

M. B. GIBERSON.
CAR COUPLING.

No. 597,462.

Patented Jan. 18, 1898.

Fig. 1.

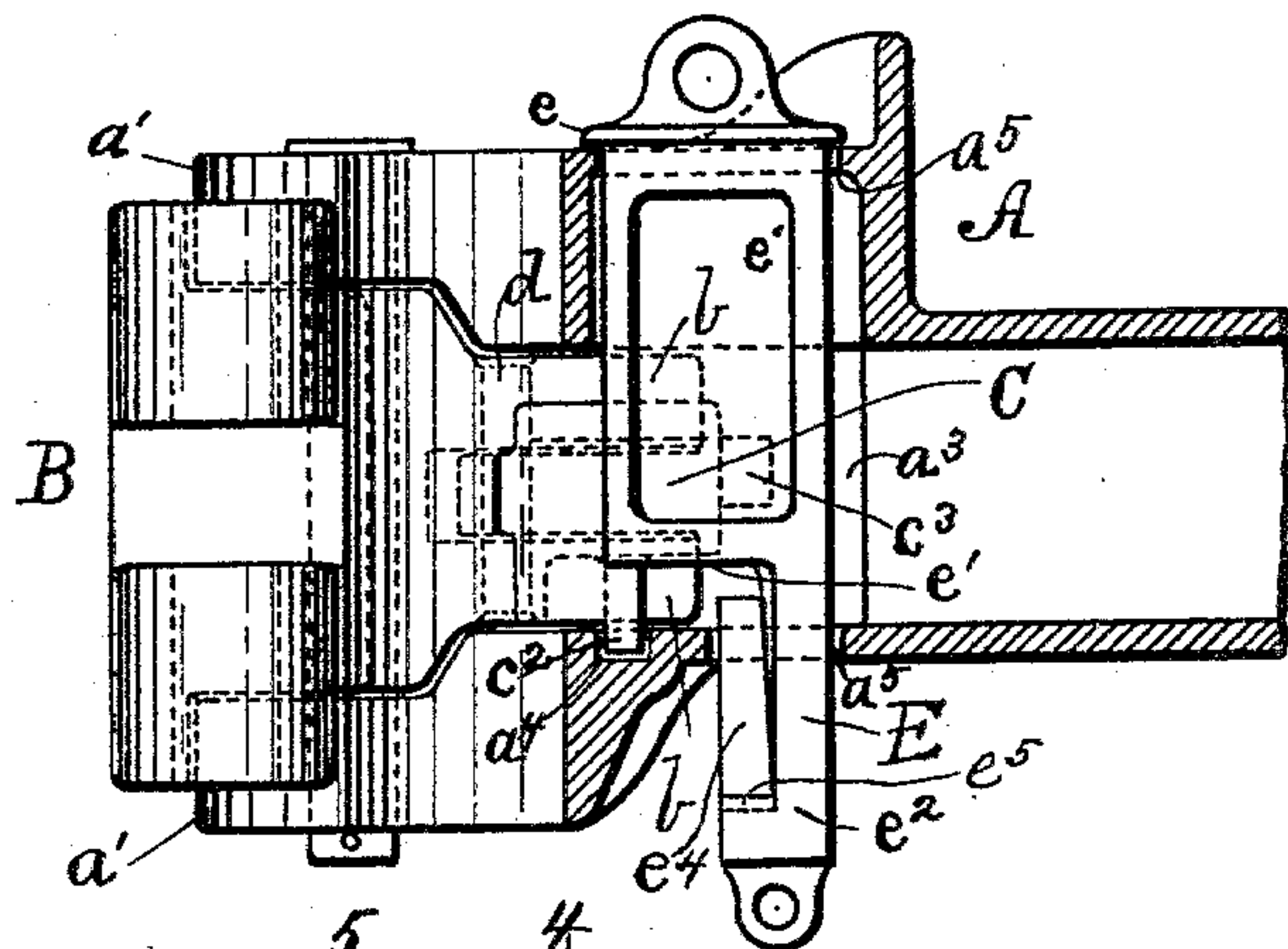


Fig. 2.

