2 Sheets—Sheet 1.

C. C. BURNS.

Car Coupling.

No. 52,962. Patented Mar. 6, 1866.

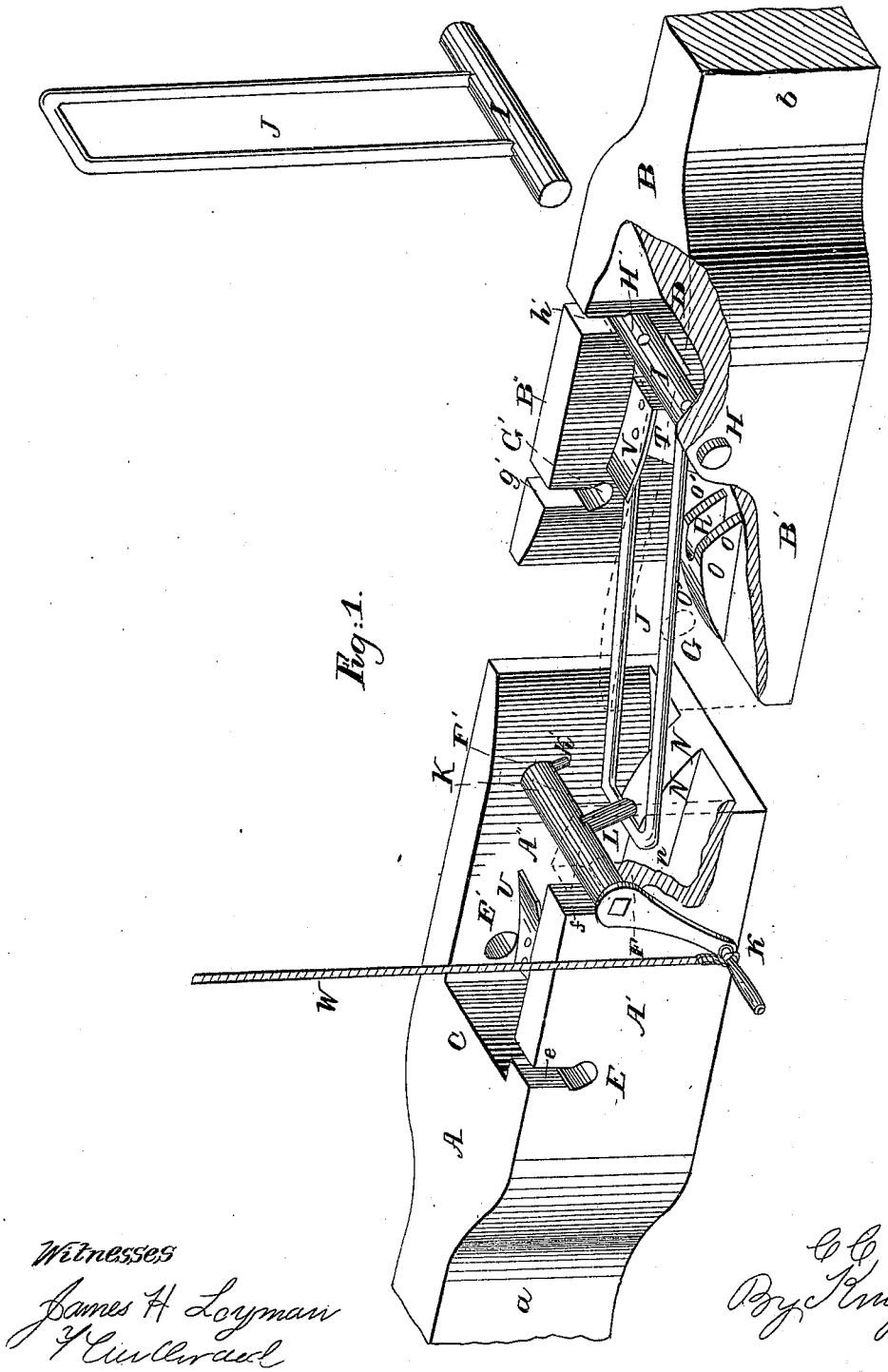

Fig: 1.

