

No. 697,803.

Patented Apr. 15, 1902.

J. CAMPBELL.  
WATER CLOSET.

(Application filed Oct. 11, 1901.)

(No Model.)

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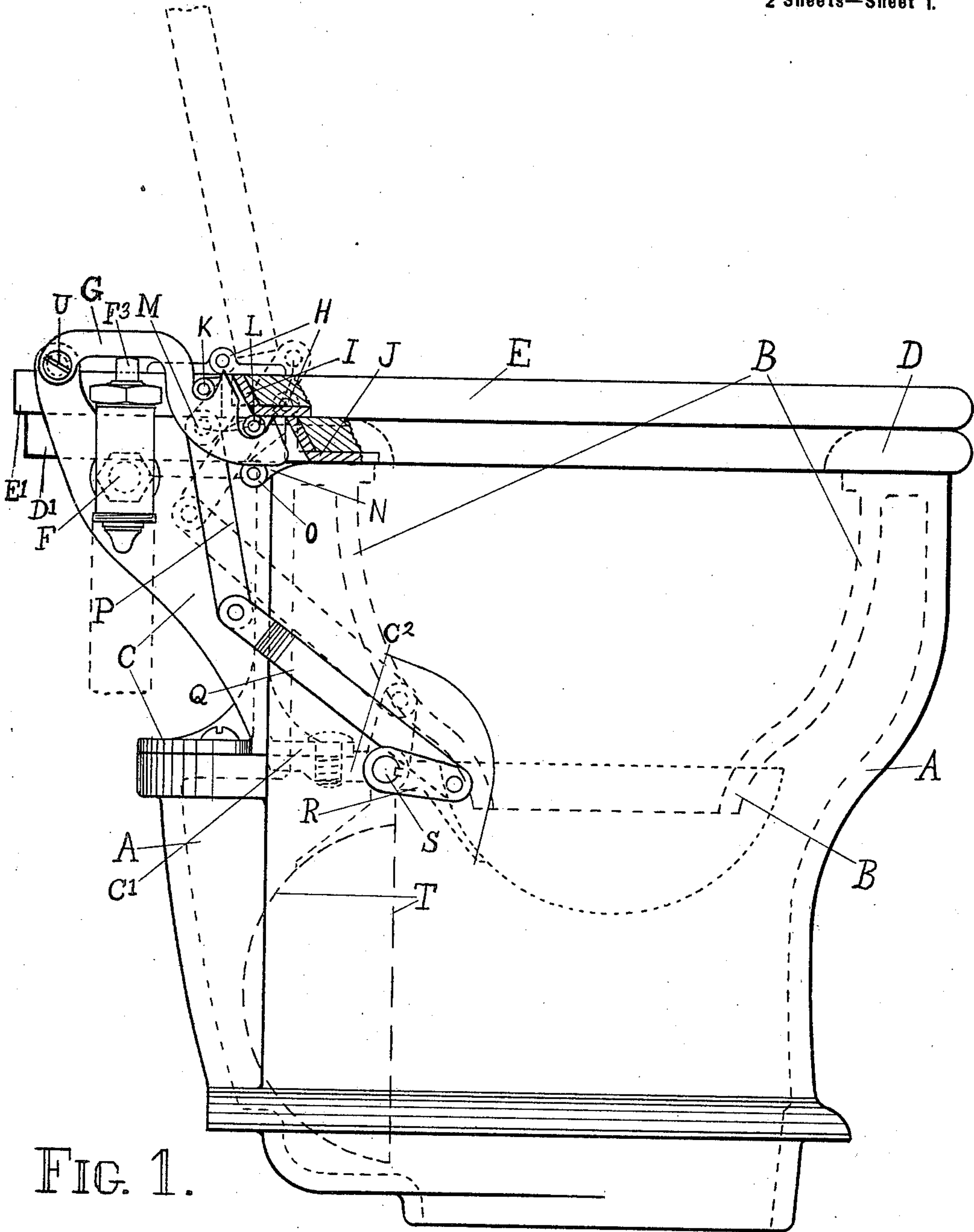


FIG. 1.

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John Campbell INVENTOR.

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No. 697,803.

