(No Model.)

S. R. HEIDELBERG.

DRAW BAR FOR LOCOMOTIVES.

No. 480,923. Patented Aug. 16, 1892.

Fig. 1.

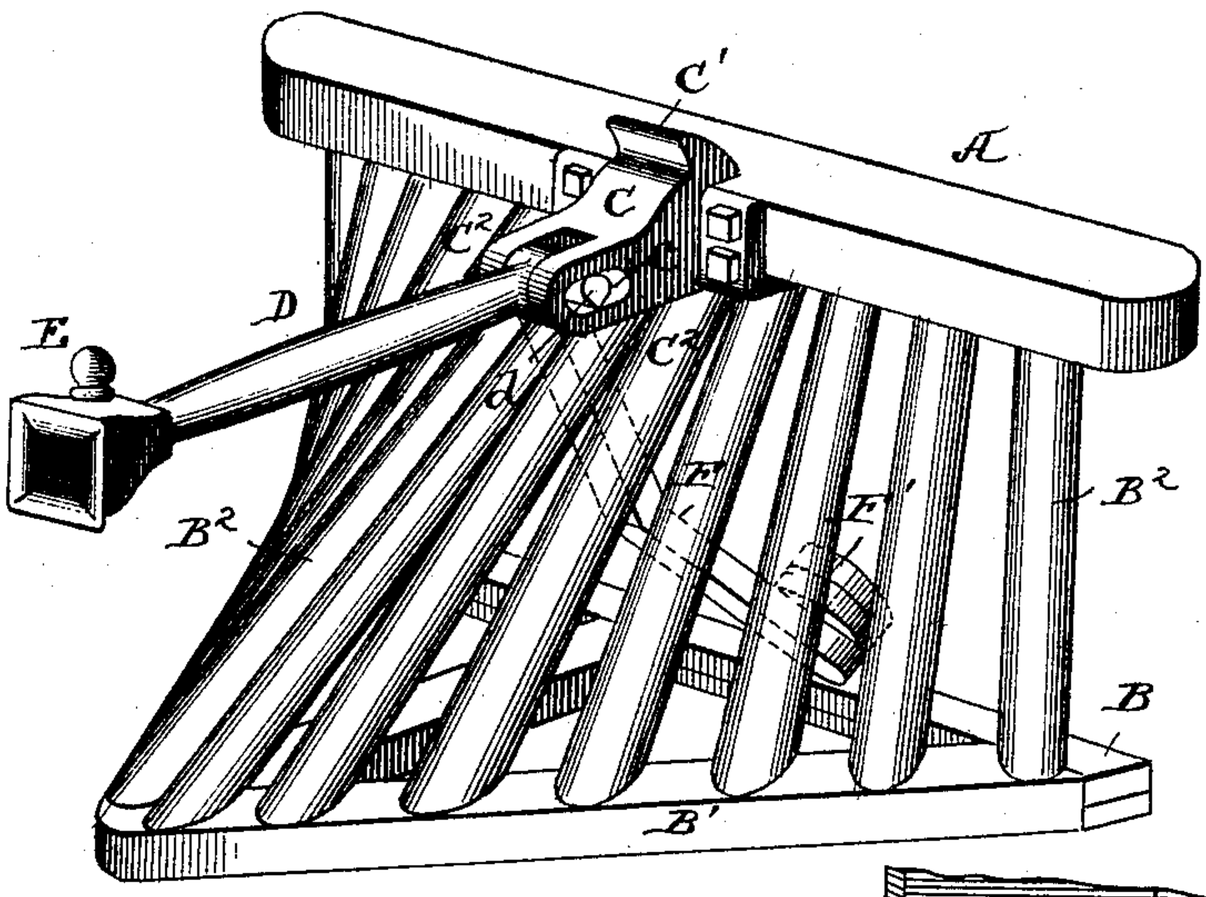


Fig. 2.

