876.

The improvements consist, first, in simplifications of the automatically-acting stop by which the pin is held up or released when the link enters; second, in an improved form of pin and covering therefor; third, in bolting the central plates to the top and bottom plates instead of a central block, as in the former invention; and, fourth, in an improved link.

Instead of a lug catching over a part of a lever which operated the pin, and thus held the pin up, I have provided a sliding stop, *a*, which projects under the shouldered end of the pin *b*, as shown in Fig. 2 of Sheet 1, which figure also represents, in rear view, a transverse section of the coupling behind the gate. This sliding stop is normally forward, under the pins, being kept in that position by a spring, *c*, coiled on the pivot of the gate. The slide *a* is drawn back by means of a pin, *e*, on the under side. The face of this pin is beveled, and it is acted upon by a projection, *d*, carried by the gate.

The construction of the gate differs materially from that in the patent referred to, the number of parts and the complication of them being greatly lessened. The gate, marked *e'*, is hung on a pintle, and pressed forward by a spring to come into the opening where the link enters, in the same manner as before. The gate, however, does not rise, but swings on the same plane. On the rear face of it is pivoted a bell-crank lever, *d'*, the pivot being at the lower left-hand corner. The vertical arm projects above the upper end of the gate, and the horizontal arm is short and heavy. A spring is shown as pressing this short end down, so as to keep the upper end normally inclined to the right; but in practice this is found unnecessary, the weight of the arm being sufficient for the purpose. The upper end of this lever is beveled, so as to act against the inclined face of the pin *e*, and draw back the pin-stop *a'*. The upright arm is limited in its movement to the right by a pin, *g*. As the gate, therefore, is forced back by the entrance of the link, the upper end of the lever is made to act on the sliding stop, withdrawing it, and allowing the pin to drop. The return of the gate is permitted by the movement of the upright arm of the lever to the left, the inclined surface, on the right-hand side of the end thereof, sliding on the left-hand side of the pin on the sliding stop. The motion of the vertical arm is free in this direction, being retarded only by the spring or weight.

The second part of my invention relates to the pin and its covering. The object of this is to protect the working parts from snow and ice, or from any obstructions, which might fall therein. In order to effect this I have modified the form of the pin by bending it, so as to have it advance and recede under cover. Of this I have shown two forms. The first is represented in Fig. 1, and is more especially adapted to passenger-cars, where the drawhead is beneath the platform. The pin *b'* is made in circular form, and is pivoted at its inner end. It is drawn back by means of a cord, as shown at *h*, and thrown forward to couple the cars by means of a spring, *k*, the end of which takes beneath a shoulder, *i*, on the pin. As the motion of the shoulder *i* is only slight, little movement is required of the spring, and there is less danger of clogging or breakage thereof. As the form of the pin makes it necessary to pivot it near the bottom of the cavity in the head, and the space is further limited at the rear because the two side plates are brought together and bolted to each other, I use the coiled spring, the scope of which is greater than that of a rubber spring placed underneath the shoulder of the pin. By placing this coiled spring directly behind the stud or shoulder on the pin, and connecting it thereto, the lifting of the said pin draws on the spring and uncoils it against its resistance. In this way a very strong and compact spring is provided.

Over the curved pin is a hood or covering, *l*, which covers and protects effectually the upper and open part of the draw-head and prevents the entrance of snow or the like where the pin passes. The rear open part of the covering being under the car, no damage is likely to occur therefrom.

Another modification of this invention is shown in Fig. 6 of Sheet 2, adapted to freight-cars. The pin is shown in Fig. 6, the bent part working under the hood or casing. An arm of the pin on the upper part rests upon the top of the draw-head. The bent portion of the pin may rest on the rear end of the link holding it by the weight of the pin in horizontal position. The pin is connected to a lever by a pitman, which lever is raised, either at the sides or from the top, by cords passing over suitable pulleys. This arrangement is shown in Fig. 5.

The side plates, which, in my former patent, extended to the rear between the upper and lower plates, and were bolted to a block, in my present invention are bolted together without the wooden block. They are formed with vertical bolt-holes, and are connected to the upper and lower plates by bolts passing down through, as shown in *x x*, Fig. 1. The side plates are brought together and strongly riveted to each other, the holes being formed for vertical bolts by swaging the parts for that purpose.

In other respects the construction is the same as in the patent referred to. The advantages, however, are manifested in the diminished number of parts, and in the simplicity and security of the operation. The device is rendered cheaper of construction, and more effective and durable in operation.

The improved link is shown in Figs. 3 and 4 of the drawing. It consists of a link of ordinary form, made with a transverse bar, *o*, at or near the center, and connecting the two sides. Around the link is wrapped a double volute spring, coiled thereon, as shown, and connected at the center, as shown, by a bolt passing through the inner ends of the spring and through the bar *o*. The outer ends slide inward, the coils passing within each other. A guard-block, *p*, is placed within the link at each end to inclose and protect the end of the spring where it bears against the bolt.

As the springs are composed of flat coils, pressed edgewise, a great amount of resistance is obtained with a small amount of metal, and the link is not made too large or clumsy. This link takes up the jar and shock when the cars come together, the spring serving at the same time to steady the motion of the cars and to hold the link on the pin in horizontal position.

I claim as my invention—

1. The improved stop for the pin, consisting of the gate with the lever pivoted thereon, the upper end of the lever operating in connection with the slide, to release the pin and let it fall upon the entrance of the link, as set forth.

2. The gate *e'*, bell-crank lever *d*, the sliding stop *a*, spring *c*, and pin *e*, constructed and arranged to operate as set forth.

3. The bent pin operating under the hood, and in combination therewith, and with a stop, *a*, as set forth.

4. The coiled spring *k* placed in rear of the pin, and with the end of said spring beneath, and connected with, the shoulder of the pin, as and for the purpose set forth.

5. The improved side plates formed with vertical bolt-holes, and extended rearward and bolted to the upper and lower plates, as set forth.

6. The spring-link consisting of the spring *k* surrounding the ordinary link, and connected thereto, as set forth.

7. The combination of the cross-bar *o*, of the link, double volute spring, and guards on the end thereof, as set forth.

N. H. DOLSEN.

Witnesses:

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MELVILLE CHURCH.