

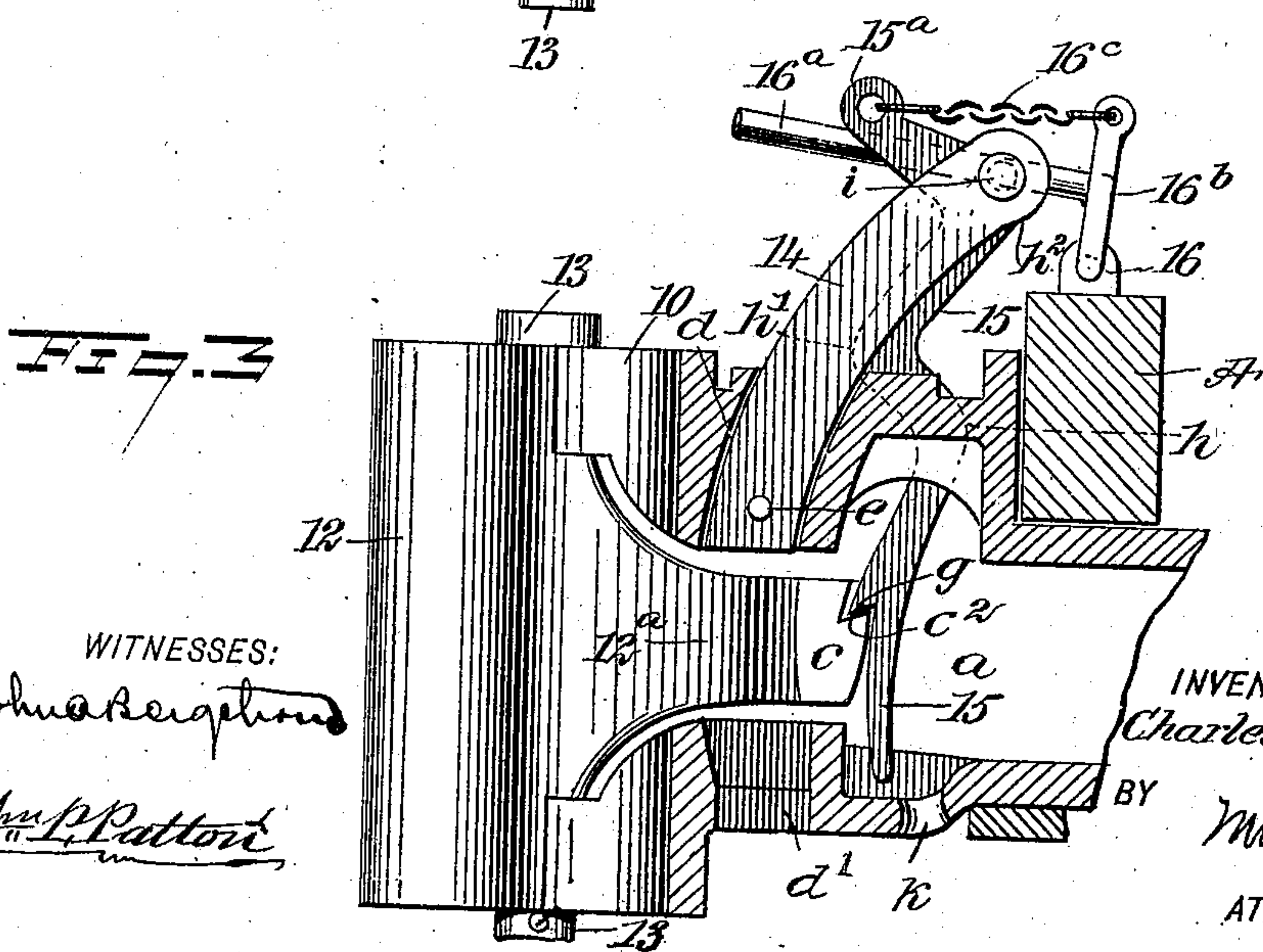
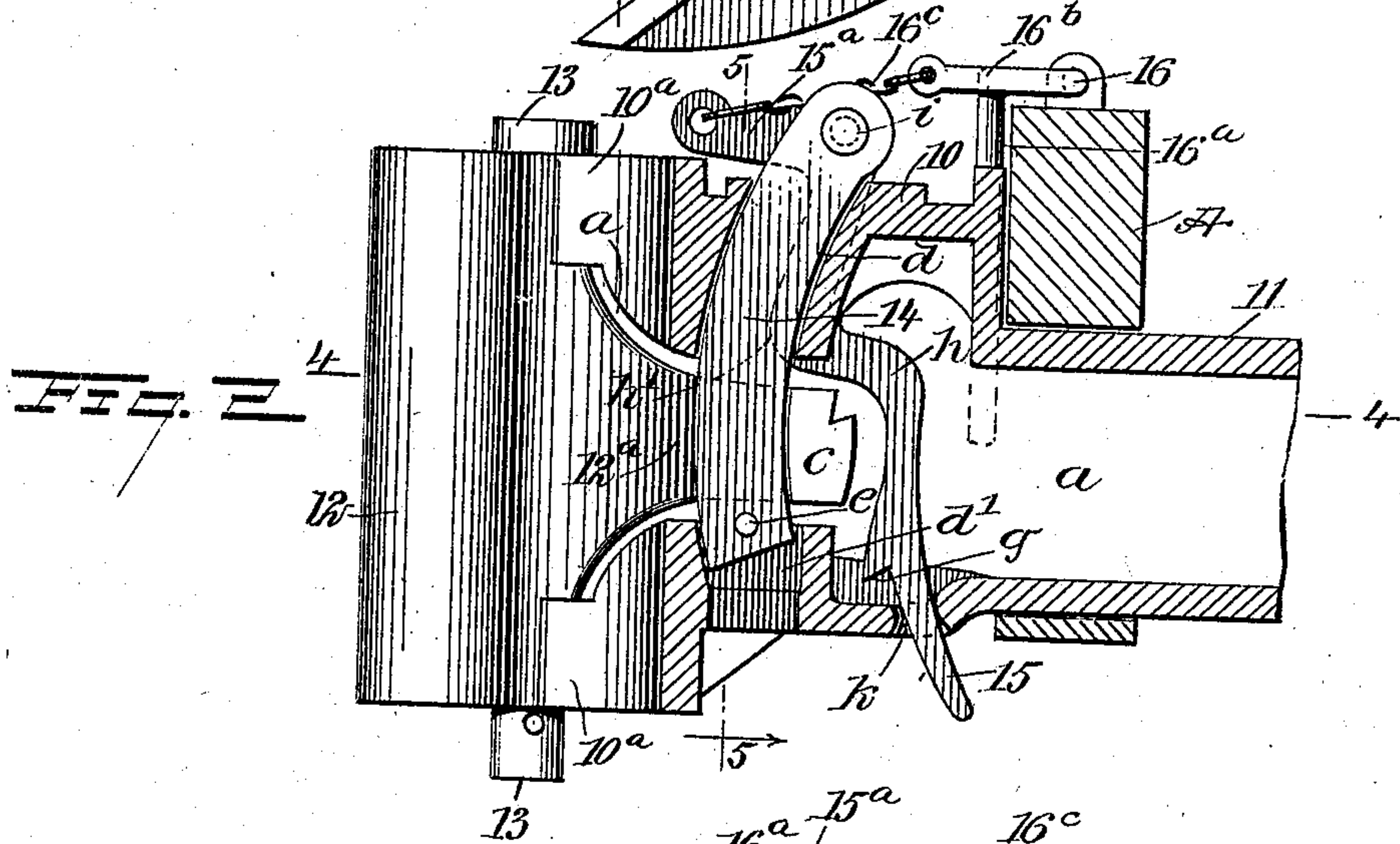
