L. SPAIN.

Car-Coupling.

No. 220,678. Patented Oct. 14, 1879.

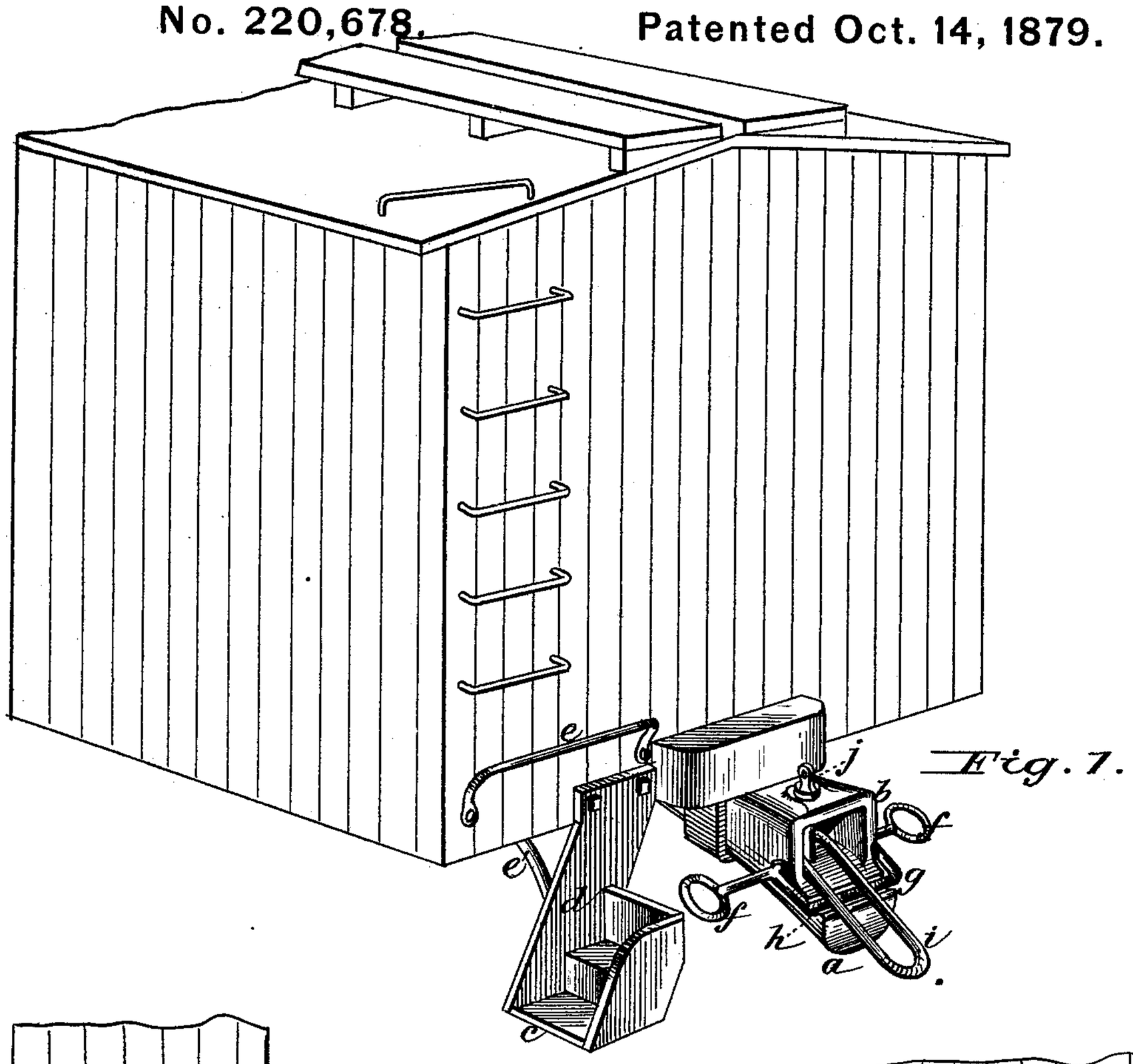

Fig. 1.

