

(No Model.)

H. SMALL.
CAR COUPLING.

No. 424,509.

Patented Apr. 1, 1890.

Fig. 1.

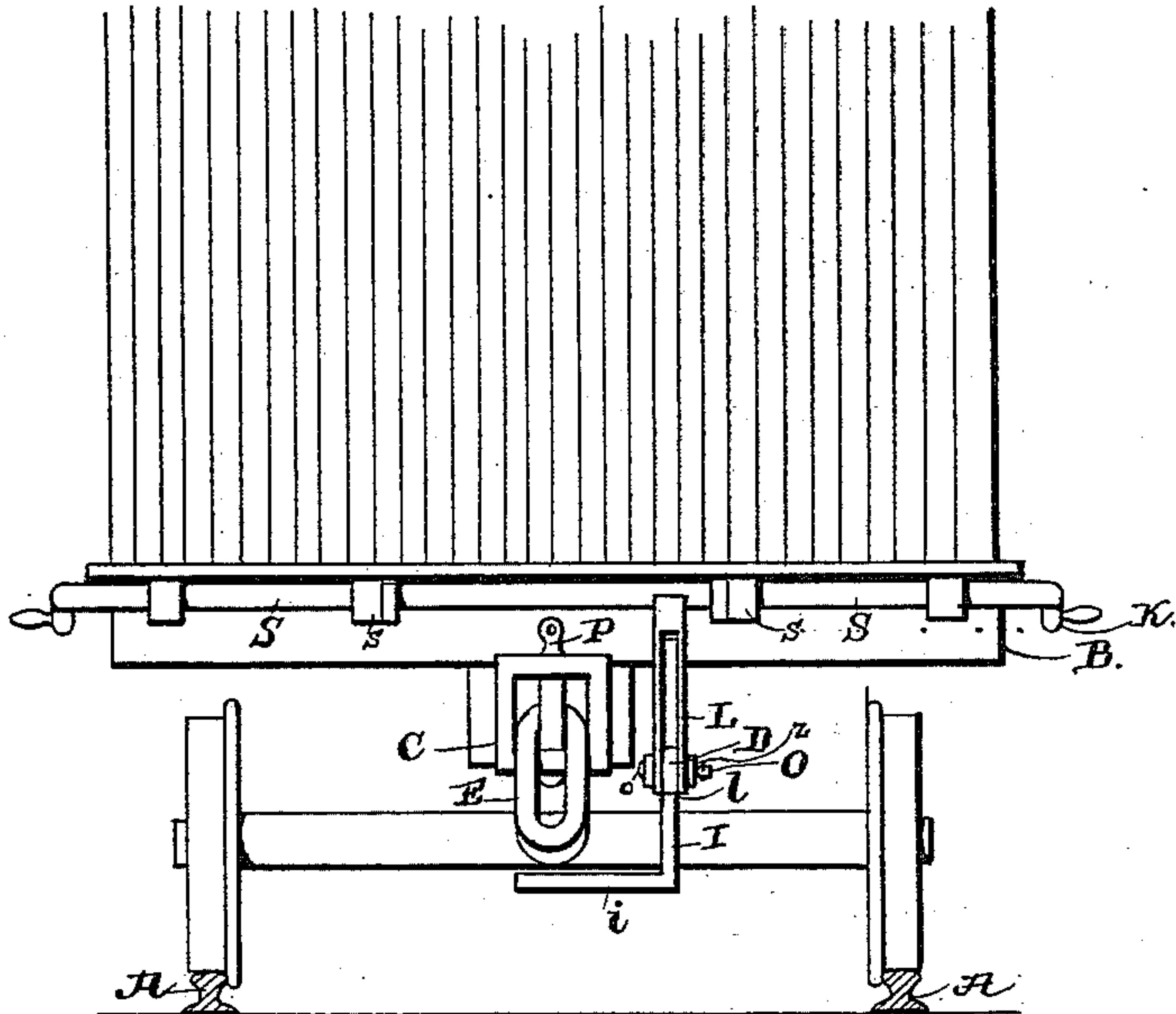


Fig. 2.

