

(No Model.)

2 Sheets—Sheet 1.

M. KRETSCHMANN.  
CAR COUPLING.

No. 450,969.

Patented Apr. 21, 1891.

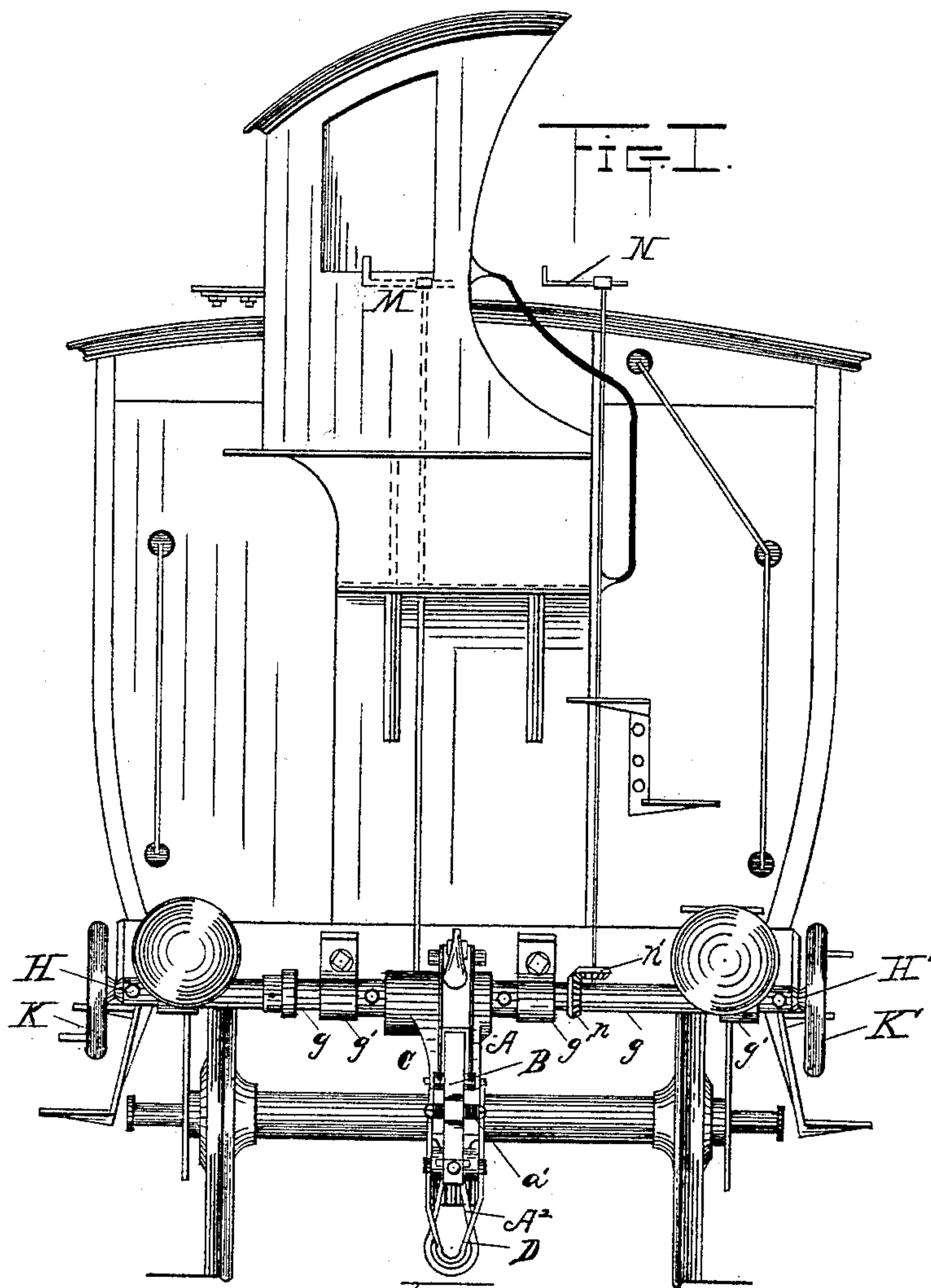


FIG. 4

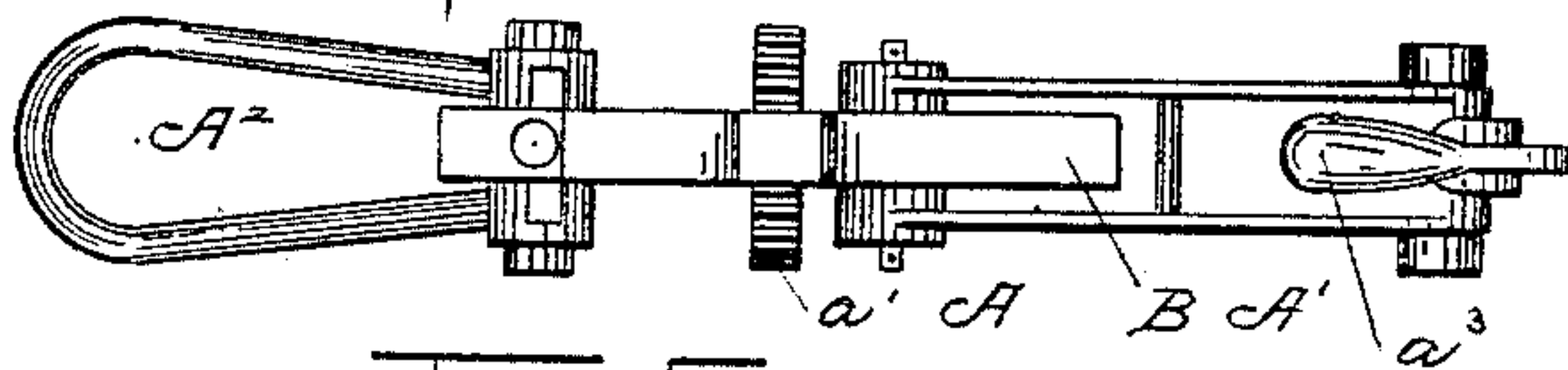
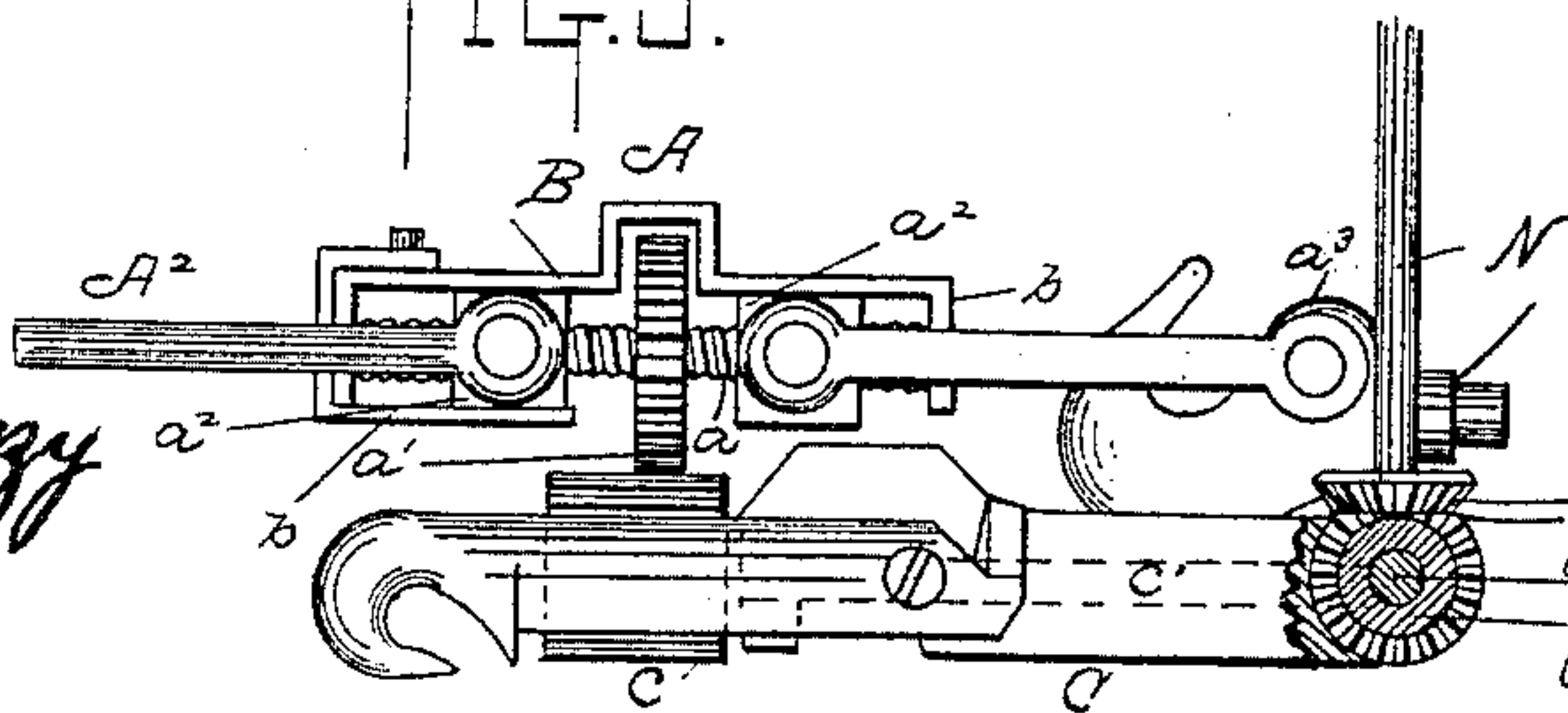


