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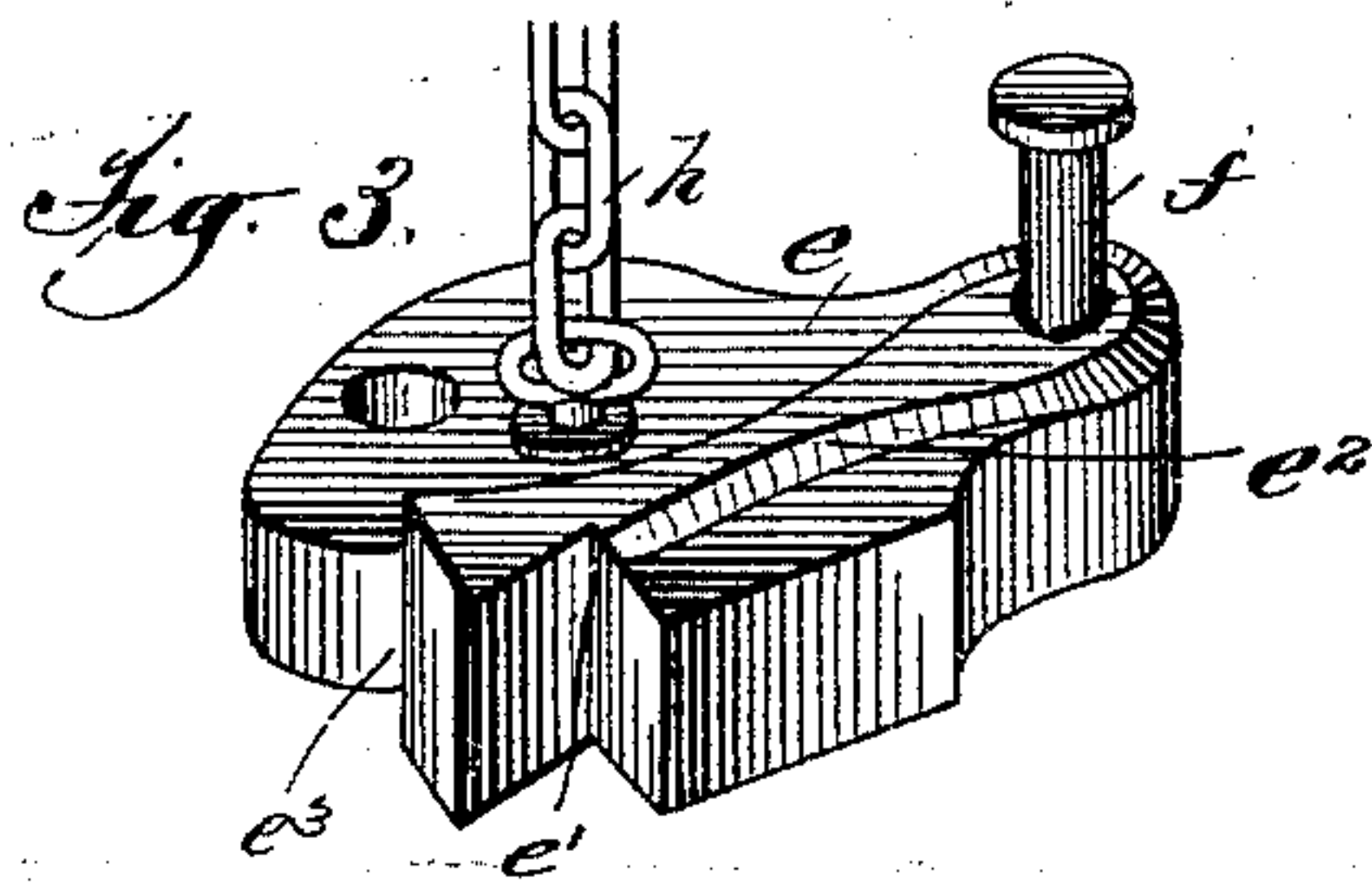