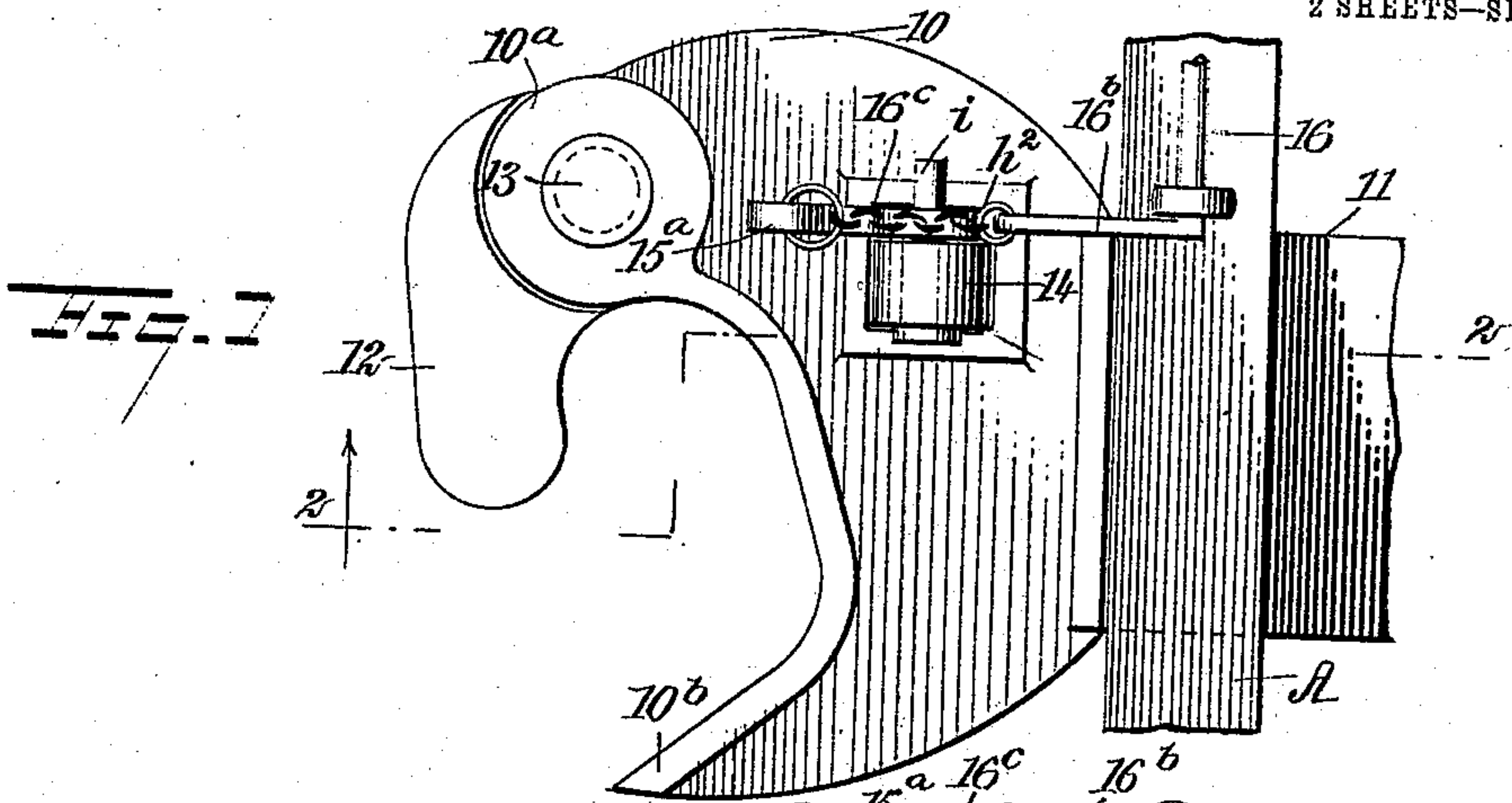
No. 814,979.

