(No Model.) 2 Sheets—Sheet 1.

J. A. HINSON.

CAR COUPLING.

No. 509,372. Patented Nov. 28, 1893.

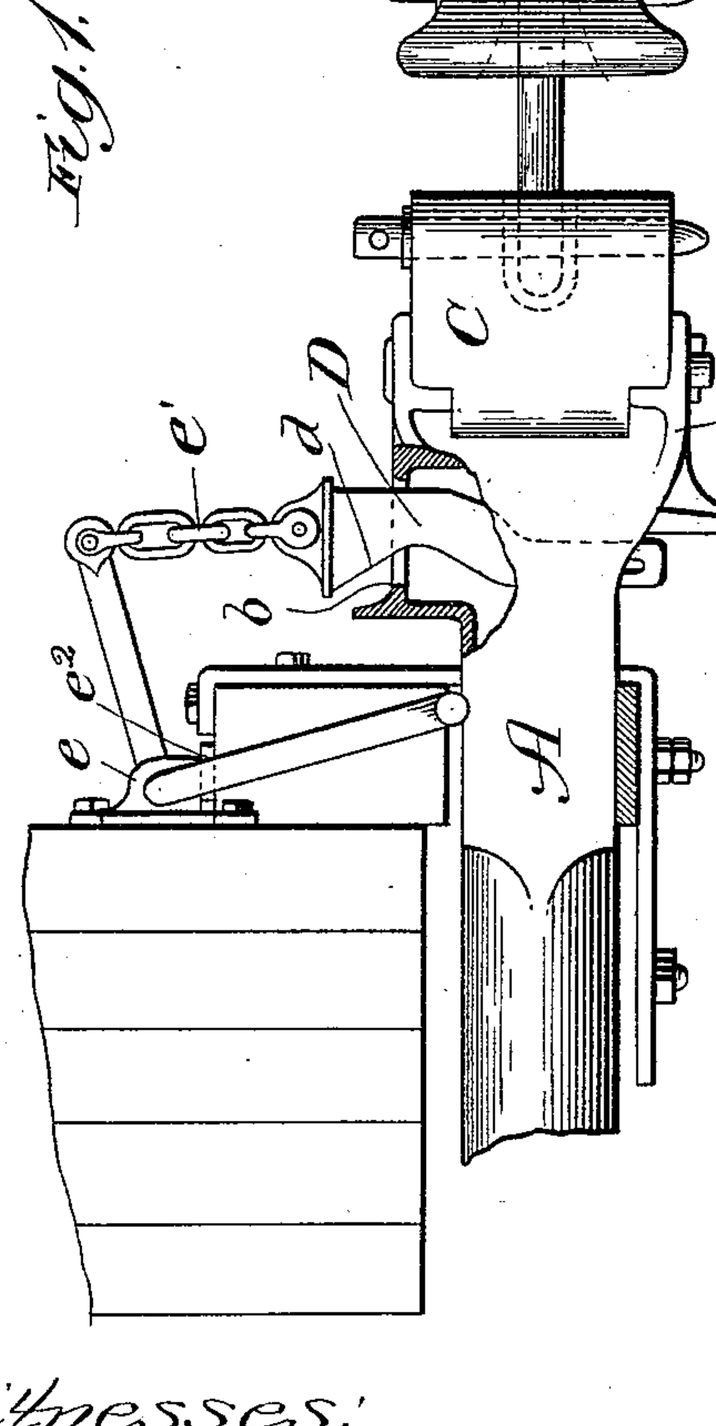

Fig. 1.