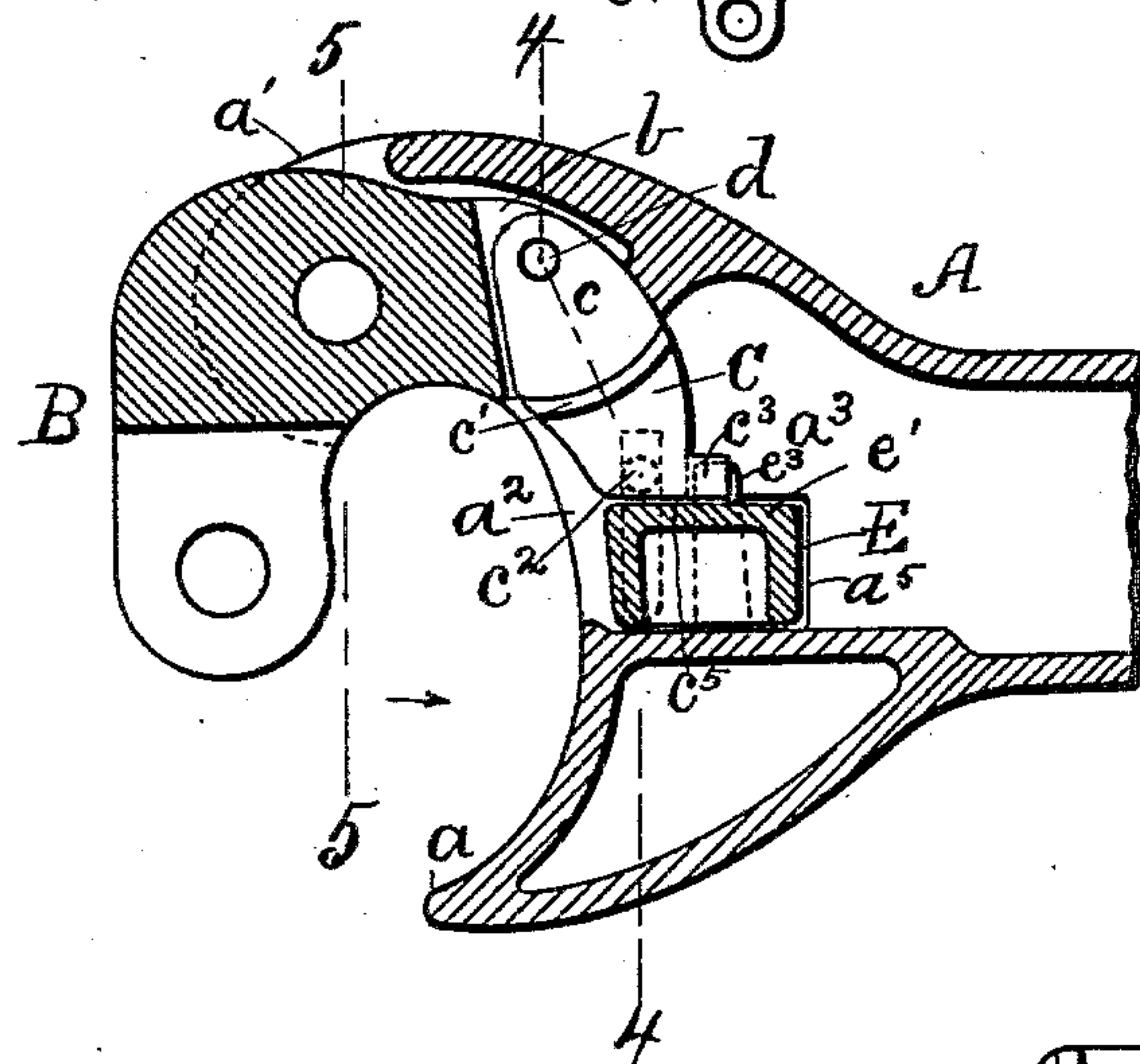


Fig. 3.

