

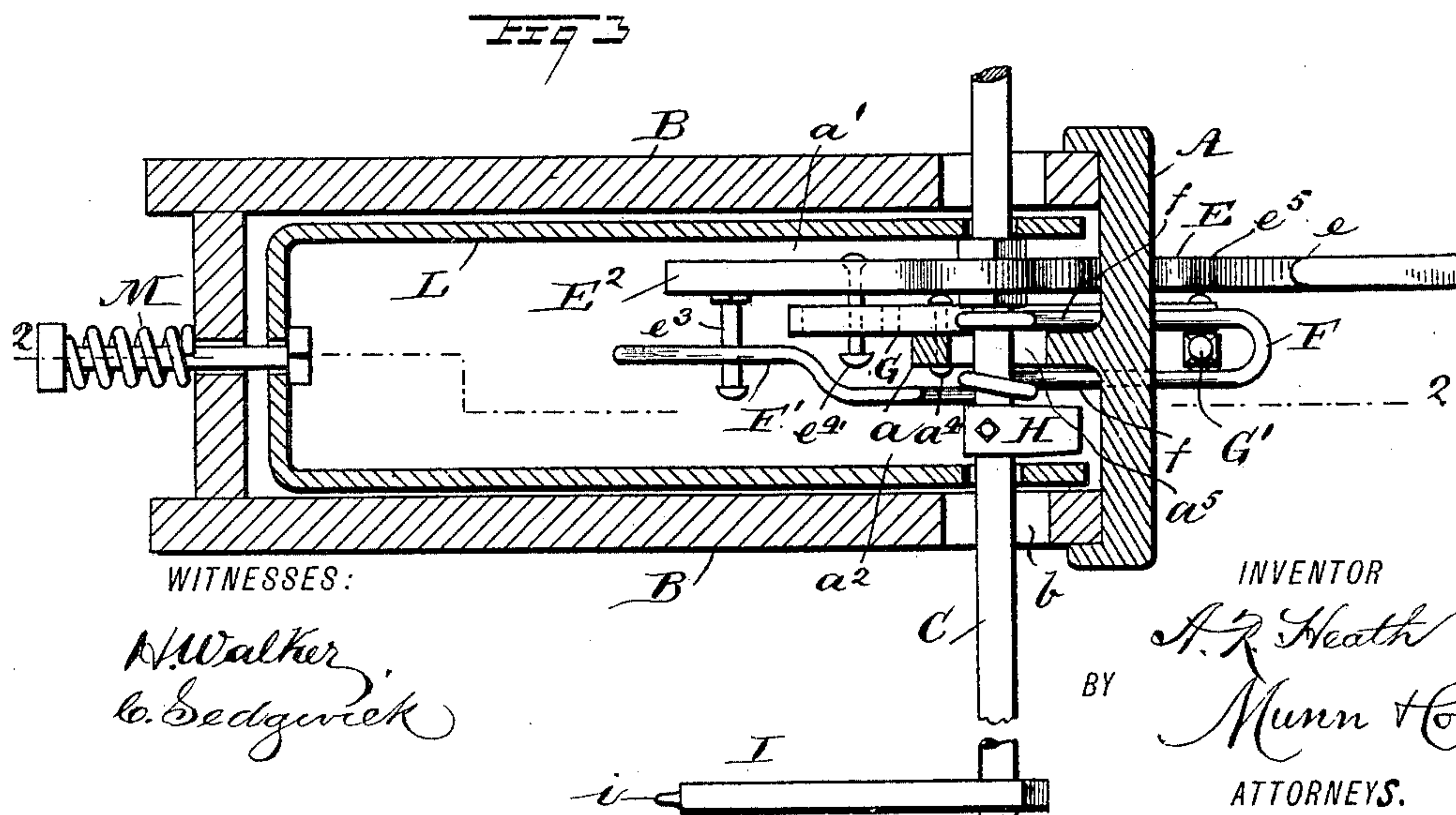