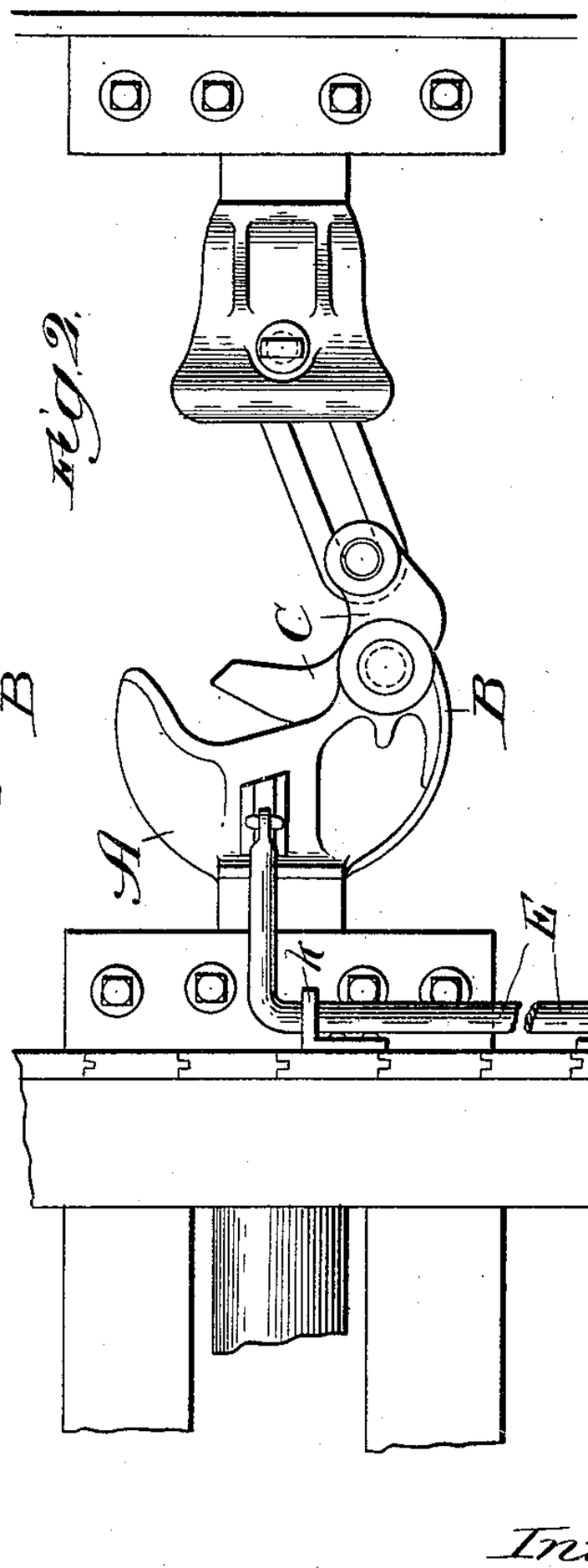

Fig. 2.

Witnesses:
Chas. E. Gaylord.
Clifford N. White.

Inventor:
James A. Hinson,
By Banning & Banning & Payson,
Att'ys.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