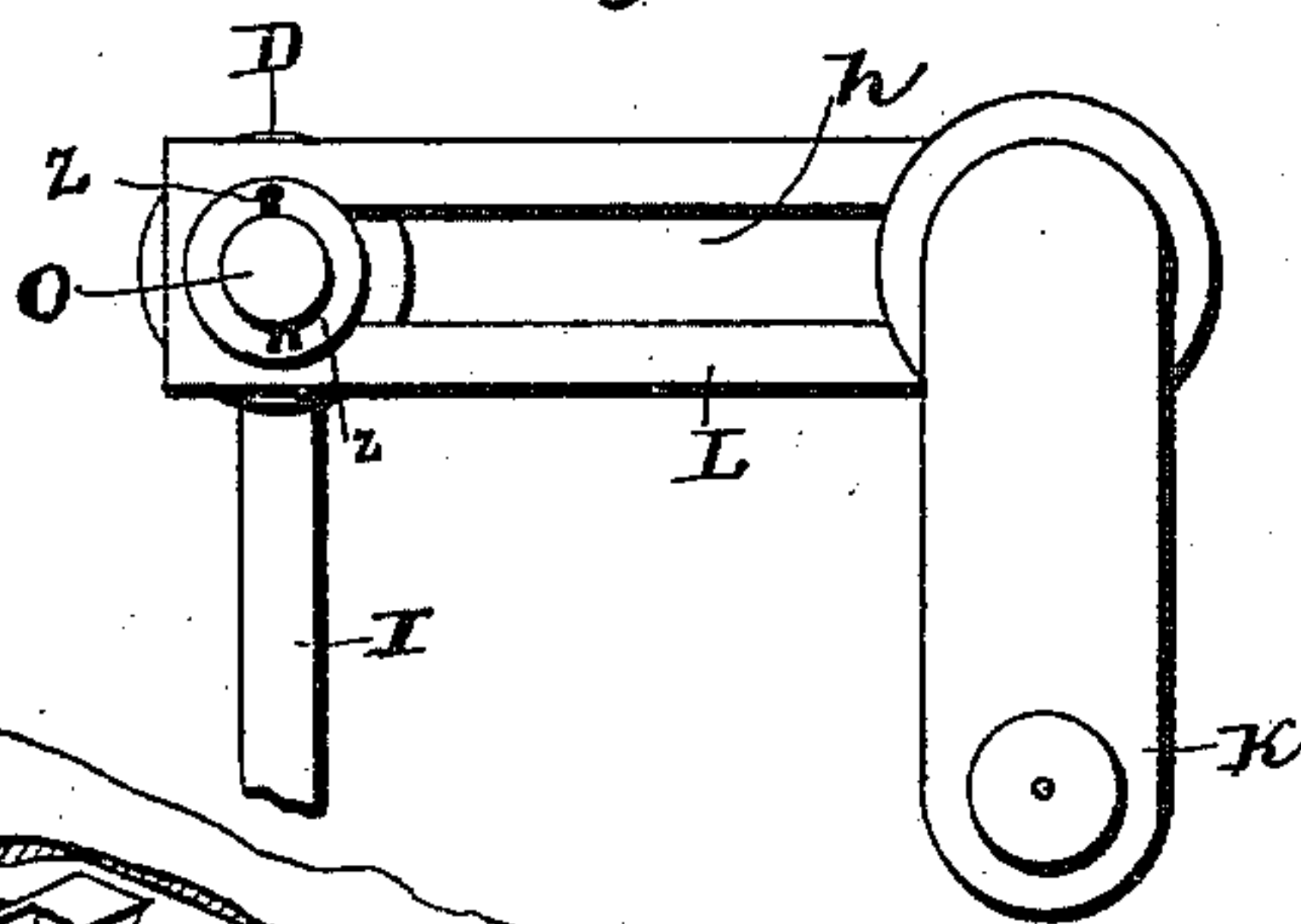


Fig. 3.