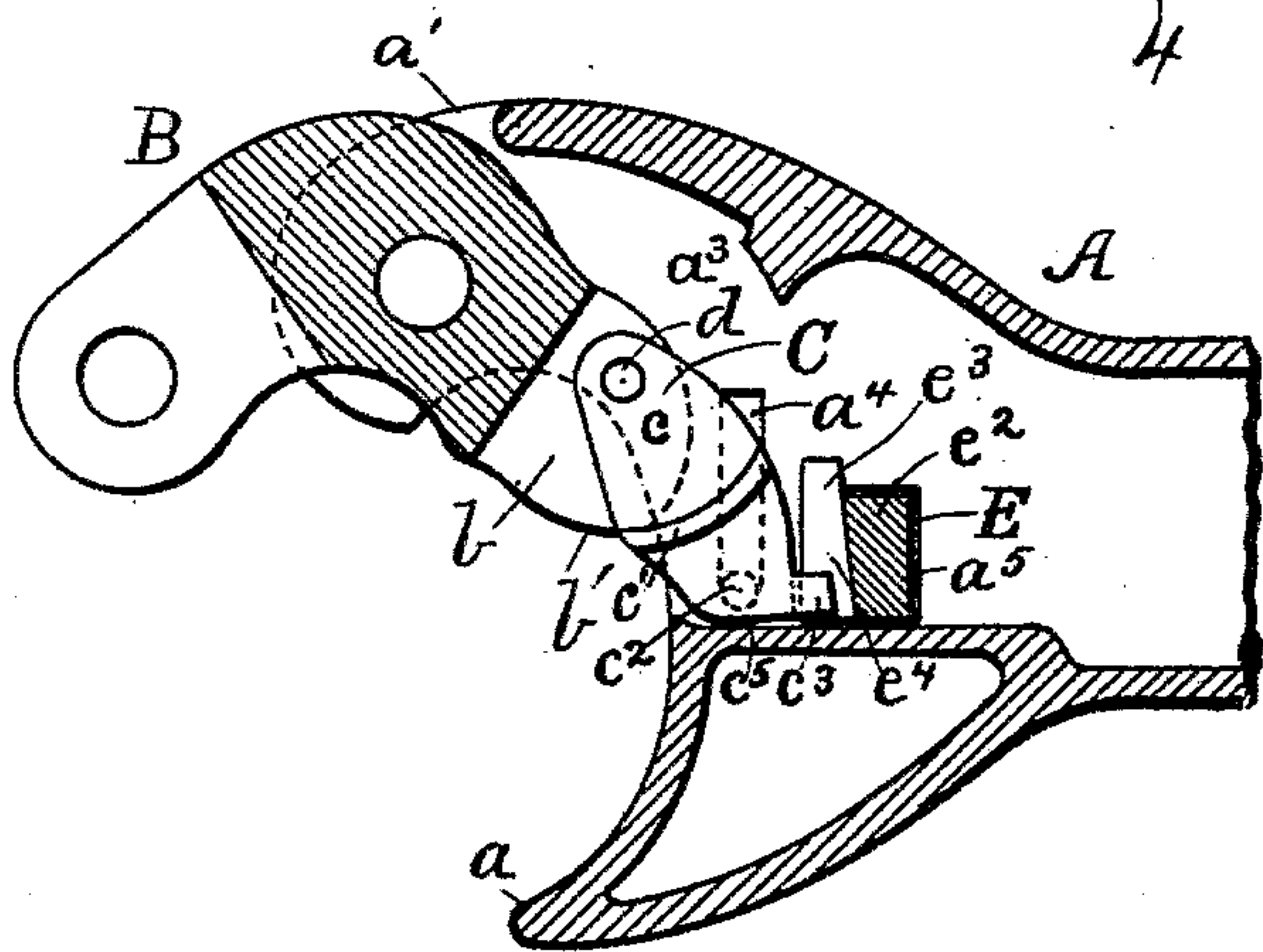
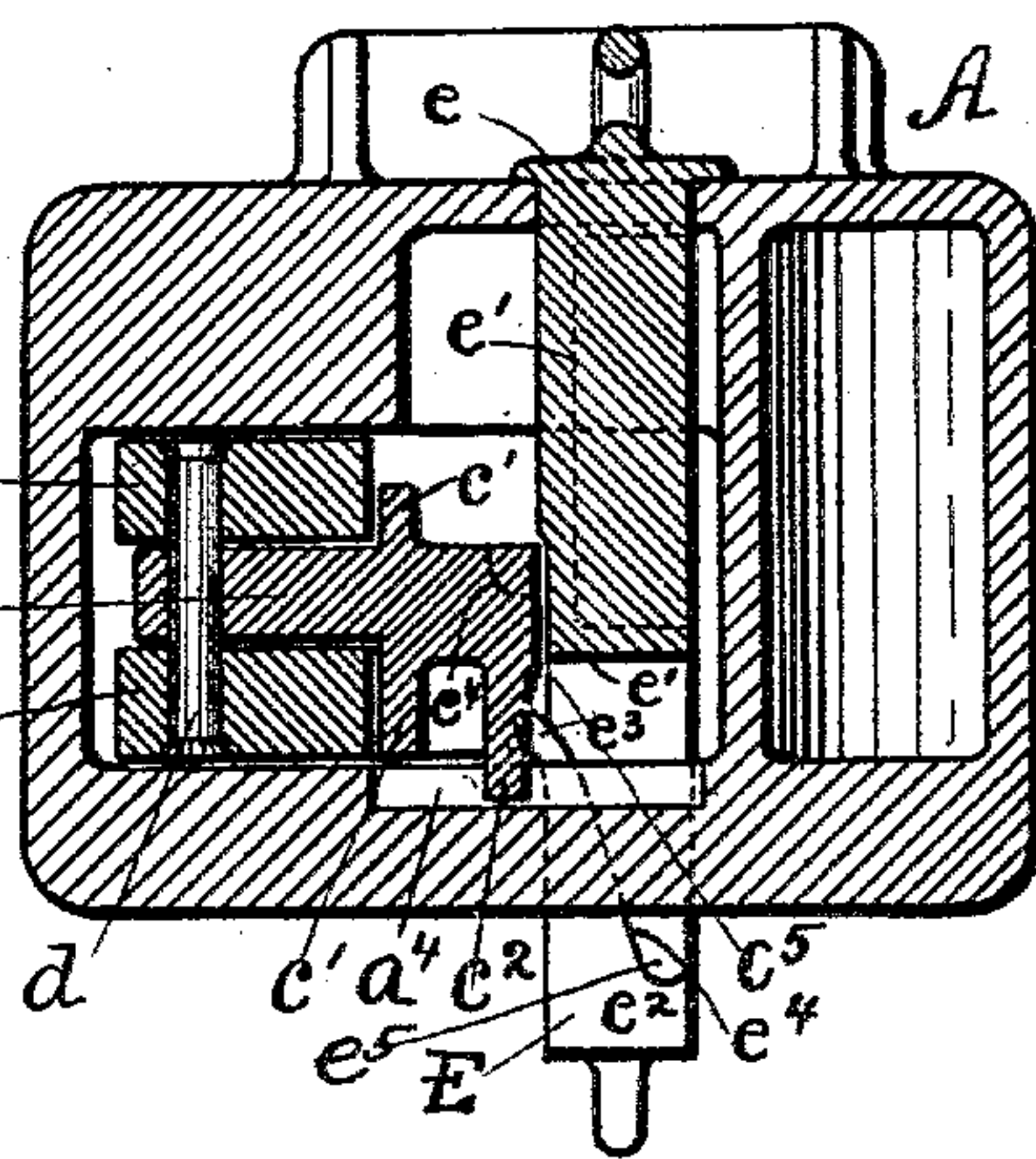


Fig. 4.



WITNESSES:

Milton Weston
E. Tibbitts

INVENTOR

Mason B. Giberson
BY J. R. Little,
his ATTORNEY.

M. B. GIBERSON.
CAR COUPLING.

No. 597,462.

Patented Jan. 18, 1898.

Fig. 5.

