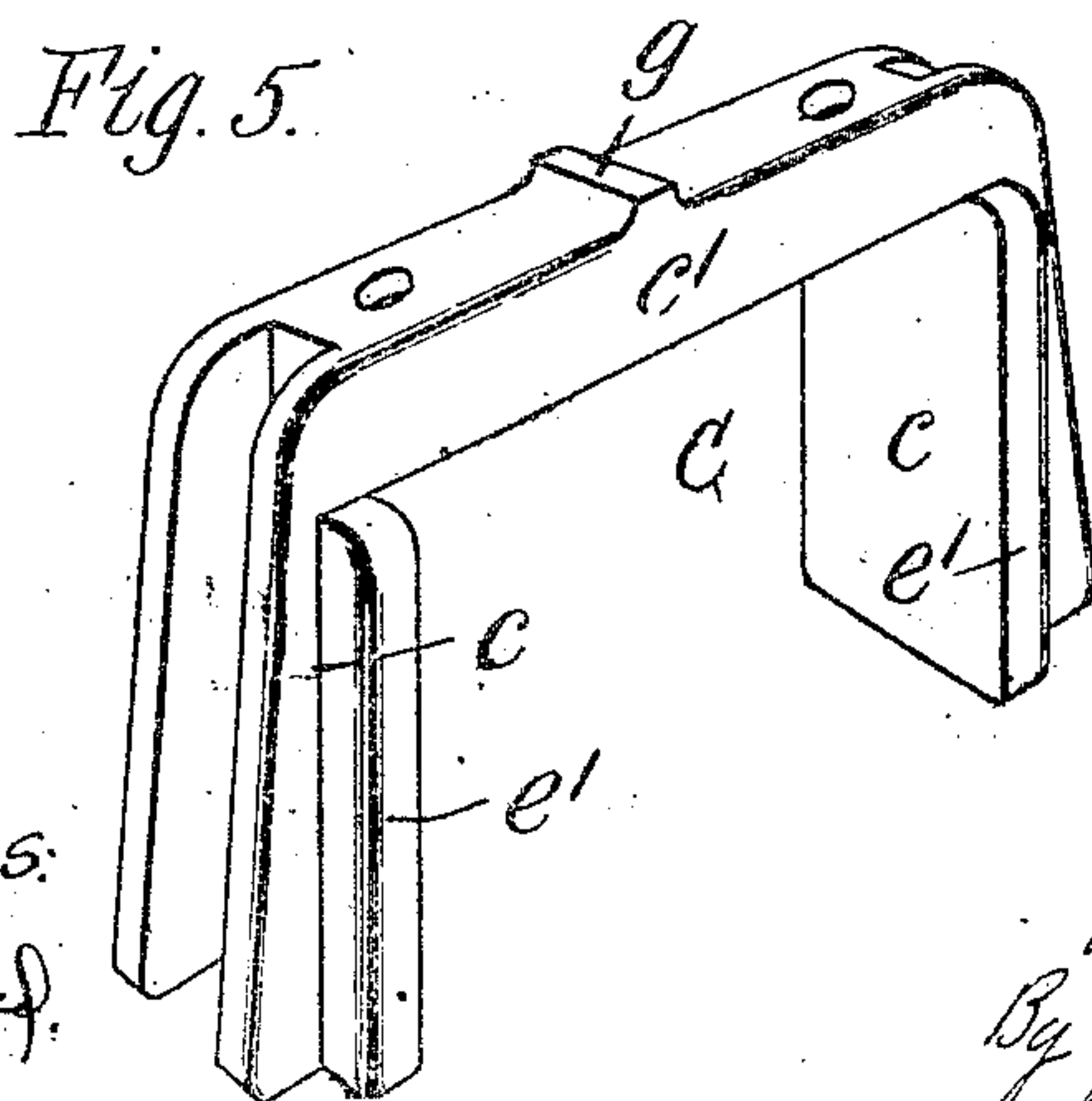
