

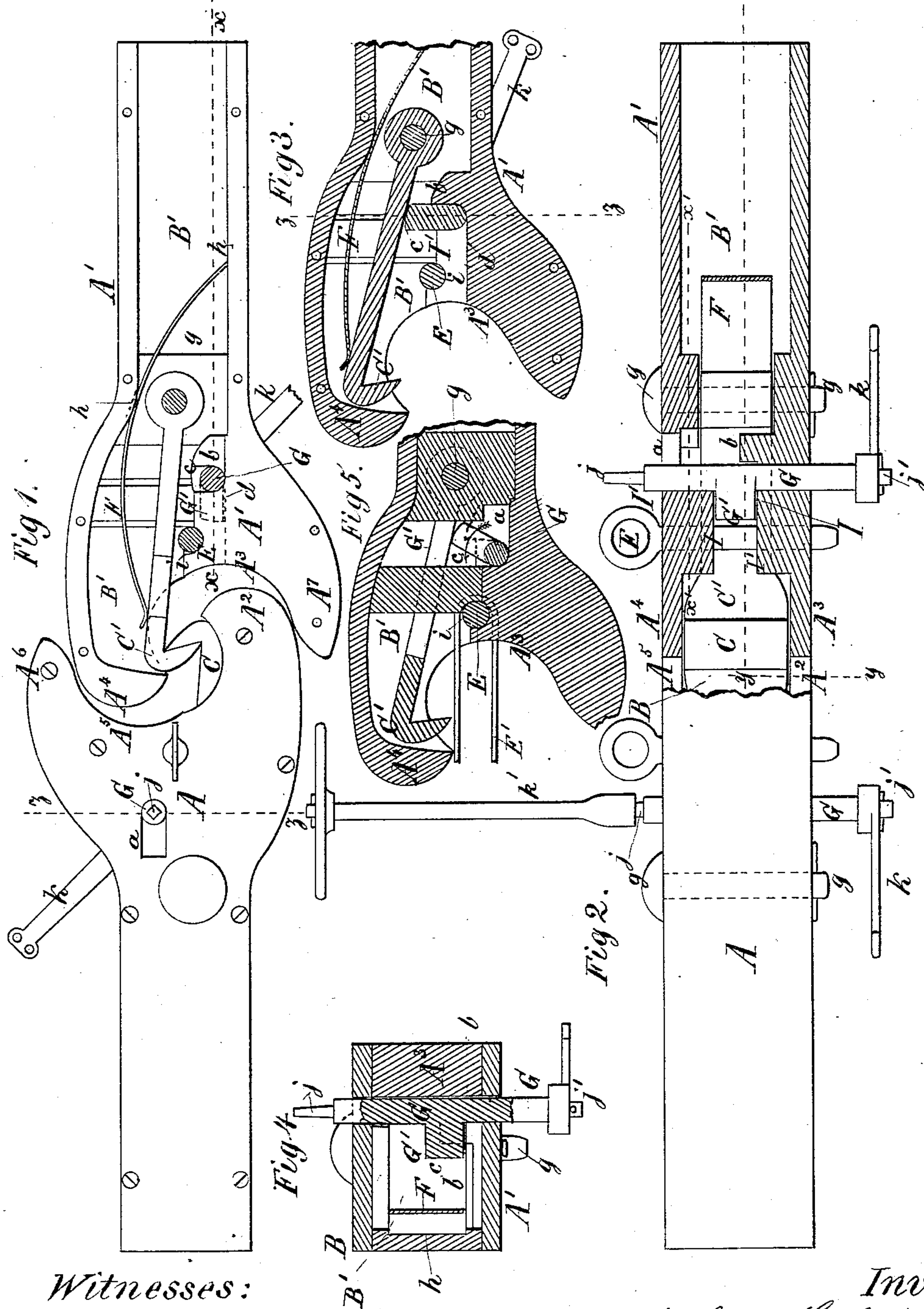
(No Model.)

N. L. DAVIS & J. H. McINTYRE.

CAR COUPLING.

No. 259,295.

Patented June 13, 1882.



Witnesses:

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 259,295, dated June 13, 1882.

Application filed April 17, 1882. (No model.)

To all whom it may concern:

Be it known that we, NICHOLAS L. DAVIS and JOHN H. MCINTYRE, citizens of the United States, residing at Rutland, in the county of Rutland and State of Vermont, have invented a new and Improved Car-Coupling, of which the following is a specification.