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2 Sheets—Sheet 2.

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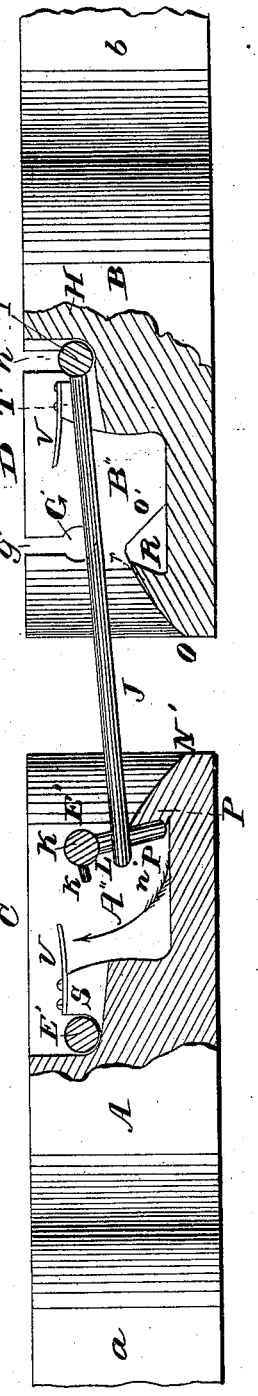
Fig: 2.



Witnesses

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UNITED STATES PATENT OFFICE.

C. C. BURNS, OF GREENSBURG, INDIANA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **52,962**, dated March 6, 1866.

To all whom it may concern:

Be it known that I, COLUMBUS C. BURNS, of Greensburg, Decatur county, Indiana, have invented new and useful Improvements in Railroad-Car Couplings; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to that class of car-couplings in which the cars are automatically connected by means of a link which is held in position by a gravitating catch or pin; and my improvement relates to certain devices for preventing the accidental detachment of the link, and also to an arrangement whereby the cars can be uncoupled without endangering the life of the operator.

Figure 1 is a perspective view of a car-coupling embodying my improvements, a portion being broken away so as to exhibit the construction. Fig. 2 is a longitudinal section through the same.

A and B represent two draw-heads, of any approved form, which are attached to the cars by the draw-bars *a* and *b*, and each draw-head is provided with a customary flaring mouth.

C and D are longitudinal throats or recesses, which contain the operating parts, and said throats have cheeks A′ A″ and B′ B″.

The cheeks A′ A″ are provided with horizontal apertures E E′ and F F′, while the cheeks B′ B″ have similar apertures G G′ and H H′.

The apertures E E′ and H H′ afford journal-bearings for the shaft I of a connecting-link, J, and the shaft K of the gravitating-pin L journals in the apertures F F′ and G G′.

The apertures E and F of the draw-head A, and also those G′ and H′ of the draw-head B, are provided with vertical slots *e f* and *g′ h′*, which enable the link J or pin L to be inserted in either of the draw-heads, as may be the most convenient or necessary.

N and O are projections placed midway of the mouth of the draw-heads, and each projection has an exterior sloping face, N′ O′, and two exterior and inclined faces, *n n′* and *o o′*, and between said faces *n n′* and *o o′* are pockets P and R, having shoulders *p r*, against which the gravitating-pin L abuts.

The interior ends of the recesses C and D are provided with vertical abutments S and T, and said abutments receive a greater portion of the strain which is brought to bear upon the shaft I of the connecting-link J, and prevent said shaft from being sprung out of line.

U and V are sheet-metal or other suitable stops secured to the upper faces of the abutments S and T, and said stops prevent the gravitating-pin L from making a complete revolution when it is forcibly struck by the connecting-link.

The shaft K has attached to it two small studs, *k k′*, which play against the inner face of the cheeks of the draw-heads, and thus prevent the accidental displacement of the shaft by any lateral motion. The stud *k′*, which is the most distant from the crank K′, is in a line with the pin L, while the nearest stud, *k*, is placed at right angles to said pin.

