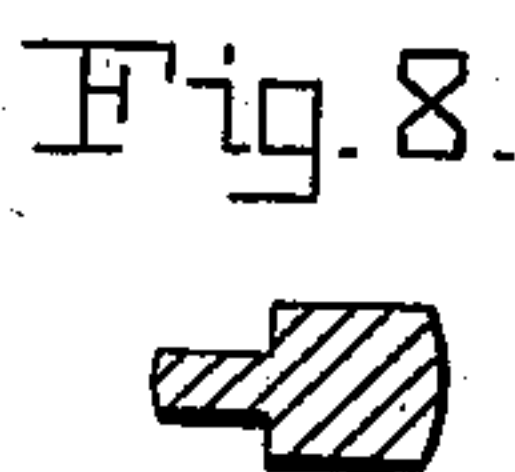
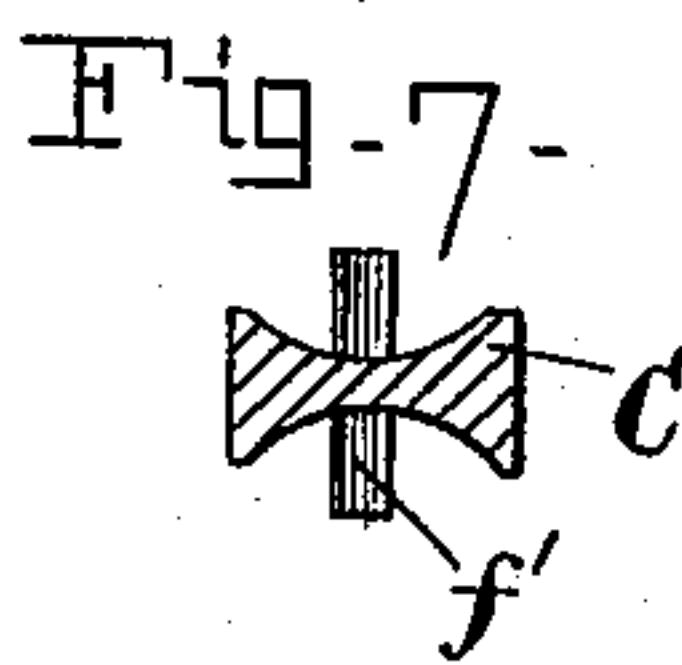
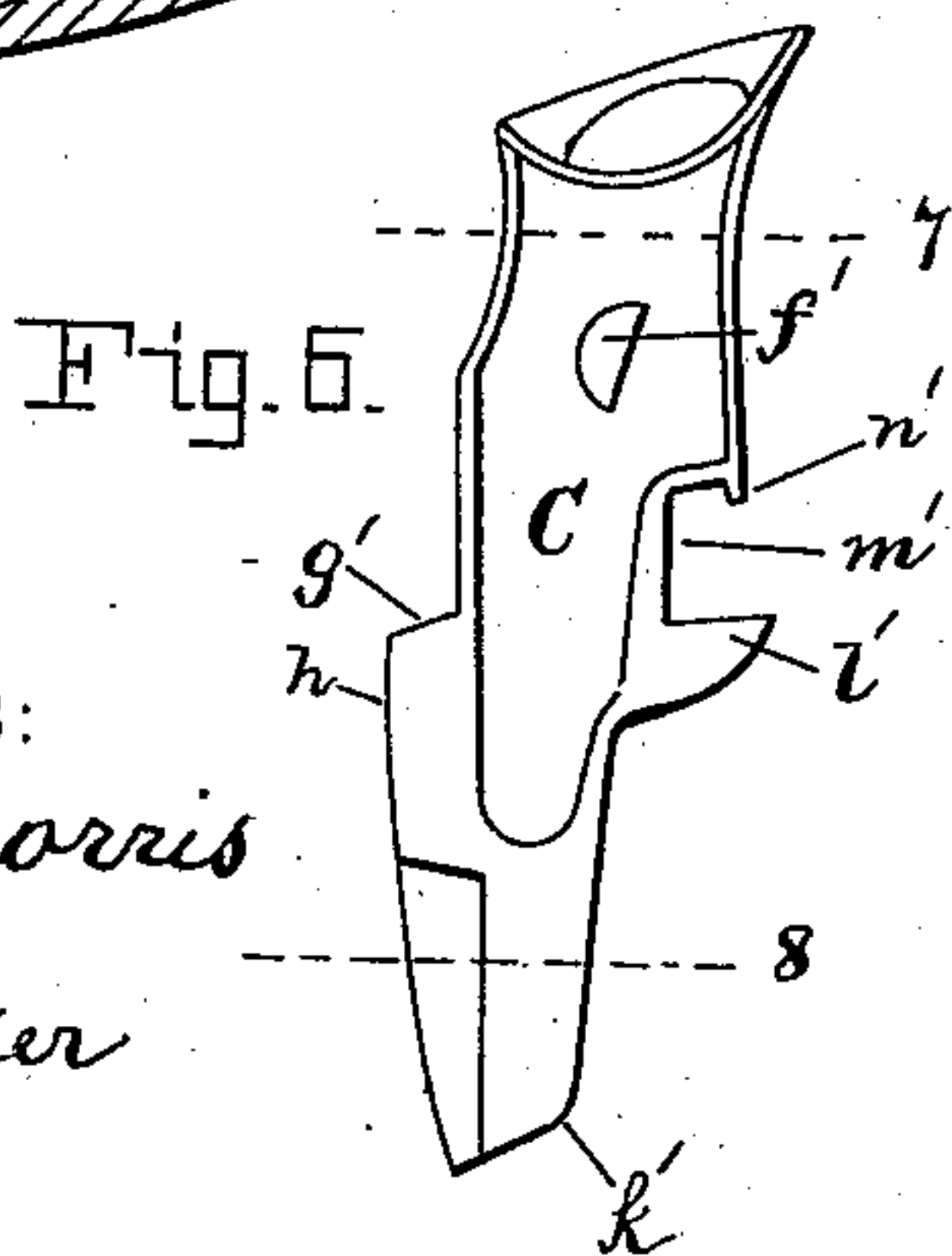