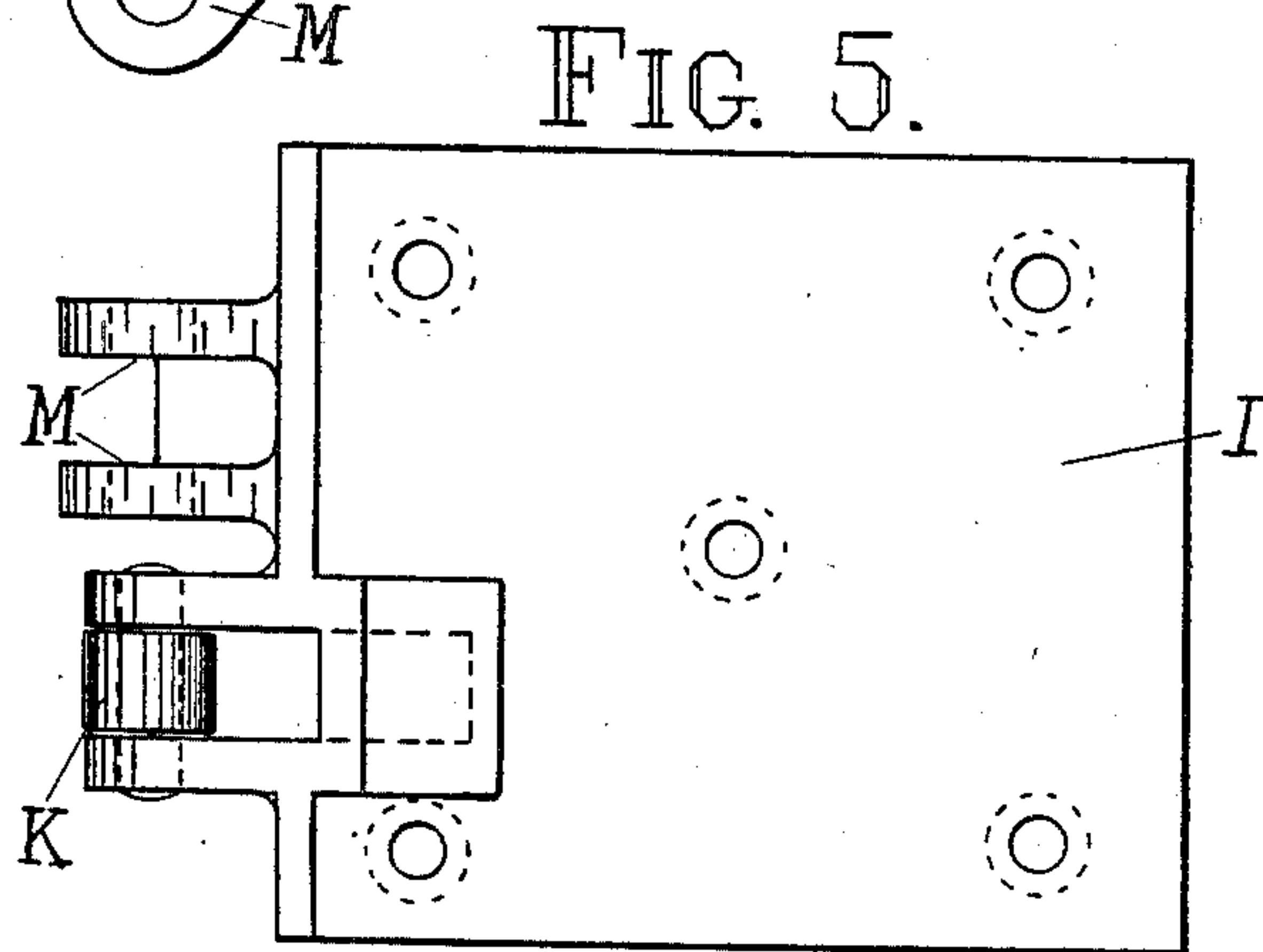
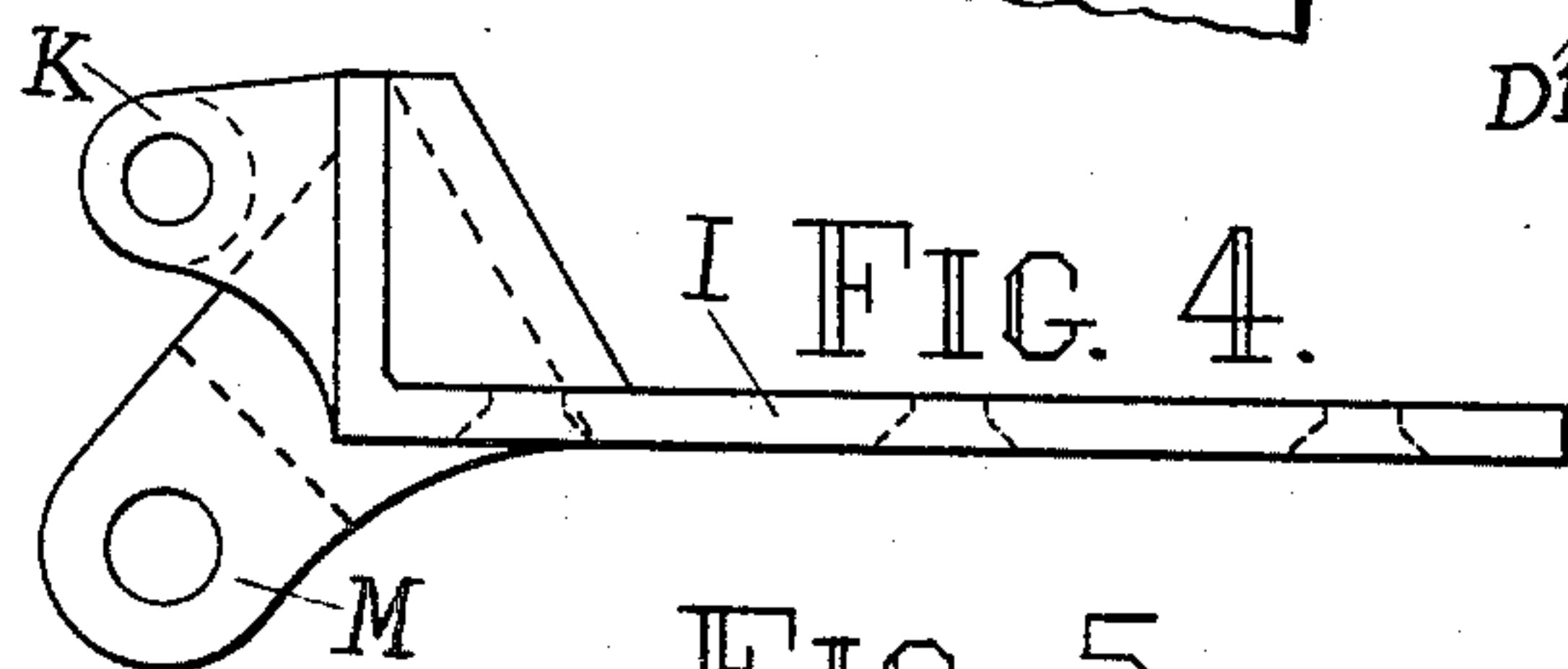