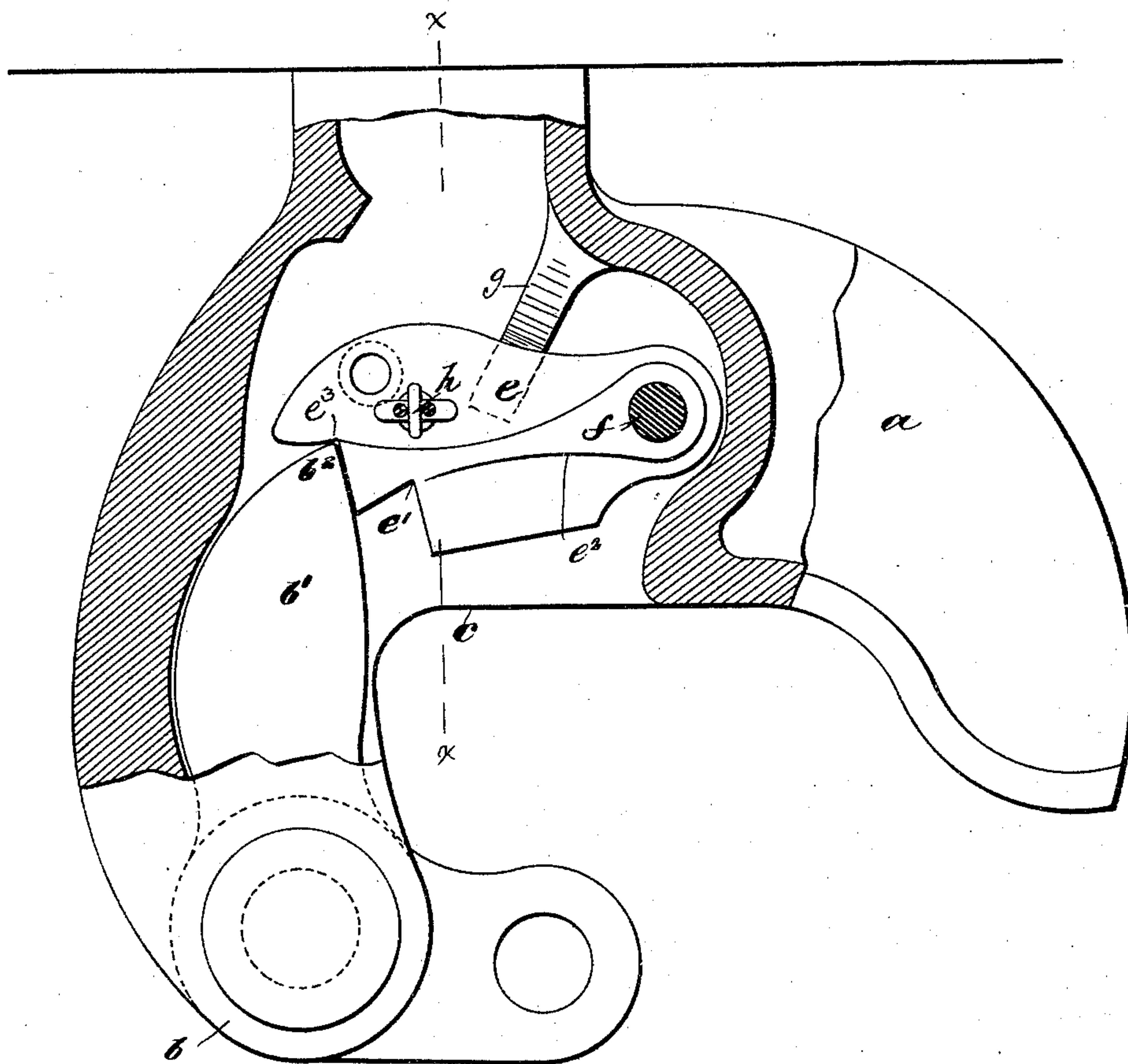
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L. BARNES.
CAR COUPLING.