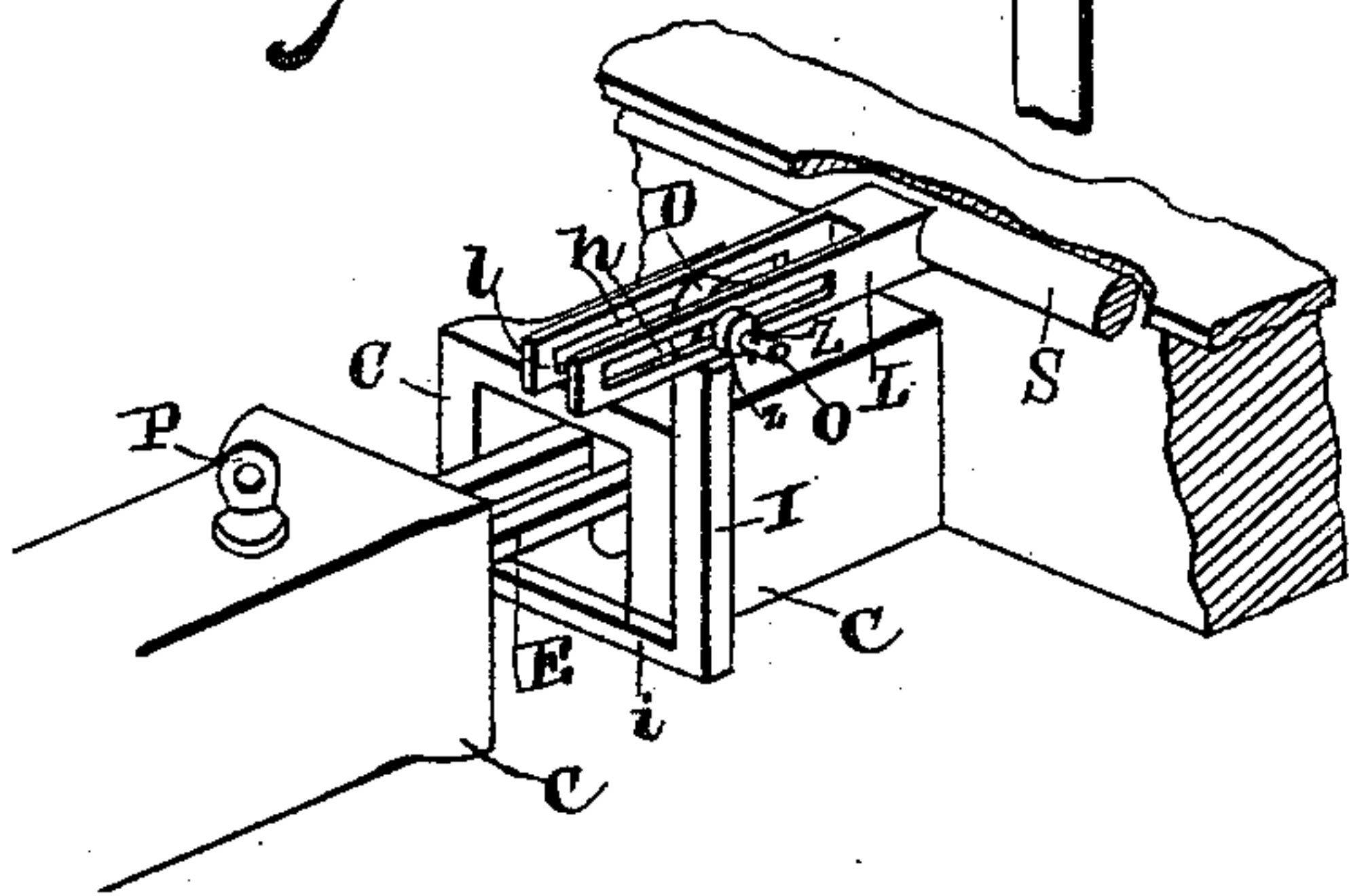
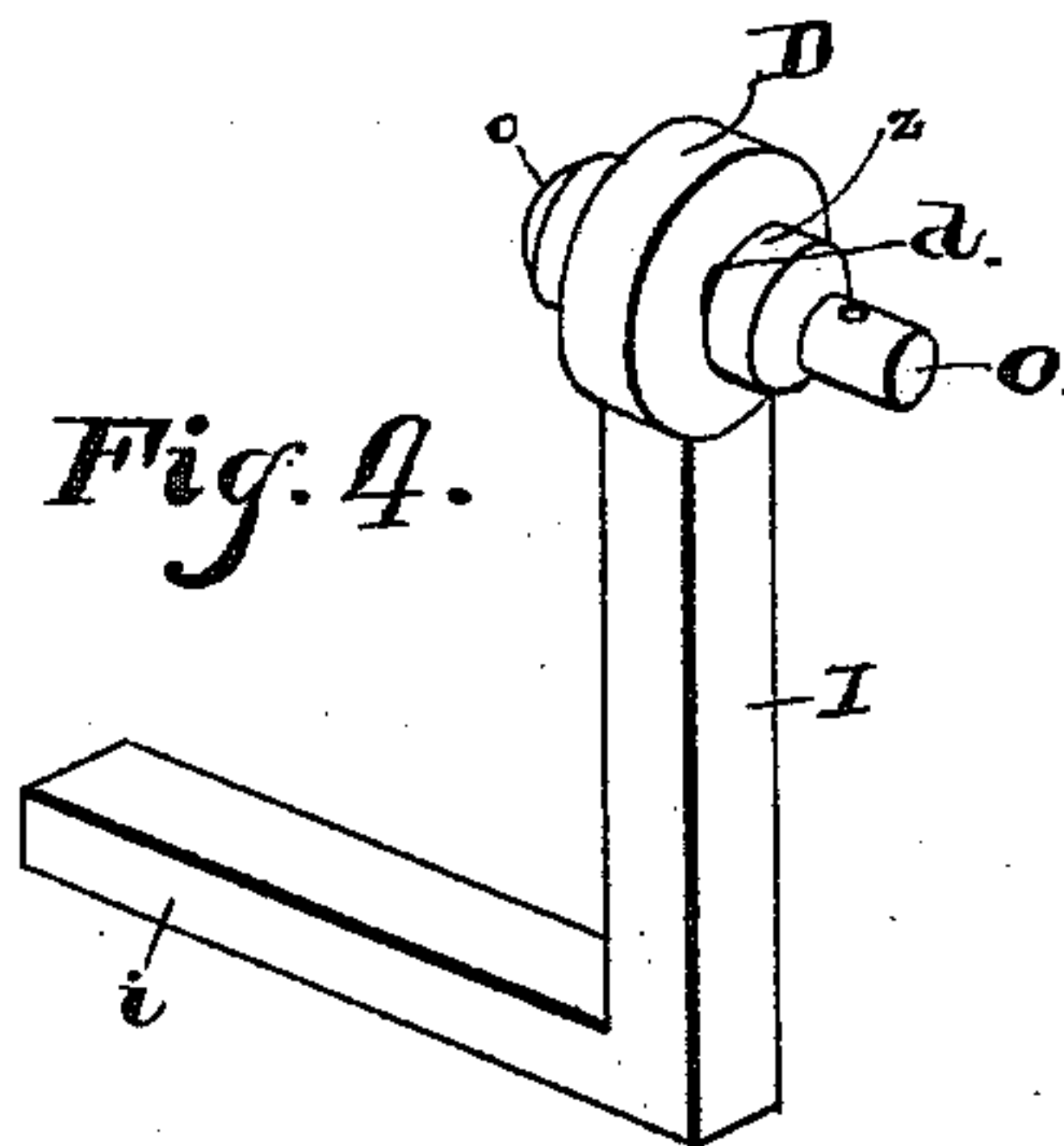