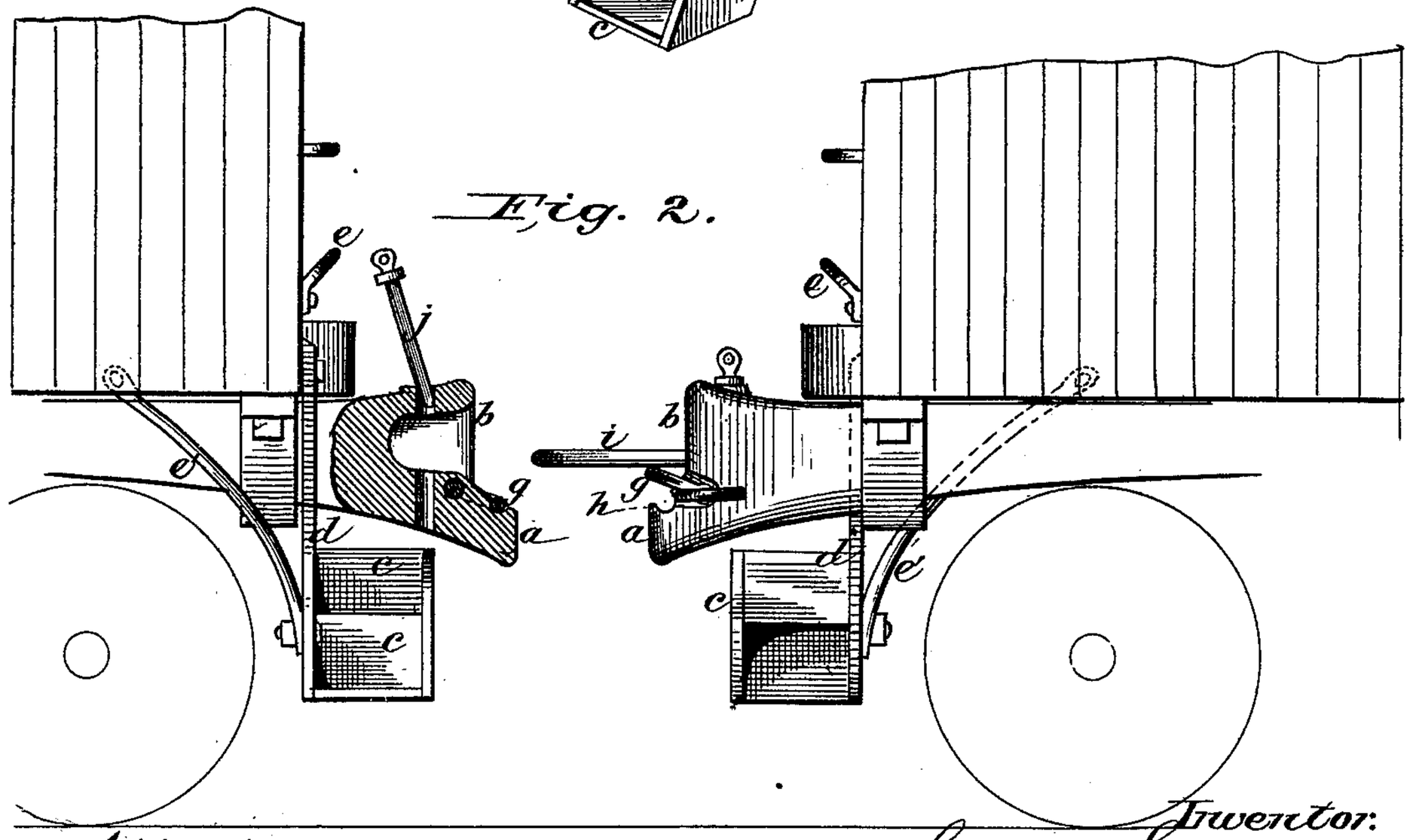

Fig. 2.

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LANSON SPAIN, OF NORTH LEWISBURG, OHIO.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **220,678**, dated October 14, 1879; application filed March 24, 1879.

To all whom it may concern:

Be it known that I, LANSON SPAIN, of North Lewisburg, in the county of Champaign and State of Ohio, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

My improvement is to obviate the danger incurred by persons coupling freight-cars in which the coupling link and pin are used. To this end I provide the draw-bar of each car with a frontward extension at the base of the link-receiving opening, so as to form the buffers and receive the concussion of the cars in making the coupling, leaving the link-receiving ends standing apart, with a clear way at each and above the buffers. The link projects from one of the draw-bars of the cars being coupled, and lies over the base-projecting buffer. This construction gives a clear way between the link-receiving ends of the draw-bars when the buffers meet, so that the link can be taken hold of and its free end raised and held in position to enter the mouth of the draw-head of the car to be coupled without danger of crushing the hand of the person making the coupling; because, instead of forming the buffers and receiving the concussion of the cars, as heretofore, the link-receiving ends, by my invention, do not serve such purpose, but only as the link-coupling bars, rising from the buffers back of their abutting ends, so that the link can be taken hold of from the side or from the top, and held with the hand between the draw-heads above the buffers, and free from injury while holding and guiding the link into the mouth of the approaching draw-head.

In cars having the link-and-pin coupling, as in freight-cars, and which vary in height, it is necessary that the link should be held up and guided into its connection with the moving car.