FIG. 5.



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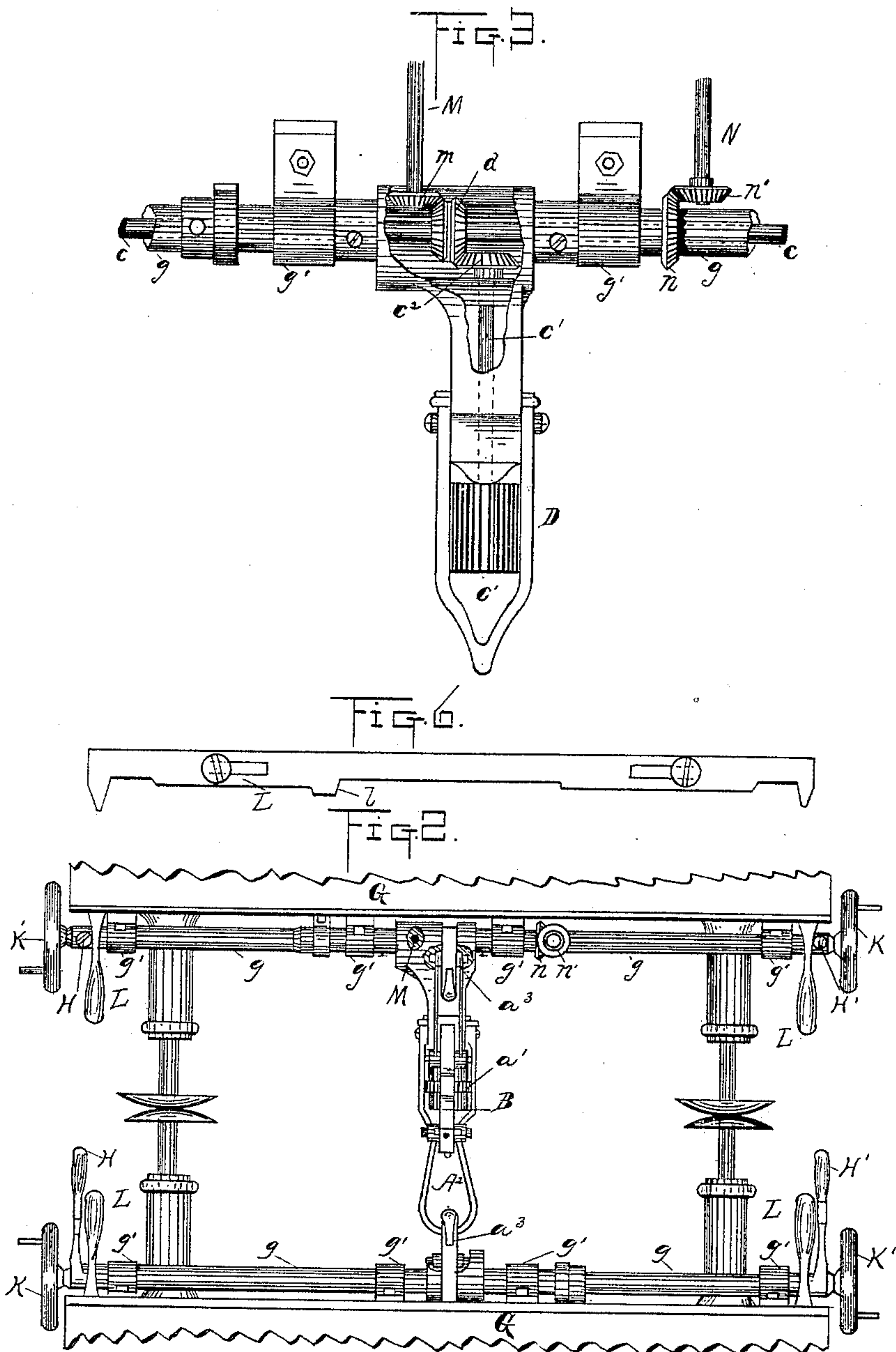
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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 450,969, dated April 21, 1891.