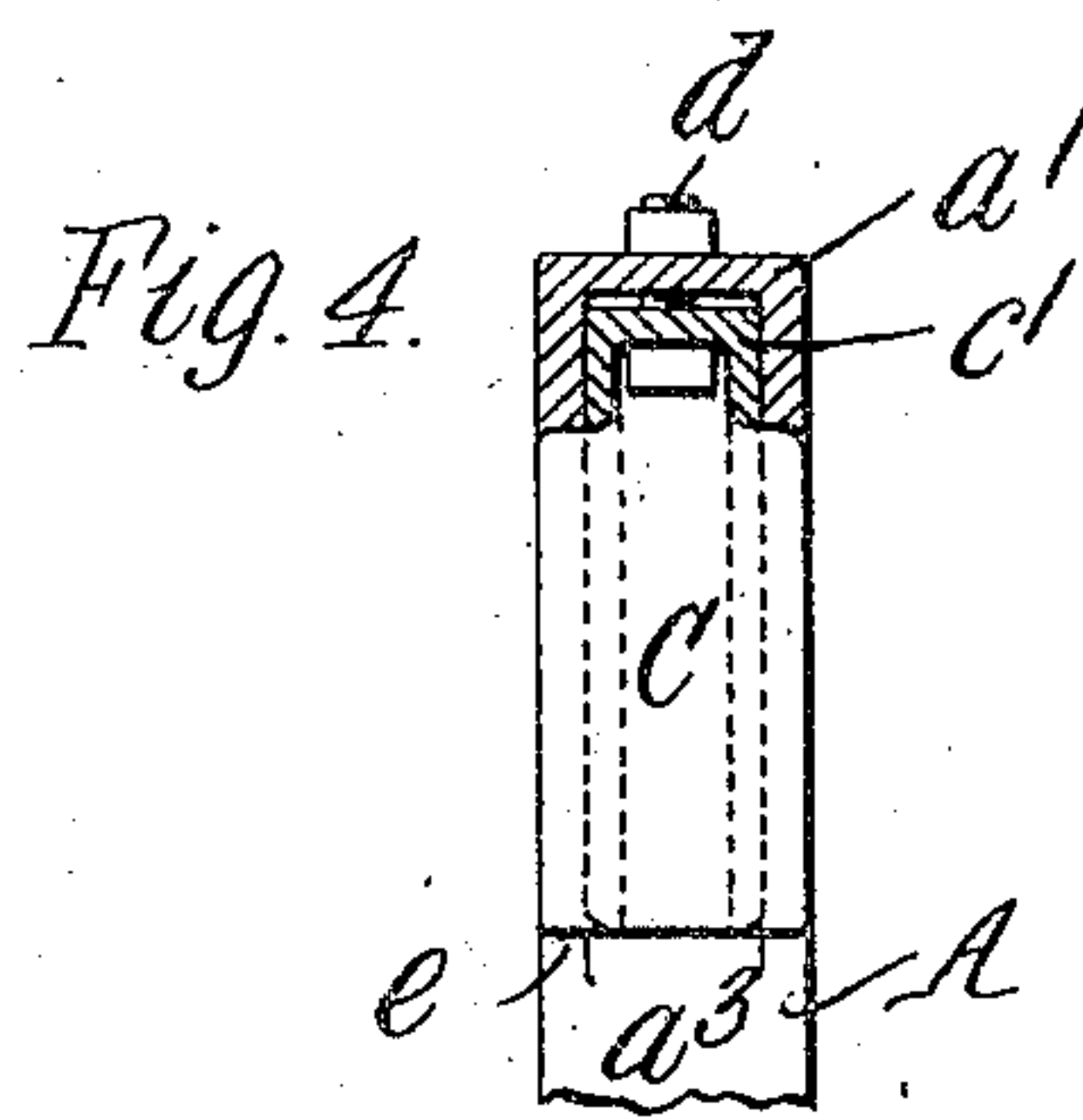
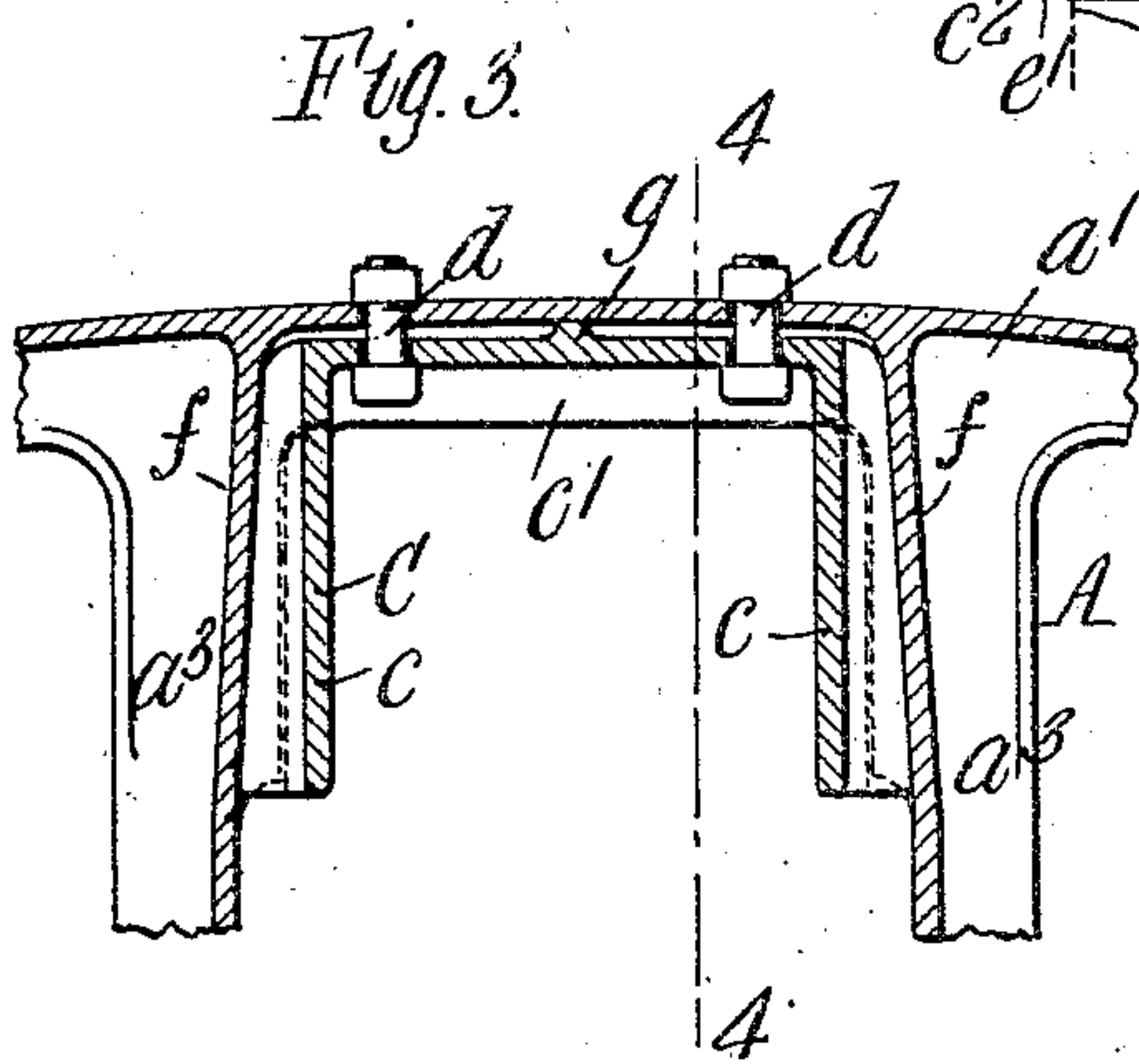
