

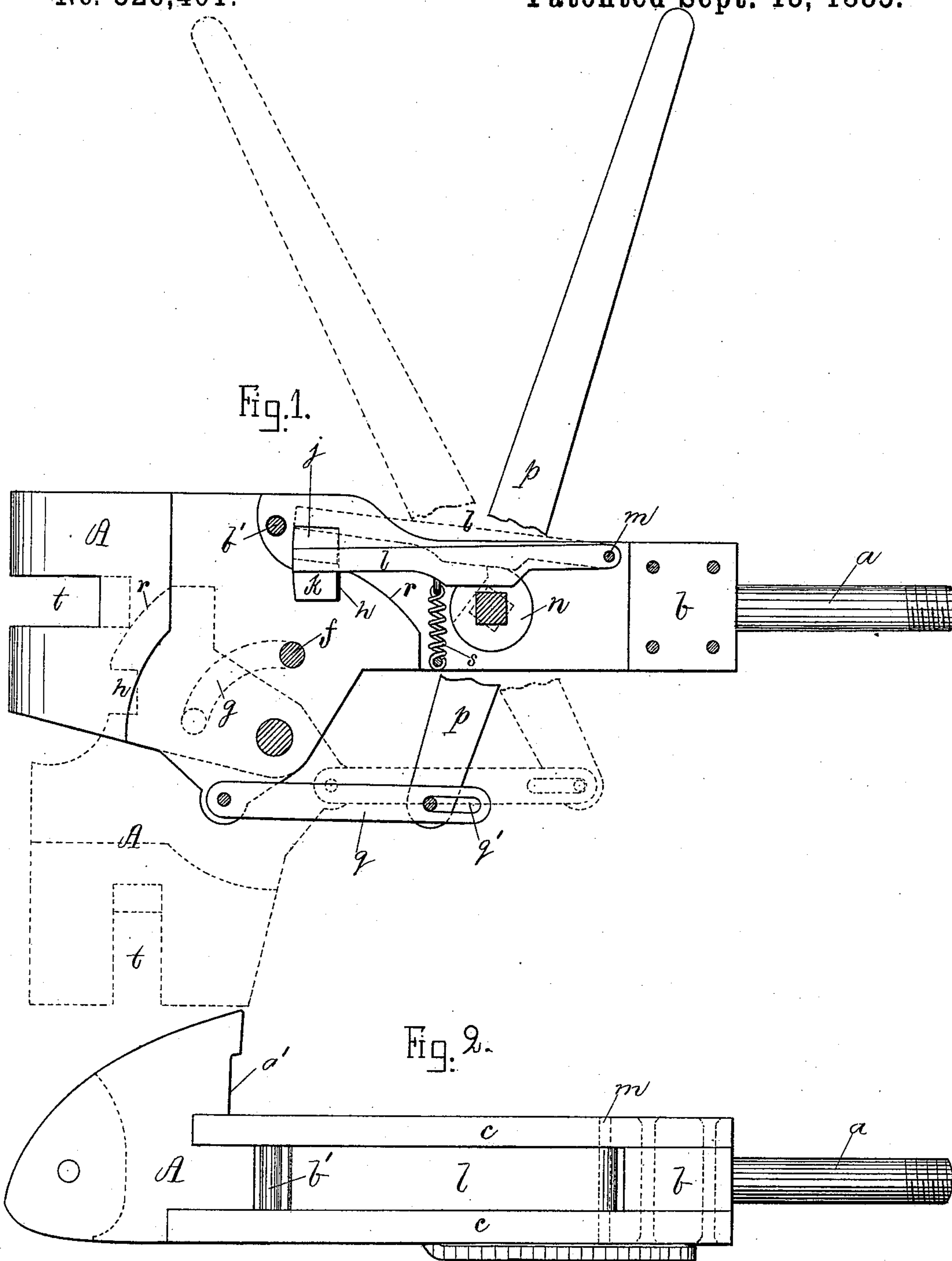
(No Model.)

2 Sheets—Sheet 1.

F. A. CASEY,
CAR COUPLING.

No. 326,401.

Patented Sept. 15, 1885.



Witnesses.

Robert Wallace,
Lauritz N. Möller.

Inventor.

