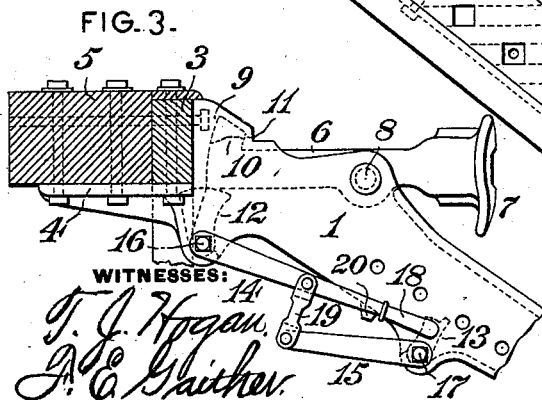
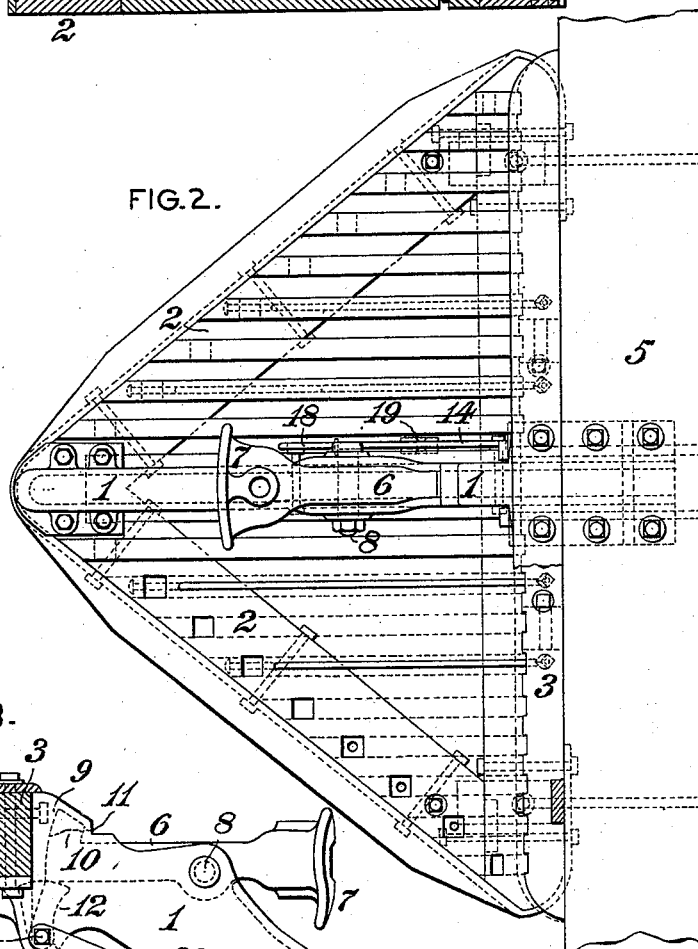
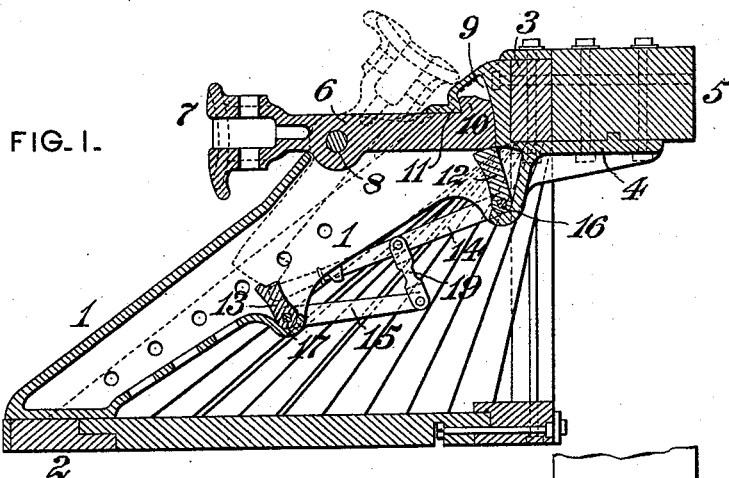


(No Model.)

