

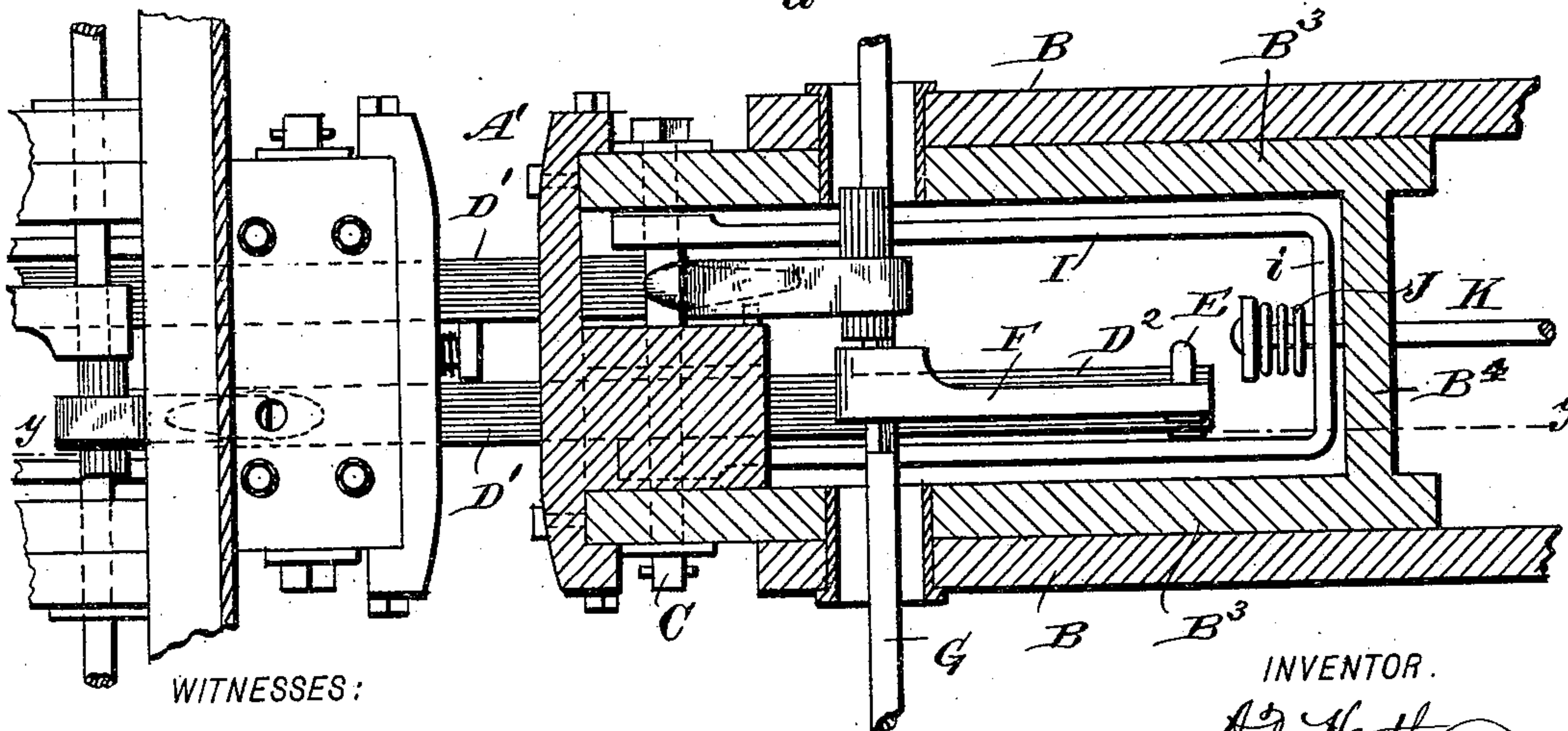
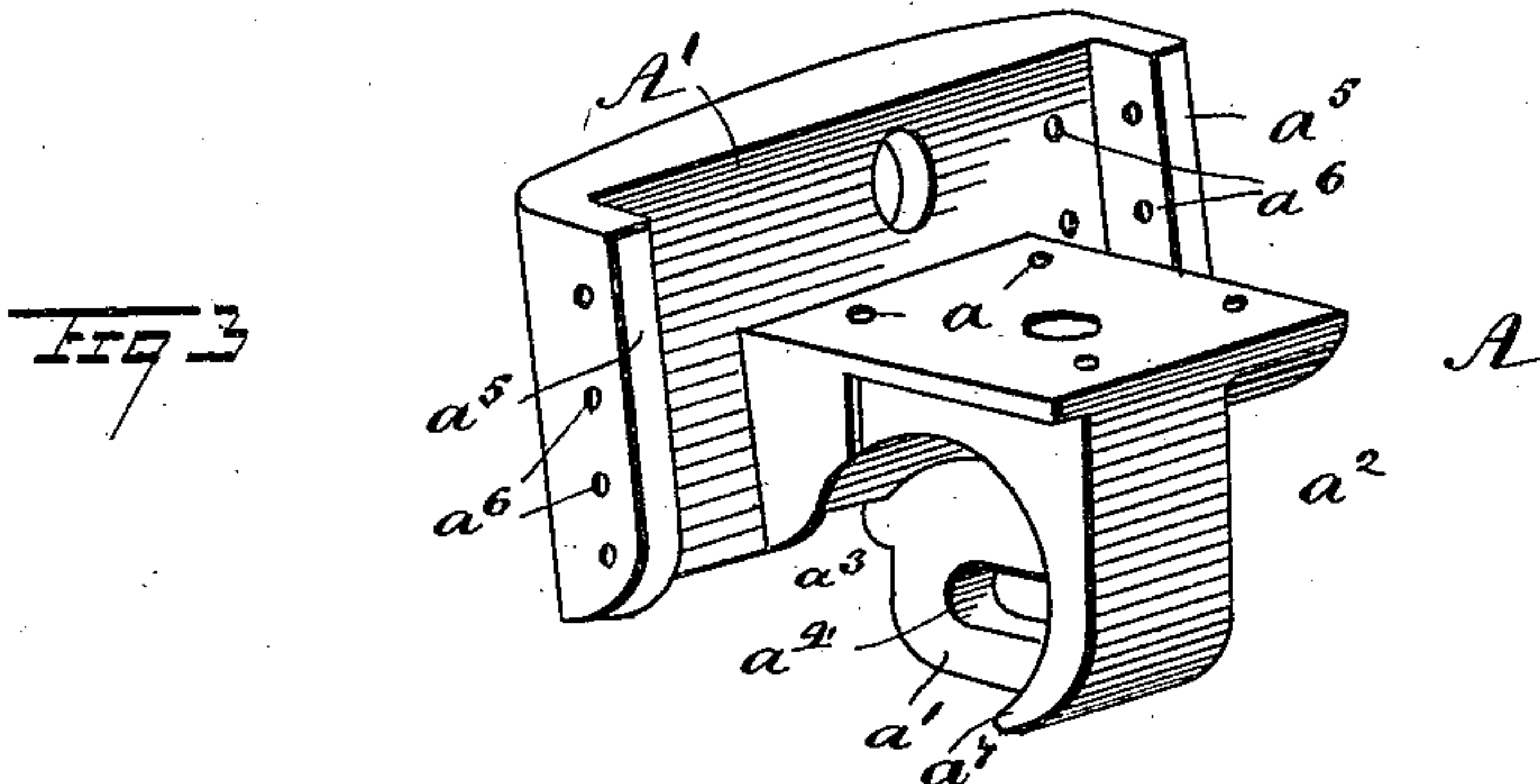
