(No Model.)

D. M. LIPPS.

CAR COUPLING.

No. 574,741. Patented Jan. 5, 1897.

Fig. 1.

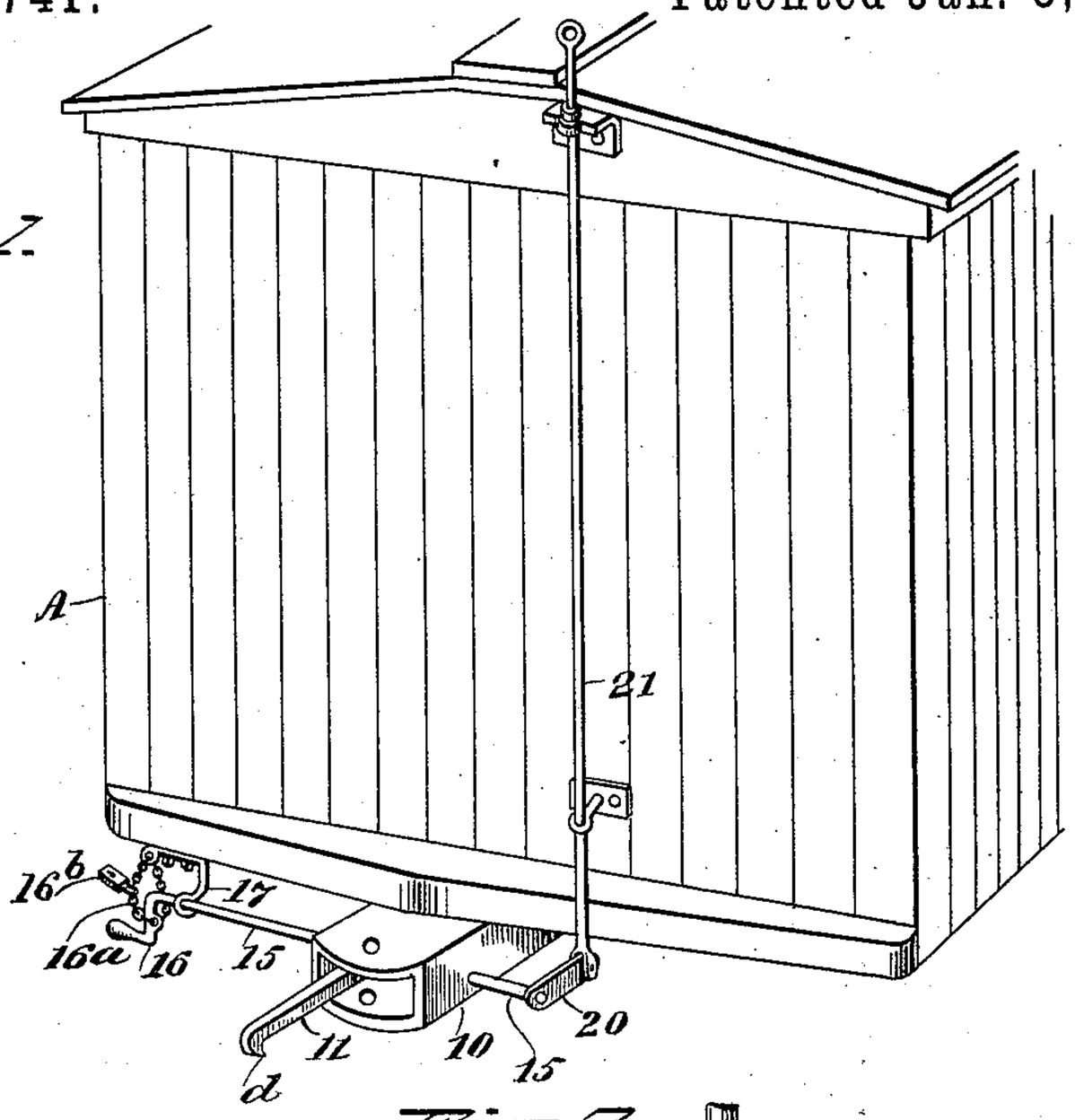


Fig. 2.