P. LEEDS.  
DRAW BAR FOR LOCOMOTIVES.

No. 522,299.

Patented July 3, 1894.



WITNESSES:

*T. J. Hygan.*  
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INVENTOR,

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# UNITED STATES PATENT OFFICE.

PULASKI LEEDS, OF LOUISVILLE, KENTUCKY, ASSIGNOR OF ONE-HALF TO  
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## DRAW-BAR FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 522,299, dated July 3, 1894.

Application filed March 19, 1894. Serial No. 504,203. (No model.)

*To all whom it may concern:*

Be it known that I, PULASKI LEEDS, of Louisville, in the county of Jefferson and State of Kentucky, have invented a certain  
5 new and useful Improvement in Draw-Bars for Locomotives, of which improvement the following is a specification.

My invention relates to draw or push bars used for coupling cars to locomotives or tenders at points above the pilots thereof, and its  
10 object is to provide a folding or reversible draw bar, which may be either turned down into operative position for connection with the draw head of a car, or turned up into a  
15 position where, when unused, it will not impair the efficiency of the pilot in deflecting obstructions to either side of the track, and which shall be automatically locked firmly in either position, with the capability of being  
20 readily released and reversed by a trainman whenever desired.

To this end, my invention, generally stated, consists in the combination, with a locomotive pilot, of a draw bar bearing or support,  
25 a reversible draw bar pivoted thereto, an automatic lock which holds the draw bar either in an operative or an inoperative position, respectively, in the draw bar bearing, and an unlocking device for releasing and permitting  
30 the reversal of the draw bar.

The improvement claimed is hereinafter fully set forth.

A draw or push bar pivoted at one end to a casting on the pilot or the bumper beam of  
35 a locomotive, and having a coupling head at its outer or free end, was formerly employed to a considerable extent in railroad service, the draw bar being held by the trainman in a substantially horizontal position, to meet  
40 the draw head of a car, when making a coupling, and being allowed to rest, in an inclined position, on or between the middle bars of the pilot, when not in use. This construction was found, in practice, to be a source of serious  
45 danger to trainmen handling it, on account of the liability of missing the coupling, and of the car running up on them, and, further, tended to crowd cars off the track when pushing on a curve. For these reasons,  
50 it has been, as a general rule, abandoned, and, as a substitute, a rigid bull nose, ex-

tending sufficiently far over the pilot to couple directly to a car, has been used, such fixed bull nose or draw head being of the same general form as a freight car draw head and  
55 coupling therewith by a link and pin. While this construction answered the requirements of coupling with safety, it introduced another element of danger, as when striking live stock or other obstructions on the track, the effectiveness of the pilot for turning them to either  
60 side was destroyed, for the reason that they would swing or balance across the face of the bull nose and roll down and under the pilot.

My improvement wholly avoids each of the  
65 objections above noted, as it provides a draw bar which, when turned into proper position for coupling, (either by hand or by automatic devices,) is automatically locked and rigidly held in such position, so that trainmen may  
70 couple an engine or tender directly to a car, with a common link and pin, with even greater safety than when coupling two cars together, and, when the draw bar is not in use, it is turned into and locked in, a position  
75 in which it projects from the pilot to a slight extent only, and at such a location thereon that its projection has no effect in impairing the efficiency of the pilot for its designed  
80 function of turning or deflecting obstructions to either side of the track.

In the accompanying drawings: Figure 1 is a vertical longitudinal central section through a locomotive engine pilot with an embodiment  
85 of my invention applied thereto; Fig. 2 a plan or top view of the same; and Fig. 3, a side view, in elevation, of the unlocking device and part of the draw bar bearing.

