

No. 643,282.

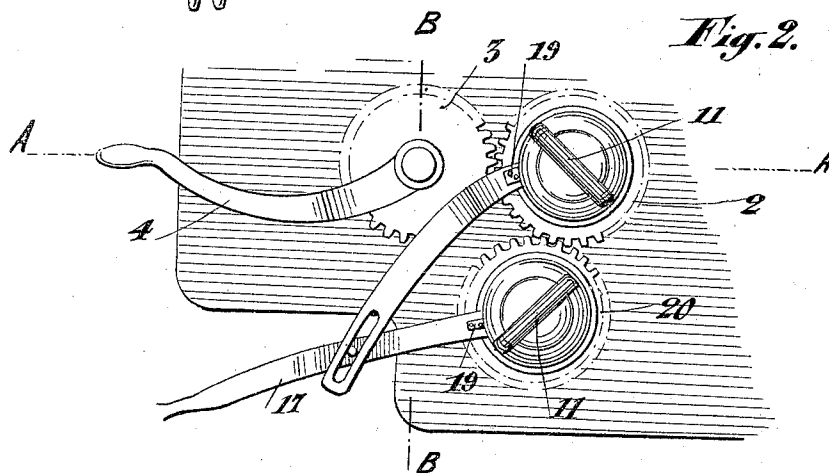
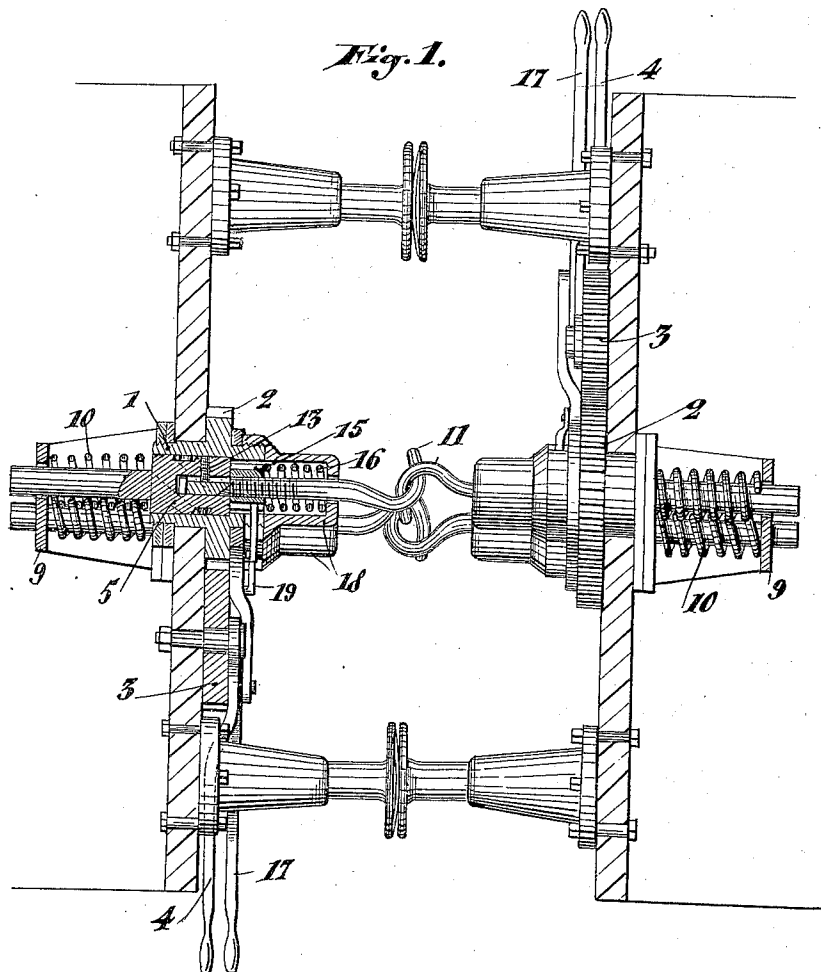
Patented Feb. 13, 1900.

G. AREND.  
CAR COUPLING.

(No Model.)

