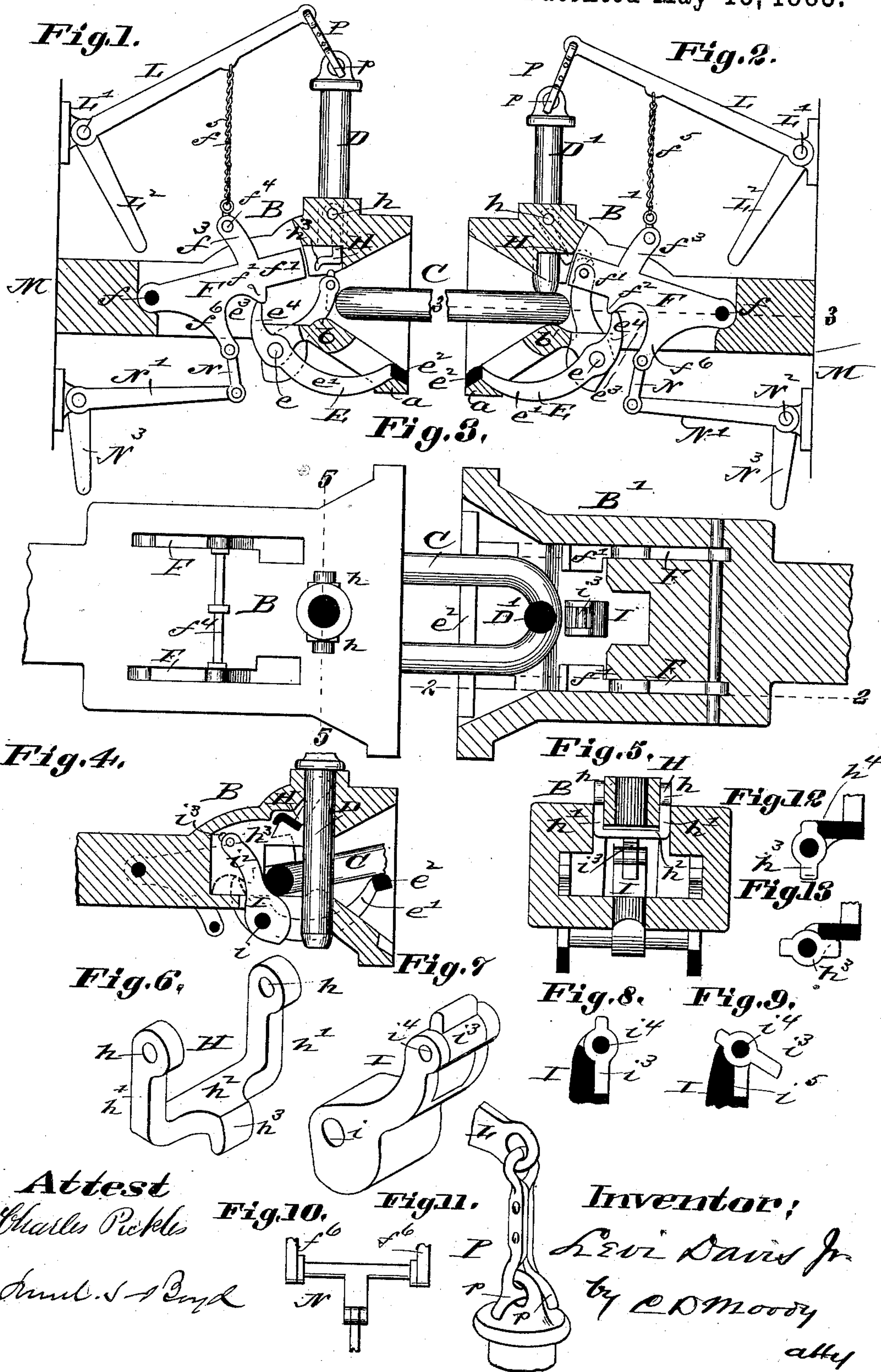


(No Model.)