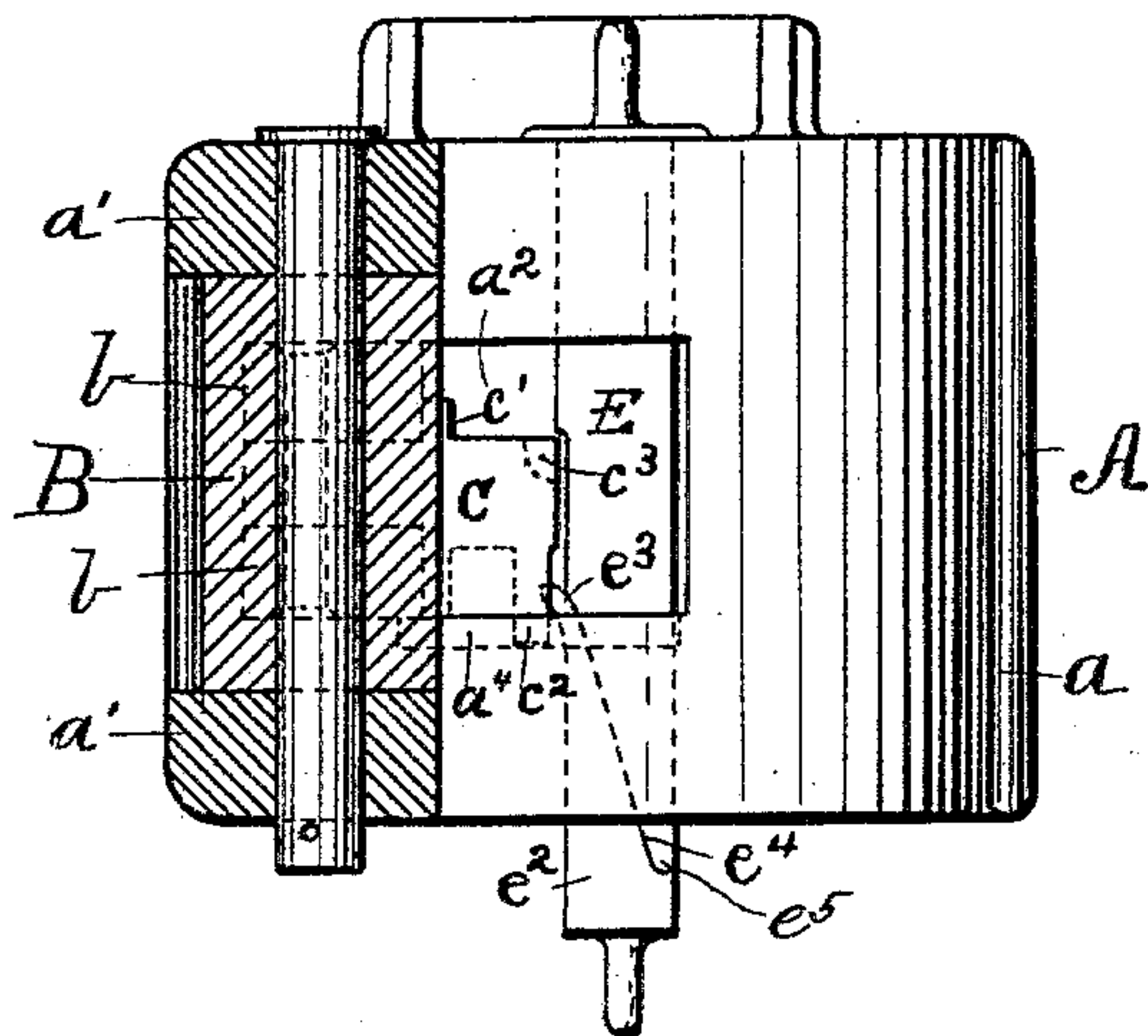


Fig. 6.

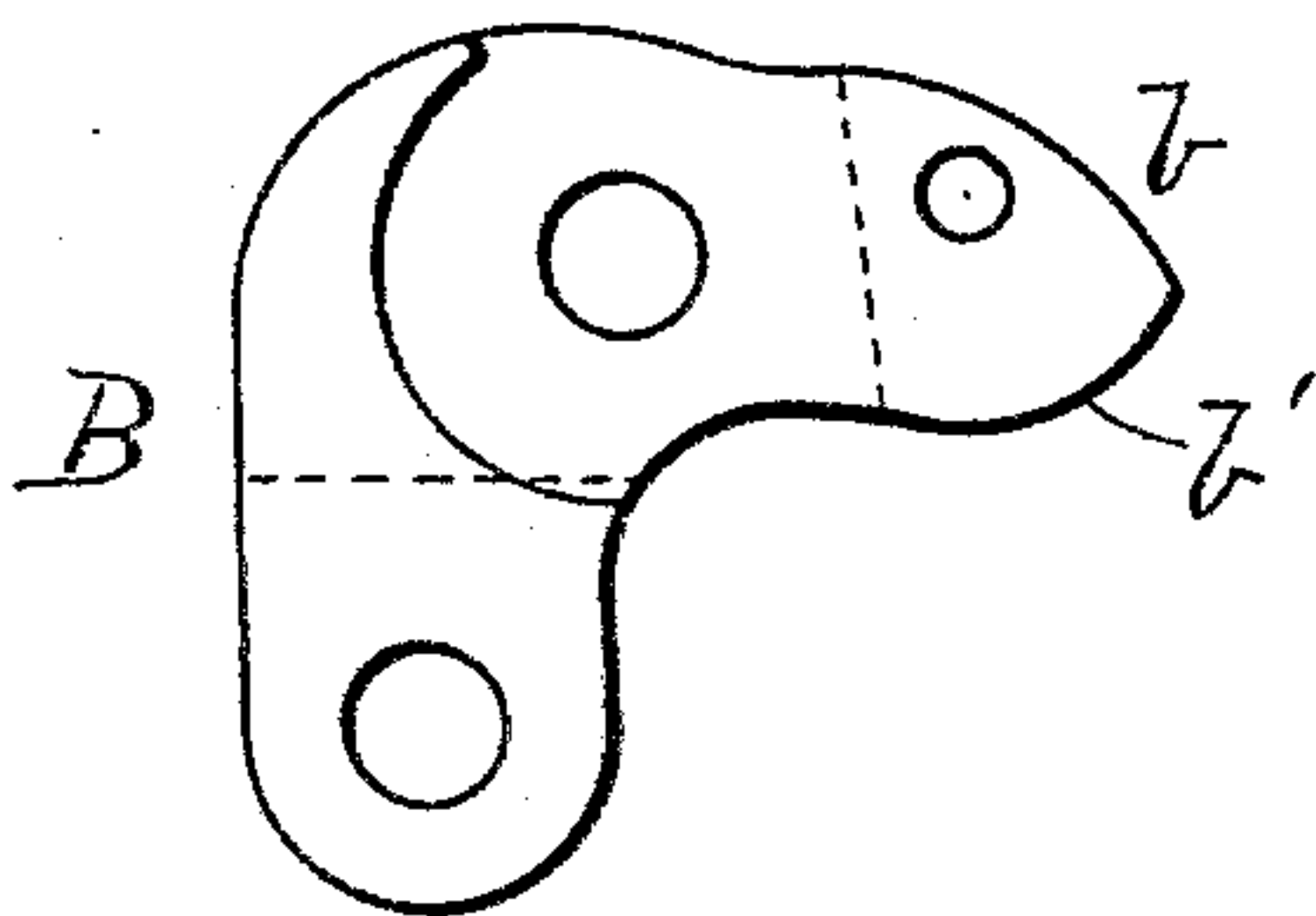


Fig. 7.