Our invention relates, first, to an improved combination of the laterally-swinging coupling-hooks, which are pivoted by their rear ends, the bifurcated bumper jaw-heads, which match one another, serving to prevent incidental separation of the coupling-hooks under an excessive lateral motion of the coupled cars, and each affords two bumping-surfaces, and the uncoupling-lever tumbler-rods for operating the coupling-hooks to uncouple the cars, this combination being such that it allows the bumper draw-heads freedom to vibrate laterally to a reasonable extent without affecting the coupling capabilities of the hooks, also permits the hooks to swing on their pivots without incidentally becoming disconnected, and also permits the coupling-hooks to swing into chambers out of the way when disconnected, and also affords a double bumping-surface upon the draw-heads, the main portions of which receive the greater shock, due to the cars bumping against each other, in rear of the coupling-hooks; and whereas the bumping shock has heretofore come directly and mainly upon the coupling contrivances, it in our combination comes upon the strongest parts of the draw-heads, and on a line with the more solid parts of the same, the hooking ends of the coupling-hooks being simply displaced laterally when the cars are forcibly bumped against one another; second, to a vertically-sliding and horizontally-vibrating tumbler-rod for uncoupling the cars, said rod being provided with a projection or tumbler for acting upon the coupling-hook, in combination with a draw-head provided with a peculiarly-constructed passage and stops or shoulders, whereby the rod with its tumbler can be entered into the draw-head and withdrawn therefrom, and when in its place is prevented from rising, and also is limited in its horizontal vibratory movement when operated for the purpose of uncoupling the cars; and, third,

to a vibrating rod extended entirely through the draw-head, and provided at its lower as well as at its upper end with a square or other many-sided device, to which means may be applied and the cars uncoupled either from the side or from above the draw-head without the danger of entering between the cars.

In the accompanying drawings, Figure 1 is a plan view of two draw-heads coupled in accordance with our invention, the entire top plate of one draw-head being removed. Fig. 2 is a vertical longitudinal section in the line $x x$ of one of the draw-heads shown in Fig. 1 and a broken side elevation of the other. Fig. 3 is a broken detail horizontal section in the line $y y$ of Fig. 1, showing the coupling-hook in its uncoupled position. Fig. 4 is a vertical transverse section in the line $z z$ of Fig. 3, and Fig. 5 is a detail horizontal section in the line $x' x'$ of Fig. 2.

The draw-heads $A A'$ (shown in the drawings) are respectively bifurcated at their bumping ends, and the bumper part A^2 of draw-head A enters into and matches the bumper part A^3 of the draw-head A' , while the bumper part A^4 of the draw-head A' enters into and matches the bumper part A^5 of the draw-head A . Thus two bumpers are secured upon the draw-heads and the bumping force or shock is distributed upon the draw-heads, the same coming on both sides of the centers of the draw-heads and at points where the draw-heads are most capable of sustaining the shock. The outside prong or projection, A^6 , of the draw-head A overlaps the prong or projection A^4 of the draw-head A' , while that, A^7 , of the draw-head A' overlaps the prong or projection A^2 of the draw-head A . Thus while perfect freedom for lateral or curvilinear movements of the draw-heads while coupled is permitted, these overlapping prongs prevent a separation of the coupling-hooks from undue lateral movement of one draw-head away from the other. The portion A^3 of the draw-head A' and the portion of A^5 of draw-head A are made very solid, while the portion A^2 of draw-head A and the portion A^4 of the draw-head A' are made chambering, as indicated by $B B'$ in rear of the bumping-surfaces.

In the chamber B a strong coupling-hook, 100

C, is applied, and a like hook, C', is arranged in chamber B'. These hooks have long shanks, and at the extremity of the respective shanks an eye is formed, and through this eye a strong pivot-bolt, *g*, is passed vertically, said bolt having its support upon the top and bottom portions of the draw-head. The chambers B B' have a lateral capacity great enough to allow of the hooked ends of the coupling-hooks C C' to be moved entirely beyond the inner vertical edges of the bumping-surfaces of portions A² and A⁴, as illustrated in Figs. 3 and 5. This is desirable in order that the hooks may be locked back out of the way in cases where it is found necessary to temporarily use an ordinary coupling-pin, E, and link E' in lieu of the hooks for coupling the cars, as illustrated in Fig. 5.

On the outer broad surfaces of the shanks of the hooks strong elliptic springs F are made to bear, said springs being seated and held in notches *h*, formed in the inner sides of the draw-heads, as shown. These springs keep the hooks coupled and allow them to be moved aside until in a proper coupling position, and then cause them to couple automatically after the force which moves them aside is withdrawn.