L. DAVIS, Jr.
CAR COUPLING.

No. 277,466.

Patented May 15, 1883.



Attest
Charles Pickle
Amos S. Boyd

Fig. 10.

Fig. 11.

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att'y

UNITED STATES PATENT OFFICE.

LEVI DAVIS, JR., OF ALTON, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 277,466, dated May 15, 1883.

Application filed December 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEVI DAVIS, Jr., of Alton, Illinois, have made a new and useful Improvement in Car-Couplings, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a vertical longitudinal section of one of the draw-heads of the improved coupling; Fig. 2, a similar section upon the line 2 2 of Fig. 3 of the opposing draw-head, the parts being as when the link has entered the draw-head farther than as shown in Fig. 1; Fig. 3, a plan, half in horizontal section, of the coupling, the section being on the line 3 3 of Fig. 2; Fig. 4, a vertical longitudinal section of one of the draw-heads, the link being coupled; Fig. 5, a vertical cross-section on the line 5 5 of Fig. 3, and the remaining figures details, Fig. 6 being a view in perspective of the pin-support, the support being turned around from the position in Figs. 1, 4; Fig. 7, a view in perspective of the lever used to trip the pin-support; Figs. 8 and 9, sectional views of the upper end of the trip-lever; Fig. 10, a front elevation of the link attached to the weight-levers; Fig. 11, a view in perspective, showing the part which connects the coupling-pin and its lifting-lever; and Figs. 12 and 13, sectional views, showing a modification of the pin-support.

The same letters denote the same parts.

The present invention relates to the means for upholding the link in the draw-head, to the means for operating and supporting the coupling-pin, and to other minor details.

A, Fig. 3, represents the improved coupling.

The draw-heads B B' are of the usual description, saving as modified by the present improvement.

C represents the coupling-link, and D D' the coupling-pins.

Pivoted at e in each of the draw-heads is an arm, E, consisting of the side bars e' e' , united at their outer ends by a cross-bar, e^2 . The draw-bar is chambered out at e^3 to receive and provide for the working of the arm E. When the outer end of the arm is depressed, as in Fig. 9, the cross-bar e^2 is held in an offset at the outer edge of the lower lip, a , of the draw-

bar, and the inner ends, e^4 e^4 , extend upward in the chamber e^3 , substantially as shown.

The levers F F are each pivoted at f in the draw-head and weighted at f' , and at f^2 the levers bear upon the ends e^4 e^4 of the arm E. The levers F F act, when free to turn upon the pivot f , to depress the ends e^4 e^4 , and thereby to elevate the bar e^2 , and the bar e^2 , as it rises, encounters and elevates the outer end of the link C. The ends f' of the levers F F, when down, co-operate with the bar e^2 in upholding the link. The link, as it is thus turned upward and downward, turns as upon a fulcrum upon the part b of the draw-head. Whenever the levers F F cease to bear upon the ends e^4 e^4 the outer end of the bar E drops, as in Figs. 1 and 2.

As thus far described, the construction is substantially similar to that shown in a pending application for Letters Patent.

The levers F F in the present case are lifted upon their pivots by two distinct mechanisms—viz., one connected with the lever used in lifting the coupling-pin, and the other being independent of the coupling-pin. Upon their upper sides the levers are provided with the ears f^3 . A cross-bar, f^4 , Fig. 3, is connected with the ears f^4 f^4 , and from the cross-bar a connection—such as the chain f^5 —leads to the lever L, which in turn is attached to the shaft L', turning in the bearings l upon the car M. The shaft L' is supposed to extend to the sides of the car, and there provided with cranks L², by turning which the lever L and levers F F are lifted, as in Figs. 1 and 2. Upon their under sides the levers are furnished with the projections f^6 , to which a link, N, Figs. 1, 2, 10, is jointed. The link N, at its lower end, is jointed to a lever, N', which in turn is attached to a shaft, N². This last-named shaft is adapted to be rotated in bearings n upon the car M. The shaft extends to the sides of the car, and is there supported with cranks N³, by turning which the outer end of the lever N' is raised and lowered, and the levers F F, through the link N, move accordingly. The object and effect of the mechanism last above described is to enable the link C to be held at various angles of inclination in the draw-head, irrespective of the fact that the coupling-pin is down in the draw-