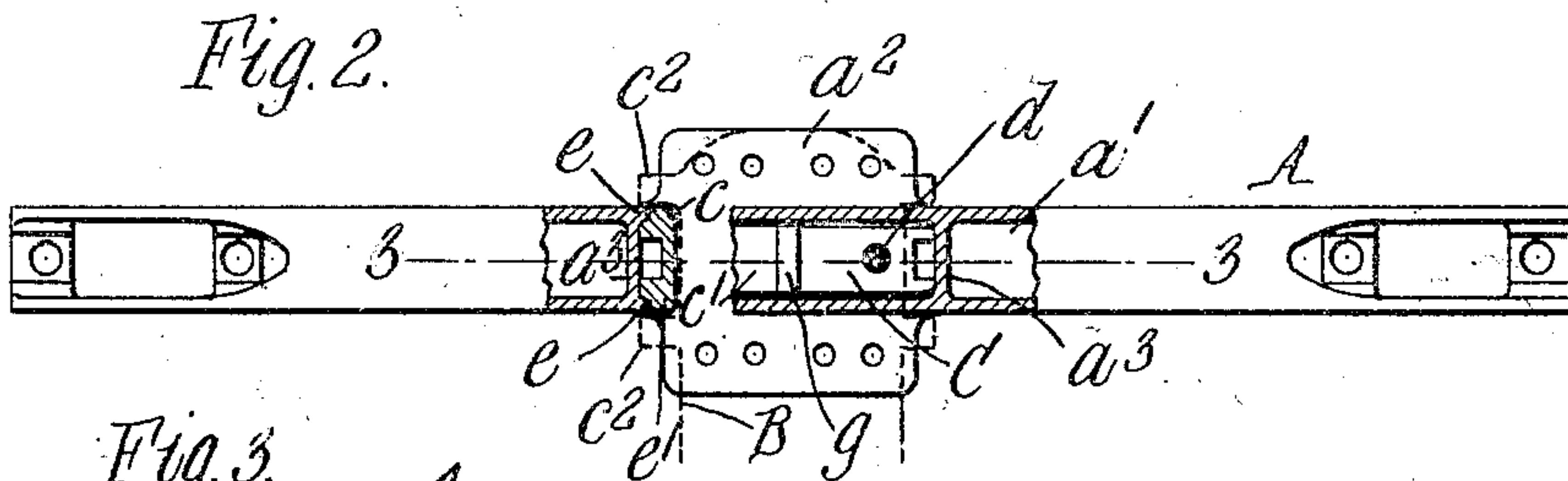