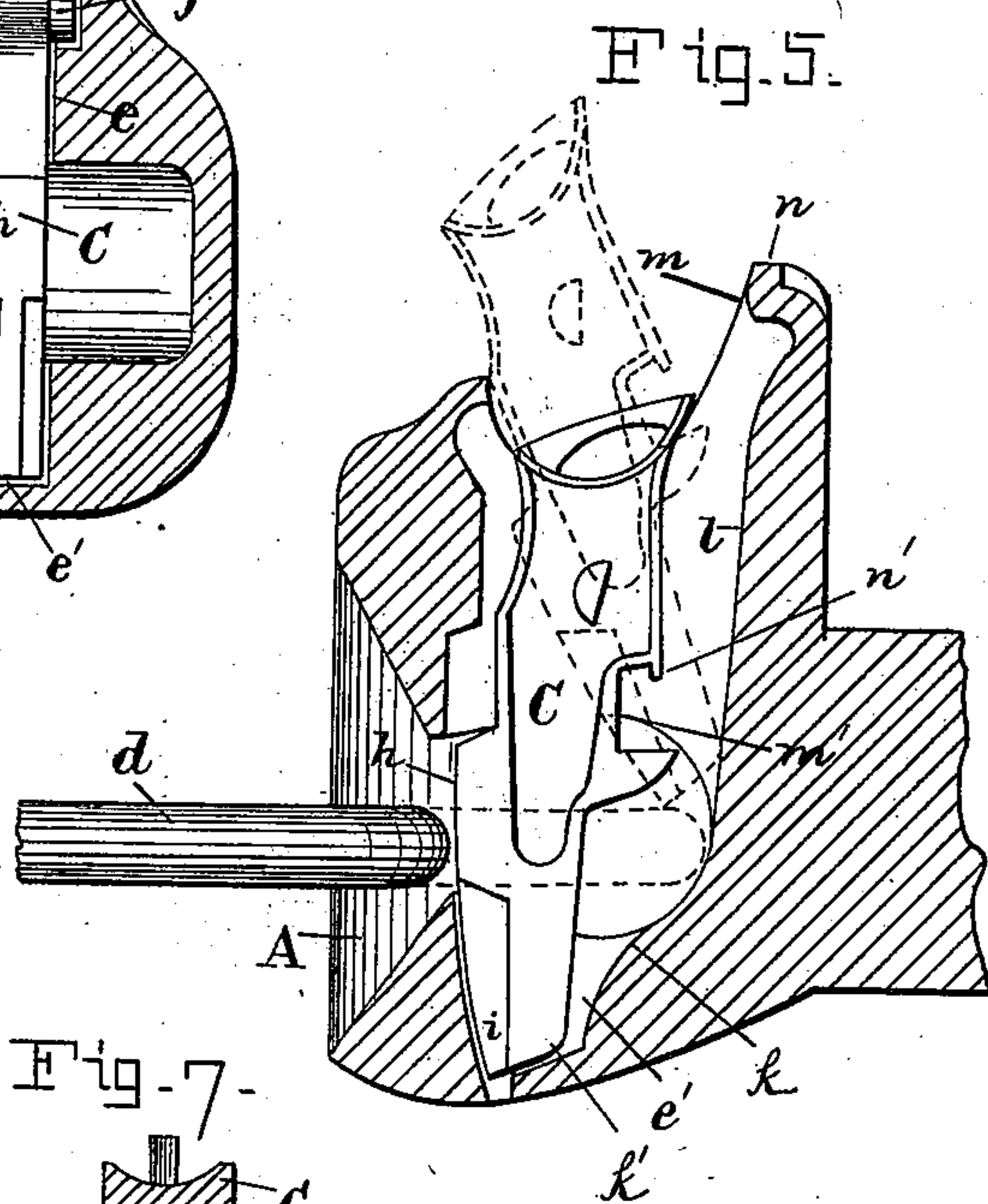
