(No Model.)

H. E. KIES.

CAR COUPLING.

No. 477,258. Patented June 21, 1892.

Fig 1

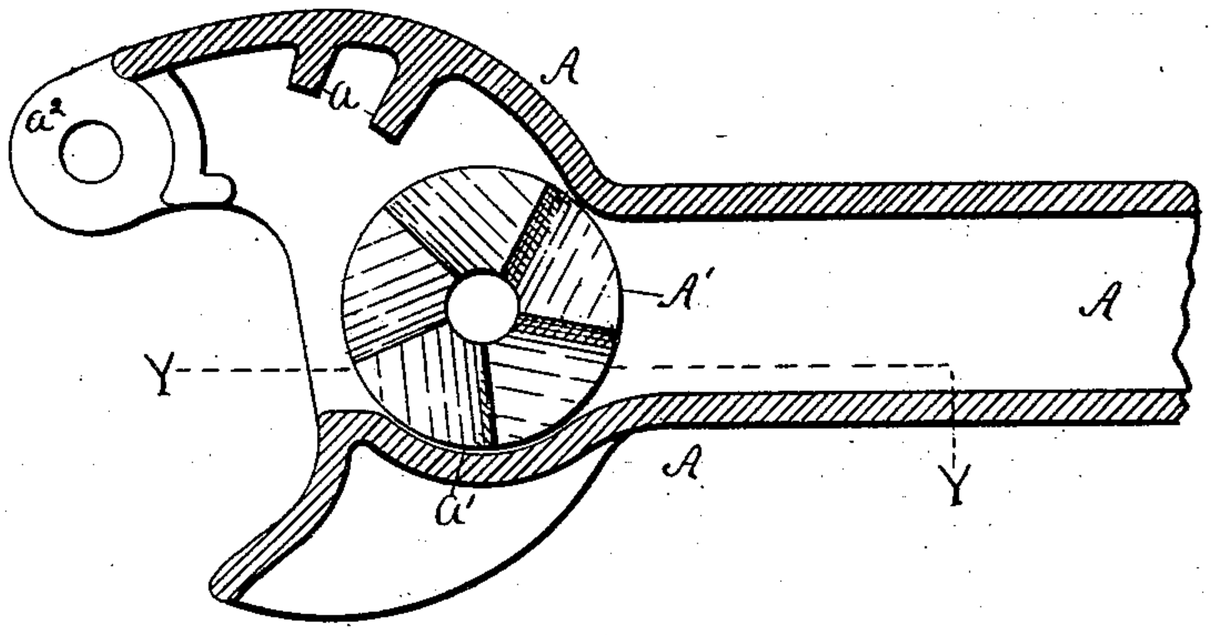


Fig 2

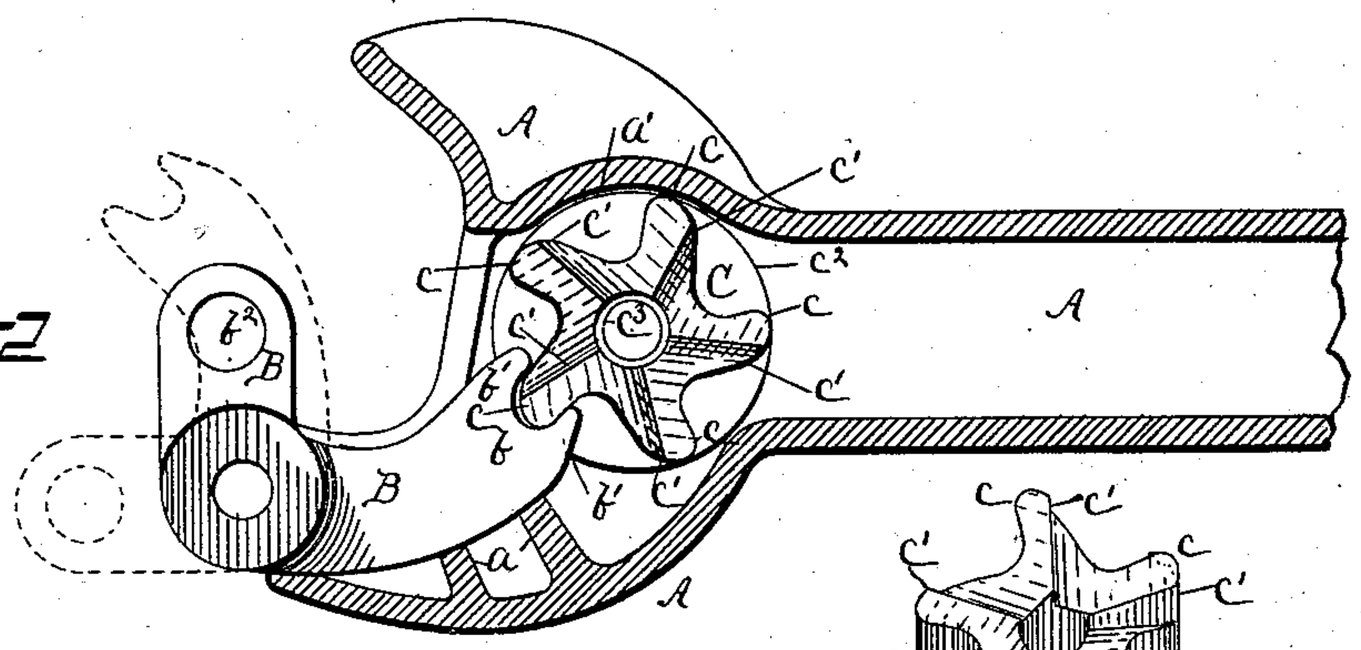