(Application filed June 16, 1899.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

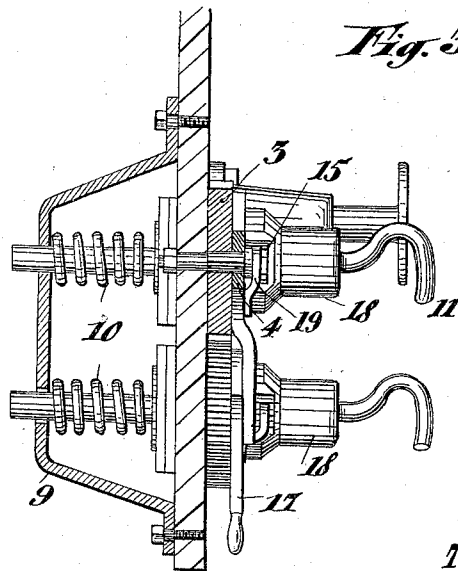
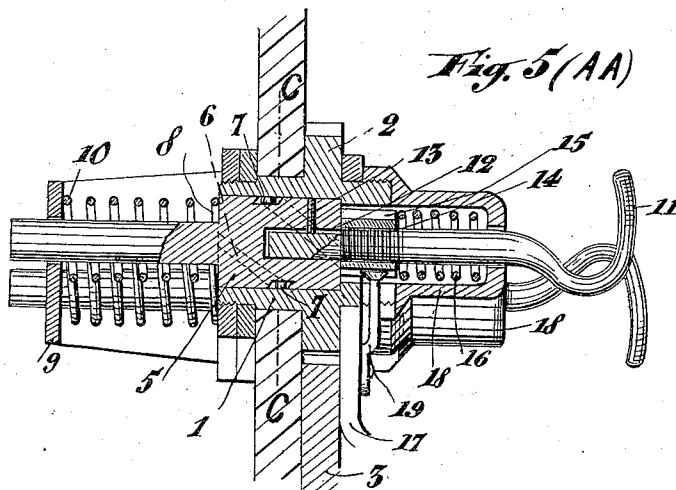
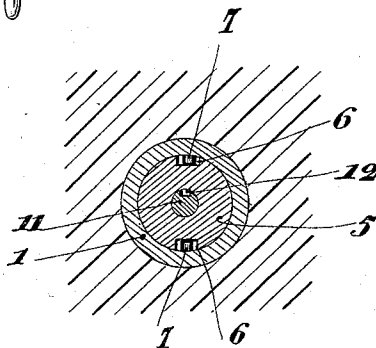


Fig. 4 (CC)



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# UNITED STATES PATENT OFFICE.

GEORG AREND, OF BERLIN, GERMANY.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 643,282, dated February 13, 1900.

Application filed June 16, 1899. Serial No. 720,842. (No model.)

*To all whom it may concern:*

Be it known that I, GEORG AREND, a subject of the German Emperor, residing at Berlin, Germany, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

My present invention relates to improvements in car-couplings, the object being to provide a device of this kind of simple but substantial construction and which may be readily actuated from the outside of the cars or wagons without any danger for the workmen.

The improvements consist in the construction, novel combination, and arrangement of parts fully described hereinafter and specifically pointed out in the appended claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a general plan view of the device, with parts shown in section. Fig. 2 is a front elevation of the improved car-coupling. Fig. 3 is a vertical sectional view of same on line B B of Fig. 2. Fig. 4 is a section on line C C of Fig. 5; and Fig. 5 is an enlarged horizontal section on line A A, Fig. 2.

Like numerals refer to like parts throughout all the views.