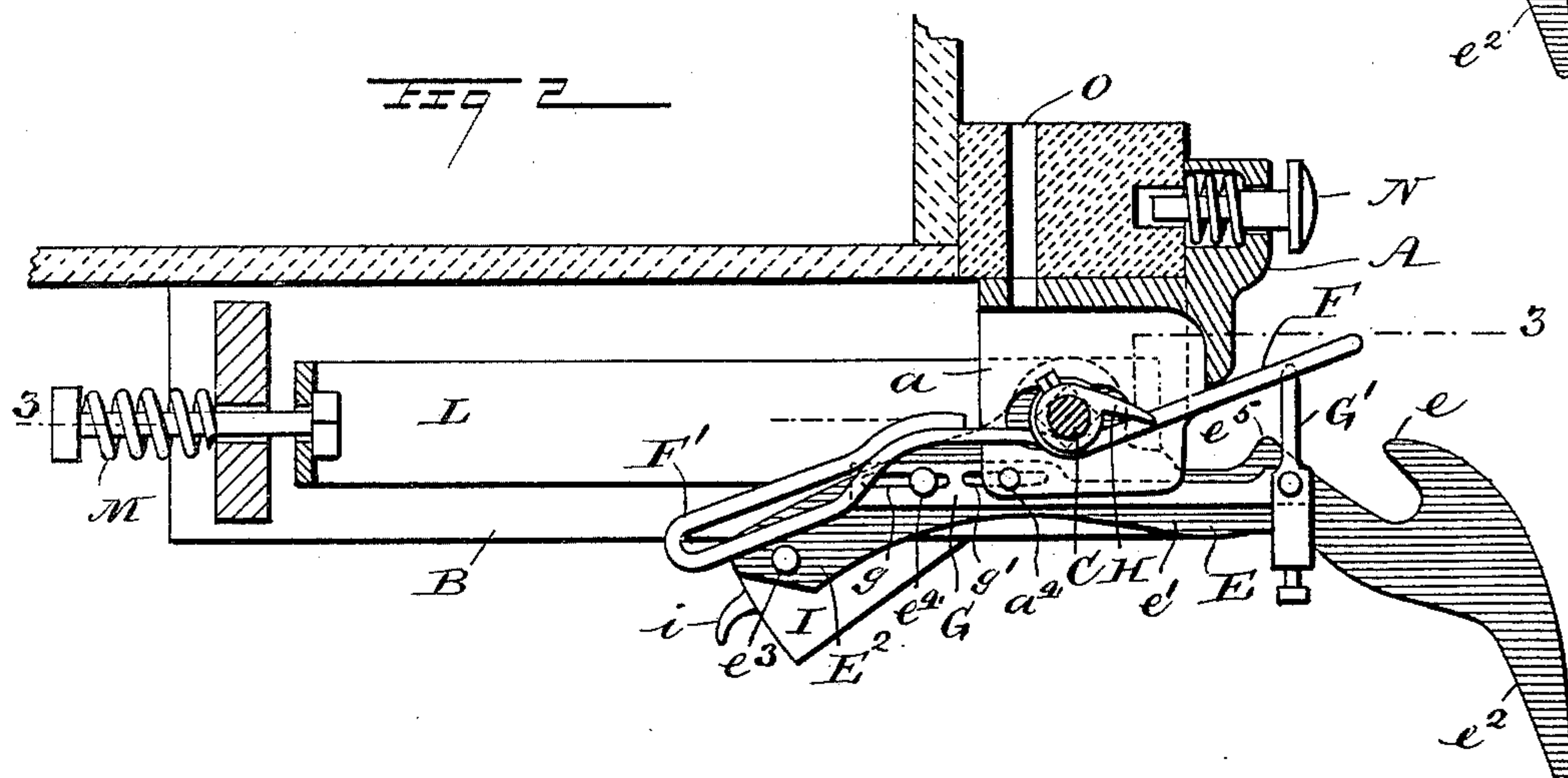
