

(No Model.)

C. F. PHELPS & R. A. LUCAS.
CAR COUPLING.

No. 441,580.

Patented Nov. 25, 1890.

Fig. 1.

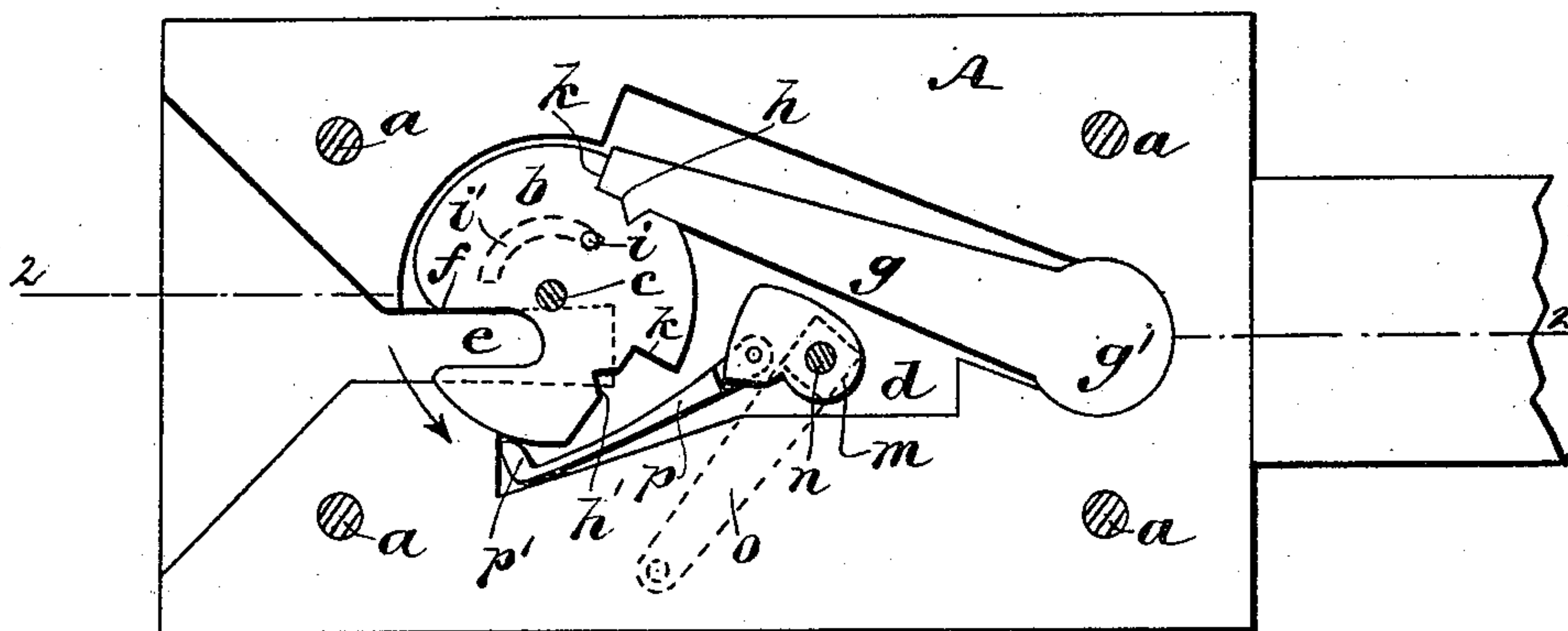


Fig. 2.