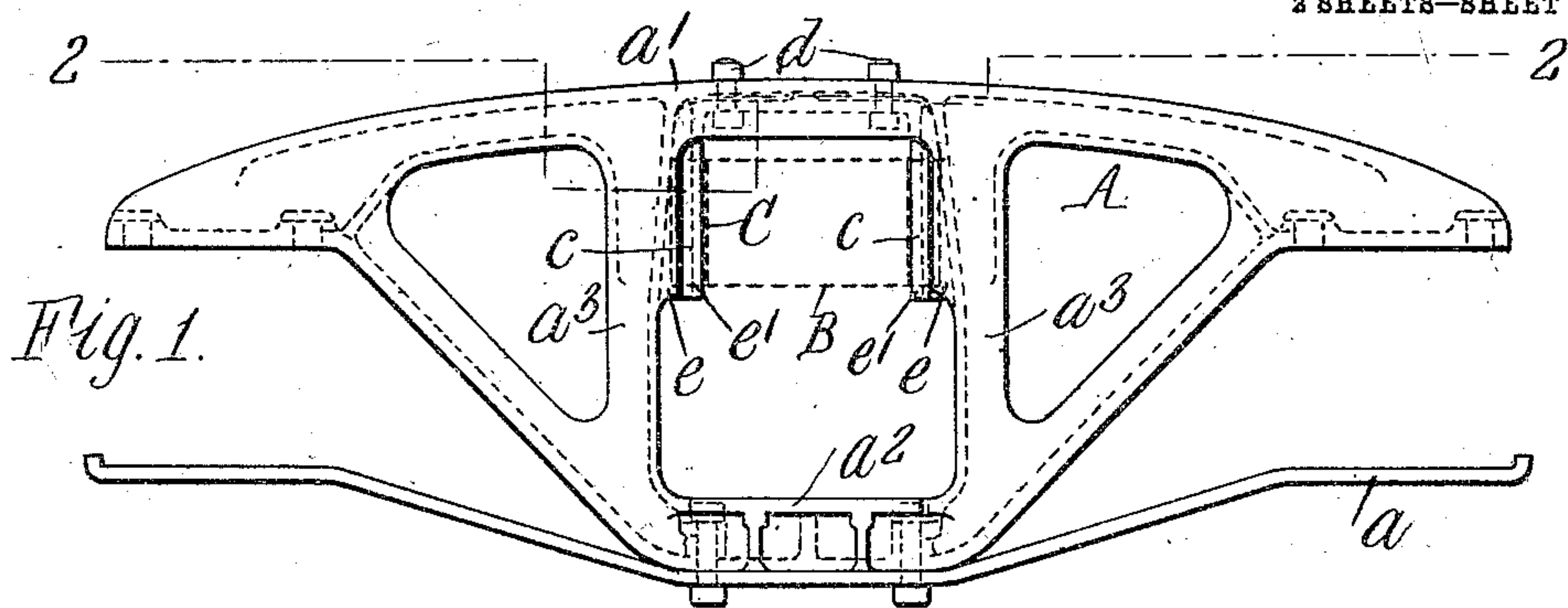