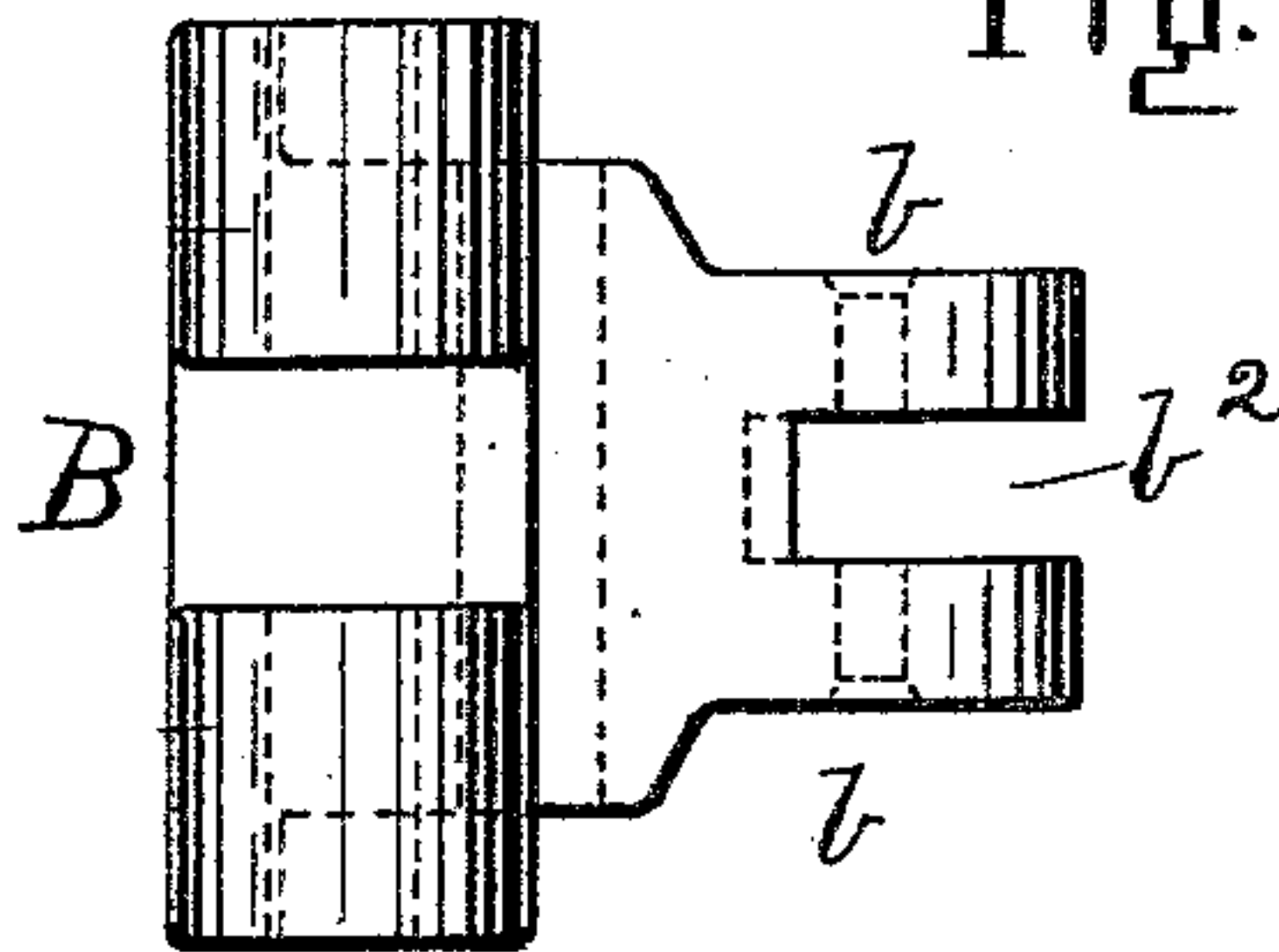


Fig. 8.