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 424,509, dated April 1, 1890.

Application filed January 16, 1890. Serial No. 337,070. (No model.)

To all whom it may concern:

Be it known that I, HENRY SMALL, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Car-Coupling, of which the following is a specification.

This invention relates to car-couplings, and more especially to that part or portion of the mechanism usually termed "link-lifters;" and the object of the invention is to provide means whereby the link can be lifted and caused to enter the draw-head of an approaching car by the operator when standing alongside the stationary car. I attain this object by the mechanism hereinafter described, and illustrated in the accompanying drawings, forming a part of the specification, and in which—

Figure 1 is an end view of a car with my improved link-lifter attached. Fig. 2 is a side elevation of the link-lifting arm proper, showing the pivoted lifter attached thereto. Fig. 3 is a perspective detail view of the arm and lifter, showing their manner of connection. Fig. 4 is a perspective detail of the lifter detached.

The letter A represents the track, B the car-body, C the coupling, E the link thereof, and P the pin for retaining the link in position, all as is common and well known.

Across the end of the platform of the car or the end of the car-body B, I place the rock-shaft S, which turns in suitable bearings s, and at the ends thereof I provide the crank-handles K, all as clearly shown in Fig. 1 of the drawings.

At a point in the length of the rock-shaft S, a little to one side of the draw-head C, I provide the lifting-arm L, whose outer end is provided with a vertical slot *l*, opening through the said end, and with a pair of horizontal slots *h*, whose outer ends are closed, all as shown in Fig. 3.