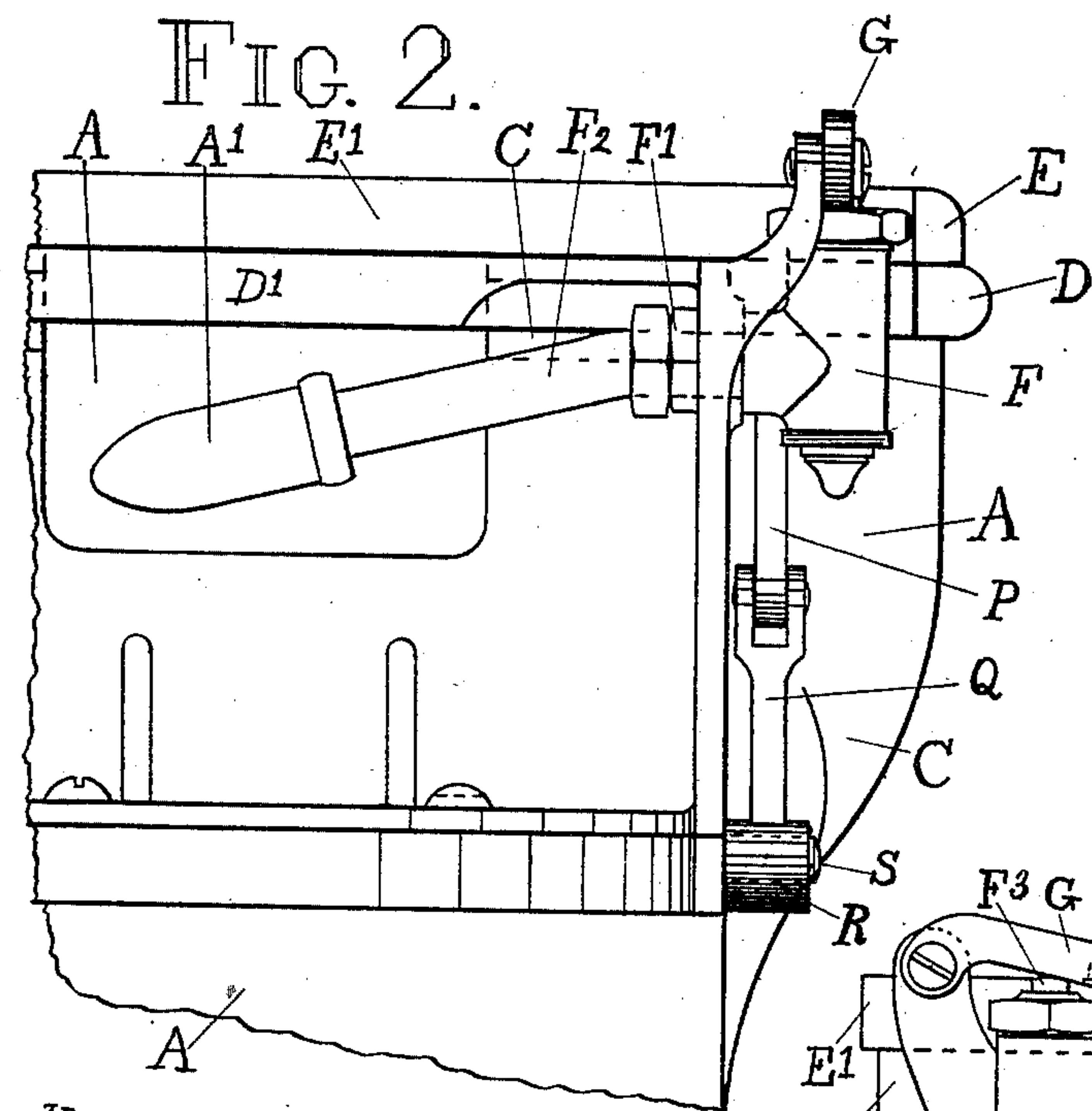
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