Frederick A. Casey
by *Wm. A. MacLeod*
his atty

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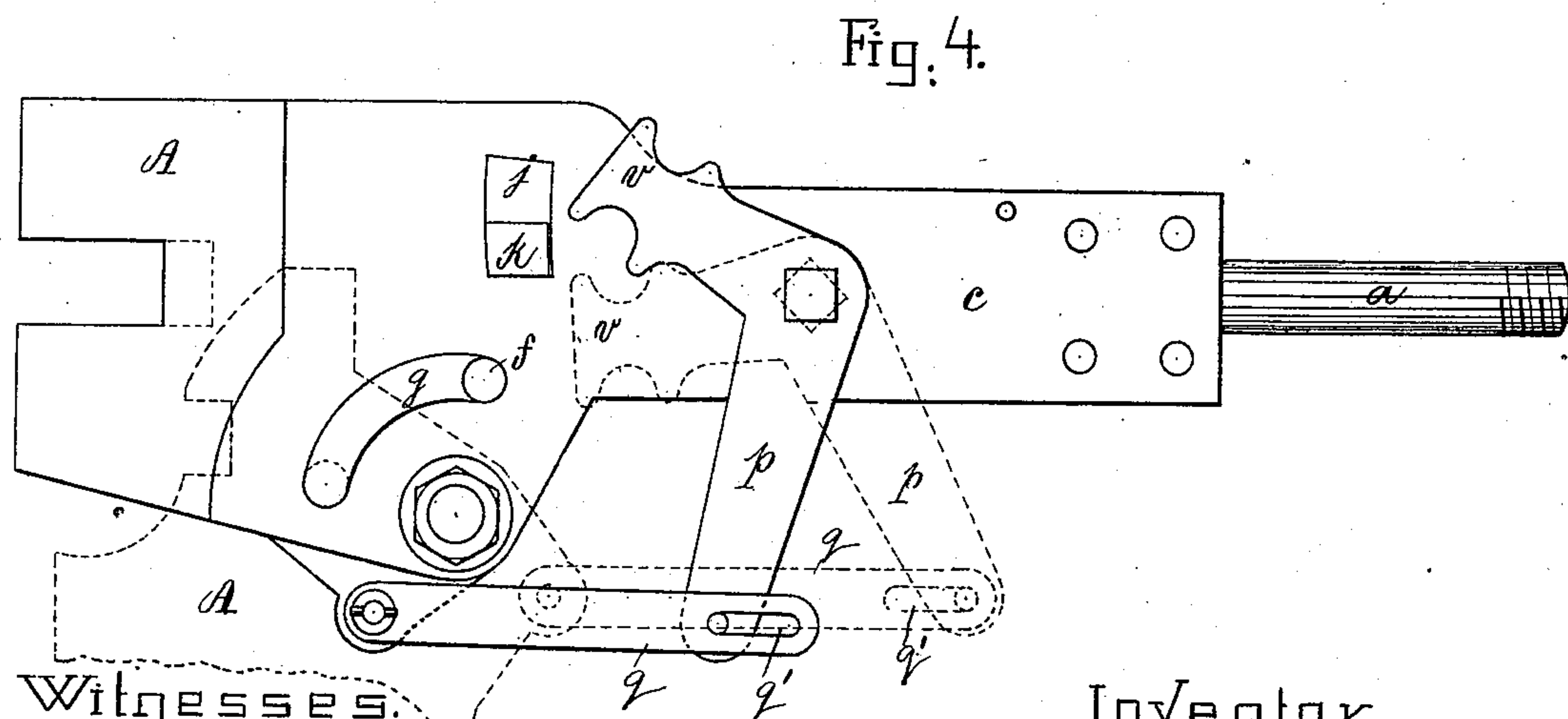
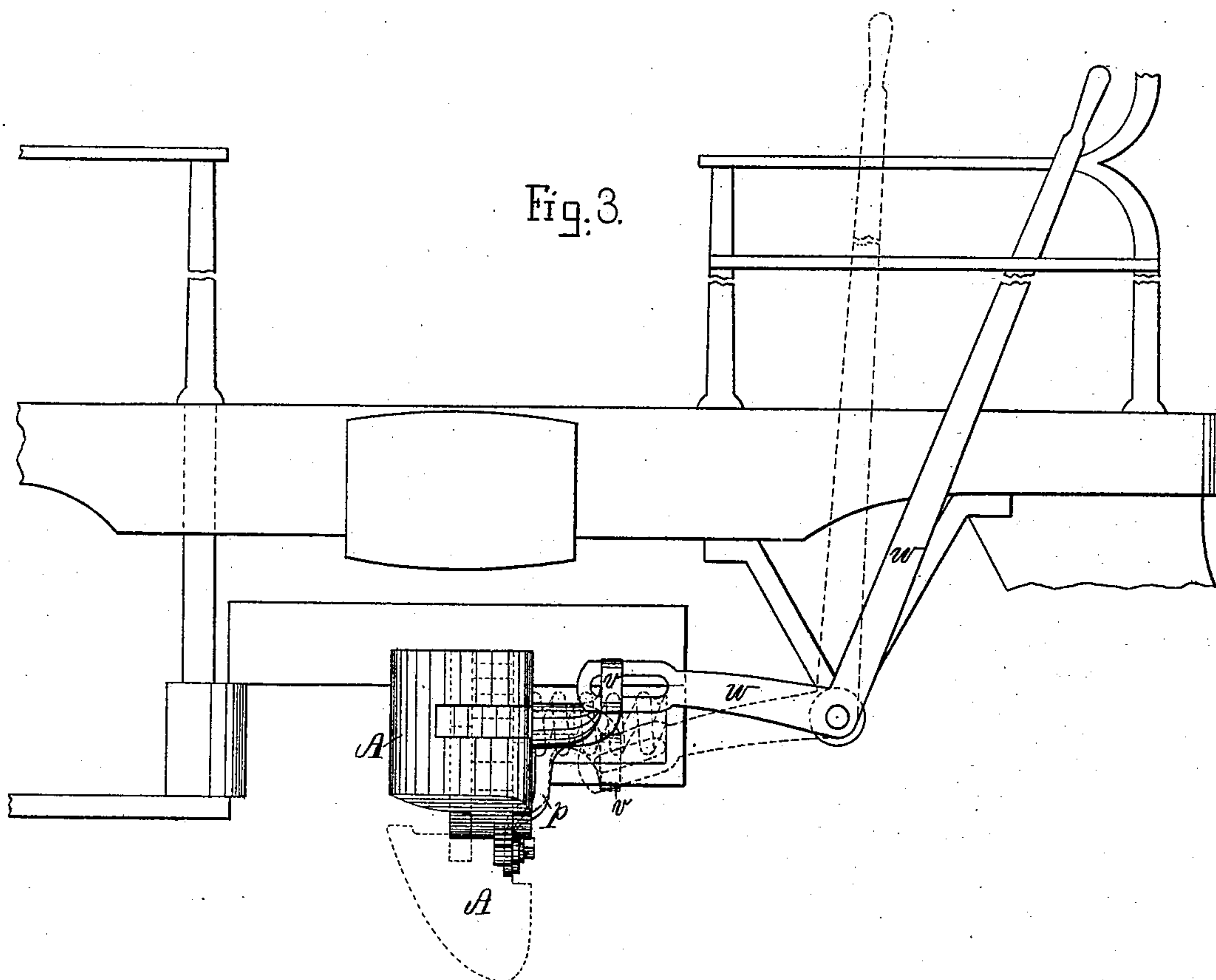
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UNITED STATES PATENT OFFICE.