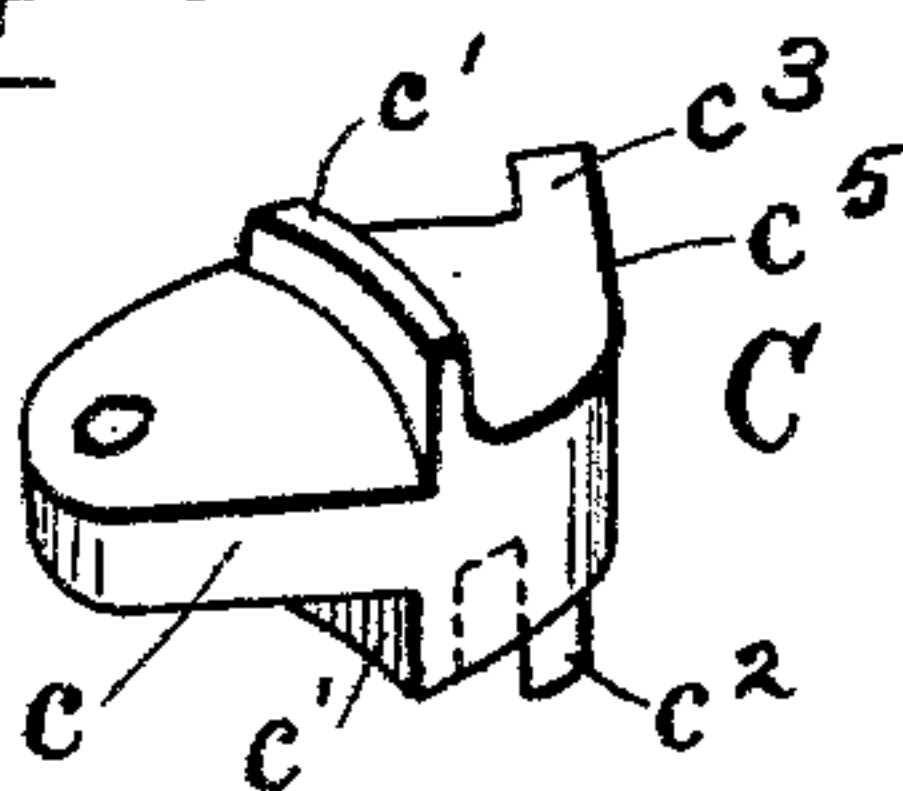
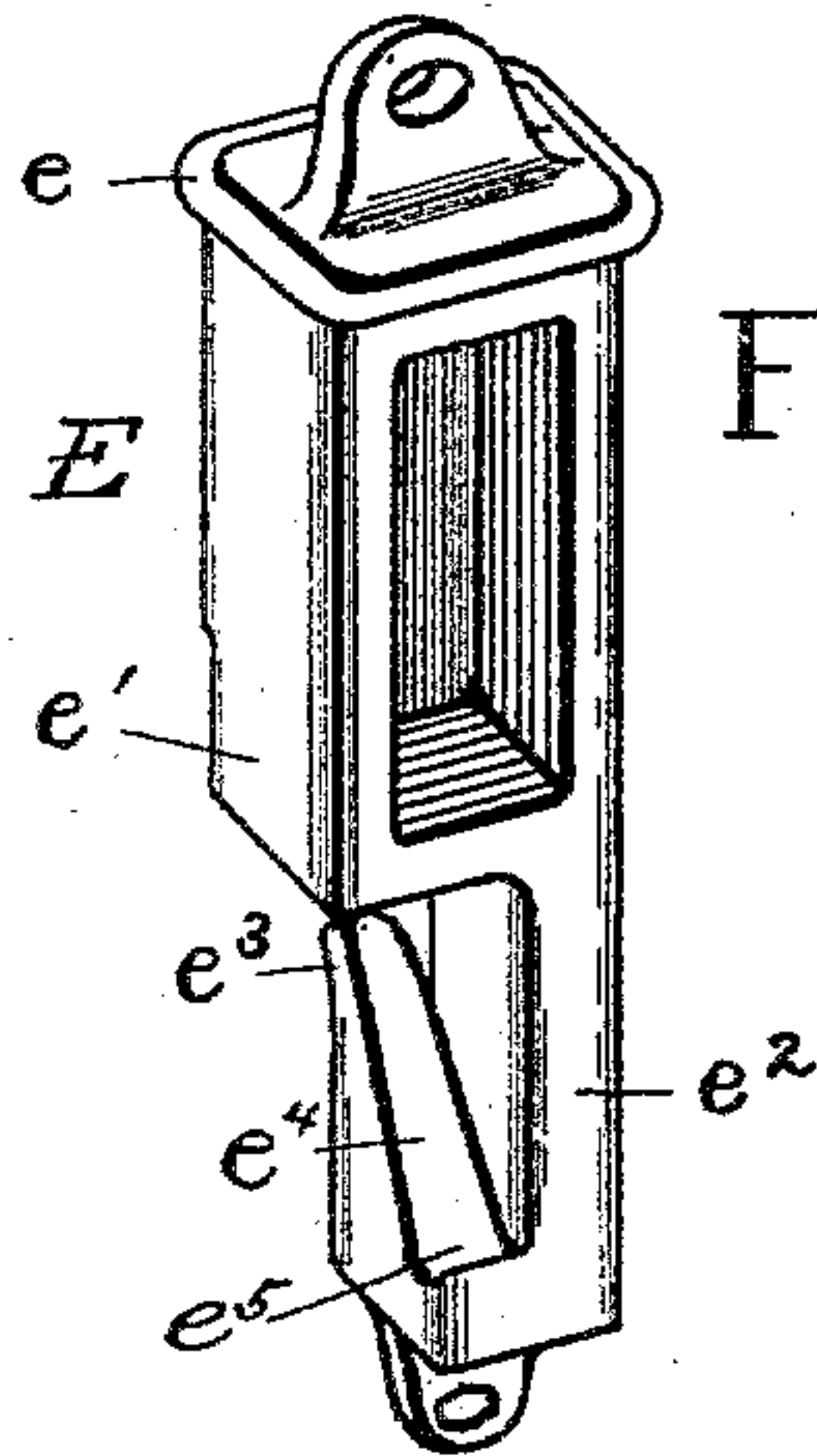


Fig. 9.



WITNESSES:

Milton Weston
E. Tibbels

INVENTOR

Mason B. Giberson

BY

J. R. Little,
his ATTORNEY.

UNITED STATES PATENT OFFICE.

MASON BASSETT GIBERSON, OF MARION, INDIANA, ASSIGNOR TO
FRANK A. FOX, OF NEW YORK, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 597,462, dated January 18, 1898.