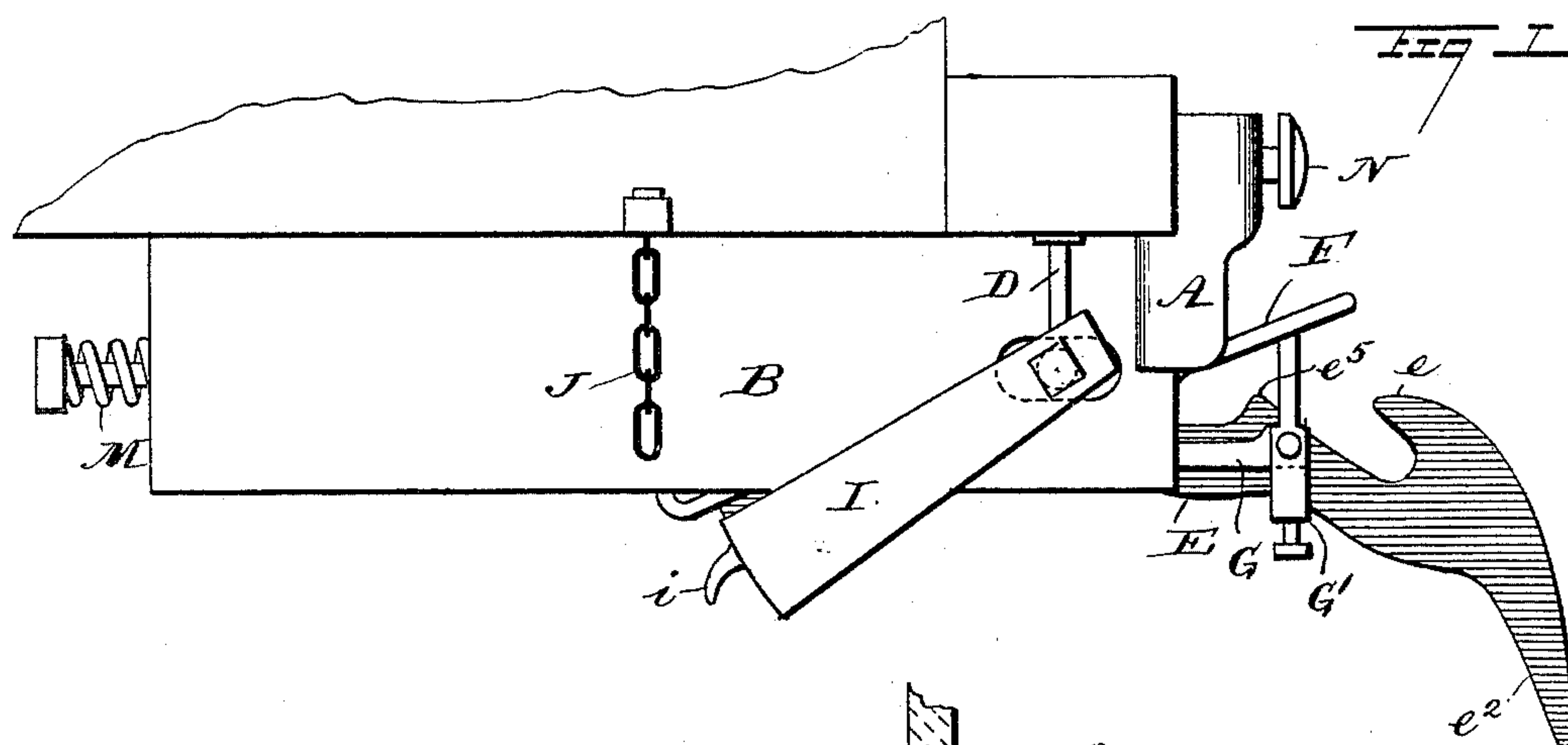
(No Model.)