FREDERICK A. CASEY, OF SACO, MAINE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 326,401, dated September 15, 1885.

Application filed March 13, 1885. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. CASEY, of Saco, county of York, State of Maine, have invented a new and useful Improvement in Car-Couplings, of which the following, taken in connection with the drawings accompanying and forming a part hereof, is a specification.

Figure 1 of the drawings is a side elevation of a draw-head with one of the plates removed and showing my improvements. Fig. 2 is a top view of Fig. 1 with the plate in position. Fig. 3 is an end view of a car-platform, showing the yoke and guard and my draw-head in position, also showing one method of constructing the operating-levers which enable the device to be worked from the platform of a passenger-car. Fig. 4 is a side elevation of the draw-head and part of the lever-operating mechanism shown in Fig. 3.

The dotted lines in the drawings show the position of the parts immediately after the car has been uncoupled.

My invention has for its essential feature the construction of a draw-head the hook of which is pivoted to the shank or body of the head, as hereinafter shown and more fully described, so that when desired it may be dropped or swung down out of the line of draw, thus freeing it from the hook of the adjoining car with which it is in contact.

My invention will be readily understood from the following description of the construction of the device, in which reference is made to the accompanying drawings.

My device may be secured to the car in any well-known manner, and to assist in this the rod *a*, of common construction, is provided. This rod is fast to the block *b*, to which the rear ends of the plates *c c* are bolted. (See Fig. 2.) These plates are enlarged at their forward ends, as shown in Figs. 1 and 4, and between them the hook *A* is pivoted at *d*, the nut of the pivot *d* being countersunk, as shown in Fig. 4.

The shank or rear portion of the hook, which projects between the side plates, *c c*, is of the shape shown in Fig. 1, and this shank is provided with a pin, *f*, which projects on either side of it and lies in curved slots *g* cut in the plates. This pin acts as a guide to pre-

vent the hook from dropping farther than is necessary.