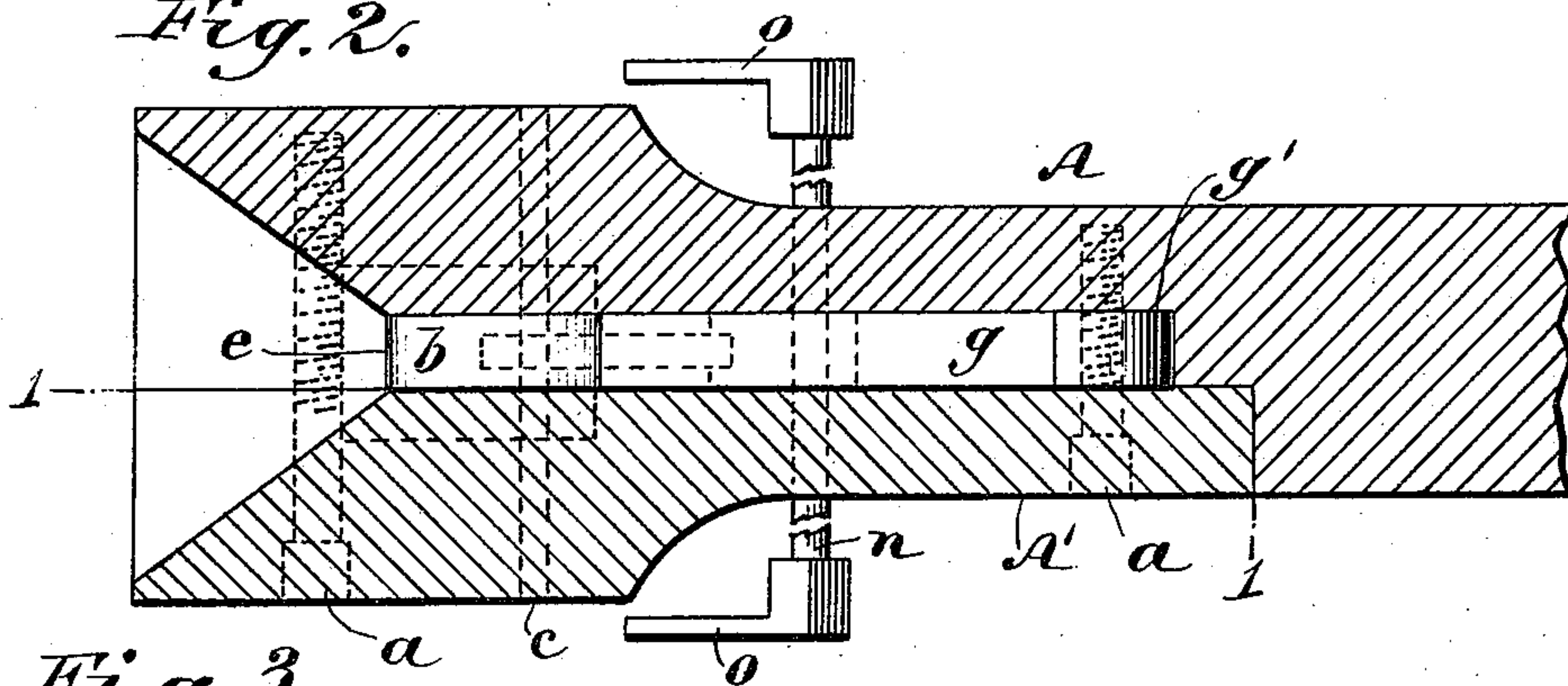
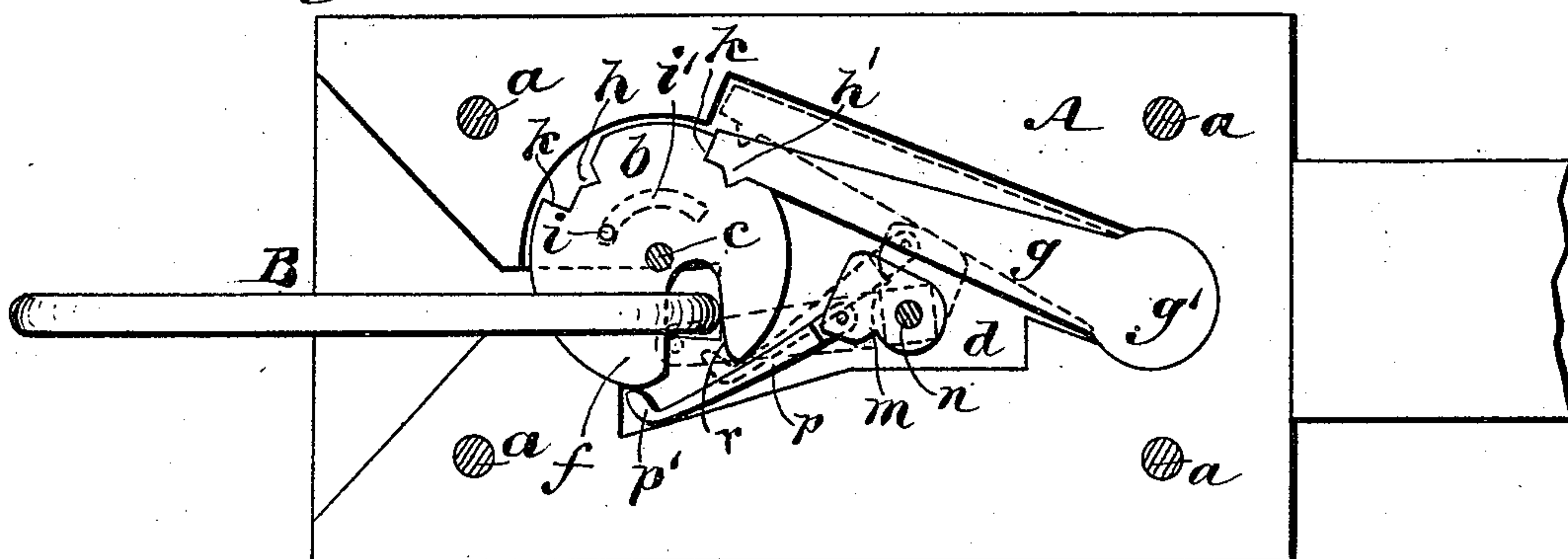