2 Sheets—Sheet 1.

A. R. HEATH.  
CAR COUPLING.

No. 467,807.

Patented Jan. 26, 1892.



WITNESSES:

H. Walker,  
C. Sedgwick

INVENTOR

A. R. Heath  
BY Munn & Co  
ATTORNEYS.

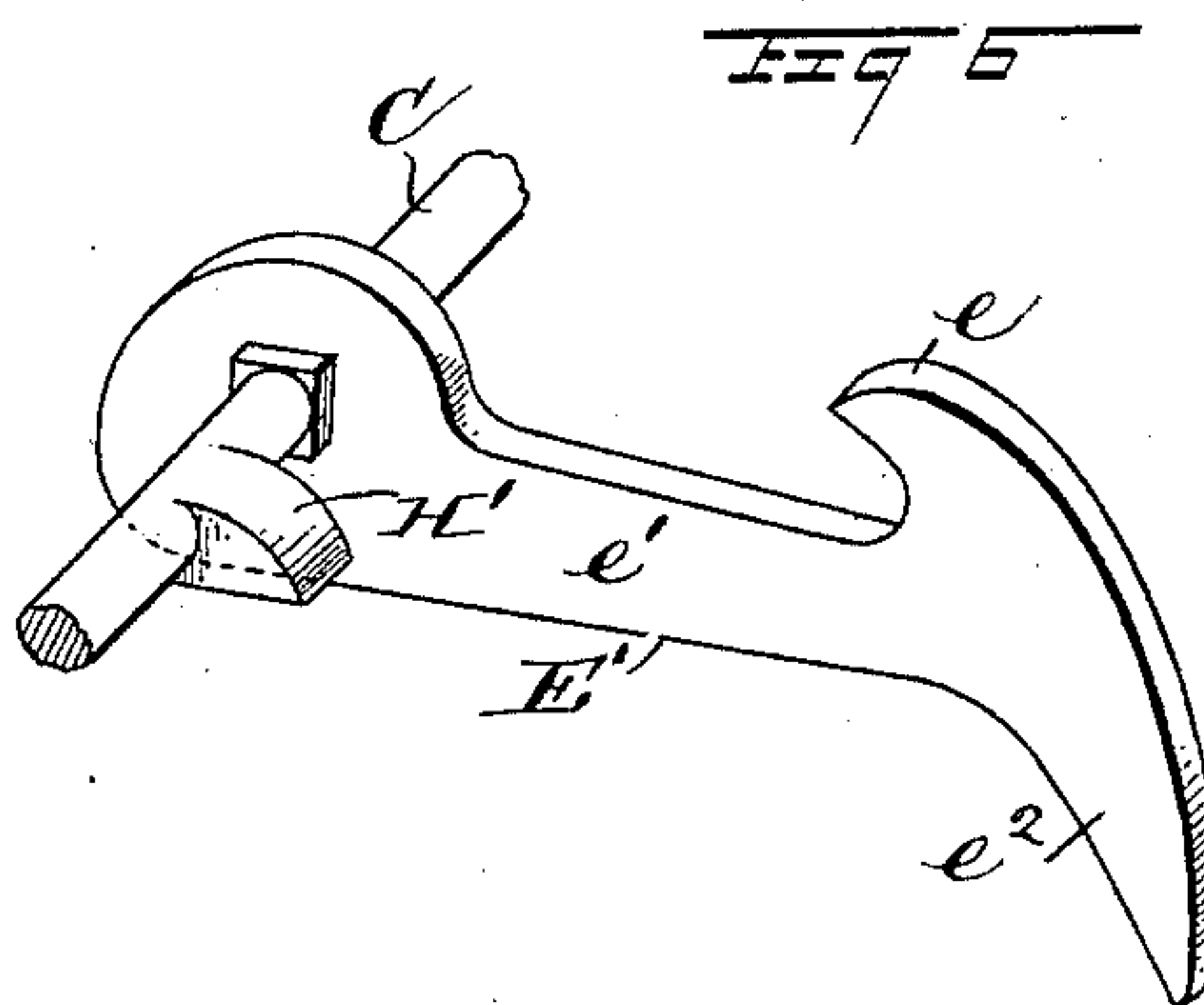
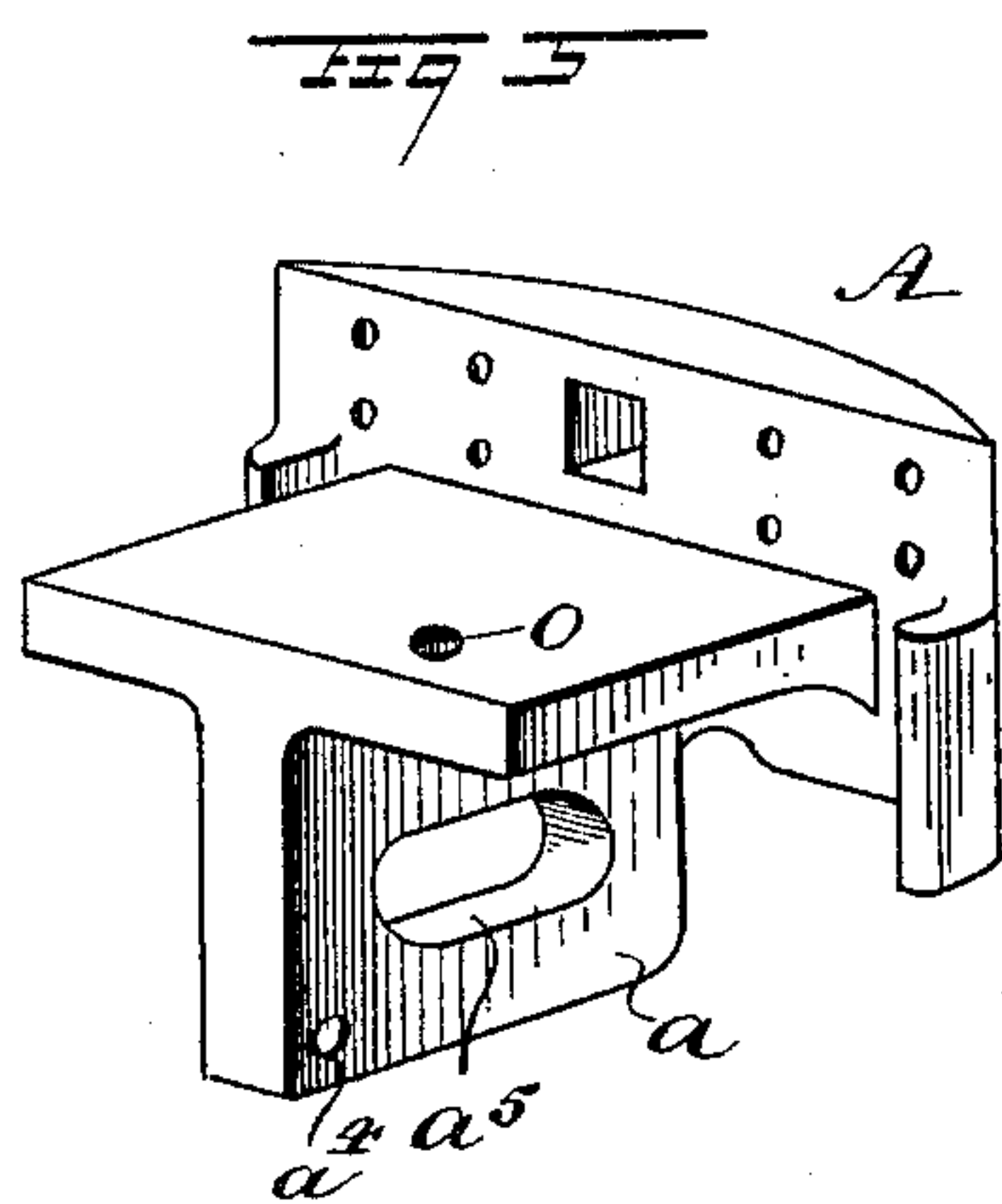