No. 474,466.

Patented May 10, 1892.

Fig. 1.



Attest:
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(No Model.)

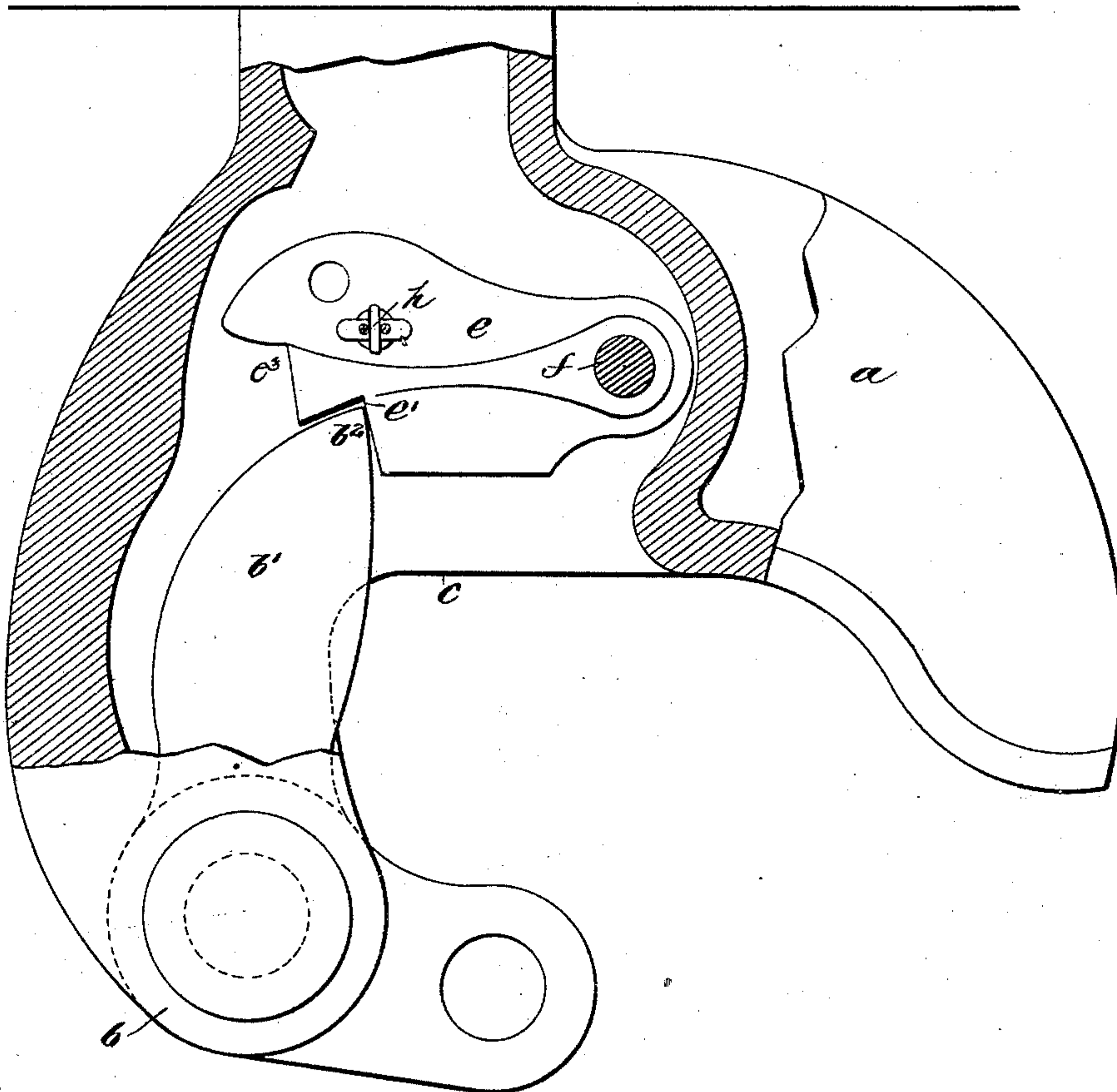
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Fig. 2.