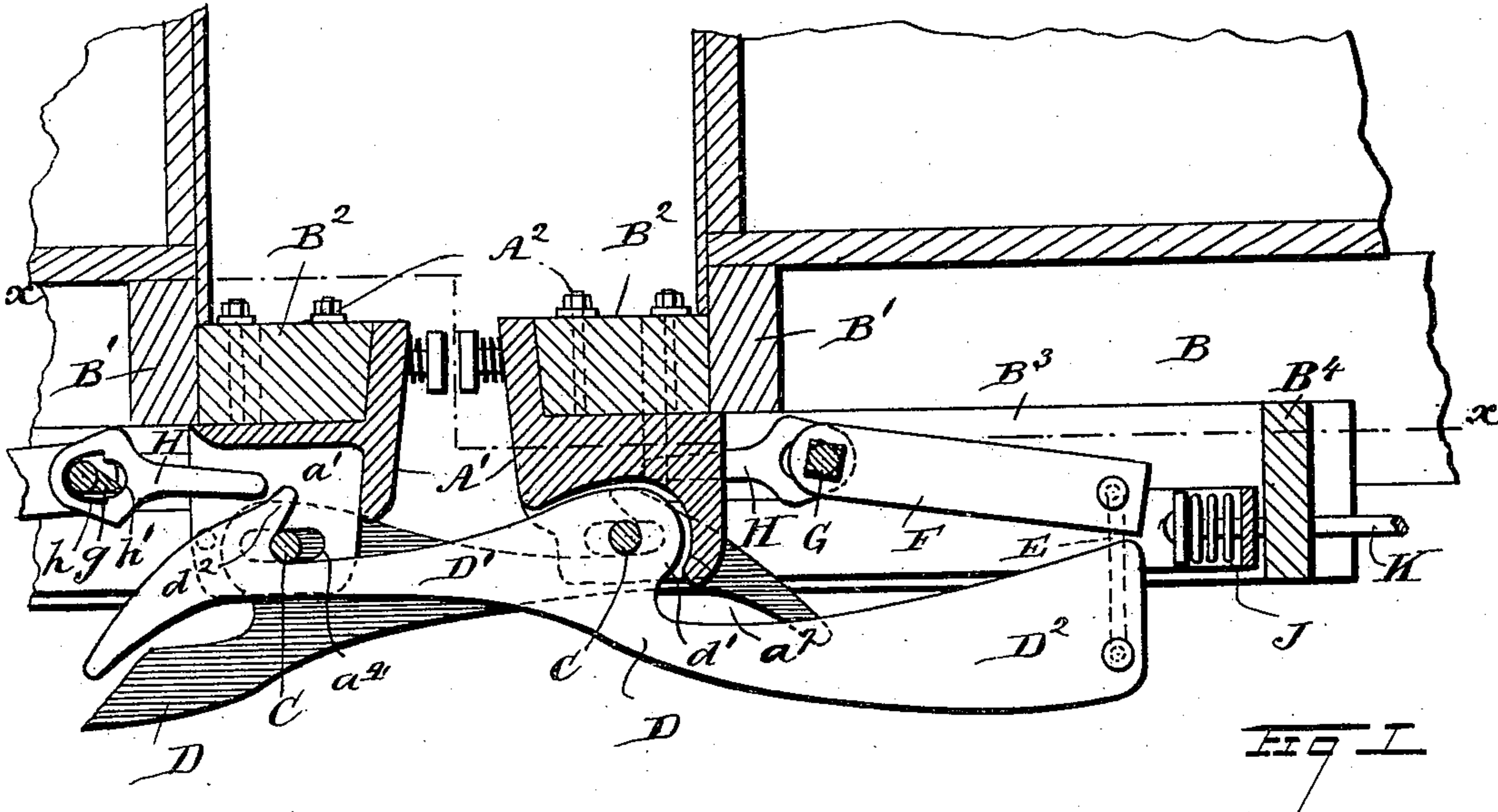
(No Model.)