Application filed October 12, 1897. Serial No. 654,971. (No model.)

To all whom it may concern:

Be it known that I, MASON BASSETT GIBERSON, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of car-couplings which are known as the "Janney" type, and it has particular relation to couplings of this general type which embody means for automatically locking the knuckle and for simultaneously unlocking the knuckle and throwing it into open position by the unlocking movement of the locking device.

The objects of my invention are to provide a simple and improved car-coupling of this type in which the general construction will be simplified and the number of parts reduced, whereby advantages in point of strength, lightness, inexpensiveness, positive action, durability, and general efficiency will be insured.

In the drawings, Figure 1 is a vertical longitudinal sectional view taken on a plane intersecting the lifting-pin. Fig. 2 is a horizontal sectional view taken on a plane above the locking-block. Fig. 3 is a corresponding horizontal sectional view showing the coupling in open position. Fig. 4 is a vertical transverse sectional view taken on the line 4 4, Fig. 2. Fig. 5 is a vertical transverse sectional view taken on the line 5 5, Fig. 2. Fig. 6 is a detail top view of the knuckle. Fig. 7 is a detail side view of the knuckle. Fig. 8 is a detail perspective view of the locking-block. Fig. 9 is a detail perspective view of the lifting-pin.

Corresponding parts in all the figures are denoted by the same letters of reference.

Referring to the drawings, A designates the draw-head, which may be of any suitable or adapted construction, having at one side the usual guard-finger a and at the opposite side the usual forward extension a' , to which is pivoted the angular knuckle in the usual manner. The draw-head is provided with a

throat or recess a^2 , centrally located and opening into the recess a^3 , within which the tail of the knuckle operates.

B designates the knuckle, which may be in the main of the usual construction, embodying a tail portion b , adapted to swing within the recesses a^3 and a^2 . The tail b of the knuckle preferably embodies a curved inner face or edge, as shown at b' .

C designates a locking-block which is pivotally connected to the tail of the knuckle, preferably in the manner herein shown, the locking-block being provided with a rearwardly-extending arm c , received by a corresponding recess b^2 in the tail of the knuckle and secured therein by a vertical pin or bolt d , located at the outer part of the tail of the knuckle. The locking-block is thus arranged in horizontal position at approximately right angles to the line of movement in which the knuckle swings and is pivotally and directly connected to the knuckle. This pivotally-connected and horizontally-mounted locking-block projects from the tail of the knuckle, at the inner face of the latter, and has a sliding movement in its operation. The projecting portion of the locking-block is provided with shoulders c' , preferably upon its top and bottom surfaces, as shown, which correspond to the face or edge b' of the tail of the knuckle and are adapted to bear against the latter when the mechanism is in normal position. From the bottom of the locking-block, at its inner end, projects a guide-pin c^2 , projecting into and adapted to slide within a transverse groove or recess a^4 in the bottom of the throat-recess of the draw-head, whereby the locking-block is guided in its sliding movement. The locking-block does not bear or rest upon this guide-pin, and the relative construction and arrangement is such that no draft-strain can come upon the latter. Projecting rearwardly from the inner end of the locking-block at its top is a lug c^3 , having its bottom edge inclined or beveled upwardly and rearwardly with respect to the outer or pivoted end of the block, as shown in dotted lines at c^4 in Figs. 4 and 5. The inner face or end of the projecting portion of the locking-block is preferably straight or flat, as shown at c^5 .

E designates the lifting-pin, which operates

in a vertical recess a^5 , intersecting the throat-recess of the draw-head, the pin being preferably supported by top head or flange e , resting upon the top of the draw-head. The top or upper portion of the lifting-pin is preferably enlarged with respect to the longitudinal plane of the draw-head, as shown at e' , and the relative construction and arrangement is such that when the pin is in normal position this enlarged upper portion projects in front of the inner end of the lifting-block, so that the face or end c^5 of the latter bears against the side or face of the lifting-pin, the knuckle being thus locked firmly in normal position. The lower end or portion e^2 of the lifting-pin is of reduced size with relation to the enlarged upper portion e' and in respect to the longitudinal plane of the draw-head, so that this lower portion will clear the body of the lifting-block when the lifting-pin is operated in its vertical movement. This reduced lower end or portion e^2 of the lifting-pin is provided in its front edge at the side adjacent to the locking-block mechanism with a laterally-projecting lip e^3 , from which extends downwardly and transversely across the front edge of the lifting-pin toward the side opposite from the locking-block mechanism an inclined guide shoulder or way e^4 . This lip e^3 is adapted to engage with the inclined edge of the lug c^3 when the lifting-pin is elevated vertically, so that by action of the inclined guide-shoulder e^4 the locking-block is drawn inwardly past the reduced lower portion e^2 of the lifting-pin to effect the simultaneous unlocking and opening of the knuckle. The lower end of the inclined shoulder or way e^4 of the lifting-pin preferably terminates in a concave shoulder or stop, as at e^5 , in which the lug c^3 of the locking-block will rest or against which it will abut when the limit of movement is reached, by which relative construction and arrangement the passage of the lifting-pin vertically from engagement with the locking-block is obviated and the accidental withdrawal of the lifting-pin from the draw-head is avoided.

The operation and advantages of my invention will be readily understood.