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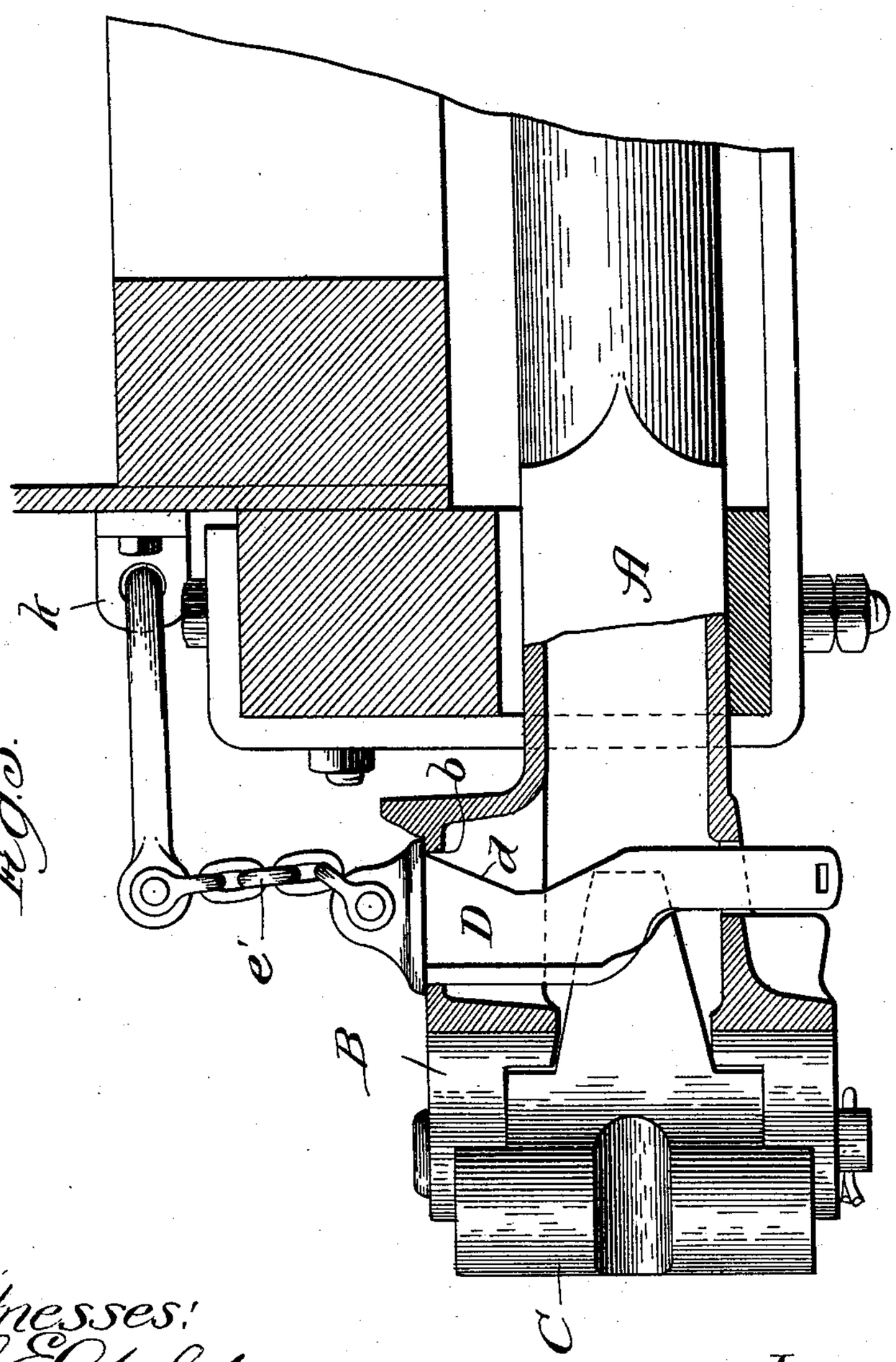

Fig. 3.

Witnesses:
Chas. E. Gaylord.
Clifford N. Hiete.

Inventor:
James A. Hinson,
By Banning & Banning & Payson,
Attys.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES A. HINSON, OF CHICAGO, ILLINOIS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 509,372, dated November 28, 1893.

Application filed February 28, 1893. Serial No. 464,068. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. HINSON, of Chicago, Illinois, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification.

My invention relates to that class of car couplings which are so constructed that when the coupling head is drawn out beyond a limited range of motion, the coupling pin will be automatically withdrawn; and it has for its object the construction of a car coupling by means of which, when the coupling knuckle is set so as not to couple with one of its kind and is coupled with an ordinary link and pin coupling, and the coupling pin lifted into its up position, provision is made for a limited range of motion without tearing the pin lifting device from the end of the car or destroying any of its parts; and the invention consists in the details and combinations hereinafter described and claimed.

In the drawings Figure 1 is a side elevation of my improved coupler set so as not to couple with one of its kind, and coupled with an ordinary link and pin coupling. Fig. 2 is a plan view of the same, and Fig. 3 a side elevation, partly in section, showing my improved coupler head arranged to mate with one of its kind.