Application filed October 9, 1890. Serial No. 367,611. (No model.) Patented in Belgium May 19, 1890, No. 90,618; in England June 2, 1890, No. 8,517; in Germany June 7, 1890, No. 54,395, and in Austria-Hungary October 29, 1890.

*To all whom it may concern:*

Be it known that I, MICHAEL KRETSCHMANN, of Vienna, Austria-Hungary, have invented new and useful Improvements in Car-Couplings, (for which I have obtained patents in Germany, No. 54,395, dated June 7, 1890; in Austria-Hungary, dated October 29, 1890, tome 40, folio 3,091; in Belgium, No. 90,618, dated May 19, 1890, and in Great Britain and Ireland, No. 8,517, dated June 2, 1890,) of which the following is a specification.

The present invention relates to improvements in railway-car couplings, and has for its purpose to arrange the coupling of railway-cars in such a manner that the coupling and the uncoupling, the securing together of the coupled cars as well as the hanging in of the reserved coupling, can take place from beside the car or from the seat of the conductor or of the brakeman easily and rapidly without it being necessary for the man who couples the cars to go between the car nor need any particular instrument. For this purpose the coupling, which is screw-threaded and which hangs on the draw-bar of a car, is raised from beside it or from above by means of a bearer or lifting device capable of being turned, and can be hung over the hook of the coupling device of the next car, the support and the coupling, screw-threaded, being connected to another by toothed wheels in such a manner that, by means of an axle-tree arranged in the front of the car and provided at the sides of the car with wheels which are operated by hand, rotation can be transmitted to the screw of the coupling by means of bevel-wheels for the purpose of screwing the coupling devices together or unscrewing the same; also, the said axle-tree is connected by means of a bevel-gearing, in a suitable manner, with a crank-handle on the seat of the brakeman, so that the screwing together and the unscrewing may take place from above.

A particular advantage of these improvements consists in enabling the coupling device which has been raised by means of the support or lifting device to be retained in its raised position by means of a slider, so that the coupling device of an approaching car

will fall automatically over the hook of the next car.

In the accompanying drawings this new method of coupling is represented as follows:

Figure 1 is a view of the coupling which can be operated from the side or from above. Fig. 2 is a plan view of the coupling device. Fig. 3 is an elevation of the bearer or porter. Fig. 4 is an elevation of the coupling device. Fig. 5 is a view of the raised support or lifting device and of the coupling device. Fig. 6 is the bolt to maintain the raised support or lifting device.

In all the figures the same characters indicate the same parts.

A is the screw-threaded coupling, fixed to the draw-bar  $a^3$  and free to rotate. It consists in a screw-shaft  $a$ , provided with screw-threads to the right and to the left of the center, where the cog-wheel  $a'$  is rigidly fixed. On the threads of the screw on each side of said cog-wheel are arranged the screw-nuts  $a^2$ , with the yoke  $A'$  and the turning-loop  $A^2$  pivotally mounted thereon, respectively. Both ends of the screw-shaft  $a$  are inclosed by a longitudinally-arranged strip or plate B, provided with two small flanges  $b$ , extending down over these ends, the said plate or strip being fixed on both sides to the nuts  $a^2$ . The plate B serves as a supporting-frame of the yoke  $A'$  and of the loop or link  $A^2$  to prevent these latter from turning untimely and to retain the same in the direction of the axle if the coupling is lifted up.

The support or lifting device C affords bearings for the small shaft or arbor  $c'$ , on one end of which is fixed the bevel gear-wheels  $c^2$  and on the other end the spur-wheel  $C'$ . The latter is put in rotation by a bevel-gearing  $d$ , this rotation being transmitted to the said wheels  $a'$ , gearing therewith. The support C is fast on the hollow journals  $g$ , which are free to turn and lie in the couches  $g'$ , arranged on the front G of the cars. Every journal  $g$  is provided at its outer end with a lever H H'. If the lever H or H' is oscillated at one of the sides of the car and in the required direction, the support or lifting device C will oscillate equally. In the hollow journals  $g$  lies the shaft  $c$ , on which are



fixed at or near the middle the conical wheel  $d$ , serving to move the shaft  $c'$  at the outer ends, and on both sides of the car the hand-wheels  $k k'$ . If one of the latter wheels is 5 turned, the rotation is transmitted by means of the bevel gear-wheels  $c^2 d$ , the shaft  $c'$ , and the wheels  $C' a'$  to the screw-shaft  $a$ , so that the coupling device is screwed together or unscrewed.