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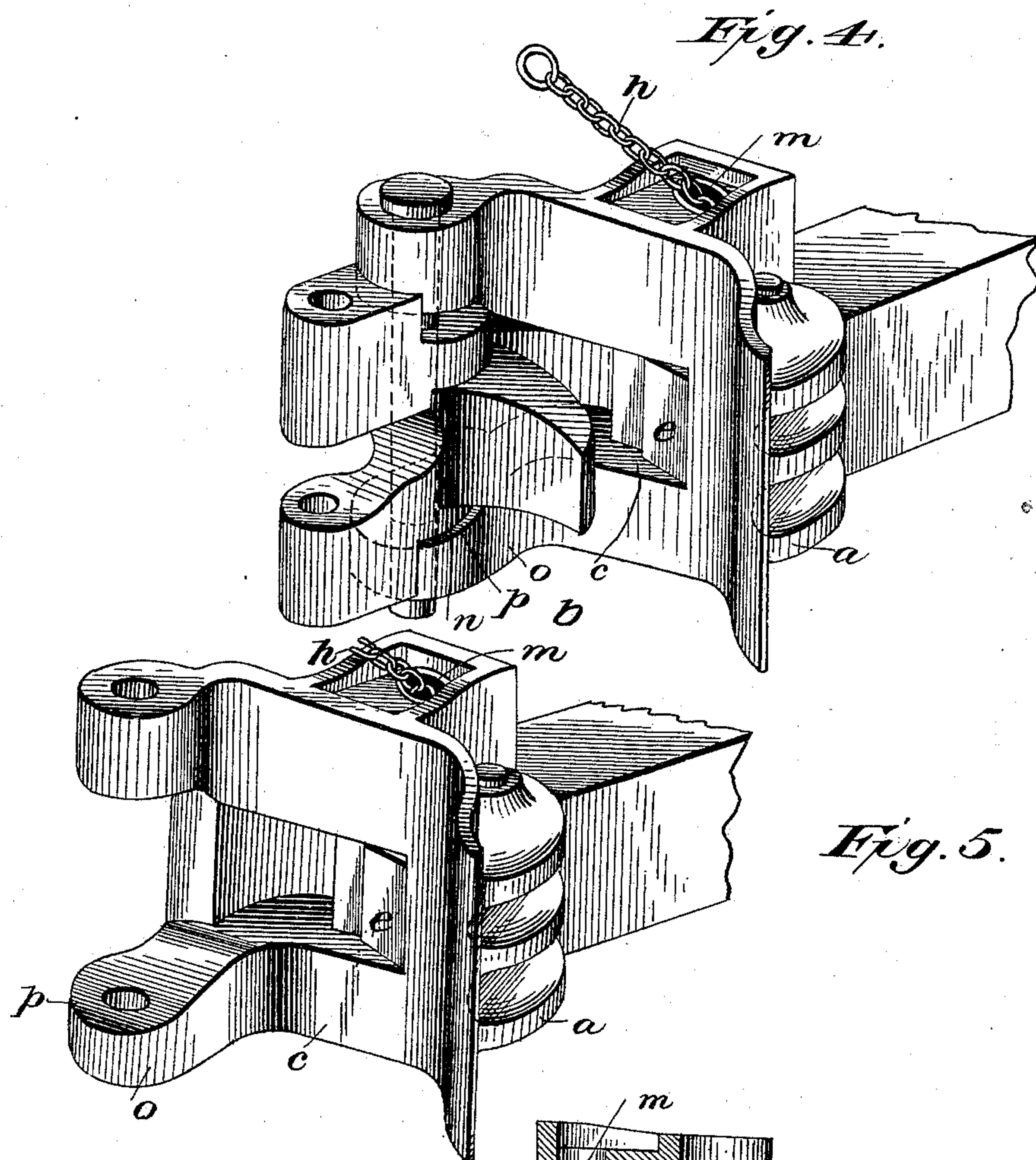
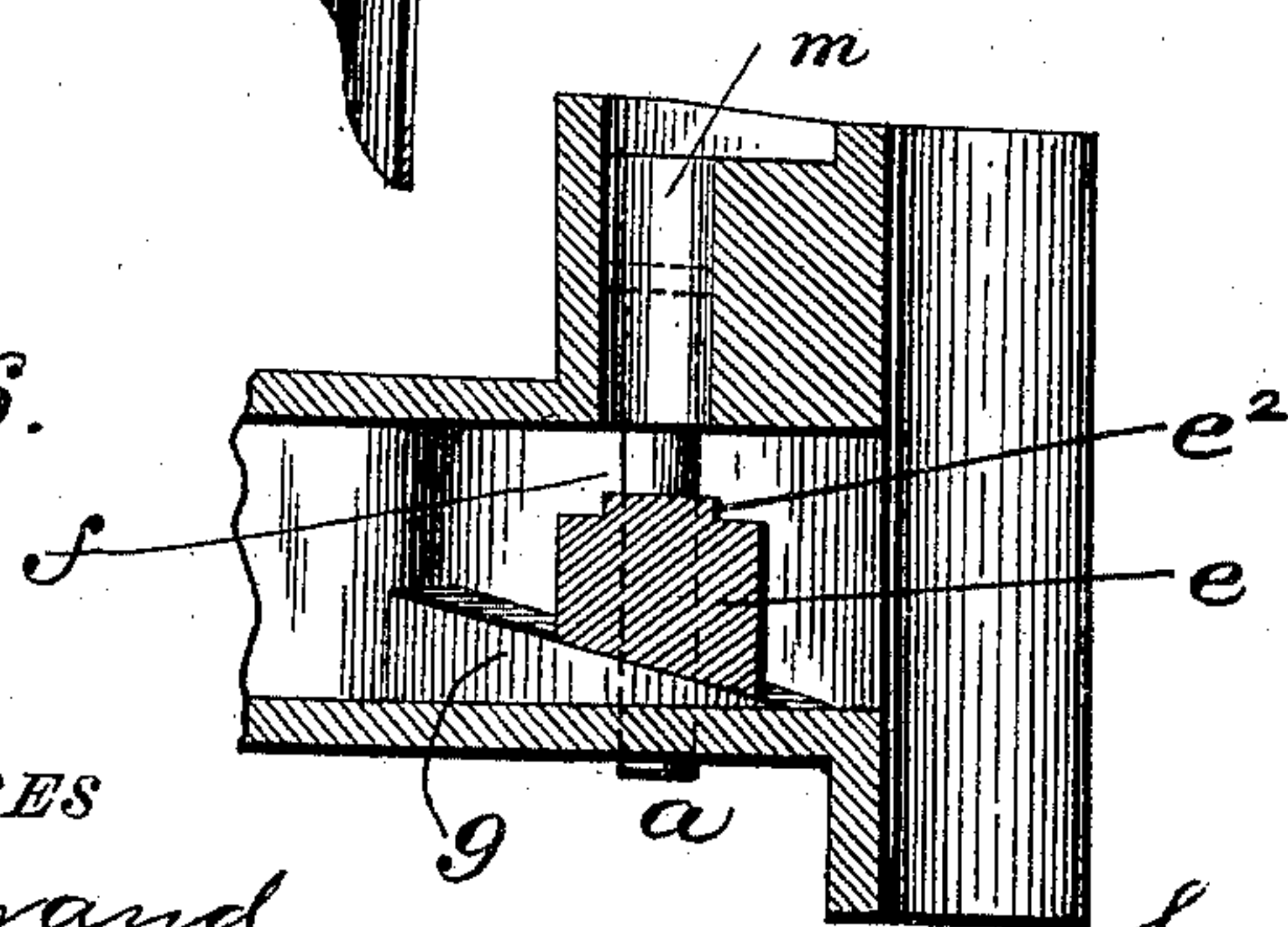