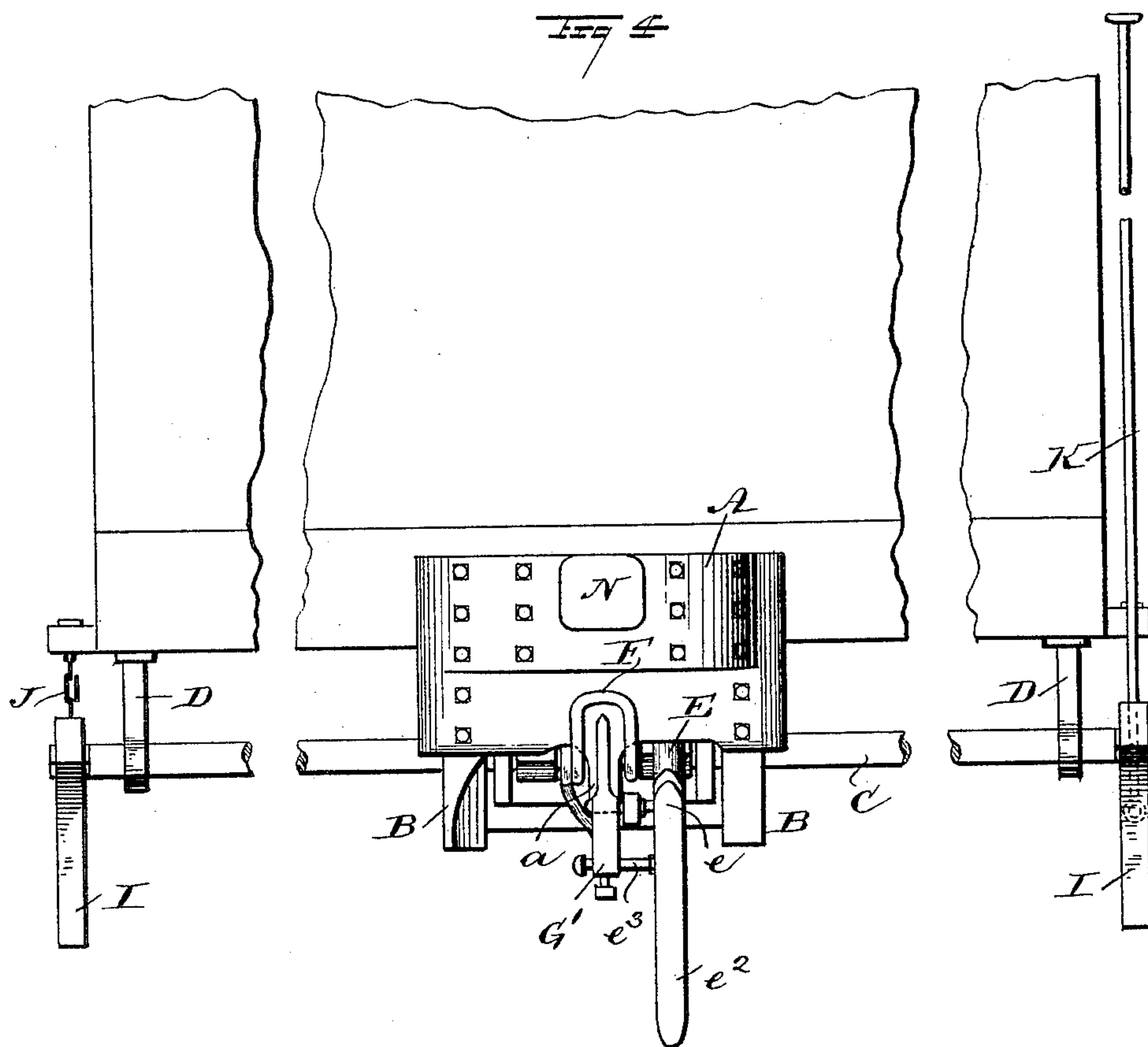
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# UNITED STATES PATENT OFFICE.