Fig 4

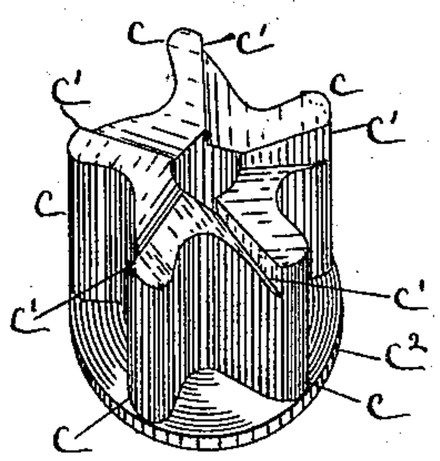


Fig 3

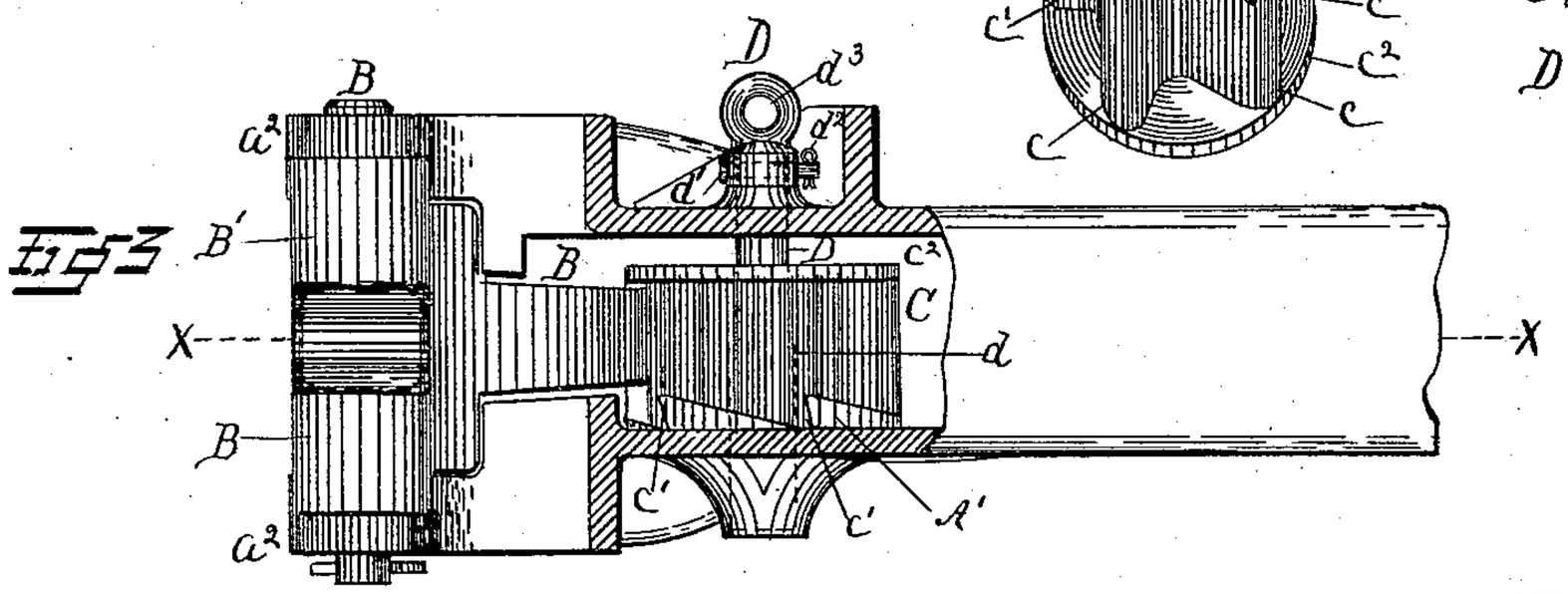
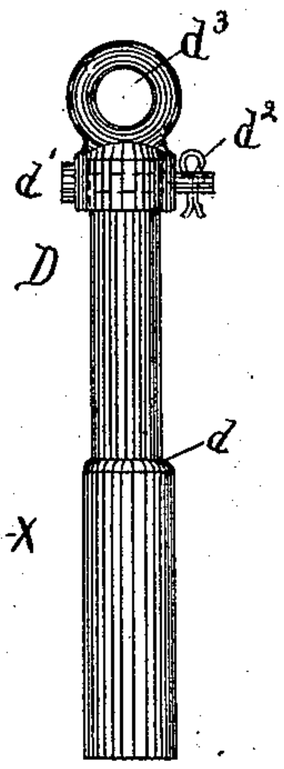