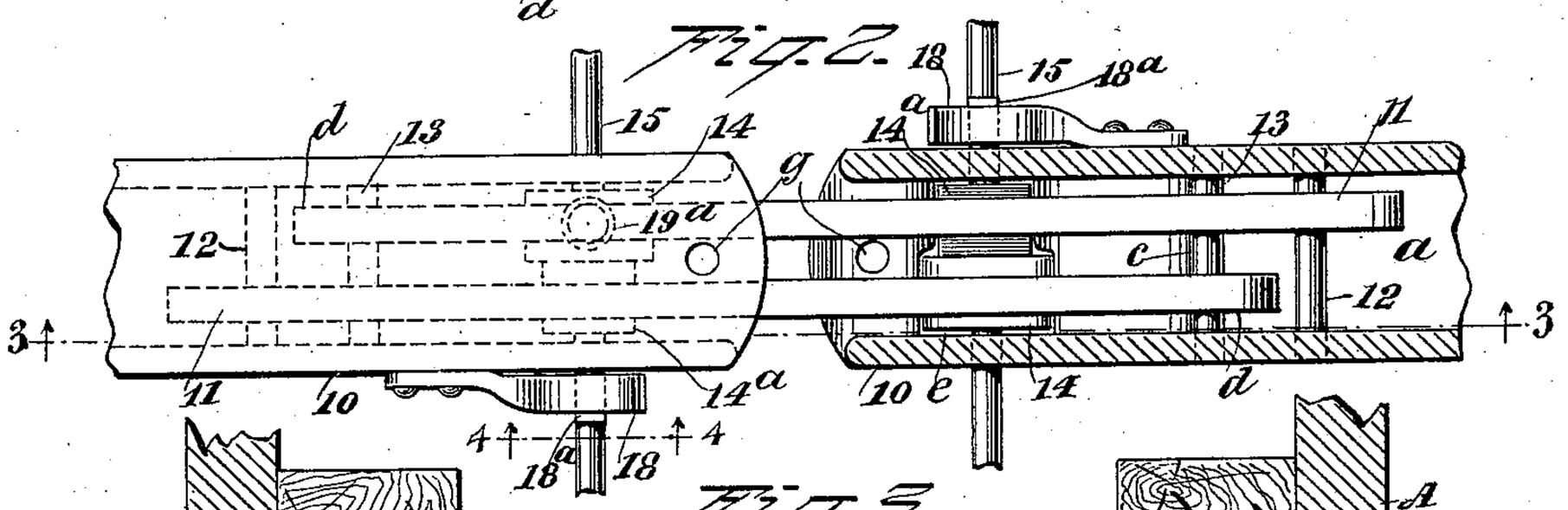


Fig. 3.

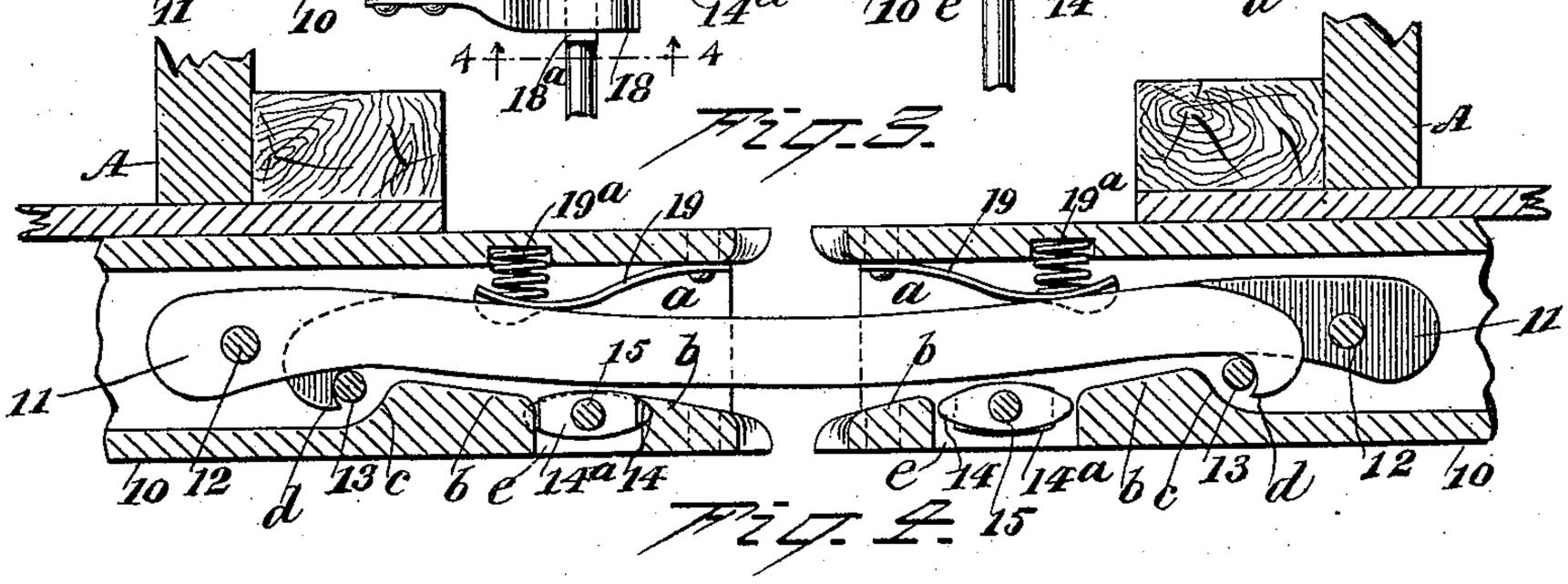
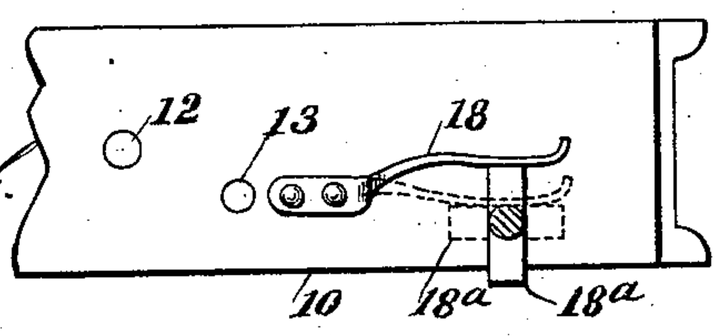