ALFRED R. HEATH, OF COVINGTON, INDIANA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 467,807, dated January 26, 1892.

Application filed September 10, 1891. Serial No. 405,278. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED R. HEATH, of Covington, in the county of Fountain and State of Indiana, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

The invention relates to that class of car-couplings in which a pivoted coupling-hook is employed having a movement in the vertical plane for engaging a transverse pin or shaft on an opposing car, and it is more especially designed as an improvement on the construction forming the subject-matter of my United States application, Serial No. 390,844, filed April 28, 1891.

The present invention consists in the novel construction and combination of parts, as hereinafter described and claimed.

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 broken side elevation showing my invention applied. Fig. 2 is a vertical section on line 2 2, Fig. 3. Fig. 3 is a sectional plan view on line 3 3, Fig. 2. Fig. 4 is a broken end view of a car having the invention applied thereto, the view also illustrating a different means of rocking the operating-shaft. Fig. 5 is a perspective view of the draw-head, and Fig. 6 is a detached perspective view of the coupling-hook and operating-shaft, as the same are constructed without reference to the ordinary link-and-pin coupling.

The draw-head A is bolted to the dead-wood, sills, and draft-timbers, or either of them, according to the construction of the car, and at its under side the said head is formed with a central depending flange or web  $a$ , which ranges in the direction of the length of the car and forms, in connection with the draft-timbers B, two compartments  $a'$   $a^2$ . A transverse rock-shaft C is suitably supported in hangers D, or otherwise, and passes through an oblong slot  $a^5$  in the web  $a$  and through similar slots  $b$  in the draft-timbers B, the last-mentioned slots being bushed with iron. A yoke L of stirrup shape is connected at its forward ends to the shaft and at its rear or inner end it is suitably connected with the draft-spring M of the coupling. On the shaft

C also, in the compartment  $a^2$ , is fixedly secured the coupling-hook E. In Fig. 6 the coupling-hook E' is adapted to engage a similarly-equipped opposing car, while in the other figures the hook E is designed to couple to a car similarly equipped or to coact with auxiliary coupling devices adapted to couple to an opposing car having the old style draw-head.

Referring to Figs. 1 to 4, the coupling-hook is formed with a hook proper  $e$  at its extreme outer end, at the upper side, the shank  $e'$  below or at back of the hook being extended downwardly and forwardly, as at  $e^2$ , to insure engagement with the shaft of an opposing car, regardless of any slight differences in the height of the opposing couplings. Beyond its connection with the rock-shaft C the hook E is extended rearwardly, as at  $E^2$ , and to the said rearward extension two laterally-extending studs or pins  $e^3$   $e^4$  are secured. The stud  $e^3$  extends beneath the weighted rearwardly-extending end F' of a link F, which is pivoted on the shaft C, one arm or member  $f$  of the link passing each side of the web  $a$  and secured to the shaft. The stud  $e^4$  on hook E passes through a longitudinal slot  $g$  in a lever G, and the latter is formed with a second longitudinal slot  $g'$ , into which projects the pin or stud  $a^4$ , which is secured to or formed on the web  $a$  of the draw-head, said pin  $a^4$  forming the fulcrum for the lever. The said lever extends beneath the link F, and carries a vertical pin G', fixed or pivoted, as desired, which is adapted to coact with the link F, as presently explained.