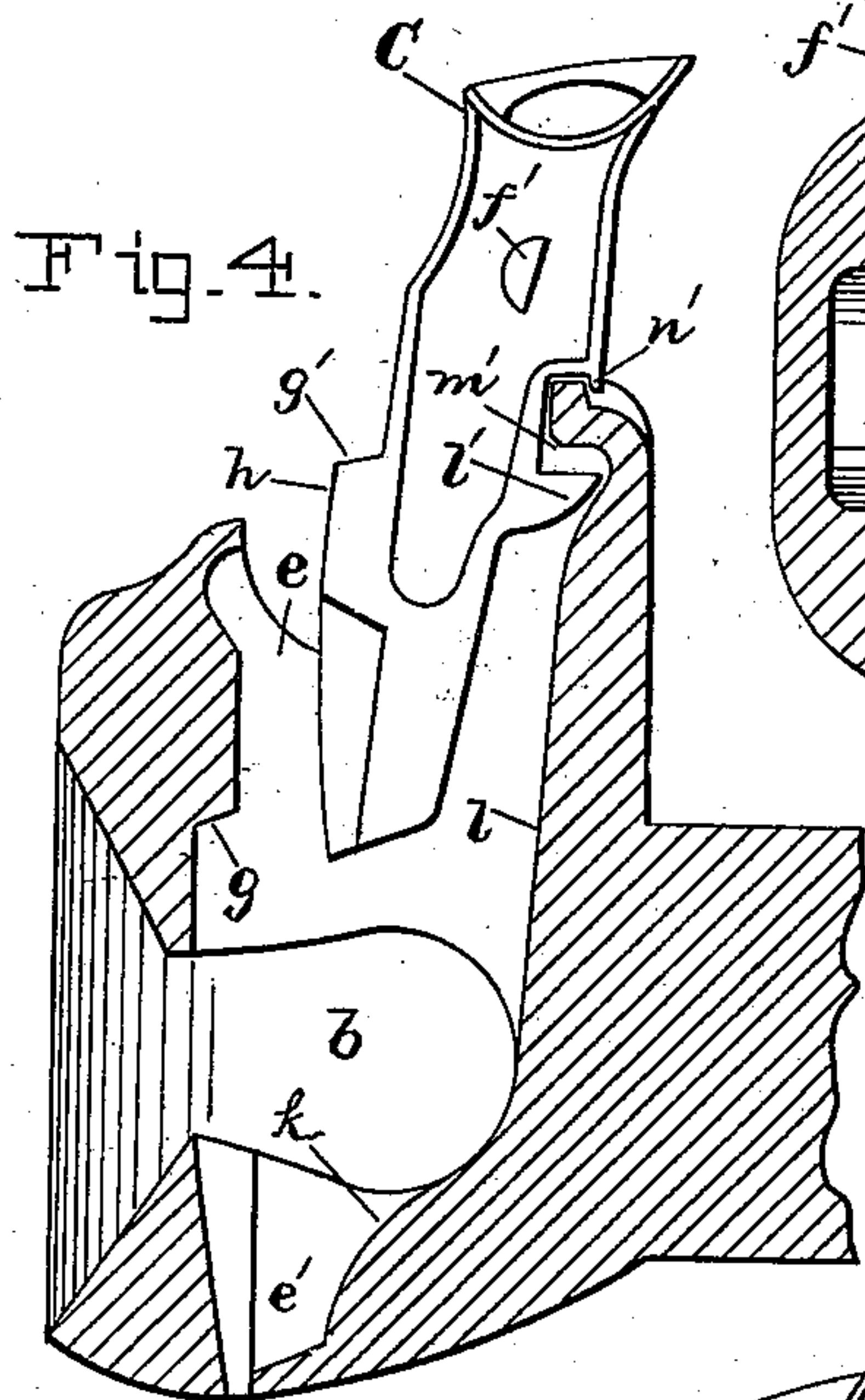