PATENTED MAR. 13, 1906.

C. McCARTER.
CAR COUPLING.

APPLICATION FILED AUG. 22, 1905.

2 SHEETS—SHEET 1.



WITNESSES:

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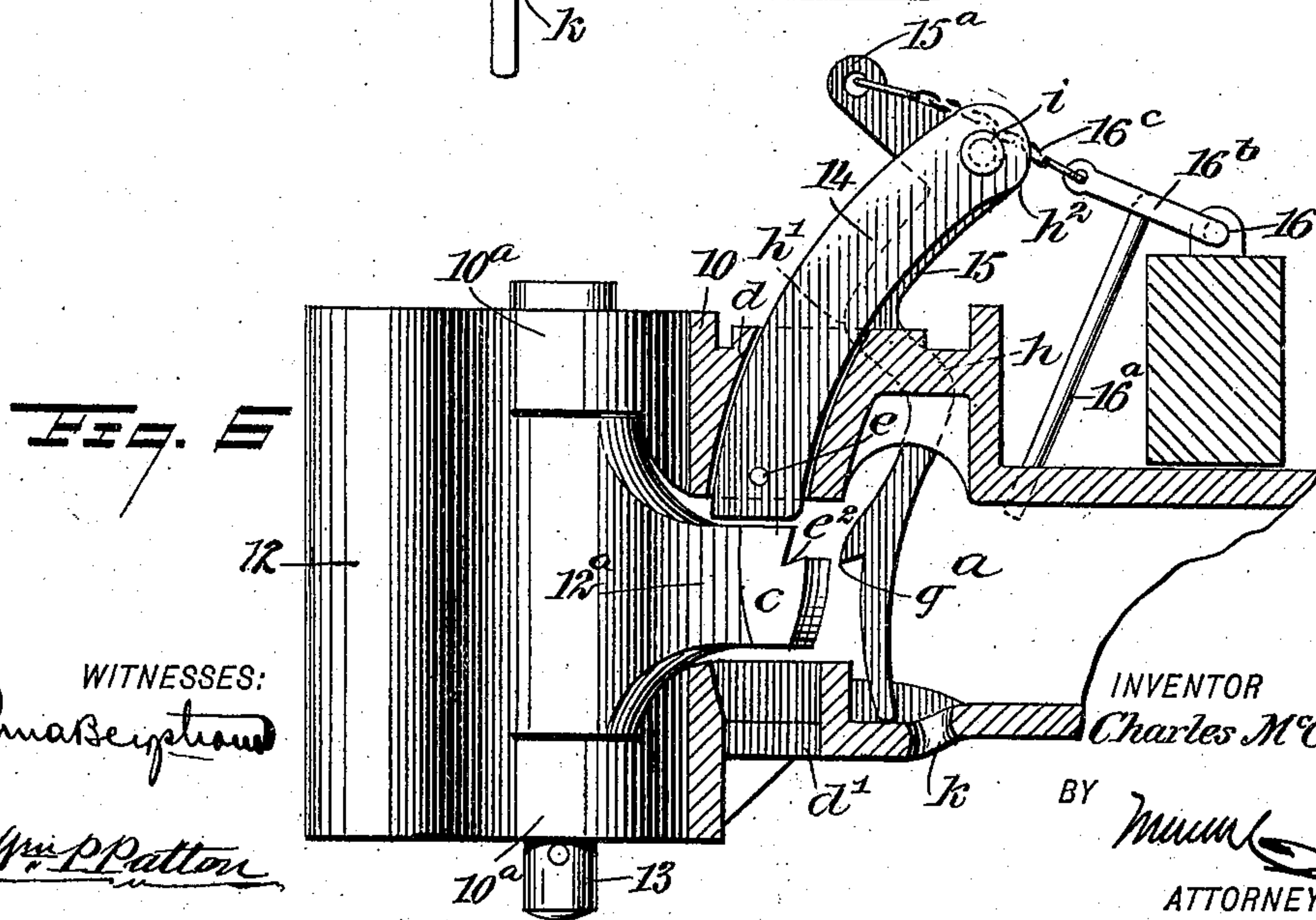
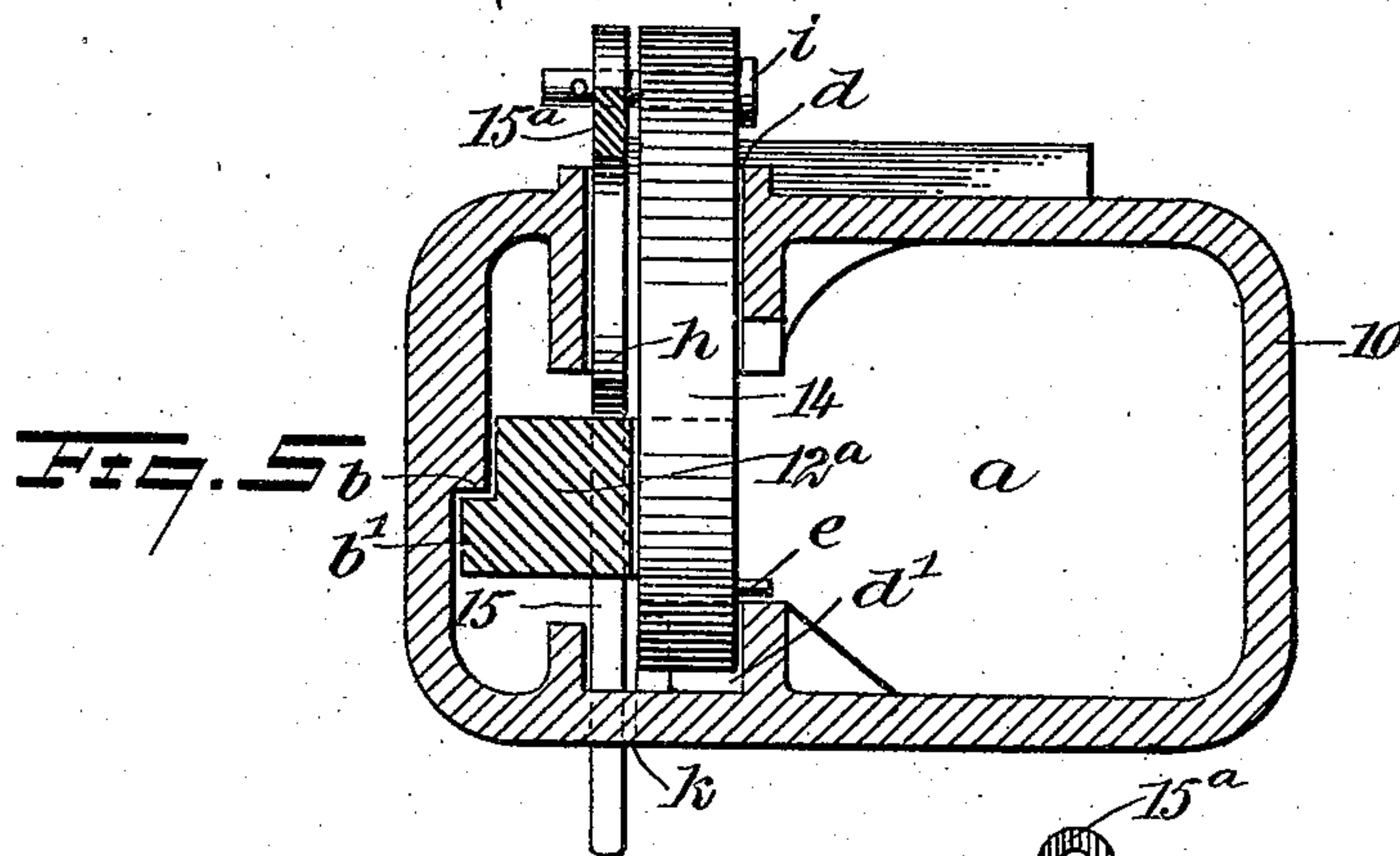