When the coupling is in normal position, in engagement with an opposing draw-head, the locking-block bears against the enlarged upper portion of the lifting-pin and the knuckle is securely locked in position. By reason of the relative construction and arrangement as comprised in my invention, the locking-block being at approximately right angles to the line of the swinging movement of the knuckle, there is no material draft-strain upon the locking-block or against the lifting-pin when the parts are in normal coupling position, and when in the position just stated the bearing of the shoulders c' of the locking-block against the corresponding inner edge or face of the tail of the knuckle relieves the pivotal pin or bolt, by which the locking-block is directly connected with the knuckle,

from any strain. This pin or bolt only serves to draw the knuckle into open position and to secure the locking-block in connection with the latter and does not meet any draft-strain whatever. To uncouple, it is only necessary to raise the lifting-pin, when by engagement of the lip e^3 with the inclined bottom edge of the lug c^3 of the locking-block the latter is drawn inwardly and transversely across the throat-recess of the draw-head past the lower reduced portion of the lifting-pin and out of engagement therewith, by which operation the knuckle is simultaneously and positively unlocked and at the same time thrown open as its tail is drawn inwardly by the movement of the connected locking-block. When the mechanism is in open position ready for coupling, the lifting-pin will rest upon the top of the locking-block by reason of the shoulder between the reduced lower portion e^2 and the enlarged upper portion e' , and when the cars come together the knuckle of the opposing draw-head will carry the knuckle back, thus drawing the locking-block horizontally and transversely into normal position and permitting the lifting-pin to drop by gravity into position for locking the block.

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

1. A car-coupling device, comprising a coupler-head carrying an angular knuckle, a locking-block pivotally connected with the tail of the knuckle and adapted to bear against a lifting-pin when the mechanism is in normal coupling position, and a lifting-pin carrying devices for engaging said locking-block when the pin is elevated and drawing said block inwardly, whereby the knuckle is simultaneously unlocked and opened, substantially as set forth.

2. A car-coupling device, comprising a coupler-head carrying an angular knuckle, a locking-block pivotally connected with the tail of the knuckle and adapted to bear against a lifting-pin when the mechanism is in normal coupling position, said locking-block being provided with a lug or projection, and a lifting-pin having an inclined shoulder or way adapted to engage said lug when the pin is elevated, whereby the locking-block is drawn inwardly and the knuckle is simultaneously unlocked and opened, substantially as set forth.

3. A car-coupling device, comprising a coupler-head carrying an angular knuckle, a locking-block pivotally connected with the tail of the knuckle and adapted to bear against a lifting-pin when the mechanism is in normal coupling position, said locking-block being provided with shoulders adapted to bear against the inner face or edge of the tail of the knuckle when in such normal position to relieve the pivotal connection of the locking-block with the knuckle from strain, and a lifting-pin adapted to engage said locking-

block when the pin is elevated to draw the block inwardly, substantially as and for the purpose set forth.

4. A car-coupling device, comprising a coupler-head carrying an angular knuckle, a locking-block pivotally connected with the tail of the knuckle and having a guide-pin or projection received by a groove or recess in the coupler-head, and means for drawing said block inwardly to cause the simultaneous unlocking and opening of the knuckle, substantially as set forth.

5. A car-coupling device, comprising a coupler-head carrying an angular knuckle, a locking-block pivotally connected with the tail of the knuckle and projecting inwardly with relation to a lifting-pin, and a vertically-mounted lifting-pin having an enlarged upper portion adapted to project with relation to the locking-block when the mechanism is in normal coupling position and a reduced or smaller lower portion adapted to permit the release of said block when the pin is elevated, substantially as set forth.

6. A car-coupling device, comprising a coupler-head carrying an angular knuckle, a locking-block pivotally connected with the tail of the knuckle and projecting inwardly with relation to a lifting-pin, and a vertically-mounted lifting-pin having an upper portion adapted to project into engagement with the locking-block when the mechanism is in normal coupling position and a lower portion adapted to be passed by said block when the latter is drawn inwardly, said pin carrying devices for engaging said locking-block as the pin is elevated to draw the block inwardly and cause the simultaneous unlocking and opening of the knuckle, substantially as and for the purpose set forth.

7. A car-coupling device, comprising a coupler-head carrying an angular knuckle, a locking-block pivotally connected with the tail of the knuckle and adapted to bear against a lifting-pin when the mechanism is in normal coupling position, said locking-block being provided with a lug or projection, and a lifting-pin having an upper portion adapted to project into engagement with the locking-block when in such normal position and a lower portion adapted to be passed by the block when the latter is drawn inwardly, said pin being provided with an inclined shoulder

or way adapted to engage said lug when the pin is elevated, whereby the locking-block is drawn inwardly and the knuckle is simultaneously unlocked and opened, substantially as set forth.

8. In an improved car-coupling device comprising a coupler-head carrying an angular knuckle, a horizontally-arranged locking-block pivotally connected with the tail of the knuckle and extending therefrom in a relatively transverse plane, and vertically-operating devices for locking said block and for drawing the same in its transverse plane of movement to swing the knuckle open, substantially as and for the purpose set forth.

9. A car-coupling device, comprising a coupler-head carrying an angular knuckle, devices for locking and unlocking said knuckle, and a locking-block intermediately arranged in a horizontal and relatively transverse plane between the tail of the knuckle and said locking and unlocking devices and pivotally connected with the tail of the knuckle, said locking-block being adapted to move transversely by operation of the locking and unlocking devices, substantially as and for the purpose set forth.

10. In a car-coupling device comprising a coupler-head carrying an angular knuckle, the combination, with said knuckle, of a locking-block pivotally connected with the tail of the knuckle and extending therefrom in a horizontal and relatively transverse plane, and means for operating said block to swing the knuckle open, substantially as and for the purpose set forth.

11. In a car-coupling device, comprising a coupler-head carrying an angular knuckle to the tail of which is pivotally connected a locking-block having a projection or lug, a vertically-operating lifting-pin having an inclined shoulder or way for engaging said lug, said shoulder or way terminating at its bottom in a seat or stop-shoulder for engagement with the lug to limit the vertical movement of the pin, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MASON BASSETT GIBERSON.

Witnesses:

WILLIAM L. LENFESTEY,
LIZZIE LENFESTEY.