10  $M$  is a vertical shaft, which can be operated from the seat of the brakeman, and this axle-tree transmits the rotation to the screw-shaft  $a$  by means of the bevel-wheels  $m$  and  $d$ , the shaft  $c'$ , and the wheels  $C' a'$ , thereby 15 operating the screw-threaded coupling device from above. On the hollow shaft  $g$  is arranged the segment of a bevel-wheel  $n$ , in which catches a bevel-wheel  $n'$ , operated by the vertical axle  $N$ , so that the support or 20 lifting device  $C$  can be oscillated from the seat of the brakeman in the same manner as by means of levers  $H H'$ .

$D$  is a coupling-hook fixed on the support  $C$  and capable of being turned, and 25 which serves to form a reserve coupling, Fig. 1—that is to say, if two cars are already coupled, the lever  $H$  of one of the cars and the lever  $H'$  of the other one or the vertical shaft  $N$  is turned so that the hook  $D$  catches 30 in the link or loop  $A^2$  of the opposite coupling device.

At one side of the car is arranged the bolt  $L$ , Fig. 6, which serves to retain the raised support  $C$  with the raised coupling device in their position, for if the lever  $H'$  or the shaft  $N$  is turned 35 the support  $C$ , and consequently also the coupling device, are lifted up. By pushing forward the bolt  $L$  by means of one of the shoulders  $l l$ , the lever  $H'$ , which has been bent 40 down, and equally the raised support  $C$  and the raised coupling device, are maintained in these positions thereby, and the nose  $l'$  of the bolt is pushed over the projection  $g^2$  of the journal  $g$ , so that the latter is hindered from 45 turning back so long as the bolt is not pushed back.

The operation of this coupling device is as follows: The lever  $H$  or  $H'$  or the shaft  $N$  is 50 turned in a required manner, whereby the support  $C$  is raised sufficiently. Now the car is pushed forward and the flap falls into the

hook of the other car. Then the hand-wheel  $K$  or  $K'$  or the shaft  $M$  is turned, so that, as described heretofore, the coupled cars are rigidly drawn to one another by means of the 55 wheel-work  $c c^2 d$  or  $m d$ , the shaft  $c'$ , the gear-wheels  $C' a'$ , and the screw-shaft  $a$ . The coupling can take place also automatically if the coupling device as before has been raised in the required manner by means of the lever 60  $H$  or  $H'$  or the shaft  $N$ , and if the bolt has been pushed forward. The coupling loop or link falls in this case automatically into the hook of the next car.

Having thus fully described my invention, 65 what I claim as new, and desire to secure by Letters Patent, is—

1. Improvements in car-couplings to be operated from the side and from above, consisting of the shaft  $c$ , which is operated by the 70 hand-wheels  $K$  and  $K'$ , in combination with the bevel-gears  $d c^2$ , the shaft  $c'$ , the screw-shaft  $a$ , the gear-wheel  $a'$ , the nuts  $a^2 a^2$ , the yoke  $A'$ , and the turning-loop  $A^2$ , in order to screw the coupling device together or to un- 75 screw it, essentially as set forth and shown.

2. In a car-coupling, the combination of the shaft  $c$ , the hand-wheels  $K K'$ , with the journal  $g$ , the levers  $H H'$  to operate the latter, the bearer  $C$  of the shaft  $c'$ , the toothed wheel 80  $C'$ , the conical wheels  $c^2 d$ , and the hook, essentially as set forth and shown.

3. In a coupling device for railway-cars to be operated from the side and from above, the combination of the shaft  $c$ , the hand- 85 wheels  $K K'$ , the journal  $g$ , with the conical wheels  $m d$ , the shaft  $M$ , and the conical wheels  $n n'$ , operated by the shaft  $N$ , essentially as set forth and shown.

4. In a coupling device for railway-cars to 90 be operated from the side and from above, the combination of the journal  $c$  with the projection  $g^2$ , with the bolt  $L$ , the shoulders  $l l$ , and the nose  $l'$ , which catches over the projection  $g^2$ , essentially as set forth and shown. 95

In testimony whereof I sign this specification in the presence of two subscribing witnesses.

MICHAEL KRETSCHMANN.

Witnesses:

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