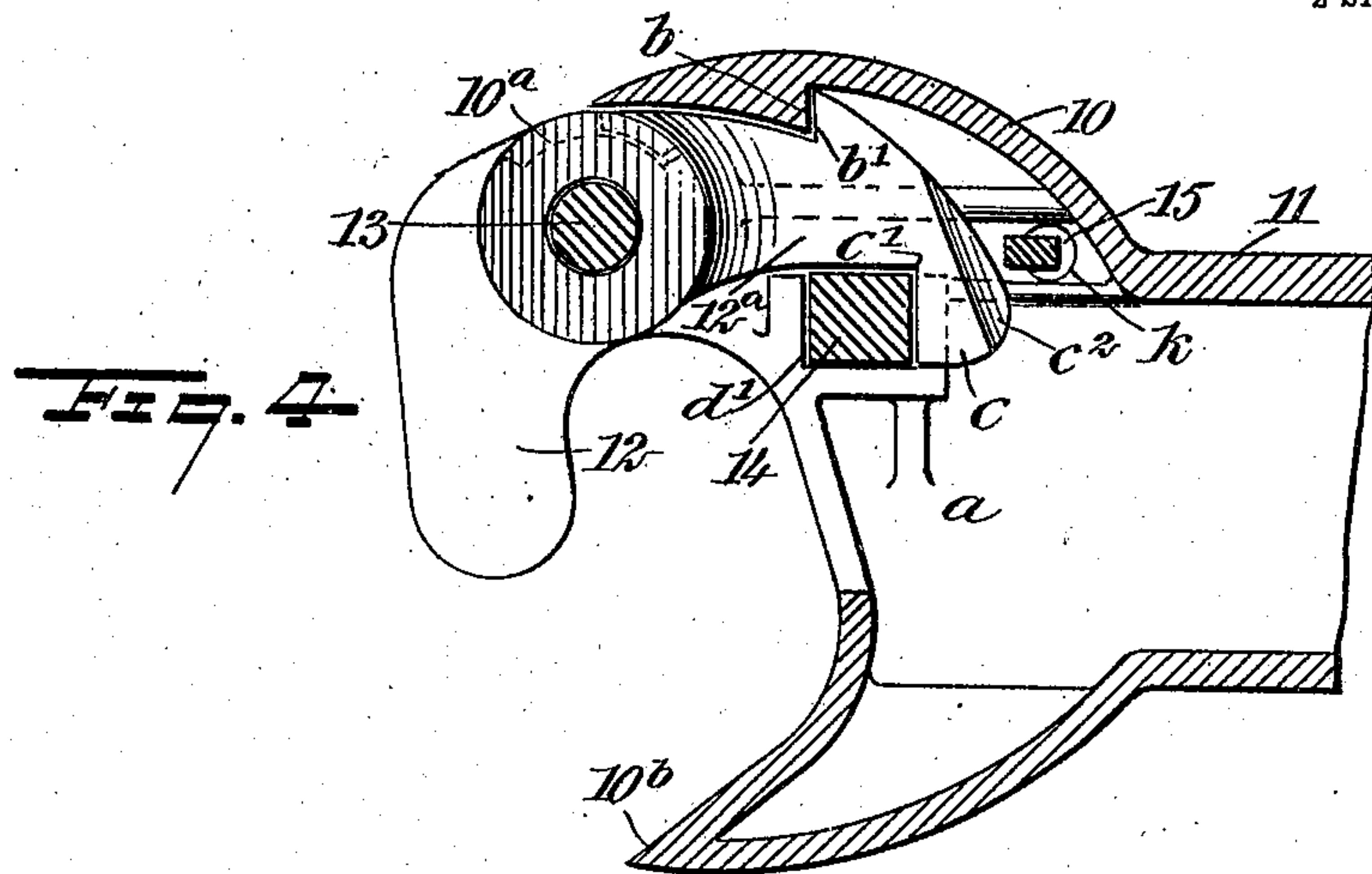
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES McCARTER, OF INDIANAPOLIS, INDIANA.