In carrying out my invention I employ a gear-wheel 2, the hub 1 of which is journaled in the buffer cross-bar of the car or wagon. Said gear-wheel meshes with a second gear-wheel 3, the axle of which carries a lever 4, secured thereto. By actuating in either direction the latter the gear-wheel 2 will be rotated to a corresponding extent. Into the hub or hollow axle 1 is inserted a cylindrical block 5, provided with screw-threads 6, engaged by projection 7, made one with or secured to the inner surface of said hub or hollow axle 1. The cylindrical block 5 has an offset at 8 and is guided at its rear end portion in the block 9, screwed or otherwise secured to the inside of the buffer cross-bar of the car. A coiled spring 10 is fitted over said offset part of block or rod 5 and held to bear against the block 9 and the shoulder 8 to constantly press the part 5 toward the front side of the car. The hollow axle or hub 1 extends toward the front, and this extended portion has a smaller inner diameter to form an inner shoulder, against which bears the end of the part 5. The larger

portion of the latter is hollowed out over a portion of its length, into which hollow part is fitted the shank of the hook 11, provided with a longitudinal groove 12, engaged by a bolt 13, passing through said part 5. Thus said bolt may be moved in the direction of its axis independently from the part 5, but it must follow the rotations of the latter. The shank of the hook is provided at 14 with screw-threads to receive an internally-threaded gear-wheel 15, the position of which determining the distance at which the rear end of the hook-shaft may be inserted into the part 5. The various parts are housed within a socket 18, screwed onto the front end of the hollow axle 1. A coil-spring 16, fitted over the shank of the hook 11, is held to bear at one end against the socket 18 and the other end against the gear-wheel 15 to hold the latter in constant engagement with the front end of the part 5. A lever 17, engaging the gear-wheel 15 by means of a finger 19, allows of modifying the position of said wheel on the shank of the hook 11.

When two cars or wagons, both provided with the foregoing coupling, are moved toward each other, the gear-wheel 15, bearing against the front view of the part 5, produces a pressure toward the back of said part, which is thus rotated on account of the screw-thread 6 and the fingers 7 engaging such screw-thread. The part 5 being rotated, it will be readily seen and understood that the hook 11 must follow the rotation on account of the provision of the longitudinal groove 12 and the bolt 13 engaging it. Thus said hook will slowly rotate until it is enabled to slide off the opposite hook, whereupon the spring 10 presses the parts toward the front, the hook 11 resuming its initial position and moving behind the opposite hook. When the hook 11 is pulled forward by the force of traction exerted through the hook on the car in front engaging it, said traction is transmitted through the agency of gear-wheel 15 and spring 16 to the socket 18 and thence to the hub or hollow axle 1, suitably secured to the buffer cross-bar of the car or wagon. Thus the traction will produce no action on the part 5 and the fastening-block 9 of the device.

In order to increase the safety of the device, I may arrange two devices of the kind

described one above the other, as shown in the accompanying drawings. In this case the hooks are preferably arranged at right angles with each other and adapted to be rotated in opposite directions, and the gear-wheel 2 meshes with a similar gear-wheel 20, Fig. 2, arranged on the lower device. The lever 17 acts on the gear-wheel 15 of the lower device by means of a finger 19, secured thereto.

The lower hook 11 is preferably made of greater length than the upper hook, so that the lower hooks can only loosely engage each other when the upper hooks are in close engagement.

Changes in the relative arrangement and minor details of construction may be made without departing from the scope or sacrificing any of the advantages of the invention.

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

1. The improved car-coupling comprising a gear-wheel 2, a hub or hollow axle 1 on said wheel journaled in the buffer cross-bar of the car, a cylindrical block 5 inserted into said hub and pressed toward the front by a strong spring 10, said block being hollowed out to receive the shank of a coupling-hook 11, means for preventing said hook from being rotated in the block 5, an adjustable gear-

wheel on said shank, means for adjusting said gear-wheel, a suitable socket casing the various parts, and a spring within said socket and held to bear against said gear-wheel to press it against the block 5, substantially as and for the purpose set forth.

2. The improved car-coupling comprising a hook 11, the shank of which engages a hollow block 5 within which it may be moved lengthwise, means for preventing said shank from being rotated within said hollow block, a suitable screw-thread on the latter, and projections or fingers engaging the screw-thread so that the hollow block and the coupling are rotated when said hook is pressed inward, substantially as and for the purpose set forth.

3. The improved car-coupling comprising two coupling-hooks arranged the one above the other at right angles with each other, means for rotating said hooks in opposite directions when the hooks are pressed inward, and means for actuating both hooks at once, substantially as and for the purpose set forth.

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

GEORG AREND.

Witnesses:

LA STURM,

GREGORY PHELAN.