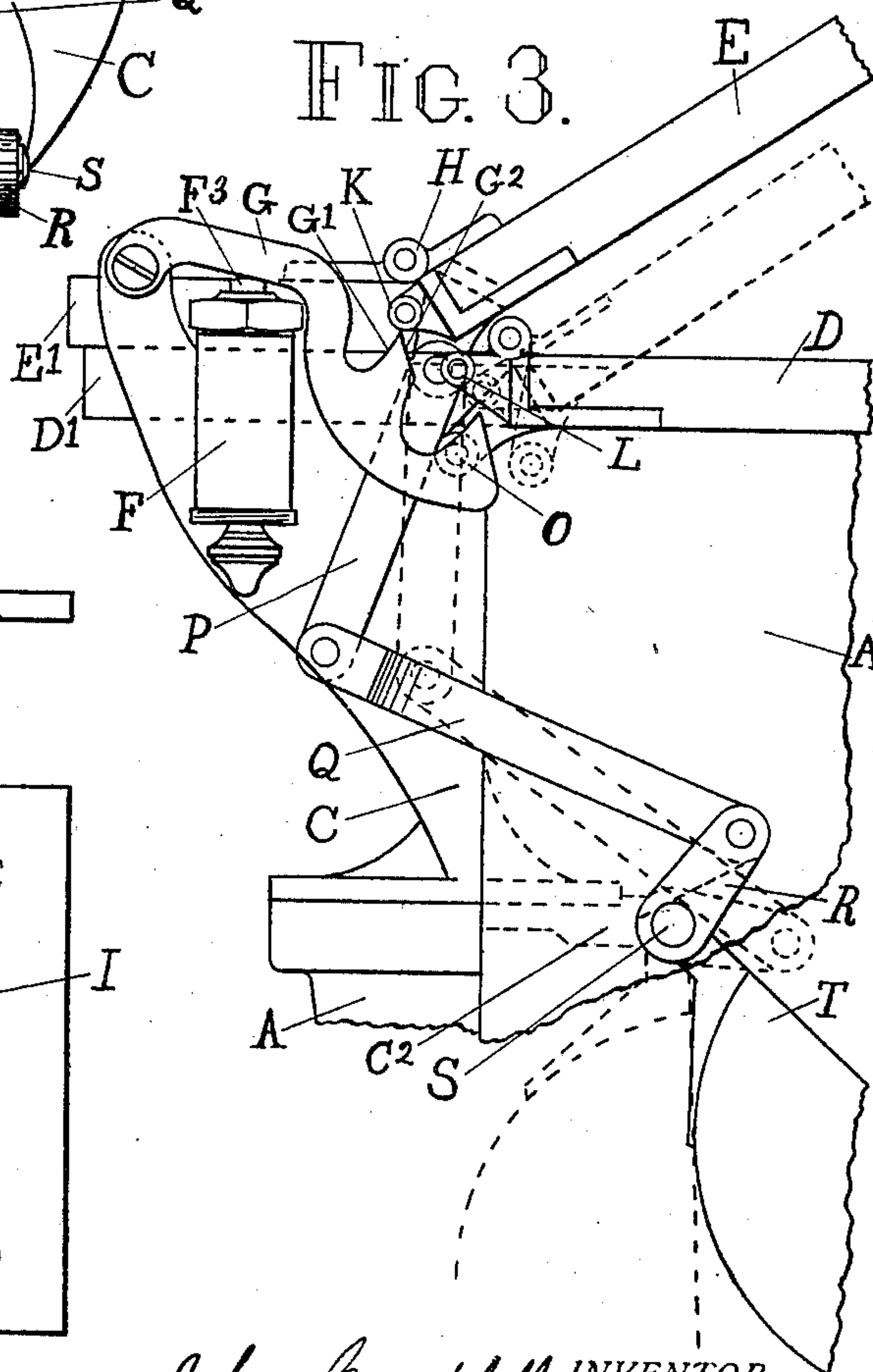
(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