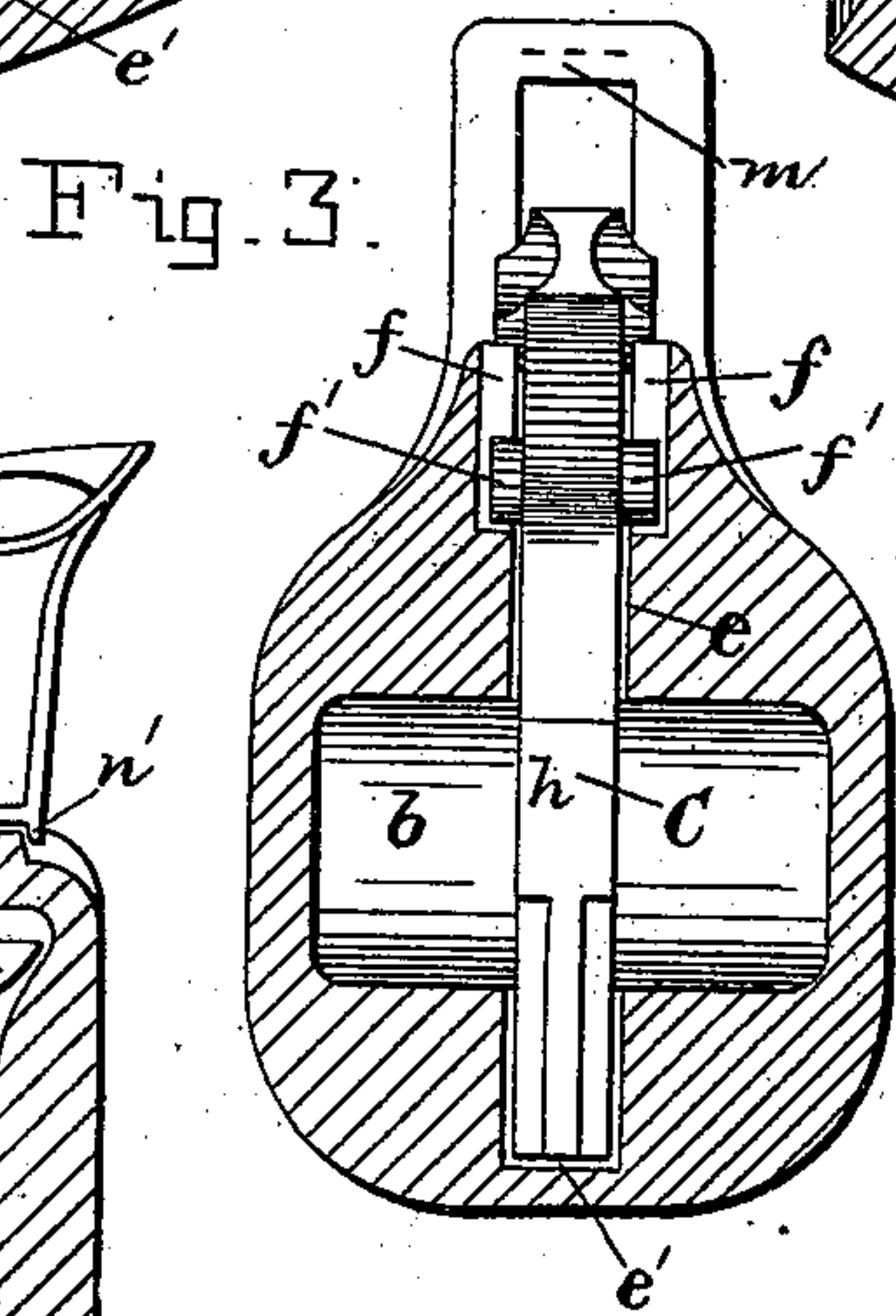
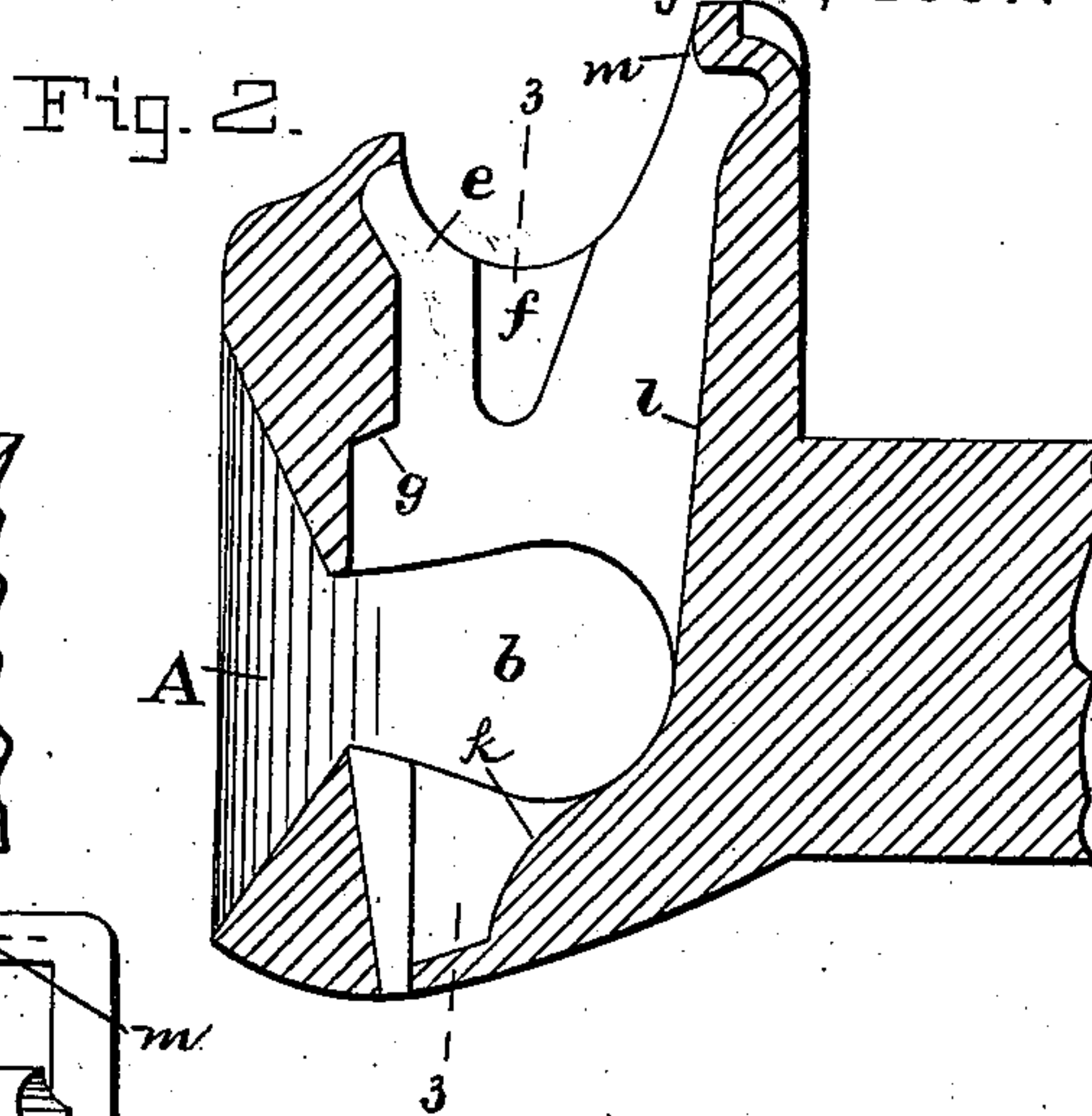