W. F. RICHARDS.
RAILWAY CAR TRUCK.
APPLICATION FILED MAR. 9, 1909.

943,707.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.



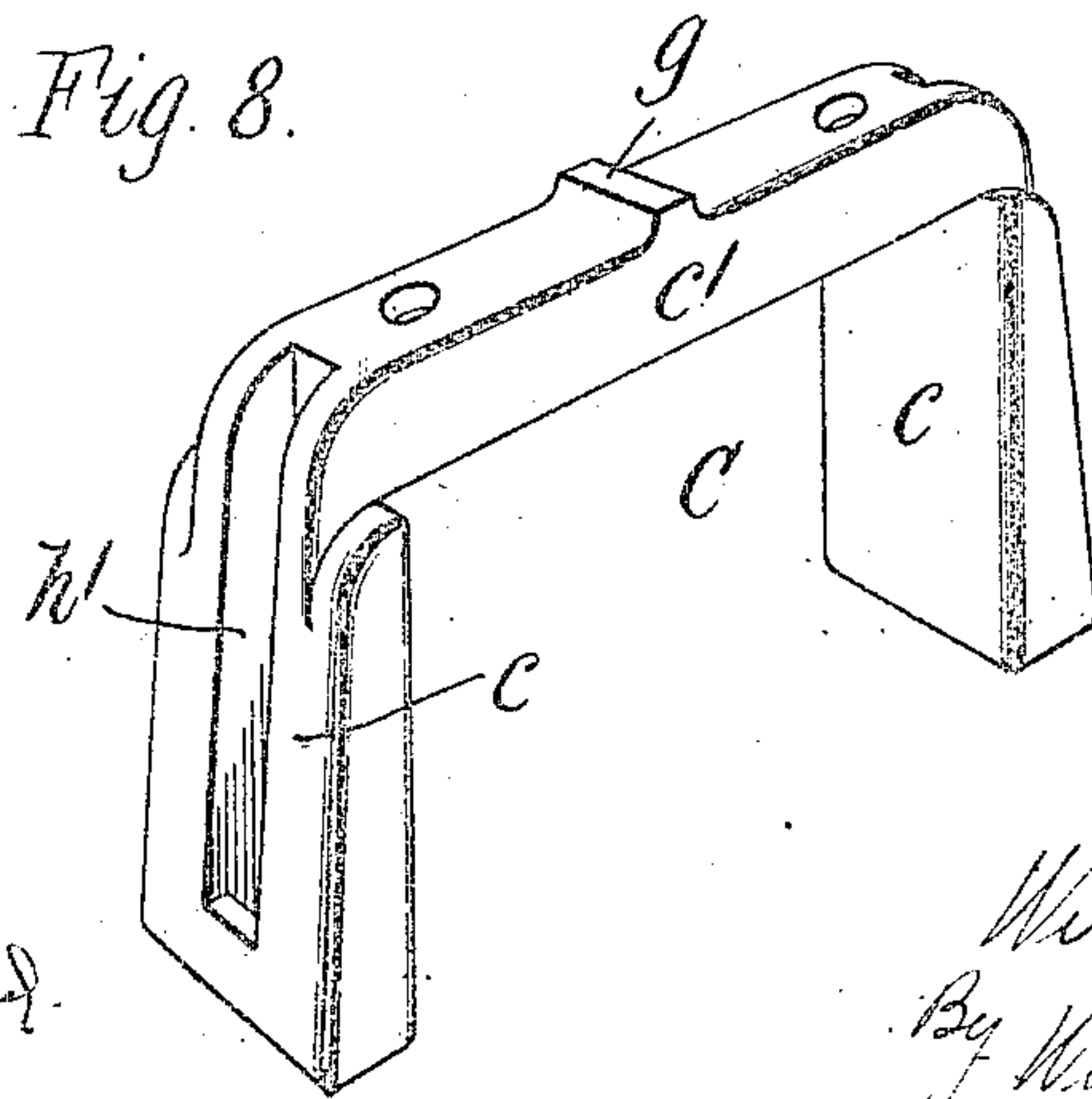
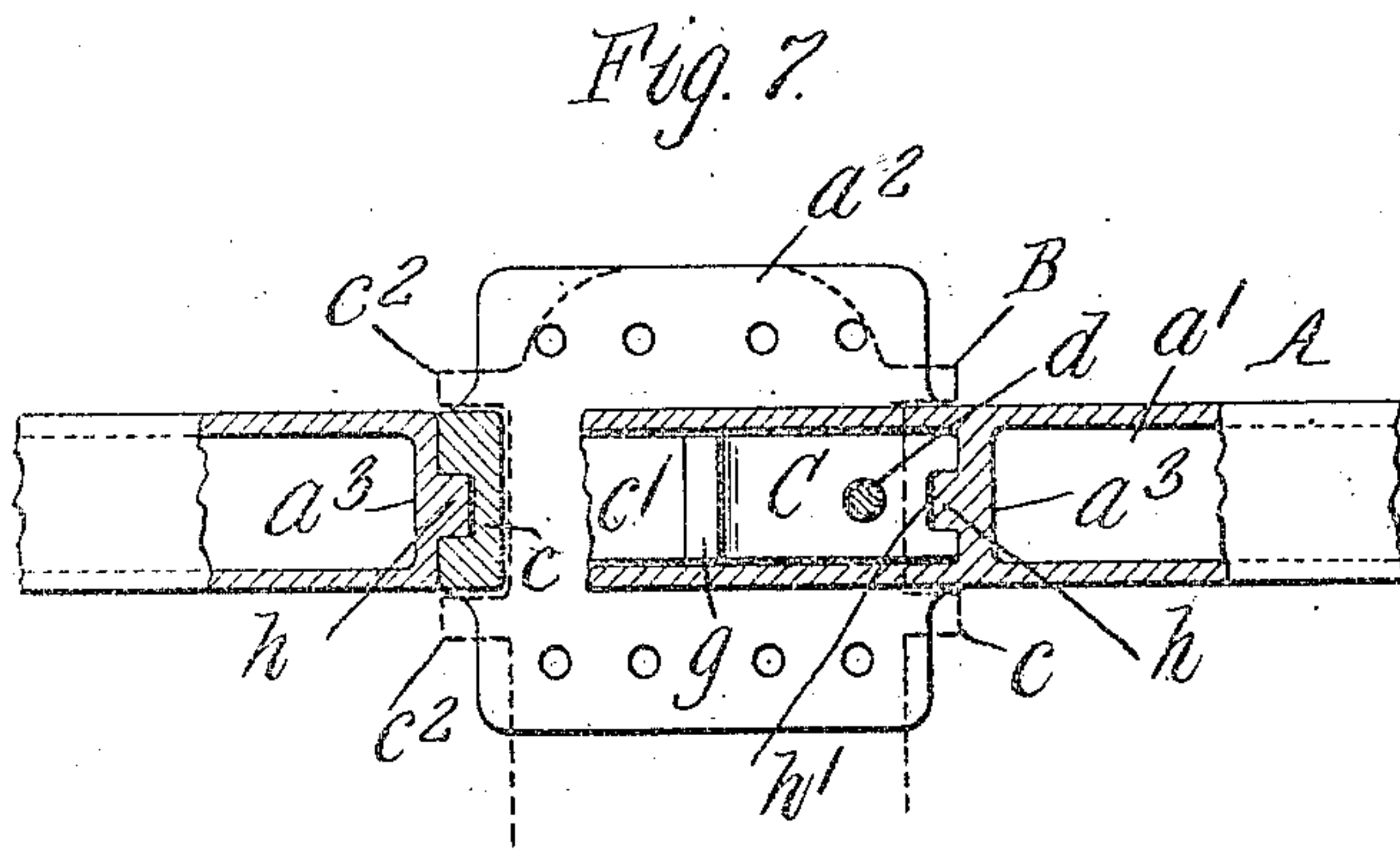