In the practice of my invention, I provide an inclined draw bar bearing or support 1,  
90 which may be either of cast or of wrought metal, or be a composite structure containing both forgings and castings, and which is built into the framing of a locomotive pilot, in the position ordinarily occupied by the middle  
95 inclined bar or bars thereof. The lower and forward end of the draw bar bearing is secured to the lower horizontal timbers, 2, of the pilot, and its upper and rear end abuts against the top timber, 3, thereof. A horizontal  
100 flange, 4, projects rearwardly from the draw bar bearing, through which flange it is

bolted to the top timber, 3, of the pilot, and to the bumper beam, 5, of the engine frame. The draw bar bearing 1, which is thus made a rigid member of the pilot frame, has the general form of a box or casing.

A draw bar, 6, having on one of its ends a suitably formed coupling head, 7, adapted to receive a coupling link and pin, or which may, if preferred, be fitted with any of the various forms of automatic couplers, is pivoted by a pin, 8, to the draw bar bearing 1, near its top, the axis of the pin 8 being located, as nearly as may be, in a horizontal plane passing through the top timber 3 of the pilot and the bumper beam 5. The draw bar 6, extends on the opposite side of its pivot, into the space between the side members of the draw bar bearing 1, and, when in operative position, which is a substantially horizontal one, as shown in full lines in Fig. 1, its rear end abuts against a transverse buffer bearing face, 9, at the rear end of the draw bar bearing, which in turn, abuts against the top timber, 3, of the pilot. A shoulder or projection, 10, on the top of the draw bar, at its inner end, abuts against a transverse draft bearing face, 11, on the draw bar bearing, opposite the buffer bearing face 9.

When in operative position, the lower side of the draw bar, in front of its pivot, seats and rests upon the central portion of the draw bar bearing, and its upper side, near its rear end, abuts against the inside of the draw bar bearing, in front of the draft bearing face. When not in use, the draw bar is swung upon its pivot into the position shown in dotted lines in Fig. 1, in which its coupling head seats and rests upon the outer central portion of the draw bar bearing near the top of the pilot, its projection therefrom being, as will be seen, comparatively slight in degree, and so near the top of the pilot as not in any way to interfere with the performance of its function of deflecting obstructions to either side of the track.

The draw bar 6 is automatically locked and held in either of the above positions in which it may be placed, by an automatic lock, the preferred construction of which, as shown in the drawings, consists in two arms or pawls 12, 13, which are pivoted to the draw bar bearing 1, in such positions that the arm 12 bears against the lower side of the draw bar at its end farthest from the coupling head, when the draw bar is in operative position, and, when the draw bar is in inoperative position, the arm 13 bears against the opposite side of the draw bar at the same end, which, in the reversal of the draw bar, becomes its forward end. The arms, 12, 13, are normally brought into and held in their locking position by means of weights, which are preferably, as shown, levers, 14, 15, fixed upon the pivots, 16, 17, of the arms. Inasmuch as any strain then brought upon the draw bar, tending to move it upon its pivot 8, out of either position in which it may be placed, will act to

wedge it against the pivot of the arms, 12 or 13 as the case may be, by which it is locked, it cannot be either accidentally or intentionally displaced, and will be held firmly in position until the arm is released by a suitable manually operated unlocking device. In this instance, the lever 14, of the upper locking arm 12, is prolonged to form an unlocking handle 18, which projects outwardly between the draw bar bearing 1, and the adjacent inclined bar of the pilot on one side, for a sufficient distance to be grasped by a trainman, and the levers 14, 15 are connected one to the other by a link 19. The traverse of the levers 14, 15 to unlocking position is suitably limited by a fixed stop or stops, which may be a pin 20, against which the lever 14 bears when the arms 12, 13 have been moved far enough to allow the draw bar to be released and reversed.