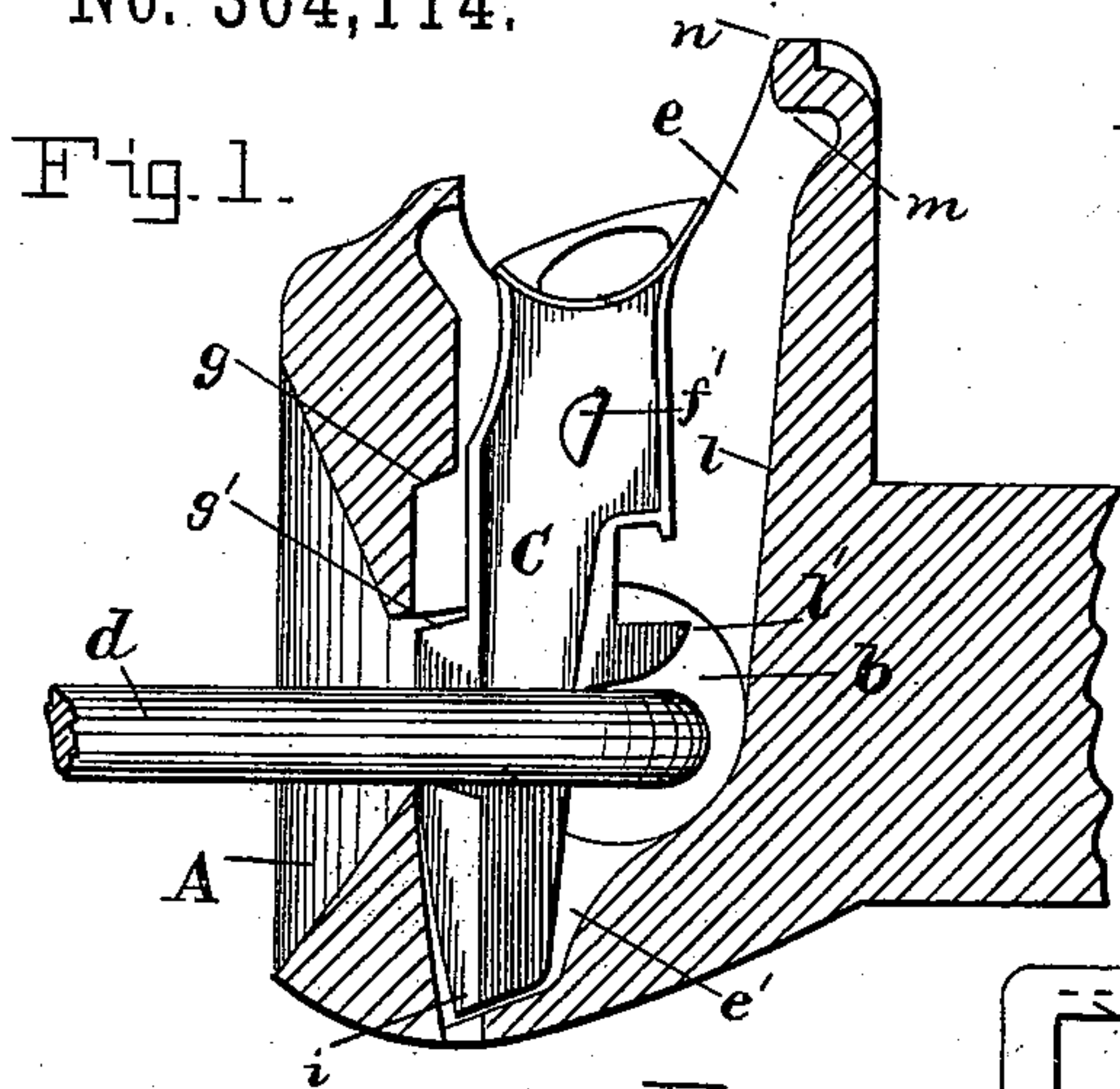