Fig. 3.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 441,580, dated November 25, 1890.

Application filed July 21, 1890. Serial No. 359,418. (No model.)

To all whom it may concern:

Be it known that we, CASPER F. PHELPS and RAYMOND A. LUCAS, of Kohala, Hawaii, Hawaiian Islands, have invented a new and useful Car-Coupling, of which the following is a full clear, and exact description.

This invention relates to an improved car-coupling of a type employing an elongated link which may be automatically coupled to two adjacent draw-heads, the object being to provide a coupling of the character named which will be of simple substantial construction and that will afford means to release the engagement of two connected couplings manually from either side of the cars, thus securing safety to the operator.

To this end our invention consists in certain features of construction and combination of parts, as hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation, partly in section, of a main portion of the draw-head, the other portion being removed on the parting line 1 1 in Fig. 2, interior working parts being exposed, which are adjusted to engage a coupling-link. Fig. 2 is a plan view, in section, taken on the line 2 2 in Fig. 1; and Fig. 3 is a side elevation of the parts shown in Fig. 1 as they appear when in locked engagement with a coupling-link.

The draw-head consists of an elongated metallic bar longitudinally divided to receive interior parts, the line 1 1 in Fig. 2 indicating where the two pieces A A', which form the draw-head, are joined, screw-bolts *a* being preferably used to secure these sections together, both sections being flared at the front end to receive a coupling-link B. The section A (shown in Figs. 1 and 3) has a circular recess laterally formed in it for the reception of a locking-disk *b*, and directly opposite said recess a similar cavity is produced in the section A' of the draw-head, which will also receive a portion of the locking-disk when the two draw-head sections are secured together, an axial shaft *c* being introduced into aligning perforations in the draw-head sections, whereon the disk *b* is revolvably supported.

Each of the sections A A' is excavated at the rear of the circular recess in which the disk *b* is seated, so as to produce an elongated cavity *d*. A slot is cut in the disk *b* at *e* of a suitable depth from the peripheral edge inwardly and below the shaft *c*, thus producing a locking-tongue *f* on the disk, which will engage the link B, when the disk is caused to rock on its supporting-shaft by an end-thrust of the link, such a movement being permitted on account of the relative position of the slot *e* with regard to the shaft *c*.