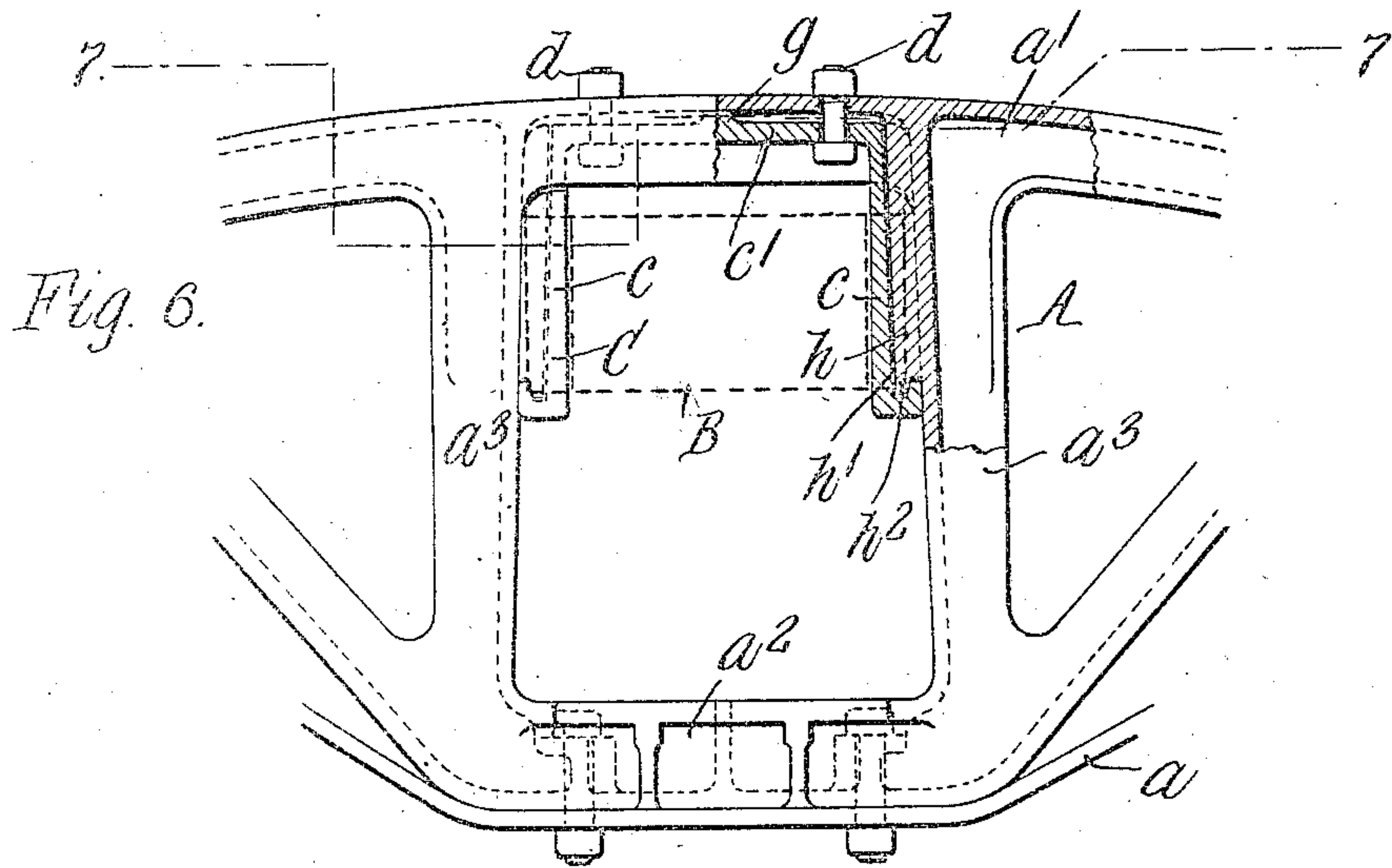
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943,707.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF LANCASTER, NEW YORK, ASSIGNOR TO GOULD COUPLER COMPANY, OF NEW YORK, N. Y.