Fig 5



Witnesses.

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UNITED STATES PATENT OFFICE.

HARRY E. KIES, OF ERIE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO BENJAMIN J. WALKER, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 477,258, dated June 21, 1892.

Application filed November 10, 1891. Serial No. 411,474. (No model.)

To all whom it may concern:

Be it known that I, HARRY E. KIES, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers; 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.

This invention relates to car-couplers, and particularly to that class or type of car-couplers known as "automatic couplers;" and it consists in certain improvements in the construction thereof, as will be hereinafter fully described, and pointed out in the claims.

My invention is illustrated in the accompanying drawings, as follows:

Figure 1 is a horizontal section of the draw-head, taken on the line $x\ x$ in Fig. 3, showing the parts below said line. Fig. 2 is a like view showing the parts above said line and showing the knuckle and catch-dog in place in elevation. Fig. 3 is a side elevation with the draw-head in vertical section on the line $y\ y$ in Fig. 1. Fig. 4 is a perspective view of the catch-dog C detached from the machine and in an inverted position. Fig. 5 is an elevation view of the catch-dog pin D.

Like letters of reference designate like parts in all the figures and will be referred to in proper place herein.

A is the draw-head and is made in conformity with the rules prescribed by the National Association of Car-Builders as to exterior form and dimensions, so as to operate in connection with other car-couplers now in use on railroads.

A′ is a clutch-boss formed on the inner lower wall of the draw-head in position to receive the catch-dog.

B B′ is the knuckle, which is pivoted in the jaw a^2 of the head by a knuckle-pin B^2, as commonly in this type of couplers, and it has its short arm B′ formed to receive a coupling-link, and has a hole b^2 to receive a coupling-pin, as is also common in this type of couplers. The long arm B of the knuckle B B′ is formed at its outer end with a cog formation $b\ b'$, as if it were a segment of a cog-gear, there being two teeth b' and one interspace b, which are of proper form to mesh with the cog formation on the catch-dog C, the teeth $c\ c$, &c., of which are slightly hook formed or deflected forwardly.

The catch-dog C is pivoted on a lifting-pin D and has a ratchet-clutch $c'\ c'$, &c., formed on its lower end, which engages with the ratchet-clutch boss A′, formed on the inside of the bottom wall of the draw-head A. On the upper end of the catch-dog C a disk c^2 is formed. This catch-dog will preferably be made of cast-steel and will have all its parts above named formed integral. The object of the disk c^2 is to provide a uniform bearing-surface which will contact with the curved side wall a' of the draw-head (see Figs. 1 and 2) and support the catch-dog independently of its pivot D against lateral thrust exerted by the knuckle when under strain. The catch-dog can be disengaged from its clutch, so as to move backward and release the knuckle, by lifting up on the pin D, said pin having a shoulder d, which engages a ledge or inset c^3 in the central opening in the catch-dog. (See Fig. 2 and dotted lines in Fig. 3.)

The pin D is held against falling out by a head secured thereto by a bolt d', which is keyed in place by a key d^2, and an eye d^3 is formed on the head to receive a pull chain or cord for lifting the bolt, and thereby lifting the catch-dog off its clutch connection.

The knuckle B B′ is limited in its inward movement by a stop a on the inside of the side wall of the draw-head, (see Figs. 1 and 2,) so that it can move inwardly far enough to be engaged by the catch-dog.