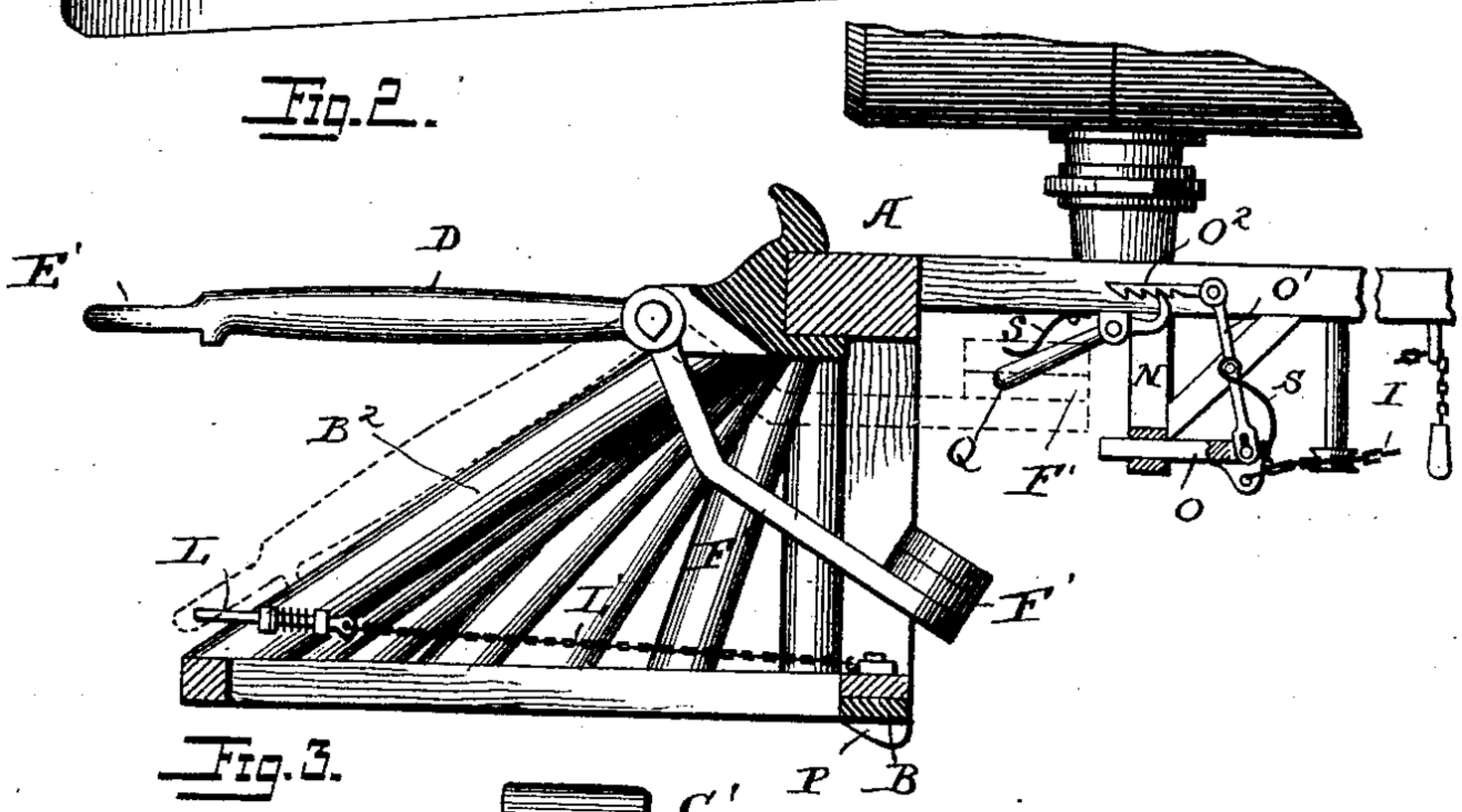
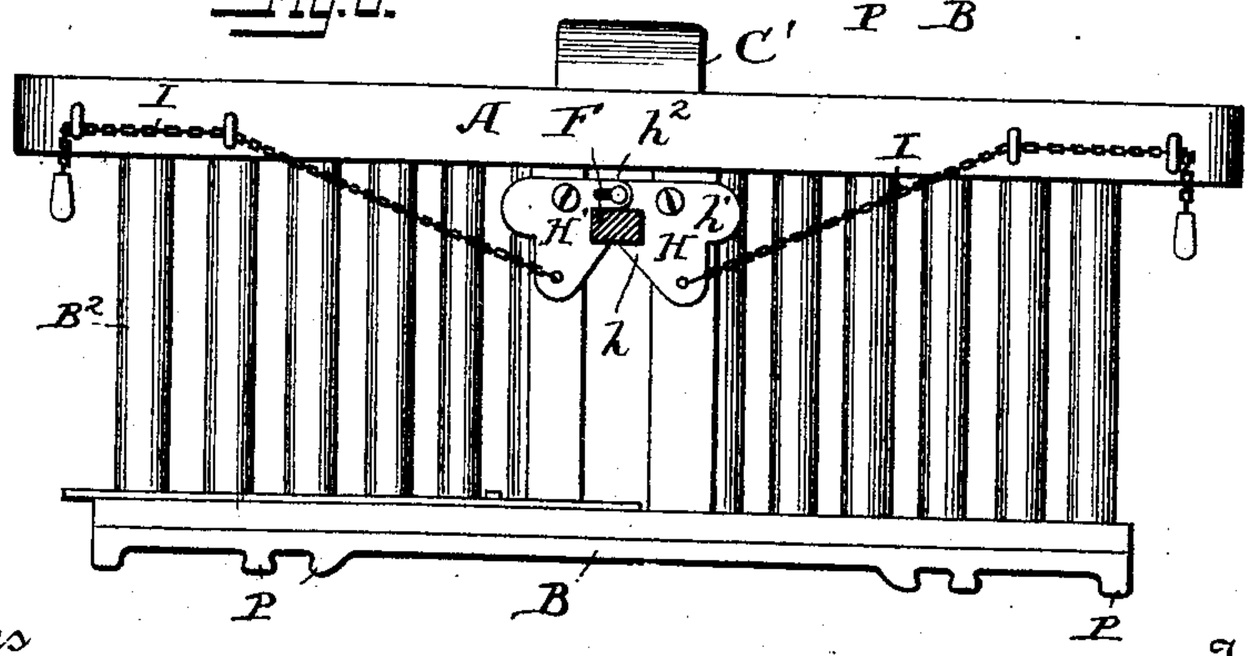


Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL R. HEIDELBERG, OF PALESTINE, TEXAS.

DRAW-BAR FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 480,923, dated August 16, 1892.

Application filed April 20, 1892. Serial No. 429,936. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. HEIDELBERG, a citizen of the United States, and a resident of Palestine, Anderson county, Texas, have invented certain new and useful Improvements in Draw-Bars for Locomotives, of which the following is a specification.

My invention relates to draw-bars for locomotives, and has for its object to improve the construction, arrangement, and operation of said draw-bars; and to these ends it consists in the various features of construction, substantially such as are hereinafter more particularly pointed out.

Referring to the accompanying drawings, Figure 1 is a perspective view of an ordinary pilot for a locomotive having my improved draw-bar attached. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a vertical section at the rear of the pilot, showing the locking means, as well as the safety attachment to the pilot.

The dangers of coupling cars are well known, and various means have been suggested to relieve the brakeman or other operator from some of the dangers. One of the most dangerous operations consists in coupling the ordinary draw-bar at the head of the locomotive with a car. As ordinarily constructed, this draw-bar lies upon the front portion of the pilot and is necessarily quite heavy and requires a considerable effort to lift it to a proper position to meet the coupler on the car. Furthermore, when the locomotive is coupled to the car it is almost always moving, and the operator either has to step and walk in front of the moving locomotive or stand on the pilot and hold the draw-bar in position. This is a hazardous position, for as usually constructed the pilots do not furnish a safe footing for the operator, especially in view of the jerks and jolts due to the moving locomotive, and it often happens that the operator is unable to properly guide or direct the draw-bar into the coupling and he is liable to be seriously injured in a manner which need not be pointed out to those skilled in the art. In order to avoid these objections, I provide the draw-bar with a counter-weight, which will substantially balance the bar and tend to hold it in its normal position ready for coupling, and I further provide means for locking the draw-bar in position on the pilot when not in use.

Referring to the drawings, A represents the end of the frame of the locomotive, to which the pilot is attached. This pilot consists of the bottom frame B B′, having inclined bars or rods B^2, extending from the frame to the plate A.

Mounted on the plate A is a bumper or head C, which is shown with an upward extension C′, which acts as an ordinary bumper and is provided with forwardly-extending arms C^2, which serve as a pivotal support for the draw-bar D, which draw-bar may be provided with a coupling-head E, or it may be provided with the link formed directly thereon, as shown at E′, Fig. 2. This draw-bar is provided with bearing *d*, fitting in the slots *c* in the lugs or arms C^2. These slots are preferably extended horizontally to allow a little longitudinal play of the draw-bar, and in order that it may turn easily in the slots I provide the bearings *d* in the shape of knife-edges on their lower sides, as shown in Figs. 1 and 2. Connected to the draw-bar is an arm F, extended downwardly and rearwardly and provided with a weight F′, which may be adjustable or otherwise, and is preferably of such a weight as to slightly overbalance the draw-bar and tend to hold it in the horizontal position shown.