On the upper edge of the shank of the hook a slot, *h*, is cut, and directly opposite this slot *h* are the slots *j*, cut in the side plates. These slots are provided for the reception of a key, *k*, which consists of a square bar of metal of sufficient length to project through the plates, and which, together with the pivot-bolt *d*, sustains the strain when the draw-head is in use. While the key *k* is in the slots *h j j* the hook is locked in position and the car cannot be uncoupled. For the purpose of raising this key, and thus allowing the hook to be dropped and the car uncoupled, I provide a lever, *l*, secured at its forward end to the key *k*, and pivoted at its rear end at *m* between the plates *c c*. If now this lever be raised, it will carry the key *k* up with it in the slots *j* and out of the slot *h* in the hook, and thus free the hook and allow it to drop down. For the purpose of raising this lever I provide a roll, *n*, cam-shaped in cross-section, as shown in Fig. 1, and set underneath the lever *l* between the side plates. The cam-roll *n* is set on the pivot of lever *p*, so that the forward movement of lever *p* (see Fig. 1) to the position shown in dotted lines turns the cam-roll, causing it to raise the lever *j* and the key *k* and thus free the hook.

To the lower end of the lever is pivoted a link, *q*, the other end of which is pivoted to a projection on the under side of the hook, so that as the hook is freed from contact with the key *k* the further movement of the lever *p* acts to swing the hook downward. The slot *q'* in the end of link *q*, where it is attached to the lever, permits the movement of the lever and the cam-roll *n* sufficiently to raise the key *k* before there is any movement of the link to pull the hook down. The movement of the lever *p* in the opposite direction, as will be obvious, will cause the hook to be thrown up again into position and ready to be again coupled in the ordinary manner. As the hook is being thrown back the bulge of the cam-roll *n* is passing its point of contact with the lever *l*, and the key *k* is consequently lowered in the slots *j*, so that as the hook is swung up the rounded portion at *r*, Fig. 1, comes in contact with the key, and the key slides over this rounded portion until the hook is fully back

in position, when it drops into the slot *h* and the hook is again locked.

To insure the dropping of the key *k* into its slot in the hook, a spiral spring, *s*, is provided, secured above to lever *l* and below to a pin set between the plates near their lower edge. As the lever *l* is raised against the tension of the spring, the spring acts when the lever is released to pull it down and thus make certain that the key falls into its slot in the hook.

The slot *t* and the hole in the front of the hook (see Figs. 1 and 2) are simply for convenience in the use of a link-and-pin coupling, if necessary. The bolt shown at *b'*, Fig. 2, secures the plates and strengthens them against the constant tendency to separate, due to the unequal strain on the hooks in coupling and drawing.

In Figs. 3 and 4 I have shown a set of levers which will serve to operate the device from the platform of a passenger-car. As there shown, I make the lever *p* of an elbow shape, the upper end of it projecting forward from its pivotal point, and being provided with a head of the shape shown at *v*, Fig. 4, having notches on either side which are received in a slot in the end of another bent lever, *w*, Fig. 3, which is pivoted to a bracket projecting downward from beneath the platform. The slot in the end of lever *w*, where it is connected with lever *p*, serves to allow of the lateral motion of the draw-head. It will be obvious that the movement of the lever *w*, Fig. 3, to the position shown by the dotted lines will carry downward the upper end of lever *p*, and consequently the hook *a*, into the position shown by dotted lines, Figs. 3 and 4.

It will be obvious that the force of the gravity or the drawing strain will serve to drop the hook and uncouple the cars the moment the key *k* is raised, and that there will be no binding action, because the pivot on which the hook is swung lies below the lowest point of contact between this hook and the one on the

adjoining car. A drawing strain, whether on a curve or a straight road, therefore is no hindrance to uncoupling, but, on the contrary, is a help. This renders it possible to have the contact-faces of the hooks provided with a recess, as at *a'*, Fig. 2, so that they are locked when in contact and cannot be uncoupled by lateral motion.

For freight-cars the pivot or shaft of cam-roll *n* may be carried out to the side of the car and provided with a crank, so that the device may be operated without getting between the cars.

For the purpose of coupling my improved draw-head is substantially the same as draw-heads now in use, while for uncoupling it is arranged to be operated as hereinabove set forth.

What I claim is—

1. A draw-head having the hook pivoted to the plates below the line of draw, and keyed to said plates above said pivot, whereby as the key is removed from contact with the hook the hook swings down out of contact with the hook of the adjoining car, substantially as shown and described.

2. The combination, with the plates *c c* and hook *A*, of the key *k* and its lever *l*, and the cam-roll *n*, actuated as described, for the purposes set forth.

3. The combination, with the hook *A* and plates *c c*, of the slotted link *q* and lever *p*, pivoted to said plates, substantially as shown and described.

4. The combination, with a draw-head having a pivoted hook, of the link *q*, attached thereto, and the bent levers *p* and *w*, whereby the coupler may be operated from the platform of a car, substantially as shown and described.

FREDERICK A. CASEY.

Witnesses:

WM. A. MACLEOD,
ROBERT WALLACE.