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Frank Burnham



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# UNITED STATES PATENT OFFICE.

JOHN CAMPBELL, OF DENVER, COLORADO.

## WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 697,803, dated April 15, 1902.

Application filed October 11, 1901. Serial No. 78,294. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN CAMPBELL, a citizen of the United States, residing at No. 3830 Williams street, in the city of Denver, county  
5 of Arapahoe, and State of Colorado, have invented certain new and useful Improvements in Water-Closets, of which the following is a specification.

My invention relates to that class of water-  
10 closets in which a hinged pan is employed at the bottom of the bowl, the same being capable of being flushed or filled with water to close the bottom of the bowl, and in which a hinged seat and lid or cover are connected  
15 with the pan to operate the same and with the flushing-valve to open it to flush the pan and wash the bowl. This closet, although suitable for general use, is designed with special reference to the requirements for use upon  
20 railway-cars, and therefore, in addition to other requirements, is made of a very compact form and with a view to extreme simplicity and certainty of operation.

Some of the objects of this invention are,  
25 first, to provide a water-closet in which very simple and direct means connect the pan with the lid and seat to cause the pan to be down when both lid and seat are down, when both lid and seat are up, or when both lid and seat  
30 are being raised, and to cause the pan to be raised only when the lid is raised while the seat is left down; second, to provide a water-closet in which the flushing-valve shall be opened when either lid or seat is raised or  
35 lowered or when both lid and seat are raised or lowered; third, to provide a water-closet in which the connections from seat and lid to the pan and valve shall be of such construction as to be incapable of being affected by  
40 dirt and corrosion to cause the lid or seat to stick when part way down, and thus hold the flush-valve open and waste the limited supply of water carried on cars; fourth, to provide a water-closet in which the flushing-valve is  
45 placed vertical and at such height as to drain into the inlet at the top of bowl and yet have the mechanism substantially all below the top surface of the lid, and, fifth, to provide a water-closet in which all the operating mechanism is simple, durable, all on the outside,  
50 easily accessible and taken apart, and con-

finied to the width and length of a compact form of bowl.