3 Sheets—Sheet 1.

A. R. HEATH.
CAR COUPLING.

No. 466,167.

Patented Dec. 29, 1891.



WITNESSES:

H. Walker
C. Sedgwick

INVENTOR.

A. R. Heath

BY

M. M. M.
ATTORNEYS

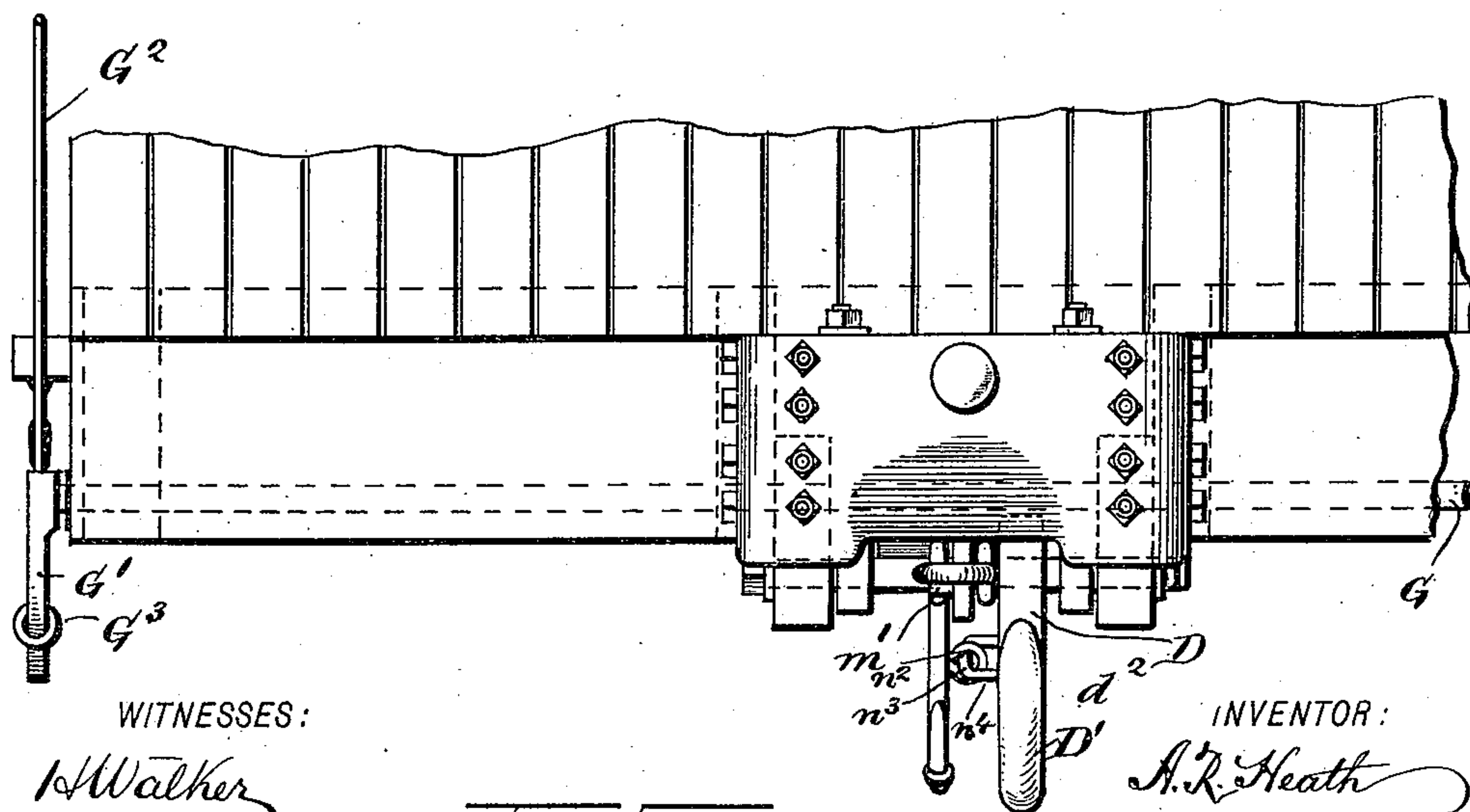
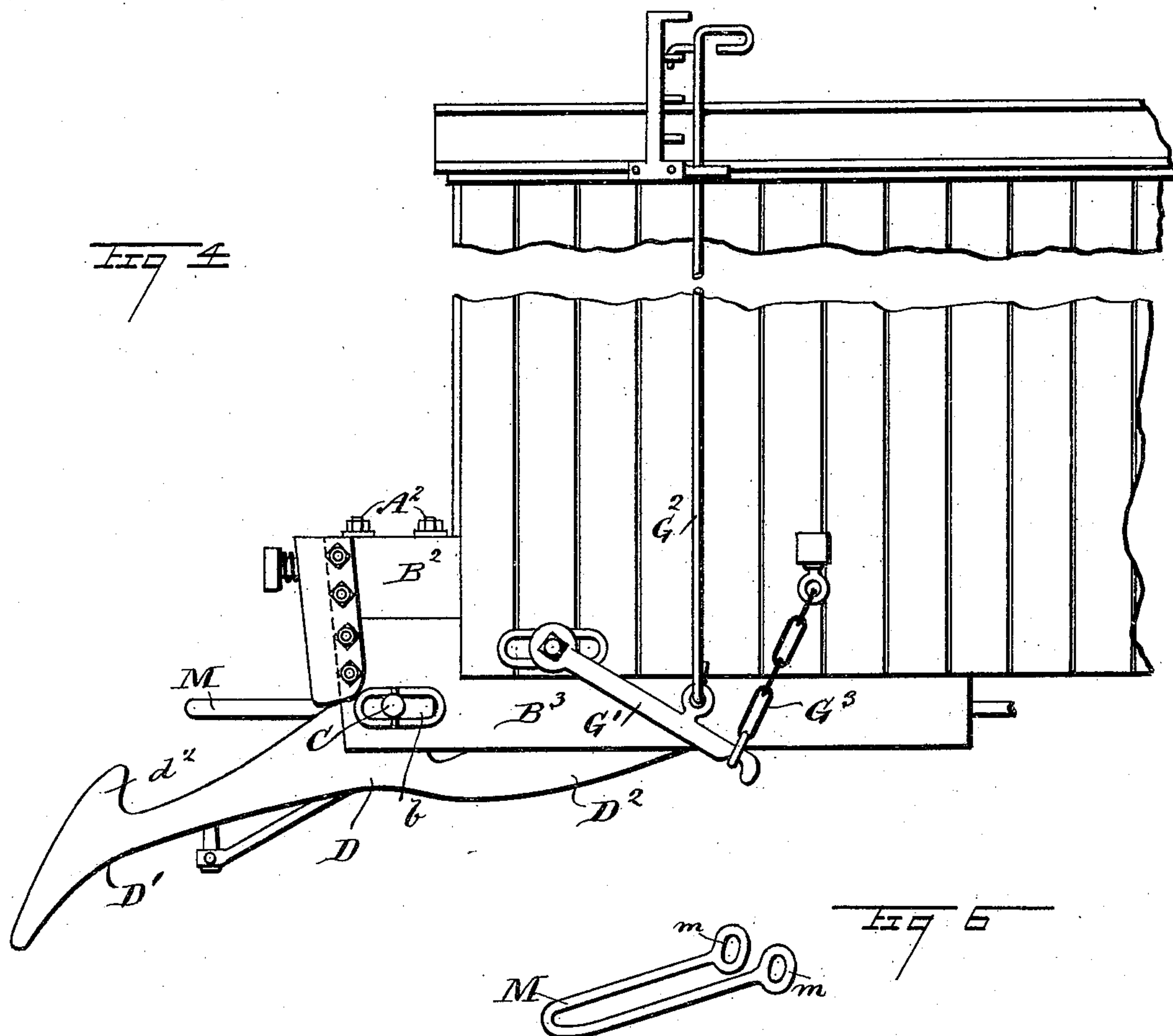
(No Model.)