CAR-COUPLING.

No. 814,979.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed August 22, 1905. Serial No. 275,204.

To all whom it may concern:

Be it known that I, CHARLES McCARTER, a citizen of the United States, and a resident of Indianapolis, in the county of Marion and State of Indiana, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

This invention relates to car-couplings of the Janney type, and has for its object to provide novel features for a device of the character indicated which adapt the coupling for a reliable automatic coupled engagement with a similar coupling, enable the quick, convenient, and safe detachment of two of said couplings, and provide means for an automatic release of two couplings on adjacent cars in a moving train if the fastenings of either of said coupled car-couplings become loosened and liable to detachment, thus severing the train of cars and avoiding accidental derailment of a portion that might result if the loose coupling fell upon the track.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

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

Figure 1 is a plan view of a car-coupling having details of the improvement thereon. Fig. 2 is a sectional side view of the same, taken substantially on the line 2 2 in Fig. 1, showing details of the improvement in coupled condition. Fig. 3 is a view similar to Fig. 2, but showing details in uncoupled adjustment. Fig. 4 is a partly-sectional plan view taken substantially on the line 4 4 in Fig. 2. Fig. 5 is a transverse sectional view substantially on the line 5 5 in Fig. 2; and Fig. 6 is a sectional side view showing an uncoupled adjustment of parts of the improved coupling, effected automatically by a forward pull on the draw-head when the draw-bar of the coupling is accidentally loosened sufficiently to permit the coupling to be drawn away from the transverse timbers of the car-frame a distance, but not entirely released therefrom.