(No Model.)

G. W. JAMES.
CAR COUPLING.

No. 364,114.

Patented May 31, 1887.



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UNITED STATES PATENT OFFICE.

GEORGE W. JAMES, OF LIMA, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 364,114, dated May 31, 1887.

Application filed November 15, 1886. Serial No. 218,849. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. JAMES, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to certain improvements in the construction of automatic link-and-pin couplings for cars.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of the draw-head, and shows the link and pin coupled. Fig. 2 is a vertical longitudinal section of the draw-head alone. Fig. 3 is a vertical cross-section of the draw-head on the line 3 3, and shows a front view of the pin in position. Fig. 4 is a vertical longitudinal section of the draw-head, and shows the pin raised and supported on the top of draw-head. Fig. 5 is a vertical longitudinal section of the draw-head, and shows the pin down and the link in the position it takes when projecting from the draw-head of another car and about to make an automatic coupling. Fig. 6 is a side view of the pin. Figs. 7 and 8 are cross-sections of the pin on the lines 7 and 8, respectively.

The letter A designates the mouth of the draw-head; *b*, the link-recess; *C*, the pin, and *d* the link.

The top of the draw-head has a vertical hole or opening, *e*, for the pin *C*, which latter has an irregular shape. The draw-head has at the top and at each of the two sides of the said pin-opening a recess, *f*, the front wall of which is vertical and the rear wall inclined from the bottom upward and to the rear. The pin has at each side a lateral lug, *f'*, and normally said lugs occupy the aforesaid recesses *f*. The front side of the lug *f* is curved or half-round, and comes against the front wall of the recess *f*. The lugs *f'* being half-round on the front side adapts the top of pin to tilt forward, as indicated by broken lines in Fig. 5. The rear side of lug *f'* has an inclination corresponding to the inclination of the said rear wall of the recess *f*, whereby the pin will be assisted to rise so as to couple automatically when a link,

d, projecting from the draw-head of another car, presses against its front, as in Fig. 5.