When the engine is running, ordinarily the draw-bar D lies on the front portion of the pilot parallel to the inclined arms, as shown in dotted lines, Fig. 2, and in order to retain it in this position I provide some sort of a locking device. Various locking devices may be applied engaging various parts of the draw-bar or its counter-weight. Thus in Fig. 2 I have shown a simple bolt L, mounted on one of the rods B^2 and pressed forward by a spring to engage the link on the end of the draw-bar, and this may be provided with a rod or connection L′, running back on the foot-piece B′ of the pilot to a convenient position to be operated by the brakeman outside the track. In Fig. 3, however, I have shown a preferred form of locking device arranged to engage the weighted lever F, and while this may be of different construction I have shown it as consisting of two gravity-

pawls H, having hooks or projections h, with beveled faces and weighted portions h', while they are preferably connected together by slotted arms h^2. Connected to these weighted pawls are suitable operating devices, as a cord I, which extends outward along the bar A, for instance, and is provided with means whereby the brakeman can release the pawls or dogs and allow the weighted draw-bar to assume a proper position for coupling; but when it is restored to its normal position for traveling the weighted arm F will impinge upon the inclines of the dogs and separate them until it reaches its proper position, when they naturally fall into locking position.

Another form of locking device is shown in Fig. 2, in which a sliding bolt O, mounted in a suitable support, as a bracket N, and this bolt is connected to a lever O', carrying at its other end a ratchet-bar O^2, into which normally engages a weighted dog Q. A spring S, mounted on the fulcrum of the lever E, tends to force the sliding bolt forward, but is prevented from doing so by the weighted dog Q. When, however, the weighted arm F is moved upward, the weight F', impinging upon the weighted dog Q, releases it, allowing the spring S to throw the bolt O forward under the weighted arm and to hold it in position. When, however, it is desired to release the weighted arm and allow the draw-bar to assume the horizontal position, the brakeman or operator pulls on the cord I, which is arranged to extend outside the frame of the engine, preferably on both sides, and which passes around a small guide-pulley N' on a suitable standard, draws the bolt downward, releasing the weighted arm, and the dog Q engages the ratchet-bar O^2 and holds the lock in this position until it is automatically released by the weighted arm. The weighted dog may also be provided with a spring s to prevent its moving or being moved out of the teeth of the ratchet-bar.

From the above it will be seen that when it is desired to couple the engine to a car it is only necessary for the brakeman or other operator to release the locking-latch holding the draw-bar in its normal position, when the weighted arm will cause it to assume substantially a horizontal position, and oftentimes this will be sufficient to guide the draw-bar into the coupling device without the necessity of the brakeman touching the draw-bar. He can, however, if necessary, reach in from outside the track and with one hand guide or direct the draw-bar to the proper position to unite with the coupling, it being understood that the draw-bar is practically in equilibrium, so that it is easily moved upward or downward, while the elongated slots in which the bearings rest allow sufficient lateral movement. Thus the coupling of the locomotive to a car can be accomplished without exposing the operator to danger and without the necessity of his exercising any considerable amount of force or strength.

Another feature of my invention relates to the safety device for aiding in retaining the car on the track if, for instance, the wheels are derailed. In carrying out this branch of the invention I provide the cross-bar B of the pilot with a series of guides or projections P, which are arranged so that if the wheels slip off the rails on either side these projections P will serve to guide the pilot, and consequently the locomotive, and aid in preventing its running off the road-bed.

While I have illustrated and described the preferred construction and shown the embodiment of my invention, it will be understood that I do not limit myself to the precise details of construction and arrangement set forth, as it is evident that these can be varied and substantially the same results accomplished without departing from the spirit of my invention.

What I claim is—

1. The combination, with the frame of the locomotive, of the counterbalanced draw-bar mounted thereon, substantially as described.

2. The combination, with the frame of the locomotive and pilot, of a draw-bar mounted on the frame above the pilot, the draw-bar being provided with a counter-weight, substantially as described.

3. The combination, with the frame of the locomotive and pilot mounted thereon, of the draw-bar connected to the frame, devices for locking and holding the draw-bar on the pilot, and a counter-weight for automatically elevating the draw-bar when released, substantially as described.

4. The combination, with the locomotive-frame having a bumper-head provided with elongated slots, of a counterbalanced draw-bar having knife-edge bearings fitting said elongated slots, substantially as described.

5. The combination, with the frame, the pilot, and counter-weighted draw-bar, of the automatic locking devices for holding the draw-bar in its normal position and means for releasing the locking device from the outside of the frame, substantially as described.

6. The combination, with the frame and pilot, of the cross-bar of the pilot having downwardly-extending projections forming guides, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL R. HEIDELBERG.

Witnesses:
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