3 Sheets—Sheet 2.

A. R. HEATH.
CAR COUPLING.

No. 466,167.

Patented Dec. 29, 1891.



WITNESSES:

H. Walker
C. Sedgewick

INVENTOR:

A. R. Heath

BY

ATTORNEYS

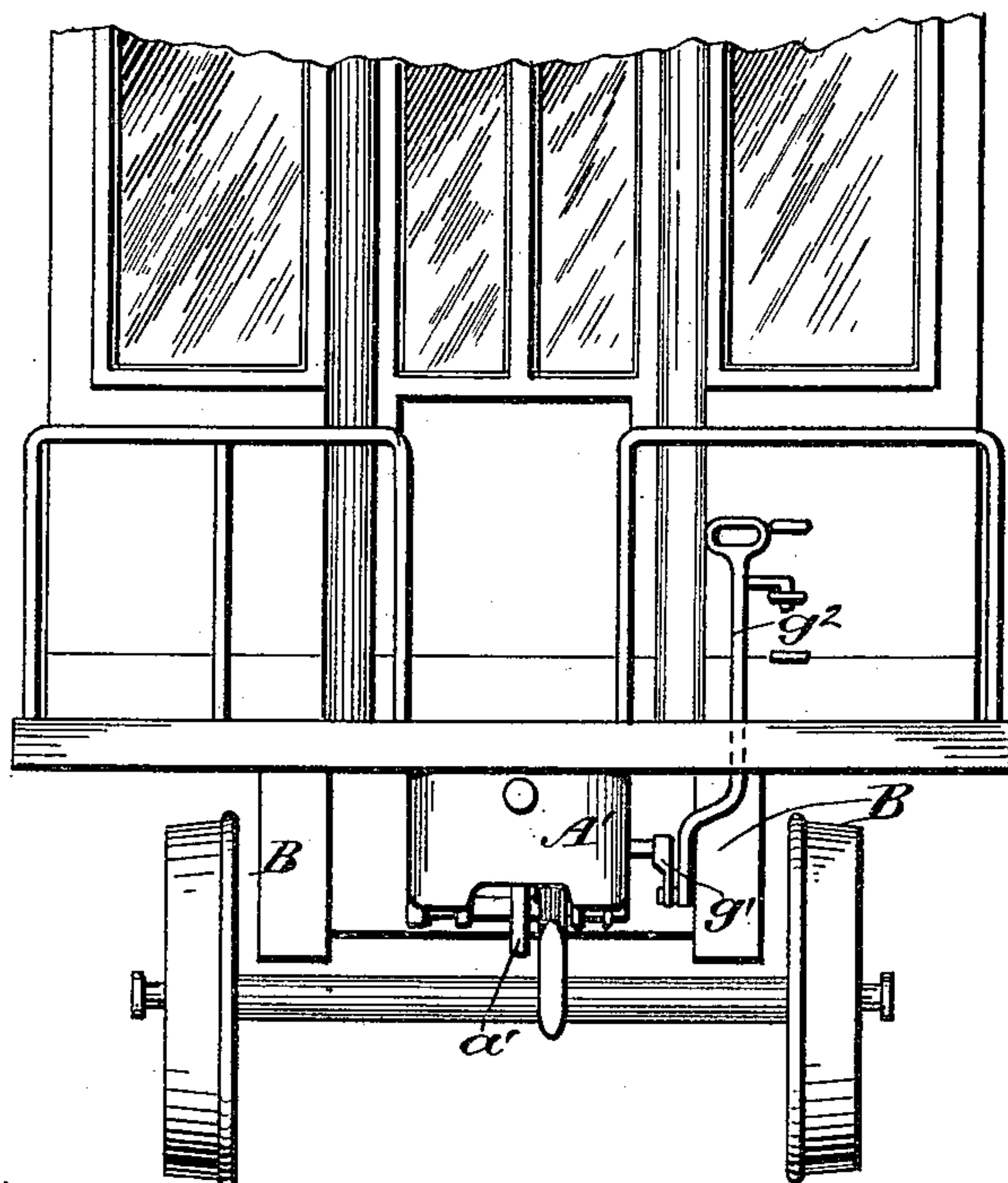
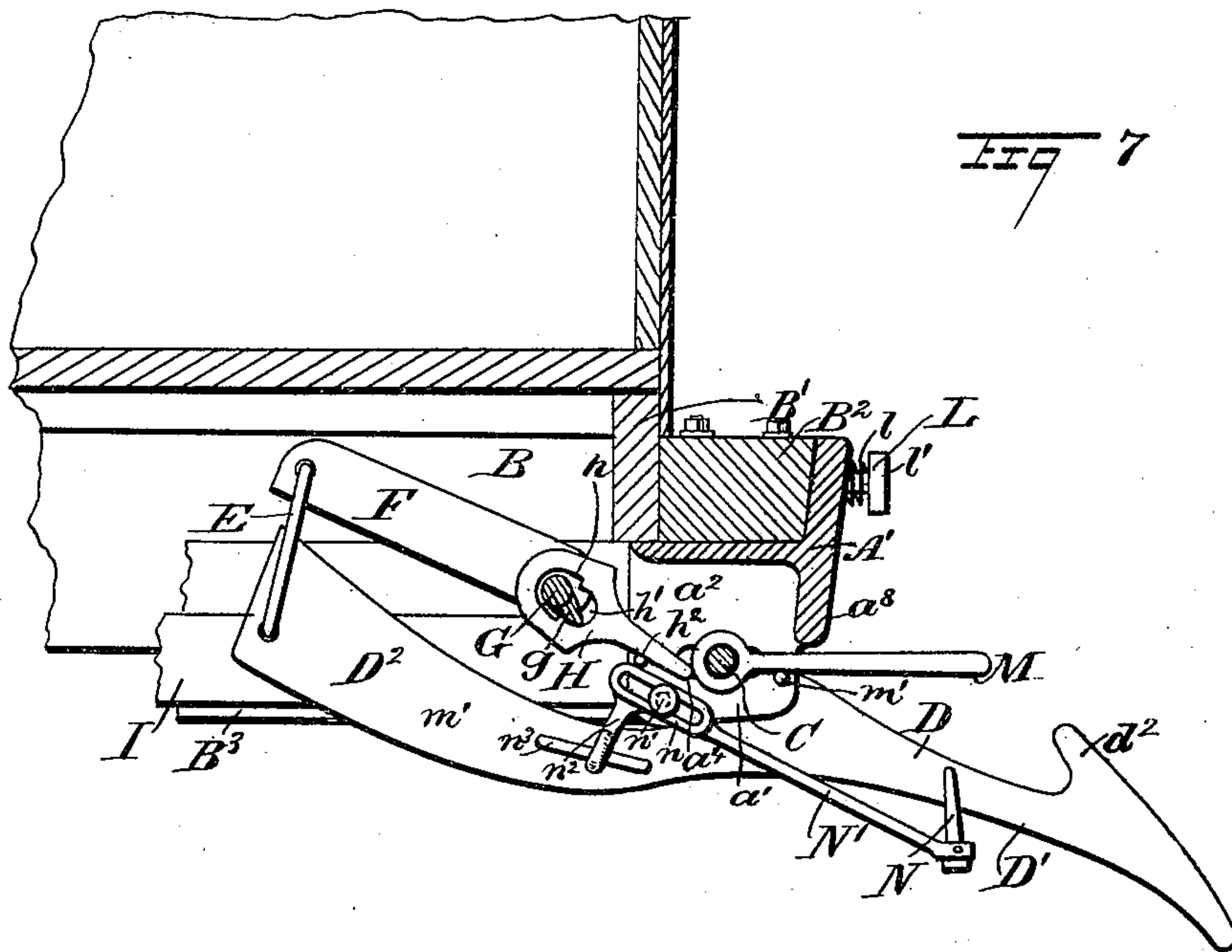
(No Model.)