In connection with a draw-bar adapted to give safety to the hand in coupling, I have arranged a safety-step and hand-rail, by which the person making the coupling is supported in position free from danger and from liability to stumble and fall, so that he is both safe in body and in hands in coupling with my improvement.

In connection with my safety-coupling draw-bar and safety-step I use a lifting device for the link, pivoted in the draw-bar, and adapted to be operated by the person standing on the safety-step to raise and guide the link into the receiving-opening, and thus make the coupling without having to reach so far over as would be necessary in taking hold of the link directly with the hand. This lifting device lies upon the buffer beneath the link, and in such position it is not touched by the jamming of the buffers.

Referring to the drawings, Figure 1 represents a view, in perspective, of my improved safety-coupling device for freight-cars, and Fig. 2 a vertical section of the coupling device with the link raised in position to couple, and showing the ends of two cars as coming together for the purpose.

In freight-cars the coupling link and pin are used with draw-bars having open buffer-plates, into which the link passes, and which receive the concussion of the cars; and it is necessary when coupling that the link be guided by a person between the cars, and the hand is liable to be crushed between the buffers.

By my invention the buffer of the draw-bar is formed by a base-projection, *a*, leaving the link-receiving end of the draw-bar *b* standing back from the face of the buffer, so that when the buffers are in contact there will be a clear way above them in front of each open-end draw-bar, and the hand can be reached into this space from the top or side and hold and guide the link, as may be required, without danger of injury, as the buffers are below the link, and when they come together they leave ample room above their abutting ends for the handling of the link between the open ends of the draw-bars, which do not meet.

The buffer-extensions stand on a downward incline with the draw-bar, so that the force of the concussion will be upward upon the car, and the buffers are of sufficient size to work together under all circumstances, and adapted to resist the continuous strain to which they are subjected.

The buffer may be formed with the draw-bar or separate and bolted to it, as may be found best for use. This construction renders it safe in using the hand to hold and guide

the coupling-link, as the projection of the buffers when in contact will give ample handway clearance between the open ends of the draw-bars.

To insure the safety of the person making the coupling, I arrange a safety-step, *c*, secured by a depending arm, *d*, to the end sill of the car, and upon which the person stands while coupling and uncoupling the cars, and thus avoid the danger of his stumbling and falling between the cars, especially when they are in motion, as has often been the case. The steps are formed upon the lower end of the arm *d*, at one side of the coupling, and are from eighteen to twenty inches high, to allow the person to stand erect upon them in position to reach his right hand to take and guide the link or to uncouple the pin, while with his left hand he grasps a sill-rail, *e*, by which he holds himself secure in such operation. The step *c* is made firm by a brace, *c'*, extending from the bottom of the arm *d* upward, and is bolted to one of the timbers of the car-bottom.

The safety device thus constructed is complete for coupling and uncoupling cars; but I may use a link-lifter in connection with the draw-bar, by which, instead of taking hold of the link by the hand, the person may grasp the handle *f* of a lifter, *g*, which extends from said handle beneath the link and lies upon the top of the buffer-extension, so that by turning the handle-rod the lifter raises the link and holds it in position to enter the mouth of the draw-head of the car moving up to be coupled, and thus relieves the person from reaching over to effect this operation by taking the link in his hand. In thus using the lifter it lies in a cross-groove, *h*, on the top of the buffer-extension, so as to not interfere with the link in coupling.

This link-lifter may be used without the safety-step attachment by extending the handles of the link-lifter out far enough to allow the person to operate it without requiring him to pass in between the cars in making the coupling; but the safety-step gives the advantage of both coupling and uncoupling, and may be used with my new buffer draw-bar with or without the link-lifter. The safety-step is arranged at the opposite corners of the car, so as to allow the use of the right hand in coupling or uncoupling.

The draw-bar is secured to the car in any suitable manner, and the coupling-link *i* and coupling-pin *j* are of the usual kind. The handles of the link-lifter extend from both sides of the draw-bar, so that if the person be on the standing car, and the link is in the moving car, he can reach the handle and make the coupling without taking hold of the link.

I claim—

1. The draw-bar of a car-coupling having the buffer formed by a base-extension from the open-end draw-bar, leaving a clear way above said buffer for the direct handling and guiding of the link in coupling the cars.

2. A car having a buffer formed by a base-extension from the open-end draw-bar, leaving a clear way above said buffer, a safety-step depending from the end car-sill, and a hand-rail, all constructed for use in coupling and uncoupling cars, as set forth.

3. The combination, with the draw-bar of a car-coupling having the buffer formed by a base-extension from the open-end draw-bar, leaving a clear way above said buffer, of a link-lifter carried by said draw-bar and adapted for use in raising and guiding the link in making the coupling, substantially as stated.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

LANSON SPAIN.

Witnesses:

RICHARD M. DAVIS,

JOHN EPPS.