At the rear terminal of the cavity *d* a circular formation is given thereto for the reception of the rounded end *g'* of a latch-dog *g*, the parts fitting together to afford a knuckle-joint connection between the draw-head and dog. Above the latch-dog *g* the cavity *d* is enlarged to produce an upwardly and forwardly inclined wall, thus providing clearance for the latch-dog that it may engage with the locking-notches *h h'*, that are cut in the edge of the disk *b*, or be released therefrom. The location of the notches *h h'* is such with regard to the position given to the slot *e* that the latch-dog *g* will engage with the notch *h* when the slot *e* lies extended toward the open front end of the draw-head free to receive the end-thrust of the coupling-link B and have a locking engagement with the notch *h'* in the disk *b* after the link has been thrust against the inner terminal wall of the slot *e* and the disk partly rotated, so as to engage the tongue *f* with the coupling-link. A detent-stud *i* is projected from one face of the disk *b* and enters and traverses a curved slot *i'*, laterally produced in the wall of the draw-head section A, which slot represents the arc of a circle struck from the shaft *c* as a center and serves to determine the rocking movement of the disk *b* by the impingement of the stud on the terminal end walls of the slot. Each of the notches *h h'* has a shoulder produced at *k*, against which the free end of the latch-dog *g* will abut when it is engaged with either notch, said shoulders being adapted to prevent a revoluble movement of the disk *b* in an improper direction when the parts are uncoupled, and also to prevent a rotative movement of said disk while coupled until a disconnection of the latch-dog *g* is designedly produced, the stud

coacting therewith to effect such a locking action of the parts.

To facilitate the manipulation of the coupling so as to release a coupling-link when desired and effect the same from either side of a car with safety, the cam-block *m* is secured on a transverse rock-shaft *n*, which rock-shaft projects through a lateral perforation in the draw-head at a proper point below the latch-dog *g* for the rocking engagement of the cam-block therewith, so as to elevate said latch-dog and release the disk *b* when the shaft is revolutely moved in a proper direction.

As shown by dotted lines in Figs. 1 and 3, the crank-levers *o*, which are secured upon the outer ends of the shaft *n*, are disposed in an inclined position toward the front of the draw-head, so that the weight of the crank-levers will be utilized to hold the disk *b* in a position to receive the link *B* and retain said disk interlocked with the latch-dog *g* when a coupling has been effected.

The shaft *n* is shown broken in Fig. 2, it being designed to extend said rock-shaft toward the sides of a car, whereon the coupling is placed, and thus permit the handles or levers *o* to be loosely connected to rods or chains that may extend to the top of the car and afford means for the disconnection of the coupling from the roof of the car.

Upon the lower forward corner of the cam-block *m* a hook-bar *p* is pivoted, the free hooked end *p'* of said bar being upwardly projected to have contact with the toe *r* on the disk *b*, so as to return the cam-block *m* into position, (shown in full lines in Fig. 3,) when the disk *b* is rocked by the forward draft of the link *B*, and thus moves the toe *r* forwardly and upwardly, the contact of this toe with the hook *p'* being shown in dotted lines in Fig. 3.

In the attachment of the coupling to a car the usual approved springs are preferably employed to cushion the end-thrust of the link *B* when two couplings are brought toward each other by the approach of cars which are to be coupled. When this is to be effected, the link *B* is inserted within and coupled to one draw-head, as shown in full lines in Fig. 3, its connection with the locking-tongue *f* serving to support the inner end portion, that is also sustained by its contact

with the lower surface of the draw-head throat, whereby the link will be supported in a nearly horizontal plane, so as to enter an approaching draw-head of a similar construction and engage therewith, as previously explained.

It is claimed for this coupling that the parts are strong, few in number, and efficient in service, affording means for the automatic coupling of cars and a release of such an engagement without danger to the operator.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A car-coupling consisting in the two-part draw-head *A A'*, having a link-opening, a circular vertical internal recess at the rear of said opening, an internal recess *d* behind said circular recess and terminating at its rear end in a curved socket, the disk *b*, turning in said circular recess and provided with slot *e* and locking-shoulders, the latch-dog *g*, having a circular rear end *g'*, turning in said socket and engaging the disk with its forward end, and means for operating said dog, the said dog and the disk being wholly inclosed within the draw-head, substantially as described.

2. The combination, with the draw-head having a coupling-disk provided with a latch-dog, of a cam for raising the dog, a hook-bar pivoted to the cam and adapted to engage the disk and return the cam into its normal position, and means for operating the cam, substantially as described.

3. In a car-coupling, the combination, with a longitudinally-separable draw-head having an interior recess and a slotted disk pivoted in the recess and having an integral locking-tongue formed by the slot, of a vertically-vibratile latch-dog adapted to interlock with the notches in the disk, a cam-block below the latch-dog, a hook-bar pivoted to the cam-block and adapted to engage a toe on the slotted disk, and a rock-shaft supporting the cam-block and means for rocking it, substantially as set forth.

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Witnesses:

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