W is a cord or chain attached to the crank K′, by which the train can be uncoupled without the operator descending from the top of the car or the platform. If desirable, a rod may be substituted for the cord or chain.

Operation: The link J being properly adjusted in one draw-head and the gravitating-pin L in the other one, which is the work of a few moments only, the coupling is ready for action. When the draw-heads of two contiguous cars are brought in contact with one another the link J rides up on the exterior sloping face, N′, of the projection N and thrusts the gravitating-pin L aside, compelling it to describe a partail revolution, as indicated by the red arrow in Fig. 2. As soon as the gravitating-pin L has revolved a sufficient distance to enable the link J to pass under the free end of it said pin L instantly drops to its original position and, lodging against the shoulder P, prevents the link from being accidentally withdrawn, and the cars are thus instantly and securely coupled by their own momentum, and without endangering the life or limb of the operator. The cars being started and the tension being brought to bear upon the link, said link now ascends the interior faces, *n n′*, of the projection N and retains its position in the angle formed by said faces and the pin L, thereby dividing the strain between these two members of the coupling, as clearly shown in Fig. 2.

Whenever it is desired to uncouple the cars

the train is checked up, and after the draw-heads strike the pin L is rotated through the medium of crank K′ and cord W, and the pin being held in a horizontal position until the train resumes its motion, the link is withdrawn from the draw-head and the uncoupling of the cars is accomplished.

A person on the ground may uncouple the cars by means of the handle attached to the crank K.

It is immaterial which draw-head holds the link J, or which one contains the gravitating-pin L, as the operation of coupling or uncoupling are the same in either case, and the link or pin can be removed and inserted in either of the draw-heads in the following manner: To adjust the link J in the draw-head it is only necessary to hold it in a perpendicular position, as shown by red lines in Fig. 1; then place the end of the shaft I in the aperture H′, shove the link through the vertical slot *h′* and insert the entering end of the shaft in the aperture H. The link being allowed to fall, it at once assumes its proper position within the draw-head, and it can be instantly removed by simply reversing this operation—that is, by elevating it to a perpendicular position within the draw-head and forcing it out through the vertical slot *h′*.

The shaft K, to which the gravitating-pin L is secured, is placed in the draw-head by turning it until the pin L and the stud *k′* assumes a vertical position, so as to enable them to pass through the aperture F and vertical slot *f*, and as soon as the pin L has moved beyond the inner face of the cheek A′ the shaft is rotated one-fourth of a revolution toward the abutment S, which brings the stud *k* to a vertical position, and allows it also to pass through the slot *f*. In this last position of the shaft the pin L passes under the stop U, and the entering end of the shaft being inserted in the aperture F′, said shaft and pin are at once ready for action. It is only necessary to reverse this operation when it is desired to remove the gravitating shaft and pin from the draw-head.

Among the numerous advantages which my coupling possesses over those now in use the following may be enumerated: First, its perfect safety, there being no necessity for a person to pass between the cars, as they can be uncoupled either by the rope W or the handle of the crank; second, its reliability, the cars always coupling themselves the moment they come in contact with one another, and no amount of jolting or vibration can possibly disconnect them; third, its adaptability, as my link and pin can be inserted in any of the approved forms of draw-heads, or either the link or pin may be used in connection with the common link or pin. It can also be used on cars where the draw-heads are placed at different heights, equally as well as when they are in line.

I claim herein as new and of my invention—

1. The combination of the gravitating-pin L and projection N, with its accessories, for the purpose of dividing the strain which is brought to bear on the draw-head A by the link J, all arranged and operating substantially as set forth.

2. The stops U and V, or their equivalents, for the purpose explained.

3. The provision, in a draw-head, of the vertical slots *e f* and *g′ h′*, for the transposition of the link J and gravitating-pin L, in the manner described.

4. The vertical abutments S and T, for the purpose of preventing the shaft I of the link J from being sprúng out of line, also serving as a bearing for the same, in the manner described and set forth.

In testimony of which invention I hereunto set my hand.

C. C. BURNS.

Witnesses:

GEO. PILLING,

J. S. SCOBERY.