On the shaft C in the compartment  $a^2$  is secured a cam or presser-arm H, and on one end or on both ends of the shaft weighted arms I are secured, which normally maintain the parts in the position shown in Figs. 1, 2, and 4, which show the parts ready for coupling to an opposing car. The presser-arm H in Figs. 2 and 3 is separately secured to the shaft C, while in Fig. 6 the similar arm H' is integral therewith. Either form may be employed in practice. The hook E, forward of the draw-head, is formed with a projection at the upper side. With this construction, when coupling to a car having an ordinary old-style draw-head, the latter will strike the front of the coupling-hook and depress the



latter, and after passing over the hook proper *e* will strike the projection *e*<sup>5</sup>, further depressing the hook. The effect of the downward movement of the front of the coupling-hook *E* will be to raise the rear end *E*<sup>2</sup>, where-  
 5 by the pin *e*<sup>3</sup> will strike the rearward extension *F'* of link *F*, raising said extension and throwing down the front part or link proper to the horizontal position, permitting it to  
 10 enter the approaching draw-head. When the draw-head of the approaching car passes over the projection *e*<sup>5</sup>, the outer part of the hook *E* is permitted to rise in response to the weight of the arms *I*, and as the front of said hook  
 15 rises and its rear extension *E*<sup>2</sup> is correspondingly depressed the lever *G* will be so acted on as to throw the pin *G'* upward through the usual vertical aperture in the ordinary draw-head, and as the link *F* will have previously  
 20 entered such draw-head it will be engaged by the said pin, and the cars will thus be automatically coupled.

When coupling two cars having my improved couplings, the shaft *C* of the one will  
 25 strike the front of the hook *E* (or *E'*) of the other, depressing the same until the shaft passes thereover, whereupon the weighted arms *I* will rock the shaft, thereby elevating the front end of the hook and causing the  
 30 hook proper *e* of one car to engage the shaft *C* of the other at the cam or presser-arm *H*.

When either the link *F* or the coupling-hook *E* or *E'* is engaged with an opposing car, uncoupling is effected by raising the  
 35 weighted arms *I*, which rock the shaft *C*, and thereby depress the hook thereon and its pin *G'*, while the cam *H* or *H'* disengages the hook of an opposing car.

The arms *I* may be arranged to be operated  
 40 by hand, as in Figs. 1, 2, and 3, in which case they may be held in the raised position by causing the hook *i* at the free end of such arms to engage a link in the chain *J*, which is secured at the sides of the car.

45 In the form shown at the right of Fig. 4 the shaft is rocked by means of a rod *K*, which

is secured to one of the arms *I* and extends to the roof of the car.

The draw-head may be provided with a spring-acted buffer *N* for receiving the im- 50-  
 pact of an approaching car, and also with a vertical aperture *O* for receiving a coupling-pin for coupling the car to the shackle-bar of a locomotive.

The oblong slots *a*<sup>5</sup> *b* permit the shaft *C* and 55  
 its appurtenances to move forward and backward in response to the compression and expansion of the draw-spring *M* in coupling and in starting the cars.

Having thus described my invention, what 60  
 I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a car-coupling, of a rock-shaft, a coupling-hook carried thereby for engaging the shaft of an opposing coup- 65  
 ling, weighted arms on said shaft tending to normally maintain the hook in position to couple, and a presser-arm or cam on the shaft at the point engaged by the hook of an op-  
 posing coupling, the rocking of said shaft 70  
 serving to depress the hook thereon, and the presser-arm on said shaft serving to disengage therefrom the hook of an opposing car, substantially as described.

2. The combination, in a car-coupling, of a 75  
 draw-head, a rock-shaft, a coupling-hook thereon adapted to engage a shaft of an opposing coupling, said hook having a rearward extension and studs or pins on such extension, a  
 link on the shaft, having a rearward extension 80  
 ranging above one of the studs on the coupling-hook, and a lever fulcrumed by a slotted connection on the draw-head and engaged by the second stud on the coupling-hook, said  
 lever carrying a vertical pin at its free end, 85  
 and the said link and pin being operated by the movements of the coupling-hook, substantially as described.

ALFRED R. HEATH.

Witnesses:

H. H. STILWELL,

WILBER F. STILWELL.