The above objects are attained by means of the mechanism and construction illustrated 55 in the accompanying drawings, in which—

Figure 1 is a side elevation of the closet closed, with the seat and lid down and with the interior of the bowl represented by dotted lines, the consequent lowered position of the  
60 pan being represented by dash-lines. Dotted lines represent the lid in its tipped-up position, the connections in their corresponding position, and the pan in its consequent upper position is shown by short dotted lines. A  
65 portion of the corner of lid and seat are broken away to fully show the valve-lever and rolls. Fig. 2 is a rear elevation of the corner of the closet having the pan and valve connections, showing the inclined pipe leading from flush-  
70 valve to bowl. Fig. 3 is a side elevation similar to a portion of Fig. 1, showing in full lines the seat down, the lid partly raised, the valve-lever in its depressed position, and the connections and pan in their consequent posi-  
75 tions. Dotted lines represent the seat in a partly-raised position, the connections in their consequent position, and the pan in its lowered position. Fig. 4 shows an edge view or side elevation of one of the plates, which are  
80 secured to the corner of lid and seat. Fig. 5 is a plan view of one of the plates and its roll. The two plates are very similar.

Similar characters denote like parts in the several views. 85

In the drawings, A represents the outer casing or shell, and B the inner portion of the same, constituting the bowl proper. These may be formed of such shape as is desired and integral with each other or fitted together,  
90 as may be deemed expedient. The material may be of any suitable substance, but is preferably of porcelain. Secured to the upper rear part of the casing A in any desirable manner, as by screws or bolts, is the frame-  
95 casting C, which supports the pieces to which the seat and lid or cover are hinged, the flush-valve, and the valve-lever G. The support for the seat will be designated D', the support for the lid E', and the flush-valve F. The  
100 hinges H of the seat and lid are of the ordinary form, the plates of the hinges being



preferably set in flush with the surface of the seat, as represented. Similar plates, as represented in Figs. 4 and 5, are secured in any desired manner, as by screws, to one rear corner of the seat and to the corner of the lid above, that for the seat being designated J and the one on the cover I. Each of the plates I and J is formed with a pair of rearward projections, between which are revolubly mounted rolls (designated K and L, respectively) for engagement with the valve-lever G. A mere solid projection without the roll would suffice and be operative; but the bifurcated projection with roll is the preferred construction. The plates I and J are provided at a point somewhat nearer the center of width of the closet with downward and rearward bifurcated projections M and N, and in the latter is preferably mounted a freely-revoluble roll O. Though the bifurcated projection and roll are the preferred form, a solid projection of similar form would be equally effective and may be substituted.

A lever P is freely pivoted upon a suitable pin in the bifurcated projection M, and a connection Q is freely pivoted to the lower end of the lever P and in a crank R, which is rigidly secured upon the rock-shaft S, and to this shaft S is fastened the pan T. The frame C has front extensions C', which pass through suitable openings in shell A, and to these extensions C' are secured bearings C<sup>2</sup>, in which the rock-shaft S is freely mounted.

The flush-valve F is preferably of the form having within it a spring for the return of the valve proper to its closed position, as in Fig. 1, and the outlet-tube of the valve passes through a suitable hole through casting C and is secured in place by a lock-nut F'. (Seen in Fig. 2.) A short declining pipe F<sup>2</sup> is connected to the outlet-tube of valve F and passes into the shell A through a suitable boss A' to admit the water from the flush-valve F to the bowl B, from which it descends into the pan T when in its upper position.

Freely pivoted upon a suitable screw U in the upper extremity of casting C is the valve-lever G, which rests upon the valve-stem F<sup>3</sup>, the depression of the lever causing the opening of the valve, as shown in Fig. 3. The forward end of the lever G is provided with inclined faces upon its upper surface, there being preferably a pair of the inclined faces G' and G<sup>2</sup> slanting in opposite directions and in position to be engaged by the roll K of the lid and a similar pair of inclined faces in position to be engaged by the roll L of the seat, that the front end of the lever G may be depressed by the tipping up or down of either the lid or the seat, and consequently opening the flush-valve. The closet would be effectively operative if the lever G were provided only with inclined faces to be engaged by the roll K of the lid, but the closet would not then be as thoroughly washed.