Fig. 6.



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UNITED STATES PATENT OFFICE.

LUCIEN BARNES, OF SYRACUSE, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 474,466, dated May 10, 1892.

Application filed December 20, 1889. Serial No. 334,350. (No model.)

To all whom it may concern:

Be it known that I, LUCIEN BARNES, a citizen of the United States, residing at Syracuse, in the county of Onondaga, in the State of New York, have invented certain new and useful Improvements in Car-Couplers, of which the following is a description.

My invention relates to certain improvements in car-couplers of the class in which a rotating or swinging hook or head is employed; and my invention has for its object the production of a novel locking device for the swinging hook, whereby the coupling-arms will be firmly held in their interlocked position and can be adjusted to conform to any railroad-curve without undue strain or friction.

My invention consists in combining with a hollow draw-head provided with top and bottom inclines and having pivoted or swinging hooks with two radial arms and operating inclines, a rotating latch or locking block fulcrumed to the draw-head and formed with two or more notches or steps adapted to interlock with the end of one of the arms of the swinging hook and provided with a recess to receive the chain connection by which the said block is lifted, all as will be hereinafter described in detail and specifically claimed.

In the accompanying drawings, in the several figures of which like parts are designated by similar letters of reference, Figure 1 is a plan view, partly in section, of a coupler embodying my invention and showing the swinging hook in its locked position. Fig. 2 is a similar view showing the swinging hook locked at a different angle to the axis of the coupler than Fig. 1. Fig. 3 is a perspective view of the locking device detached. Fig. 4 is a perspective view of the invention, showing the swinging hook open. Fig. 5 is a perspective view of the draw-head without the swinging hook; and Fig. 6 is a transverse section of the draw-head, taken in the plane of line *xx*, Fig. 1.