3 Sheets—Sheet 3.

A. R. HEATH.
CAR COUPLING.

No. 466,167.

Patented Dec. 29, 1891.



WITNESSES:

H. Walker
C. Sedgewick

INVENTOR:

A. R. Heath
BY Munn & Co
ATTORNEYS

ATTORNEYS

UNITED STATES PATENT OFFICE.

ALFRED R. HEATH, OF COVINGTON, INDIANA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 466,167, dated December 29, 1891.

Application filed April 28, 1891. Serial No. 390,844. (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 present invention relates to car-couplings of the class in which coupling-hooks are employed, of which examples are shown in United States Patents No. 392,801, granted to me November 13, 1888, and No. 408,481, granted to me August 6, 1889.

The object of the invention is to improve couplings of this character with a view of providing increased strength and increased convenience in effecting the coupling and uncoupling.

The invention includes an improved means for simultaneously actuating from one car the coupling-hooks of both cars in uncoupling devices, by which cars provided with the improved coupler are adapted to automatically couple to cars provided with the ordinary link-and-pin coupling, and it further includes the various details hereinafter particularly described, and defined 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 longitudinal sectional elevation of the ends of two cars provided with my improved coupling, showing the latter in the coupled position, the section being taken on the line *y y* in Fig. 2. Fig. 2 is a partly sectional plan view, the section being indicated by the line *x x*, Fig. 1. Fig. 3 is a perspective view of the casting or head in which the coupling-hooks are pivoted. Fig. 4 is a side elevation. Fig. 5 is a front elevation. Fig. 6 is a perspective view of the link for use with an opposing car having an ordinary old-style draw-head. Fig. 7 is a longitudinal vertical sectional elevation; and Fig. 8 is a front elevation of a passenger-car with the link and its appurtenances for coupling to an ordinary draw-head omitted.