The draw-head 10 is of usual form, having its opposite sides convexed, one side merging forwardly into a pair of spaced ears 10^a and the other side into a horn 10^b. A draw-bar 11 is formed integral with the draw-head 10,

and both are hollow, the continuous chamber *a* therein having an open front end, affording freedom for the working of a knuckle therein. The knuckle-block employed consists of a latch-jaw 12, from which projects a tailpiece 12^a at an angle which adapts the latter to occupy the chamber *a* in the draw-head when the knuckle is pivoted at its angle between the ears 10^a by means of a bolt 13. From the angular corner that defines the junction of the jaw 12 with the tailpiece 12^a the latter projects near the center of thickness had by the jaw, and said tailpiece is so reduced in thickness as to permit its free rocking movement in the chamber *a* and through the front end of the drawhead, as is indicated in Fig. 6. The lateral thickness of the tailpiece 12^a is somewhat less than that of the angular portion of the knuckle that is held to rock between the ears 10^a, and, as is shown in Fig. 4, a hook *b* is formed on the inner side wall of the draw-head, that will be engaged by a similar hook *b'* on a corresponding side of the tailpiece 12^a when the latter is rocked into contact with the draw-head wall and the jaw 12 is projected transversely in front of the draw-head. There is a lateral lug *c* formed on the side of the tailpiece 12^a which is farthest from the hook *b* on the draw-head wall, the forward side of said lug forming a preferably right-angular corner at *c'*, where said side joins the wall of the tailpiece, as appears in Fig. 4.

A locking-block 14, which is curved edgewise and is rectangular in cross-section, fits loosely into correspondingly-shaped slots *d d'*, that are formed, respectively, in the upper and lower walls of the draw-head, the relative position of said coacting slots being such that the lower portion of the locking-block when depressed has a loose engagement with the tailpiece 12^a in the angular corner *c'*, thus holding the hooks *b b'* interlocked and the jaw 12 extended transversely, as is shown in Fig. 4. The arcuate locking-block 14 is disposed with its concave edge rearward and convex edge forward, so that when raised in the slots *d d'* it will project rearwardly and partly above the draw-head, as is shown in Figs. 3 and 6, the upward movement of said block being arrested by an abutment-pin *e*, that projects from the side and lower portion of the locking-block for contact with the inner side of the upper wall of the draw-head when said block is elevated sufficiently to dispose its lower end slightly above the tailpiece 12^a.

For the support and reciprocal movement of the locking-block 14 a lifting-bar 15 is employed that is preferably given the form shown in Figs. 2, 3, and 6, said bar being flat and parallel on the sides, but having zigzag form edgewise. To further explain this detail, it will be seen that a hook *g* is projected from the normally forward edge of the lifting-bar, above the lower end thereof, and at *h* an angular bend is produced that projects a short member forwardly, the length of which is determined by a second bend *h'*, from which the material trends upward and may curve edgewise rearwardly a slight degree and at *h''* again bending forwardly, providing an arm 15^a on the upper end of the lifting-bar. The lifting-bar that has been described is pivoted upon the normally outer side of the locking-block 14, said pivot *i* passing laterally through the lifting-bar at the angle where the arm 15^a and body of the lifting-bar are joined and also through the upper end of the locking-block, these parts being loosely inserted together in the slot *d* and working therein; but the portion of the lifting-bar that extends below the hook *g* curves rearward slightly and when said bar is lowered passes loosely into an aperture *k* formed to receive it in the lower wall of the draw-head, as is shown in Fig. 2.

The improved car-coupling is mounted upon the end of a car-frame in the usual or any approved manner, so that the draw-head is normally seated against the outer vertical face of the transverse end timber A of the car-frame. Upon the cross-timber A or an adjacent portion of the car-frame that carries the improved car-coupling a rock-shaft 16 is loosely secured, having a crank-arm 16^a formed or secured upon an end thereof that projects at one side of the car-frame for rocking movement, and upon the inner end of the rock-shaft a rock-arm 16^b is formed or affixed that is opposite the arm 15^a, and the ends of the arms 15^a and 16^b are connected with a short chain 16^c or other flexible connection.

The lug *c*, that is formed laterally on the end portion of the tailpiece 12^a, as well as the rear edge of the remaining portion of the tailpiece, is preferably rendered convex and the rear corner of said lug rounded, as appears in Fig. 4. The upper side of the tailpiece at its rear end is preferably formed with a rabbet *c'*, which extends from the rear corner of the lug *c* toward the hook *b'*, and, as shown in Fig. 3, the hook *g* on the lifting-bar 15 will be thrown into engagement with the rabbet *c'* when the lifting-bar 15 and locking-block 14 are together raised sufficiently to release the latter from the tailpiece 12^a and permit the knuckle to swing open.