Fig. 4.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 574,741, dated January 5, 1897.

Application filed April 27, 1896. Serial No. 589,266. (No model.)

To all whom it may concern:

Be it known that I, DAVID M. LIPPS, of Harrodsburg, in the county of Mercer and State of Kentucky, have invented new and useful Improvements in Car-Couplings, of which the following is a full, clear, and exact description.

This invention relates to car-couplings of the hook-and-catch type, and has for its object to provide a novel-constructed coupling of the indicated character which will be very simple, be efficient in operation, be adapted for automatic connection with a similar car-coupling, and that may be safely detached when coupled in pairs by an operator at the side of either coupled car or from their roofs, as occasion may require.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved car-coupling in position for service on a car shown in part. Fig. 2 is an enlarged plan view of two of the improved couplings in coupled condition, one coupling draw-head being in section and both coupling draw-heads curtailed at their rear ends. Fig. 3 is a sectional side view of two coupled draw-heads having the improvements, taken essentially on the line 3 3 in Fig. 2; and Fig. 4 is a partly sectional side view of details on the line 4 4 in Fig. 2.

There is a draw-head 10 provided for the improved car-coupling, which is preferably cast into form from suitable metal, having an elongated chamber *a* formed in it. The draw-head in complete form is afforded sufficient length for effective service when placed on a car in the usual or any approved manner, the front portion of said draw-head being projected in advance of the car-body A, as indicated in Fig. 1. In the chamber *a* of the draw-head an elongated hook-bar 11 is located, and said hook-bar, which in service becomes a coupling-link, is pivoted by its inner end on a transverse pintle-bolt 12. The hook-bar mentioned is so positioned in the draw-head 10 that it will lie near one side wall of the latter and extend its free end sufficiently beyond the front end of the draw-head to permit its entrance a correct distance within the chamber *a* of a similar draw-head, as best shown in Fig. 3.

The open front end of the draw-head chamber is rounded on the inner edges of its walls to facilitate the introduction of a hook-bar that projects from a mating car-coupling so as to lie parallel with the pivoted hook-bar, and, as shown in Fig. 3, an incline *b* is formed on the lower wall of the chamber *a*, which slopes upwardly from the front rounded edge of said bottom wall. The incline *b* terminates at a suitable distance from the front of the draw-head, affording a shoulder *c* where it ends between the high inner terminal of the incline and the rearward continuation of the bottom wall of the chamber *a*. Near the shoulder *c* a transverse catch-bar 13 is secured by its ends in the side walls of the draw-head, said bar being preferably given a cylindric form, and from its position adjacent to the high point of the shoulder *c* a hook-bar 11 of an approaching car-coupling that rides up the incline *b* will be adapted to engage its hook *d* with the catch-bar 13, and thus effect a coupled engagement of two longitudinally-alined draw-heads 10.

The draw-head is apertured in its lower wall at a correct distance from the front end of the same, this aperture *e* being preferably extended from one side wall to the other, as shown in Fig. 2. In the aperture *e* two laterally-widened tripping-dogs 14 14^a are supported to rock by the transverse rock-shaft 15, whereon the dogs are mounted and secured, the end portions of the rock-shaft that are journaled in the side walls of the draw-head 10 being therefrom extended a suitable degree. The projecting portion of the rock-shaft 15 at one side of the draw-head 10 is afforded sufficient length to locate its outer end near the side of the car-body it approaches, and on said end of the shaft a crank-handle 16 or the like is secured to enable an operator to safely rock the shaft and tripping-dogs for elevation of the hook-bar 11. Near the crank-handle 16 a bracket-arm or like support 17 projects from the car-body A, and the rock-shaft 15 has a loose engagement therewith, the arm serving to sustain the shaft and permit its free rocking movement.