The letter I designates the lifter proper, which is provided with an enlarged head D, having a transverse eye *d*, and comprises a vertical shank having a lateral arm *i* at its lower end. The apertured eye *d* at the upper end of the lifter is passed into the vertical slot *l* in the lifter-arm and a transverse bolt O passed through the eye therein, its ends loosely engaging the side slots *h* in the said lifting-arm. One end of the bolt is provided

with an integral head *o*, and the other is laterally perforated to receive a pin Z, this pin retaining the collar or washer *z* in place.

The parts of my device being arranged as above described, the operation of the same is as follows: The lifting device normally hangs in the position shown in Fig. 1; but when it is desired to couple a car to another car provided with the lifter the latter is operated by the crank-handle K to bring the lifter into operative position. The crank turning the rock-shaft S in its bearings, the arm L is raised to about a horizontal position when the lateral arm *i* of the lifter engages beneath the link, as will be readily understood. The link is now raised to the desired point to cause it to enter the opening in the draw-head of the approaching car, and the pin in the last-named car is dropped into place, thereby coupling the cars.

Devices similar somewhat to mine have heretofore been constructed, and it was found by experience that with cars having platforms and ends of a great variety of shapes and sizes the outwardly-projecting end of the lifting-arm L was frequently struck by the approaching car, resulting in the bending, breaking, or smashing thereof, and the complete destroying of the link-lifter. Various remedies for this objectionable feature have been suggested, all more or less effective; but the present construction combines the points of simplicity, economy, durability, and double prevention of the evil referred to—that is to say, the pivoted lifter I is adapted to swing longitudinally of the car, and this motion prevents its breakage by being struck by any part of the approaching car; but in addition to this the slots in the lifting-arm L permit the lifter I not only to swing around its pivot, but to move bodily therein, as will be clearly understood. By this construction, even if the lifter became accidentally distended and were struck when in such position by some part of the approaching car, it would move bodily on its pivot and no injurious results would follow.

It frequently happened heretofore that at the moment the coupling was taking place the following state of affairs occurred: The lifter was beneath the link of the stationary car, the tip of the link entered the draw-head

of the approaching car and was sustained in position therein, the utility of the lifter being then at an end, but the approaching car still moving. A continued movement of this car
 5 of course brings the two draw-heads together, and the lifter must automatically pass from between them. It is naturally expected that the operator will drop the crank and allow the lifter to fall; but experience has proven
 10 that such is not always the case, especially with inexperienced hands. The result is that the draw-head of the approaching car strikes the lower end of the lifter, and even though the latter may be supported at its upper end
 15 on a pivot, still the lifter is caught in the mouth of the draw-head or against the face of the same if it happen to be somewhat higher than the draw-head of the stationary car, and the lifter is crushed.
 20 By the use of the present device the only rigid arm that projects from the rock-shaft is at one side of the draw-heads, and is preferably made long enough and located at such height on the end of the car that it will not
 25 strike any portion of the approaching car. The lifter proper hangs from the lifter-arm and only its lateral arm *i* passes under the link. The lifter may therefore turn on its pivot, slide bodily on its pivot, or both, at the
 30 moment the cars are coupled, and the impact of the two draw-heads will therefore cause no destruction of the link-lifter.

I claim as the salient points of my invention—

35 1. In a link-lifter, the combination, with

the rock-shaft journaled across the end of the car, of the arm projecting forwardly therefrom, and the lifter connected to said arm by both pivot and slot and pin connections, substantially as described. 40

2. In a link-lifter, the combination, with the rock-shaft journaled across the end of the car and the lifting-arm projecting forwardly therefrom, the front end of said arm being horizontally slotted, of the lifter pivoted at its
 45 upper end on a pin seated in said slot and having a lower end standing normally beneath the link, substantially as and for the purpose set forth.

3. The combination, with the rock-shaft 50 journaled across the end of the car and the arm projecting therefrom at one side of the draw-head, the outer end of said arm being vertically bifurcated and each bifurcation having a longitudinal lateral slot, of the lifter 55 having a head sliding in said vertical slot between the bifurcations and a lateral arm at its lower end passing beneath the link, a bolt passing through said head and sliding loosely in said side slots in the arm, and a pin for 60 holding said bolt in place, the whole constructed as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY SMALL.

Witnesses:

JNO. A. GREEN, Jr.,

M. F. COLLINS.