RAILWAY-CAR TRUCK.

943,707.

Specification of Letters Patent.

Patented Dec. 21, 1909.

Application filed March 9, 1909. Serial No. 432,330.

To all whom it may concern:

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at Lancaster, in the county of Erie and State of New York, have invented a new and useful Improvement in Railway-Car Trucks, of which the following is a specification.

This invention relates more particularly to improvements in railway car trucks of that type having cast side frames of a construction which enables the ordinary bolsters provided with permanently attached side guide lugs or column guides to be inserted endwise into the bolster openings of the side frames and then moved into engagement with the bolster guides on the side frames, so that it is not necessary for the side frames to have a loose or removable part to permit the insertion of the bolster.

The objects of the invention are to produce practical side frames of simple and economical, but strong and durable construction, having separate or removable bolster guides which are rigidly held in place on the side frame and receive the wear incident to the movements of the bolster in the use of the truck, and which can be quickly and easily secured to and detached from the side frame; also to make the guiding parts for the opposite sides of the bolster on each side frame in a single casting which has interlocking connections with the side frame that relieve the bolts for securing the guides in place from the strains and shocks due to the movements of the bolster; also to make the side frame and bolster guides of such construction that they can be readily cast and no machine work or special finishing of the parts will be required to insure a strong and rigid connection between the side frame and bolster guides; and also to improve side frames of this sort in the respects hereinafter described and set forth in the claims.

In the accompanying drawings, consisting of two sheets: Figure 1 is a side elevation of a side frame for railway car trucks embodying the invention. Fig. 2 is a plan view thereof, partly in section, in line 2—2, Fig. 1. Fig. 3 is a fragmentary longitudinal sectional elevation thereof, on an enlarged scale, in line 3—3, Fig. 2. Fig. 4 is a transverse sectional elevation thereof in line 4—4, Fig. 3. Fig. 5 is a perspective view, on an enlarged scale, of the bolster guide detached.

Fig. 6 is a fragmentary elevation partly in section, on an enlarged scale, of a modified construction. Fig. 7 is a plan view thereof, partly in section, in line 7—7, Fig. 6. Fig. 8 is a detached perspective view, on an enlarged scale, of the modified bolster guide.

Like letters of reference refer to like parts in the several figures.

Each side frame preferably consists of a trussed frame or casting A which rests at its opposite ends on the journal boxes, and a tie bar a which is secured centrally to the depressed central portion of the casting A with its opposite ends extending beneath the journal boxes to which the ends of the casting A and tie bar a are secured by the usual vertical bolts. The casting A has an upper chord a^1 , a lower chord a^2 having a depressed horizontal central portion, and upright struts or bolster guide columns a^3 which join the upper and lower chords and form with them a bolster opening to receive the end of the truck bolster. The upper chord is preferably arched and of inverted U-shape in cross-section, at least between the columns a^3 , and the columns and lower chord are also preferably, though not necessarily, of U-shape in cross section, as shown.

As usual, the truck frame is composed of two of these side frames rigidly connected by a spring plank or cross piece (not shown) which is secured to the depressed central portions of the lower chords, and the bolster B, indicated by broken lines in Figs. 1 and 2, is yieldingly supported by springs arranged in the bolster openings of the side frames beneath the ends of the bolster.

Two slightly different constructions of the side frame and bolster guide are shown in the drawings.

C represents the bolster guide, which, in both constructions, consists of a single integral piece or casting having opposite upright guide legs or portions c which are jointed at their upper ends by a horizontal top bar c' and extend downwardly between the columns a^3 at the opposite sides of the end of the bolster and between the column guides c^2 on the bolster. The top bar c' of the guide is adapted to fit between the depending flanges of the upper chord a^1 of the side frame and the guide is secured in place by vertical bolts d passing through the upper chord and the top bar of the guide. The bolster measured over its column guides a^3 is

narrower than the bolster opening below the legs of the guide C so that it can be inserted endwise into the bolster opening and then lifted into engagement with the guide.