The tripping-dogs 14 14^a are of different lengths, that afforded the dog 14^a being so pro-

portioned that when the shaft 15 is rocked to effect a release of the hook-bar 11, pivoted therein, from a catch-bar 13 on a similar coupling the longitudinal width of said dog will be sufficient to raise the hook-bar mentioned a proper degree to effect the detachment of the depending hook *d* on its free end from said catch-bar. The other dog 14, which is positioned alongside the dog 14ª and is adapted to have contact with the lower edge of a hook-bar 11, which enters the draw-head, is proportionately lengthened, so that the dogs 14 14ª will correctly elevate the pivoted hook-bar and a like bar entering the draw-head at the side of said pivoted hook-bar for release of each when two coupled draw-heads are to be detached.

The gravity of the coupling hook-bars 11 might depress their hooked ends so as to effect a coupled engagement of two car-couplings having the improvements, but to insure such a latching engagement of the hook-bars with the catch-bars it is preferred to provide a presser-spring 19 for each coupling hook-bar 11, the said spring consisting of an elastic thin plate having one end secured on the inner side of the upper wall of the draw-head, pressing its free end on the hook-bar. The plate-spring 19 is reinforced with a spiral spring 19ª, introduced between the upper wall by the draw-head and the free end of the said presser-spring, which will insure the depression of the hook-bars of two couplings that are to be coupled and the proper engagement of the latching-hooks *d* on said hook-bars with the catch-bars 13. The plate-spring 19 is of such a width as will avoid its lateral contact with a hook-bar 11, that enters the draw-head 10 for a coupled engagement with the catch-bar 13, and to prevent the free end of the spring that contacts with the upper edge of the hook-bar from lateral displacement two depending ears are formed at opposite points on the side edges of the spring, which ears will loosely lap on the sides of the hook-bar and thereby retain the spring in place thereon, as indicated by dotted lines in Fig. 3.

On the end portion of the rock-shaft 15 that projects oppositely from that having the the crank-handle 16 a rock-arm 20 is affixed by one end, the other end of said arm having a pivoted engagement with the lower end of the upright lifter-rod 21, which extends through suitable supports projecting from the car-body to the roof of the latter, so that by proper manipulation effected by an operator on the roof of the car the tripping-dogs 14 14ª may be rocked and the hook-bars raised to release two coupled cars.

On the rock-shaft 15, at the side of the draw-head 10 nearest the crank-handle 16, a detent-block 18ª is formed or secured, which is so proportioned in width that it will receive the pressure of the spring 18, that is secured on the draw-head, and thus prevent the rock-shaft from an accidental rocking movement.

The projection of the detent-block 18ª is so arranged with regard to the disposition of the dog 14ª on the shaft 15 that said dog will hold the hook-bar it engages detached from a catch-bar 13 when the spring 18 presses on the wider portion of the detent-block, so that the hook-bars on two couplings may be conveniently held in uncoupled condition while they are entered in draw-heads they are respectively pivoted in.

A chain 16ª and lock 16ᵇ are preferably provided for securing the shaft-handle 16 from rotation, so that the detachment of the cars cannot be effected by any one who is not authorized to do so and not provided with a key.

At the front of the draw-head 10 a vertical perforation *g* is formed through its top and bottom walls to receive an ordinary coupling-pin, so that by use of said pin a common link of an ordinary car-coupling may be coupled with the draw-head if therein inserted.

It will be seen that by the construction of the apertured incline of the draw-head and the location of the tripping-dogs therein the elongated hook-bars may slide up the incline *b* and automatically effect coupled engagement, for, as shown in Fig. 3, a practically unbroken incline is thus formed. Not only is space greatly economized, but the releasing means is out of the way except when it is desired to uncouple the hook-bars.

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

1. The combination with a chambered draw-head having a rearward and upward incline on the lower wall of its chamber, and also provided with a transverse aperture in said incline, of a hook-bar pivoted by one end within the draw-head chamber behind the incline therein so as to project its hooked end out of the draw-head, a tripping-dog supported to rock in the aperture on a transverse rock-shaft, a device to rock the shaft at the side of a car, and means to hold the shaft rocked until a similar hook-bar on another coupling enters the draw-head and rocks the dog, substantially as described.

2. In a car-coupling of the described construction, the combination with a chambered draw-head having an apertured incline on the lower wall of its chamber, a shaft supported to rock transversely of the draw-head and having two tripping-dogs thereon, rockable in the aperture of the incline, and means to rock the shaft from the side of a car, of a detent-spring on the side of the draw-head, adapted to contact with a block on the rock-shaft and hold said shaft rocked for elevation of a hook-bar that is pivoted in the draw-head, and a securing device adapted to prevent a rotation of the rock-shaft, substantially as described.

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