It will be seen that the operation of the lock is entirely automatic, as the arms are moved by gravity into locking positions, in which either one or the other is operative, to lock and hold the draw bar, according to the position in which it may be placed, as soon as the unlocking lever is released, and also that the draw bar may be readily unlocked, and turned, whenever desired, from one position to another, without, in unlocking it, removing any part which would require to be replaced by the operator in order to again lock it. The levers connected to the locking arms automatically return them by gravity to locking position, while allowing the draw bar to automatically open them after it has been unlocked, in its traverse from one position to the other. The structural form of the draw bar bearing and its connection to the pilot timbers and bumper beam, are such as to impart increased strength and solidity to the pilot, and the draw bar is of such form, and is so pivoted to its bearing or support, that the shocks and strains of buffing and pushing are transferred directly to the bearing face at the rear end of the draw bar bearing, and through the metal thereof to the bumper beam and frame of the engine. Correspondingly, draft strains are transmitted to a bearing at the strongest portion of the draw bar bearing, at a point near to and about in line with the bumper beam.

The specific form of lock employed is not of the essence of my invention, as the same may, in practice, be modified in structural details without variation in operative principle or result, or in its co-operative relation to other members of the appliance with which it is combined. Thus, for example, slides or shoot bolts, operated by bell cranks, might be substituted for the arms or pawls shown, and would operate similarly thereto. I do not therefore desire to limit myself to the employment of the specific lock herein described and shown.

I claim as my invention and desire to secure by Letters Patent—

1. The combination, with a locomotive pilot, of a draw bar bearing or support, a reversible draw bar pivoted thereto, an automatic lock which holds the draw bar in either of its two opposite positions in the draw bar bearing, and an unlocking device for releasing and permitting the reversal of the draw bar, substantially as set forth.

2. The combination, with a locomotive pilot, of a draw bar bearing or support, a reversible draw bar pivoted thereto and having upon its outer end a coupling head, which, at one of the limits of the traverse of the draw bar, projects forwardly from the pilot to suitably receive a car coupling, and, at the other, projects rearwardly from the pilot adjacent to its top, an automatic lock adapted to engage and hold the inner end of the draw bar in either of said positions, and an unlocking device for releasing and permitting the reversal of the draw bar, substantially as set forth.

3. The combination, with a locomotive pilot, of a draw bar bearing or support having a buffer bearing face adjacent to its rear end, a reversible draw bar having a coupling head on its outer end and having its inner end adapted to abut against the buffer bearing face, a pin or pivot connecting the draw bar to the draw bar bearing, an automatic lock for holding the draw bar in position in which its outer end may be coupled to a car and its inner end abuts against the buffer bearing face, and an unlocking device for releasing and permitting the reversal of the draw bar, substantially as set forth.

4. The combination, with a locomotive pilot, of a draw bar bearing or support having a draft bearing face adjacent to its rear end, a

reversible draw bar having a coupling head on its outer end and a shoulder or projection at its inner end, a pin or pivot connecting the draw bar to the draw bar bearing, an automatic lock for holding the draw bar in position in which its outer end may be coupled to a car and the shoulder or projection of its inner end abuts against the draft bearing face, and an unlocking device for releasing and permitting the reversal of the draw bar, substantially as set forth.

5. The combination, with a locomotive pilot, of a draw bar bearing or support, a reversible draw bar pivoted thereto and having a coupling head on its outer end, arms pivoted to the draw bar bearing on opposite sides of the draw bar pivot and having end faces adapted to abut against the upper or the lower side, respectively, of the draw bar at the limits of the traverse thereof, levers fixed to, and extending in opposite directions from, the pivots of the arms, and a link connecting said levers, substantially as set forth.

6. The combination, with a locomotive pilot, of a draw bar bearing or support consisting of a metallic casing or frame secured at its front end to the lower timbers of the pilot at the center thereof, and at its rear end, abutting against and secured to the top timber, and a reversible draw bar pivoted to said draw bar support in or near a horizontal plane passing through the top timber, substantially as set forth.

PULASKI LEEDS.

Witnesses:

E. S. HEDGCOCK,  
JACK L. IRWIN.