Automatic car couplers which are provided with draft riggings and a draft spring with ordinarily two inches of positive and negative motion, which we term a limited range of motion, to absorb the shocks and concussions due to the coupling and uncoupling of cars, are so constructed that when they are set not to couple with one of their kind, with the pin lifted and the chain to the pin lifter drawn tight and drawn back toward the car, say at an angle of ten to twenty-five degrees, as is usually the case, then if a link coupling is made to the master car builder's knuckle and the arrangement is not released, which is a common occurrence with careless operators, it will be found that when an attempt is made to start a loaded car the compression of the spring used in the draft rigging will permit the coupling head to be drawn forward about two inches. No provision having been made for the pin lifter to admit of this motion, the result is that some portion of the mechanism is broken or destroyed. Again, when the coupler is coupled with a mating coupler and the draft rigging drawn forward to its limited range of motion, the chain to the pin lifter is usually drawn tight or nearly so. Should there from any cause, due to breakage or destruction of parts, be an excess in the forward motion of the coupler head, the pin lifter would be torn from the end of the car and the coupler thrown on the track and be liable to derail the cars following and causing considerable damage. To obviate these disadvantages and difficulties is the principal object of my invention.

In constructing my improvements, I use a draw-bar A, of the ordinary construction, provided with a coupling head, D. The draw-bar is arranged between the draft timbers or sub-sills of the car and fastened to the under side of the longitudinal sills of the car in the usual or any other convenient manner. Pivotally secured to the coupling head is a knuckle, C, of the usual twin jaw type, but which can be made in any desired shape to meet the circumstances required. The knuckle is locked in its closed position by means of a coupling pin, D.

To provide means for unlocking the knuckle, I secure to the end of the car a bell crank lever, E, supported in brackets, *e*, and which is connected at one of its lever ends to the coupling pin by means of a chain, *e'*, so that the rotation of this bell crank lever can be used to lift the pin into that position shown in Fig. 1, thereby permitting the knuckle to be unlocked with one of its kind. One of the brackets is provided with a cam surface, e^2, so arranged that when the bell crank lever is turned to that position to lift the pin, as shown in Fig. 1, it can be pushed toward the center of the car onto this cam surface, and held in that position, more particularly shown in Fig. 2.

To prevent the pin lifter from being torn from the end of the car when the coupler is set so as not to couple with one of its kind, I provide a coupling pin with an inward beveled notch, *d*, (which I term a cam surface) at its inner side, preferably that side nearest the end of the car, so that when the pin is lifted to the position shown in Fig. 1, and the knuckle is coupled with an ordinary link and pin coupler, if the coupling head should

be drawn forward, there is sufficient play between this beveled notch and the recess in the coupling head to permit an ordinary forward motion due to the compression of a draw-bar spring.

When the coupling knuckle is locked or coupled with one of its kind and the pin lowered into its locking position, as shown in Fig. 3, the chain will permit the coupling head and draft rigging to be drawn forward, ordinarily about two inches, which is usually termed the limit or range of motion. Should there from any cause, due to breakage of the parts of the draft rigging or coupler, be a forward motion in excess of this limited range the projecting end, *b*, of the upper recess in the coupler head will strike against the cam surface of the pin. The lower end of the pin fits in a lower recess of the coupler head, which is somewhat longer than the size of the pin in the direction of the length of the coupler, and permits the pin to be thrown at an angle due to the tension and angle of the chain. The continuing of this excessive forward motion will cause the projection in the end of the upper recess to act on the cam surface of the pin and facilitates the unlocking of the coupler. The knuckle being permitted to unlock, its car is uncoupled from the preceding car and the draft rigging and coupler remain in place, and are not pulled forward out of their supports and thrown on the track, causing the derailing or destruction of the cars following.

I claim—

1. In car couplers, the combination of a coupler head provided with a rotating knuckle, and a coupling pin provided with an inwardly extending notch on the side nearest the car head, whereby a forward motion is permitted to the coupler head without affecting the pin lifting device when the pin is in its uppermost position, substantially as described.

2. In car couplers, the combination of a coupler head provided with a rotating knuckle, a coupling pin provided with an inwardly extending notch, whereby a forward motion is permitted to the coupler head without affecting the pin lifting device when the pin is in its uppermost position, and means for lifting the pin into its uppermost position, substantially as described.

JAMES A. HINSON.

Witnesses:
THOMAS F. SHERIDAN,
SAMUEL E. HIBBEN.