The draw-head has at the front side of the pin-hole a recess, which produces an upward bearing, *g*, and the pin has at its front side an offset which forms a shoulder, *g'*, which, when the pin is raised vertically, comes against the said upward bearing *g*, and thereby the upward movement of the pin is limited. The front side of the pin, at *h*, just below the shoulder *g*, is the most prominent, and from this most prominent part to its lower end, *i*, the front of the pin curves slightly backward. When about to couple automatically, a link, *d*, will press the pin on this slightly-curved front, and thereby the pin will be assisted to rise.

The lower end, *i*, of the pin sets in a socket, *e'*, in the lower side of the draw-head, said socket constituting the bottom of the pin-hole *e*. The socket *e'* in the bottom of the draw-head has at its rear side an upward curve, *k*, the upper end of which terminates or merges in the rear wall of the link-recess *b*. The lower end of the pin has at its rear side an up curve, *k'*, which will readily slide up the upward curve *k* in the bottom of the draw-head. The pin-hole has a rear wall, *l*, the lower end of which enters the rear of the link-recess *b* and merges in or joins the said upward curve *k*. The pin has on its rear side a rearward-projecting lug, *l'*, which curves from its lower side upward to its extremity, whereby when the pin rises to a point where the upper side lugs, *f'*, leave the recesses *f* the said rear lug, *l'*, will come in contact with the rear wall, *l*, of the pin-hole, and as the end of a link, *d*, on the draw-head of another car will at that time be pressing against the front side of the pin at a point lower than the said rear lug, *l'*, the effect will be that the rear lug will act as a fulcrum on which to tilt forward the top of the pin, as indicated in Fig. 5, whereupon the continued pressure of the link *d* will cause the pin *C* to rise still higher, and thereby readily admit the end of the said link to the rear wall of the link-socket *b*, and then the lower end, *i*, of the pin will slip forward into the link and effect the coupling.

The foregoing is a description of the automatic coupling.

The rear lug, *l'*, besides serving the first purpose, as above described, to tilt forward the top of the pin, serves two other purposes, to wit: second, when the link and pin are coupled, as in Fig. 1, the rear lug, *l'*, rests upon the end of the link, and thereby the link is balanced and its outer end is caused to project horizontally in proper position to couple with another car; and the third purpose which the rear lug, *l'*, serves is to stop the withdrawal of the pin from the draw-head, which it will do by coming in contact with a forward projecting lip, *m*, at the top and rear of the pin-hole. The draw-head also has at the top and rear of the pin-hole and above said lip *m* an upward-pointing edge, *n*, and the pin has just above the rear lug a notch, *m'*, to receive the forward-projecting lip *m*, and the pin also has at the top side of the said notch a downward-pointing lip, *n'*, which takes over the said edge *n* at the top and rear of the pin-hole, as shown in Fig. 4. Thus the pin may be suspended, and when a link projecting from the draw-head of another car enters the link-recess below the suspended pin the concussion of the two cars will cause the pin to drop and couple with the link.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a car-coupling of the link-and-pin class, the combination of a draw-head having a pin-hole, *e*, provided at the top and at each of the two sides with a recess, *f*, each having a vertical front wall and an inclined rear wall, and provided at the bottom and rear side with an upward curve, *k*, which joins the rear wall, *l*, of the pin-hole, and a pin, *C*, having at each of its two sides a lug, *f'*, which occupy the said recesses, and at its lower end an upward curve, *k'*, and provided on its rear side with a lug, *l'*, the lower side of which is curved upward to its extremity, as and for the purpose set forth.

2. In a car-coupling of the link-and-pin class, the combination of a draw-head having a pin-hole, *e*, and provided at the top and rear of the said hole with a forward-projecting lip, *m*, and an upward-pointing edge, *n*, above said lip, and a pin, *C*, having at its rear side a lug, *l'*, a notch, *m'*, above the lug, and at the top side of said notch a downward-pointing lip, *n'*, as and for the purpose set forth.

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

GEORGE W. JAMES.

Witnesses:

J. H. PHILLIPS,
CALVIN MCPHERON.