The pan T is tipped from its lower to its upper dotted position (see Fig. 3) by tipping the

lid only from its lower to its upper dotted position, and in so tipping the lid the lever P is drawn over the roll O, which acts as a fulcrum, and the lower end of the lever is in consequence forced backward and the connection Q swings or raises the crank R and the pan T, as represented by the dotted lines. In case the seat is raised simultaneously with the lid, then the roll O is swung forward out of position to act as a fulcrum for the lever P, and consequently the pan is left in its lower position, as shown by dotted lines in Fig. 3. The location of the rolls K and L may be said to be eccentric to the hinges of the seat and cover or lid. The roll O and pivoting of lever P in plate I may be said to be pendent to the hinging of the seat and cover, respectively, as they swing a short distance past the vertical in both directions. The lever P and connection Q may be said to constitute a two-part jointed bent connection from the pan-crank R to a pivot of the cover located eccentric to the cover-hinge and adapted to operate the pan coincident with the tipping of the cover when this jointed connection is sufficiently bent.

The water-supply pipe is connected to the bottom of the flush-valve, its position being denoted by the dotted lines in Fig. 1. The object of the pair of oppositely-inclined faces of the lever G to be engaged by the roll or projection of the lid or seat is that the valve-lever may be both depressed and released by one continuous movement of the lid or seat in either direction.

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

1. In a water-closet, the combination with a hinged cover, of a roll on said cover adapted to swing from the hinge center with the cover; a flush-valve located below the surface of the said cover; a lever adapted to open said valve and provided with opposite inclined faces projecting into the path of movement of the said swinging roll; and a descending, self-draining pipe connection from the said valve to the flushing-entrance of the closet-bowl.

2. In a water-closet, the combination, with a flush-valve, of a lever adapted to open said valve; a hinged cover and seat; rolls upon said cover and seat, adapted to swing from their hinge centers; and oppositely-inclined faces upon the valve-lever, projecting into the path of movement of the rolls of the cover and seat.

3. In a water-closet, the combination, with a pan supported by a rock-shaft and crank, of a hinged cover; a lever pivoted to said cover eccentric to its hinge; a connection from said lever to said rock-shaft crank; and a fulcrum-bearing in position and adapted to engage the said lever as the cover is tipped.

4. In a water-closet, the combination, with a dump-pan supported by a rock-shaft and crank, of a hinged cover; a lever pivoted to the cover eccentric to its hinge; a connection



from said lever to said rock-shaft crank; a hinged seat; and a fulcrum secured to said seat pendent to its hinge, and in position to engage said lever.

5 5. In a water-closet, the combination, with a dump-pan, of a hinged cover; a lever and connection from said cover to said pan; and a hinged seat having a fulcrum projection located in position and adapted to be swung  
10 out of position to engage said lever when said cover and seat are simultaneously tipped.

6. In a water-closet, the combination, with a hinged cover and hinged seat, of a dump-pan; a lever pivoted to said cover and con-  
15 nected with said pan; a fulcrum on said seat in position and adapted to engage said lever; and a flush-valve operatively connected with said cover.

7. In a water-closet, the combination, with  
20 a hinged cover and a hinged seat, of a flush-valve and valve-lever having inclined faces; projections upon said cover and seat in posi-

tion and adapted to operate said valve by engaging said faces; and connections from said cover to said pan, adapted to sustain the pan  
25 in its upper position when the cover is up and the seat is down.

8. In a water-closet, the combination, with a flush-valve and valve-lever, of a hinged cover in operative engagement with said le-  
30 ver; a cover-lever pivoted eccentric to the cover-hinge; a dump-pan connected with the cover-lever; a pendent fulcrum controlled by a hinged seat; and a descending pipe connection from the flush-valve to the entrance of  
35 the closet-bowl.

In testimony whereof I have hereunto set my hand and affixed my seal, before two subscribing witnesses, at Denver, Colorado, this 7th day of October, A. D. 1901.

JOHN CAMPBELL. [L. S.]

Witnesses:

CHAS. ROBERTSON,  
W. J. CLARK.