The operation is as follows: In Fig. 2 the knuckle B B′ is shown by dotted lines in an open position or ready to receive the engaging draw-head of a contiguous car. When the coupling is effected, the knuckle is swung into the position shown by full lines in that figure and in Fig. 3. No matter what position the catch-dog may be in, the cog formation $b\ b'$ on the inner end of the long arm B of the knuckle will meet with the cog formation c on the catch-dog and turn that part until the knuckle-arm B abuts against the stop a on the inside of the side wall of the draw-head, and as soon as this occurs the clutch-teeth c' of the catch-dog will engage with the clutch-

teeth of the clutch A′ and the knuckle will be firmly locked against reaction. When the cars are in motion forward, the knuckle will be under strain and exerting force against the catch-dog; but as it is held by the clutches against reaction it cannot turn back, and as it is supported by the abutment of the curved wall a' against the disk c^2 it cannot move laterally away from the knuckle and will firmly resist whatever force is brought against it. When it is desired to disengage the couplings, the pin D will be lifted by drawing upon it, and this will lift the catch-dog off from its clutch engagement, and then it will be free to turn back and allow the knuckle to turn out into the position shown in dotted lines in Fig. 2.

I do not wish to be limited to any particular form of catch-dog, further than that it is to be pivoted and to be provided with a clutch for holding it against outward movement on its pivot. It need not have but one tooth or arm *c*, and the knuckle-arm need not have but one tooth or cog at its outer end; but I deem it highly desirable that the catch-dog have a series of cogs and an equal number of clutch-teeth and that the knuckle-arm be provided with such a cog formation, as is shown.

What I claim as new is—

1. In a car-coupler of the type herein shown, the combination, with the pivoted knuckle, of a pivoted catch-dog for engaging the inner end of the long arm of said knuckle, a ratchet-clutch for holding said catch-dog, and means for disengaging said clutch.

2. In a car-coupler of the type herein shown, the combination, with the pivoted knuckle having a cog formation on the inner end of its long arm, of a pivoted catch-dog having a cog formation thereon to engage the cog formation on the end of the knuckle-arm, a ratchet-clutch for holding said catch-dog, and means for disengaging said clutch.

3. In a car-coupler of the type herein shown, the combination, with the pivoted knuckle having a cog formation on the inner end of its long arm, of a pivoted catch-dog having a cog formation thereon to engage the cog formation on the end of the knuckle-arm, a ratchet-clutch for holding said catch-dog, having one part thereof formed on the lower end of said dog and the other part on the draw-head, and means for lifting up said dog so as to disengage said clutch parts.

4. In a car-coupler of the type herein shown, the combination, with the pivoted knuckle, of a pivoted catch-dog for engaging the inner end of the long arm of said knuckle, a ratchet-clutch for holding said catch-dog, having one part thereof formed on the said dog and the other on the draw-head, and means for lifting said dog so as to disengage said clutch parts.

5. In a car-coupler of the type herein shown, the combination, with the pivoted knuckle having a cog formation on the inner end of its long arm, of a pivoted catch-dog having a cog formation thereon to engage the cog formation on the end of the knuckle-arm, a ratchet-clutch for holding said catch-dog, formed with one part on said dog and the other part on a fixed part of the coupler, and means for disengaging said clutch.

6. In a car-coupler of the type herein shown, the combination, with the pivoted knuckle having a cog formation on the inner end of its long arm, of a pivoted catch-dog having a cog formation thereon to engage the cog formation on the end of the knuckle-arm, a ratchet-clutch for holding said catch-dog, formed with one part on said dog and the other part on a fixed part of the coupler and having on each part as many ratchet-teeth as there are cog-teeth on the said dog, and means for disengaging said clutch.

7. In a car-coupler of the type herein shown, the combination, with the pivoted knuckle, of a pivoted catch-dog for engaging the inner end of the long arm of said knuckle, a ratchet-clutch for holding said catch-dog, and the shouldered lifting-pin D for lifting said dog and disengaging said clutch.

8. In a car-coupler of the type herein shown, the combination, with the pivoted knuckle having a cog formation on the inner end of its long arm, of a pivoted catch-dog having a cog formation thereon to engage the cog formation on the end of the knuckle-arm, a ratchet-clutch for holding said catch-dog, means for disengaging said clutch, a bearing-disk on said dog, and a curved bearing-surface fitting said disk on the side wall of the draw-head opposite said knuckle.

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

HARRY E. KIES.

Witnesses:

JNO. K. HALLOCK,

B. J. WALKER.