In carrying out my invention I prefer to employ a coupler having a draw-head *a* and swinging hook *b*, which, as illustrated in the drawings, are of substantially the construction commonly employed in automatic swinging-hook couplers—such, for instance, as couplers manufactured under Letters Patent No. 254,106, dated February 28, 1882, and No.

337,650, dated March 9, 1886, and known in the trade as the "Gould automatic coupler."

The draw-head *a* is formed hollow or recessed, and is provided with an opening *c* for the free passage in and out of the arm *b'* of the swinging hook *b*. Within the cavity of the draw-head my improved locking device is confined. This locking device comprises a solid block *e*, having notches *e'* and *e''* and slightly beveled at *e'''* to conform to the shape of the interior of the wall of the draw-head. This block is pivotally held in place by means of a loose pin *f* at one side of the main axis of the coupler and normally rests upon an inclined rib or projection *g*, the bottom of the block being beveled to coincide with this rib. (See Fig. 6.) A chain *h* is attached to the inner face of the block *e* within a recess or depression, as clearly seen at Fig. 3, and passed backwardly and up through an opening *m* in the upper wall of the hollow head, and is connected to a crank-shaft lever-arm or other suitable device for operating the said chain to raise the block, and as the connection between the chain and block is below the upper face of the latter the block may be lifted to its highest limit. The swinging hook is provided with a beveled face *n*, (see Fig. 4,) and the bottom of the circular projecting edge *o* of the draw-head is provided with a correspondingly-inclined bearing *p*.

The operation is as follows: When the hook is swung into its closed or coupled position, as shown in Fig. 1, the arm *b'* rides upon the inclined bearing *p*, and its curved tail *b''* engages the notch *e'''* in the locking-block *e* and is firmly held in place. To release the hook, the locking-block is raised by means of the chain *h* until the tail *b''* is entirely out of contact with the block, which is accomplished through the medium of an incline in the top of the cavity of the draw-head coming in contact with the upper edge of the locking-block and operating to force it to rotate upon its pivot away from the tail *b''*. When the locking-block is thus rotated upwardly and away from the hook, the latter will move by gravity down the inclined bearing *p* and swing outwardly on its pivot. To adjust the coupling-arms to conform to any railroad-curves, the block *e* is slightly raised, so that it will swing back of its normal position, Fig. 1, sufficiently far to present its second notch *e''* for

engagement with the tail b^2 of the hook, as shown in Fig. 2, and in this position the swinging hook will be locked at a different angle to the axis of the coupler than when the tail b^2 is in its innermost position, as shown in Fig. 1. When the coupler is locked in the position just described, a greater space will be left between the front face of the draw-head and the coupling hook or arm, thus giving to the corresponding coupling-hook of an adjacent car greater freedom of vibration.

While I have shown the locking device e as provided with two locking notches or steps e' and e^3 , it will be understood that any number of steps may be employed within the limits provided for the safe locking of the coupler-arms.

I wish to be understood, as before indicated, that I am aware of Letters Patent No. 337,650, dated March 9, 1886, and that so far as the general construction and operation of the coupling mechanism and locking-block is concerned it is similar to the construction described in said patent; and my present improvement relates to the special construction of the locking-block and its arrangement and operation in the draw-head, so as to provide for as much variation in the vibration of the coupling-arms as will enable the cars to be coupled upon or travel around curves of varying radii without unusual strain upon the coupling mechanism.

It is obvious that my locking device may be employed in any coupler having a swinging head or hook, whether automatic or not, and whether the hook operates automatically by gravity or by the force of springs; and I do not wish to be limited to any specific form of swinging-hook coupler.

What I claim as my invention, and desire to secure by Letters Patent, is—

In a car-coupler, the combination, with the hollow draw-head a , of the swinging hook having arms b b' and provided on its under side with the inclines n p , the rotating latch or locking-block e , fulcrumed to the draw-head and constructed with notches or steps e' e^3 , adapted to successively engage with the swinging hook, said block being provided with a recess on its upper side within which the chain h is connected, and said draw-head being constructed with top and bottom arc-shaped inclines above and below the locking-block, whereby when the latter is swung it will be moved vertically by contact with such inclines, all as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 20th day of November, A. D. 1889.

LUCIEN BARNES.

Witnesses:

WILLIAM B. TULLIS,
ERNEST C. WEBB.