In the drawings, holes *i* are shown for the ordinary coupling-pins to pass through the draw-heads, and in these holes the said pins (designated by E) are passed, as illustrated. The pins E, when in position, are not in the way of the action of the coupling-hooks, and hence may always be in their places upon the draw-heads and ready for immediate use.

For operating the hook of each draw-head a strong vertically-sliding and horizontally-vibrating tumbler-rod, G G', is provided, and this rod is passed down through the draw-head, with its ends extended beyond the top and bottom thereof, as shown. The ends of this rod are square, as indicated at *j j'*, and they respectively receive a means by which the rod is vibrated. The lower end may have a lever-bar, *k*, applied to it, while the upper end receives a wheel-key, *k'*. With the rods thus applied the coupling-hooks can be uncoupled from a position on the side of the cars while standing below the platform; or they can be operated from either the platform or the top of the car.

The tumbler G' of the rod is a right-angular projection, and it occupies a position within the chamber B' of the draw-head, and is confined down by means of a stop, I, immediately above a stop, I', while its vibrations are limited by a stop, *b*, and the surface *d* of the draw-head. The normal position of the tumbler—that is, its position when the hooks are coupled, as in Figs. 1 and 2—is between the stops I I', and it bears against the stop *b* when the hooks are uncoupled, as shown in Fig. 3. Thus arranged, the tumbler-rod can be swung one-quarter round from between the stops I I' by

means of the lever-bar *k*, or by the hand wheel-key *k'*, and the hooks thereby uncoupled; but when not thus swung around it is prevented from rising or descending by the stops I I'.

In order that the tumbler-rod G G' may be introduced between the stops I I' with its tumbler G' upon it, an oblong slot, *a*, is formed in the top of the draw-head, and a suitable distance below this slot the step-stop *b* is formed for the tumbler G' to strike against as it enters the chamber B' of the draw-head; and forward of the step-stop *b* the bearing for the tumbler-rod is cut away down to a plane with the stop I', and to the right of said step-stop *b* a space, *c*, exists, such space being a portion of that B'. With this construction the tumbler G', after being passed through the slot *a* and made to rest upon the step-stop *b*, will, by being turned one-quarter round on said step-stop *b* in the direction of the arrow shown in Fig. 5, be brought over the space *c* forward of and to the right of the said stop, and then by pressing the tumbler-rod G G' downward to the plane of stop I' and turning it another quarter around, it will be caused to pass between the stops I I'. To withdraw the tumbler-rod the tumbler must be turned one-quarter round, as shown in Fig. 3, on the plane of the stop I', and in a direction the reverse of that indicated by the arrow in Fig. 5. Then the rod, with tumbler, must be drawn up, the tumbler meanwhile standing at right angles to the slot *a*, until the lower edge of the tumbler rises level with the top of the step-stop *b*. Then the rod must be turned one-quarter further around, so as to bring the tumbler in range with the slot *a*, and then be drawn straight up through the space *c* and the slot *a*.

We are aware that bifurcated draw-heads differing in construction from ours are common; also, that pivoted vibrating hooks operated by tumbler-rods have been used in the most ordinary draw-heads, or with draw-heads which are not bifurcated, chambered, and formed with bumper-surfaces such as are shown in our coupling; but we are not aware that the improved construction and combination which we have shown have ever before been devised.

What we claim as our invention, and desire to secure by letters Patent, is—

1. The combination, in a car-coupling, of the two bifurcated draw-heads A A', formed respectively as follows: that, A, having the chambered prong A², the solid prong A⁶, and the bumper-surface A⁵, and the other, A', having the chambered prong A⁴, the solid prong A⁷, and the bumper-surface A³, the long pivoted and laterally-vibrating spring coupling-hooks C C', applied within the chambers B B', and the vertical rods G G', having tumblers G' G', substantially as described.

2. The vertically-sliding and horizontally-vibrating tumbler-rod G G', in combination with the vibrating hook C, and the draw-head

provided with the oblong slot *a*, space *c*, stop *b*, and stops *I I'*, substantially as and for the purpose described.

3. The tumbler-rods *G G*, provided with
5 tumblers *G' G'* and under and upper extensions, *j j' j j'*, in combination with the vertically-sliding and laterally-vibrating spring-

hooks *C C'* and with the draw-heads *A A'*, substantially as and for the purpose described.

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