It will be noted that if it is desired to permit the jaw 12 of the knuckle to assume an open position for the coupled engagement of

said jaw with a similar jaw on another car-coupling when brought together the elevation of the lifting-bar by means of the crank-lever 16^a will remove the locking-block 14 from the path of the tailpiece 12^a and simultaneously press said lifting-bar above the hook *g* thereon into contact with the convex rear edge of the tailpiece, thus giving the knuckle a rocking impulse that will cause it to swing open. When the hook *g* is seated upon the rabbet *c'*, the lifting-bar 15 will be supported in elevated adjustment along with the locking-block 14, and said parts will remain in elevated condition until they are lowered either by manipulation of the crank-lever 16^a or by impact of another car-coupling in effecting an automatic coupled engagement with the jaw 12, such a contact manifestly releasing the locking-block, which will drop by gravity into the lower slot *b'*, thus securing the tailpiece from lateral movement and the jaw 12 in coupled condition. The interlocking engagement of the hooks *d d'*, that is produced when the knuckle is closed or is coupled with another car-coupling, disposes draft strain to which the coupling is subjected mainly upon the lug *c* and hooks *d d'*, thus to a great extent relieving the pivot-bolt 13 from such strain.

It will be noted that if the connection of the improved car-coupling with a car-frame of which the timber A is a portion is partially broken, so that the partly-released coupling may be drawn outward or away from the timber A by a coupling with which said partly-released car-coupling is connected, the forward movement of the draw-head will pull upon the chain 16^c and rock the lifting-arm 15^a, as well as the locking-block 14, upward and rearward, thus automatically uncoupling the draw-heads and permitting the secured draw-head to be separated from the one that is loosely held on the car it is to draw, which release will prevent a complete removal of said car-coupling and its possible descent by gravity into contact with wheels of the moving train, which would be liable to throw the cars from the track.

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

1. The combination with a hollow draw head and a draw-bar thereon, of a knuckle having an angularly-bent tailpiece pivoted at its angle between ears on the draw-head at one side and front thereof, a locking-block curved edgewise and held loosely in coacting curved slots formed in the upper and lower walls of the draw-head, said block, when lowered, contacting with one side edge of the tailpiece for holding the knuckle closed, a lifting-bar pivoted on the locking-block at one side for reciprocation of said block, and means for manipulating the lifting-bar.

2. The combination with a hollow draw-

head and a draw-bar thereon, of a knuckle comprising a locking-jaw and a tailpiece projected at an angle from said jaw, the knuckle being pivoted at its angle between ears on the draw-head at one side and front thereof, a locking-block curved edgewise and working in corresponding curved slots in the upper and lower walls of the draw-head so as to trend upward and rearward when raised, a stop on the lower end of the locking-block that defines its elevation, a lifting-bar bent edgewise and having a forwardly-projected arm on its upper end, said bar being pivoted at its upper end laterally on the upper end of the locking-block, said block being adapted for contact with the inner side of the tailpiece when the knuckle is closed and the block dropped by gravity, a flexible connection on the arm of the lifting-bar that is engaged with an arm on a rock-shaft carried by the car, means for rocking said shaft and elevating the lifting-bar and locking-block, and a projection on the lifting-bar that may seat upon the tailpiece when the knuckle is open and retain the locking-bar raised until the knuckle is closed.

3. In a car-coupling of the character described, the combination with the hollow draw-head, the knuckle having an angularly-

bent tailpiece and rockable in the draw-head, said tailpiece having a rabbet on its upper side, of a locking-block curved edgewise and working in a curved slot in the upper and lower walls of the draw-head so as to trend upward and rearward when raised, a stop-pin on the lower end of the locking-block that limits its upward movement, said block being adapted to loosely contact with the inner side of the tailpiece when said tailpiece is closed toward a side of the draw-head, an angularly-bent lifting-bar having a hook on its forward edge near the lower end, said lifting-bar having a forwardly-projecting arm on its upper end, the bar being pivoted at the angular junction of its arm therewith upon an adjacent side of the locking-block at the upper end of said block, and means for simultaneously elevating the lifting-bar and locking-block so that the lower end of the block clears the tailpiece and the hook on the lifting-bar seats upon the rabbet on said tailpiece.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES McCARTER.

Witnesses:

EBENEZER P. KELLEY,
CHARLES N. CARIMEE.