In the construction shown in Figs. 1-5, the bolster guide columns are formed with upright flanges *e* which extend toward each other into the bolster opening from the upper portions of the columns at the opposite faces of the side frame. Each leg of the guide C extends in between or interlocks with these flanges *e* on the adjacent column, which, together with the flanges of the upper chord *a'* of the side frame, hold the guide from lateral displacement. The legs of the guide are provided at their inner edges with ribs *e'* which project laterally to the outer faces of the flanges *e*. The upper portions of the guide columns *a''* between the flanges *e* converge upwardly slightly at *f*, Fig. 3, and the outer edges of the legs of the guide converge correspondingly, so that when the securing bolts *d* are drawn up the guide will be wedged into place between the columns and will be very rigidly and securely held from movement, either longitudinally or crosswise of the side frame. A lug *g* formed centrally on the top bar of the guide and adapted to bear against the underside of the web of the upper chord *a'* of the side frame between the securing bolts *d*, makes it possible for the guide to be drawn snugly up into place in the side frame by the securing bolts *d* notwithstanding slight surface irregularities in the upper chord *a'* of the guide and top bar formed in casting the parts. By constructing the side frame and guide as described, it is not necessary to machine or specially finish the castings in order to secure a tight fit and rigid connection between them.

The construction shown in Figs. 6-8 is similar to that above described except that the columns *a''* are provided at their upper portions with projecting ribs *h* which enter recesses *h'* in the legs of the guide instead of the flanges *e* in the other construction, which embrace the legs of the guide. The lower ends of these ribs *h* form lugs *h''* which interlock with cooperating parts at the lower ends of the legs of the guide to hold the legs from springing inwardly away from the guide columns *a''*. Similar interlocking parts could also be employed, if desired, in the first construction described.

In each construction described only two small bolts *d* are necessary to secure the guide in place and the guide is wedged in between the guide columns *a''* by drawing up these bolts, which are largely relieved from strain by the interlocking parts of the guide and the side frame. The construction is much stronger and more reliable than one employing separate guide pieces at opposite sides of each end of the bolster, and fewer fasten-

ing devices are required, thus reducing the labor of assembling the parts. The guide takes the entire wear off of the side frame, and when worn can be readily replaced at small expense.

I claim as my invention:

1. The combination of a truck side frame having a bolster opening, a portion of which is of greater width than the bolster measured over its column guides, and a bolster guide consisting of upright legs located in said bolster opening at opposite sides thereof and a top bar connecting the upper ends of said legs, said guide and side frame having interlocking portions, and securing means connecting the top bar of said guide to the upper portion of said side frame, substantially as set forth.

2. The combination of a truck side frame having a bolster opening, a portion of which is of greater width than the bolster measured over its column guides, and an upper chord which is of inverted U-shape in cross-section above said opening, and a bolster guide consisting of upright legs located in said bolster opening at opposite sides thereof and a top bar which connects said legs and is secured between the flanges of said upper chord of the side frame, said legs of the guide and the side frame having interlocking portions, substantially as set forth.

3. The combination of a truck side frame having upright columns with converging upper portions and an upper chord of inverted U-shape in cross-section connecting the upper ends of said columns, a bolster guide consisting of opposite legs which bear against said converging portions of said columns and a top bar connecting said legs which is located between the flanges of said upper chord, and means connecting said upper chord and top bar of the guide for wedging the guide between said converging portions of said columns, substantially as set forth.

4. The combination of a truck side frame having upright columns with converging upper portions and an upper chord of inverted U-shape in cross-section connecting the upper ends of said columns, a bolster guide consisting of opposite legs which bear against said converging portions of said columns and a top bar connecting said legs which is located between the flanges of said upper chord, said columns and guide legs having interlocking parts, and means for securing said guide to the side frame and wedging the guide between said converging portions of said columns, substantially as set forth.

5. The combination of a truck side frame having a bolster opening, a portion of which is of greater width than the bolster measured over its column guides, and an upper chord which is of inverted U-shape in cross-

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section above said opening, and a bolster guide consisting of upright legs located in said bolster opening at opposite sides thereof and a top bar which connects said legs and is secured between the flanges of said upper chord of the side frame, said legs of the guide and the side frame having interlocking portions, and said legs having opposite side faces which are substantially flush with the opposite sides of said side frame, substantially as set forth.

6. The combination of a truck side frame having upright columns with converging upper portions and an upper chord of inverted U-shape in cross-section connecting the upper ends of said columns, a bolster guide consisting of opposite legs which bear against said converging portions of said columns and a top bar connecting said legs which is located between the flanges of said upper chord, said legs having portions which interlock with parts on said columns and opposite side faces which are substantially flush with the opposite side faces of said side frame, and means for securing said guide to the side frame and wedging the guide be-

tween said converging portions of said columns, substantially as set forth.

7. The combination of a truck side frame having upright columns with converging upper portions and an upper chord of inverted U-shape in cross-section connecting the upper ends of said columns, a bolster guide consisting of opposite legs which bear against said converging portions of said columns and a top bar connecting said legs which is located between the flanges of said upper chord, said columns having parts which engage with said legs to prevent lateral displacement thereof and lugs which interlock with portions at the lower ends of said legs to hold the legs against the columns, and means for securing said guide to the side frame and wedging the guide between said converging portions of said columns, substantially as set forth.

Witness my hand, this 8th day of March, 1909.

WILLARD F. RICHARDS.

Witnesses:

C. W. PARKER,
E. C. WARD.