In constructing a car-coupling in accordance with my invention I prefer to provide a draw-head which is fixedly secured in place, instead of being made to yield bodily, as in

the usual manner of mounting draw-heads. Thus B represents the longitudinal sills, and B' the end sill, of a car; and B², the dead-wood of a freight-car.

My improved draw-head A is formed with a face-plate or buffer-plate A' at its front end, and on the top the said head is formed with bolt-holes *a* for receiving bolts A², that pass through the dead-wood B². At its underside the head A is provided with a depending flange *a'*, which in effect forms, in connection with the draft-timbers B³, chambers or compartments *a*² *a*³, and said flange is formed with a transverse oblong slot *a*⁴ for the passage therethrough of the axial pin C, on which the coupling-hook D is pivoted at one side of the flange *a'* in the compartment *a*³, the pin C at the opposite side of the partition *a'* in the compartment *a*² forming the coupling-pin with which the coupling-hook of the opposing car engages.

The face-plate A' of head A is formed with rearwardly-extending flanges *a*⁵, the body of the plate and the said flanges being formed with bolt-holes *a*⁶, through which bolts are passed for securing the head to the dead-wood.

The pin C passes through a circular opening in the coupling-hook D through the oblong slot *a*⁴ in partition *a'* and corresponding oblong slots *b*, formed in the draft-timbers B³.

The coupling-hook D comprises the shank D', having the hook proper *d*² on its upper side at the outer end and the rearwardly-extending portion D², which is heavier than the shank D', so as to normally maintain the latter in about the horizontal plane. The rearward extension D² is offset from the shank D', so that the upper edge of the said extension lies in about the plane of the lower edge of said shank, whereby there is formed a shoulder *d'* at the inner end of the shank, which shoulder is rounded and adapted to abut against the rear wall *a*⁷ of the compartment *a*³ when the hook is moved inward upon the cars coming together, and thus relieve the pin C of strain. The rearward extension D² of the hook is united by a link E to an arm F, which extends rearwardly from the operating-shaft G. Said shaft also has a presser-arm H, which lies in the compartment *a*²

above the pin C, the presser-arm so provided being adapted to press downward on the hook d^2 of an opposing coupling-hook D. The presser-arm H is held loosely to the shaft G, so that the shaft may have a limited movement independently of the presser-arm, and vice versa. Thus the opening h in the presser-arm, through which the shaft G passes, is somewhat larger than the latter, the opening h having a recess h' formed at the forward side thereof. The shaft G within the opening h is formed with a stud g , which extends into the recess h' and bears against the upper or lower wall of the said recess as the shaft G is rocked, and thus it has a movement independent of the presser-arm H to the extent of the recess h' . The presser-arm normally rests on a pin h^2 , as shown in Fig. 7.

The operating-shaft G, it is evident, may be operated in various ways. In freight-cars, for instance, its ends may be extended to the sides of the cars and provided with handles G' , which may be thrown by hand or by means of rods G^2 , running to the top of the car at each side; or a rod G^2 may be arranged at one side of the car only, if desired. A chain G^3 serves to hold the shaft in a given position by causing one or both of the handles G' to engage one of the links of the said chain, and by this means the shaft may be turned to move the presser-arm H to the position shown in Fig. 7 and locked in such position, whereby the presser-arm will prevent the coupling of a hook D on an opposing car.

In operation it will be seen that the coupling D being in the normal or substantially horizontal position, as the opposing car approaches the coupling-pin C of the latter will strike the coupling-hook d^2 of the car approached, throwing down the forward end until the hook d^2 passes in the rear of the said coupling-pin, when the said hook d^2 will be thrown upward in the rear of such coupling-pin. Thus the coupling-hook of one car will engage the coupling-pin C in the compartment a^2 of the opposite car beneath the presser-arm H of such opposite car, the said presser-arm rising as the coupling-pin enters. When the cars are to be uncoupled, the shaft G of either car is so rocked as to cause the presser-arm carried by said shaft to press down on the coupling-hook D of the adjacent car, disengaging the said hooks from the pin C, while at the same time the coupling-hook D, which is connected with the shaft G, so moved, will be operated through the medium of the arm F and link E, and thus the operating-shaft of either car will serve to uncouple the hooks of both cars simultaneously. The bearings or openings g^3 , through which the rock-shaft G passes, are shown oblong, but they may be round in practice. A yoke I, of stirrup shape, is pivoted at the free extremities of its arms to the pin C and extends rearwardly between the draft-timbers, the bend or cross-bar i of such yoke forming one abut-

ment for a spring J. The spring J surrounds the draw-rod K, which passes through the cross-bar B^4 , which unites the draft-timbers B^3 , and through the cross-bar i of yoke I, the forward end of the spring abutting an enlargement or disk on the forward end of the said rod. With this construction as the cars are started the draft will be initially on the spring J; but the pin C will be immediately drawn forward by the coupling-hook D to strike against the front walls of the oblong slots $a^4 b$. The draw-spring J may be differently located and arranged—as, for instance, the yoke may connect with the draw-springs now generally employed.