head, for by rotating the shaft N^2 so as to depress the outer end of the lever N' the levers $F F$ are forced against the inner ends of the link, causing the link to tilt upon the bearing b , and to be inclined according to the extent to which the levers $F F$ are depressed. By continuing to depress the levers $F F$ the link may be inclined upward, as shown in Fig. 4. The draw-head is suitably shaped on the inner side of the bearing b to enable the link to be thus inclined. The coupling-pin is lifted by means of the lever L , the pin being connected with the lever by means of the link P . The connection must be such as to enable the draw-head in use to sway laterally in the ordinary manner; but to prevent the link from being thrown too far to one side the link P is provided with the projections or shoulders $p p$. The levers $F F$ are lifted with the coupling-pin. The pin is upheld by means of the support H , Figs. 1, 2, 4, 5, 6. The support is pivoted in the draw-head at $h h$ in line with the coupling-pin. The support is composed of the side bars $h' h'$, the cross-bar h^2 , and the projection h^3 . The bars $h' h'$ extend downward from the pivots $n n$ directly in line with the coupling-pin, and the point of the coupling-pin rests upon the bar h^2 . In effecting the coupling the link C , in entering the draw-head, encounters the trip-lever I , which is pivoted at i in the draw-head. The link pushes the upper end, i^2 , of the trip backward in the draw-head, causing the tip i^3 to bear against the projection h^3 of the link-support, and the support to be dislodged from beneath the coupling-pin, whereupon the coupling-pin drops, as in Fig. 4, through the link. The levers $F F$ also drop, and, in connection with the arm E , uphold the link C . When the coupling-pin is raised and the link withdrawn from the draw-head the upper end of the trip I moves outward. The tip i^3 is pivoted in the trip, and as the tip strikes the projection the tip turns upon its pivot i^4 , as shown in Fig. 9, allowing the trip to pass the support. The tip is prevented from turning in the opposite direction by means of the shoulder i^5 .

In place of providing the trip I with a mov-

able tip, the trip and tip might be in one piece, and the projection h^3 upon the link-support be made movable, as indicated in Figs. 12, 13. When the link-support is thus made, the projection h^3 is, by means of the shoulder h^4 , prevented from turning upon its pivot when the link enters the draw-head; but when the trip falls outward the projection turns, as shown in Fig. 13.

I claim—

1. In a car-coupling, the combination of the lever or levers $F F$, pivoted inside the draw-heads, the link N , and the lever N' , for the purpose described.

2. In a car-coupling, the levers $F F$, pivoted inside the draw-head, and lever N' , all suitably jointed together and combined with shaft N , substantially as described.

3. The combination of the lever L , the draw-head B , the levers $F F$, the arm E , the coupling-pin D , the link P , and the chain f^5 , substantially as described.

4. The combination of the lever L , and the link P , having the shoulders $p p$, substantially as described.

5. The combination of the draw-head B , the coupling-pin D , and the pin-support H , said support consisting of the bars $h' h'$, pivoted at $h h$, and extended downward in line with the coupling-pin, and being united by means of the cross-bar h^2 , having the projection h^3 , as and for the purpose described.

6. The combination, in a car-coupling, of the pin-support H , pivoted and constructed as set forth, and the trip I , pivoted at its lower end to the draw-head, and at its upper end provided with the pivoted tip i^3 , substantially as described.

7. In a car-coupling, the combination, in the draw-head, of the pivoted arm E and the lever N' with intermediate mechanism, substantially as described, whereby the movement of said lever will effect the movement of said arm, substantially as described.

LEVI DAVIS, JR.

Witnesses:

C. D. MOODY,
SAML. S. BOYD.