In the face-plate A' of the head A buffer-bars L are fitted, and springs l surround said bars between the buffer-heads l' and the said face-plates. Thus the impact of two cars coming together will be distributed between the buffer L, spring J, and the wall a^7 of head A.

In the case of passenger-cars I prefer not to extend the shaft G to the sides of the car, but terminate it adjacent to the draw-head, where it is provided with a crank-arm g' , which is connected with the lower end of an operating-rod g^2 , which extends upward through the car-platform and to the side of the car-door, all as shown in Fig. 8.

In order that the cars provided with my improved coupler may be coupled to a car having the ordinary link-and-pin form of draw-head, I provide an improved link M, as shown in Figs. 4 to 7, which is formed with eyes m at the inner ends of its arms, by means of which it is pivoted on the pin C. The link M lies in a nearly horizontal position, supported on a fixed stud m' .

The link M is employed in connection with a vertical coupling-pin N, carried by an angle-arm N' , the latter being carried by the same car to which the link M is pivoted, each car being so provided with a link and pin. The angle-arm N' is formed near its angle with an elongated loop n , through which a fulcrum-pin n' passes to the flange a' of head A, and the short arm n^2 of said angle-arm extends downwardly, its lower end having a sliding connection with the coupling-hook D, the connection being preferably effected through the medium of the bar n^3 , which is formed with inbent ends n^4 , that are secured to the hook D. With this construction as the opposing car approaches it strikes the hook d^2 of the car approached, thus depressing the hook d^2 and its shank D' and raising the rearward extension D^2 . As the front end or shank is depressed slightly the rearward extension D^2 is correspondingly raised and carries upward the rear end of the angle-arm N' and greatly depresses the front end of said arm and with it the coupling-pin N. Thus the link M will enter an ordinary draw-head of an approaching car, and as the draw-head of such approaching car passes over the hook d^2 the latter will be raised by the heavier rear end D^2 , the effect of which will be to elevate the coup-

ling-pin N, causing it to enter the usual vertical hole of the opposing ordinary draw-head and engage the link M, thereby automatically coupling the two cars together. The cars thus coupled may be readily uncoupled in the same manner as with the hooks D, previously described, by rocking the shaft G on the car carrying the link M and its pin N.

I thus provide a car with automatic couplers for coupling to either a similarly-equipped car or a car having the old-style draw-head, and in either case the couplers may be operated without the attendant entering between the cars.

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

1. The combination, in a car-coupling, of a coupling-hook, a pin to which said hook is pivoted, the said pin forming, also, a coupling-pin for engaging the coupling-hook of an opposing car, a rock-shaft, an arm F on said shaft, a link connecting said arm with the rear end of the coupling-hook on the car therewith, and a presser-arm also carried by said rock-shaft and arranged to disengage the coupling-hook of an opposing car, substantially as described.

2. The combination, in a car-coupling, of a fixed draw-head, a coupling-hook pivoted thereto, the pivot-pin having a forward and backward play, a yoke secured to said pin, and a draw-spring connected with said yoke, substantially as described.

3. In a car-coupling, the combination of a fixed draw-head, a coupling-hook pivoted thereto by a pin, the head having a fixed abutment a' , against which the hook contacts in its rearward movement, the pivot-pin being capable of forward and backward move-

ment, a yoke secured to said pin and connected with a draw-spring, and a spring-buffer projecting from the draw-head, substantially as described.

4. The combination, in a car-coupling, of a coupling-hook pivoted intermediate of its ends, a link for engaging an ordinary draw-head, an angle-lever fulcrumed in the rear of the pivot of the coupling-hook, one arm of such angle-arm extending forwardly of such pivot and carrying at its free end a coupling-pin adapted to coact with above-named link and engage said link after the latter has entered an opposed draw-head, the said long arm of the angle-arm having a loop, and a fulcrum-pin passing through said loop to a fixed support, the connection affording a shifting fulcrum and the short arm of the angle-arm being connected to the coupling-hook at a point in the rear of the pivot of said hook by a sliding pivotal connection, whereby the angle-arm will tilt as the hook rocks on its pivot, substantially as described.

5. The combination, in a car-coupling, of a coupling-hook pivoted intermediate of its length for movement in the vertical plane, a coupling-link supported on the same draw-head as the coupling-hook, a coupling-pin also supported from said draw-head and adapted to coact with said link in coupling to an opposed draw-head, and connections between the said coupling-pin and coupling-hook, whereby the said pin will be operated through the medium of said hook, substantially as described.

ALFRED R. HEATH.

Witnesses:

H. H. STILWELL,
WILBER F. STILWELL.