

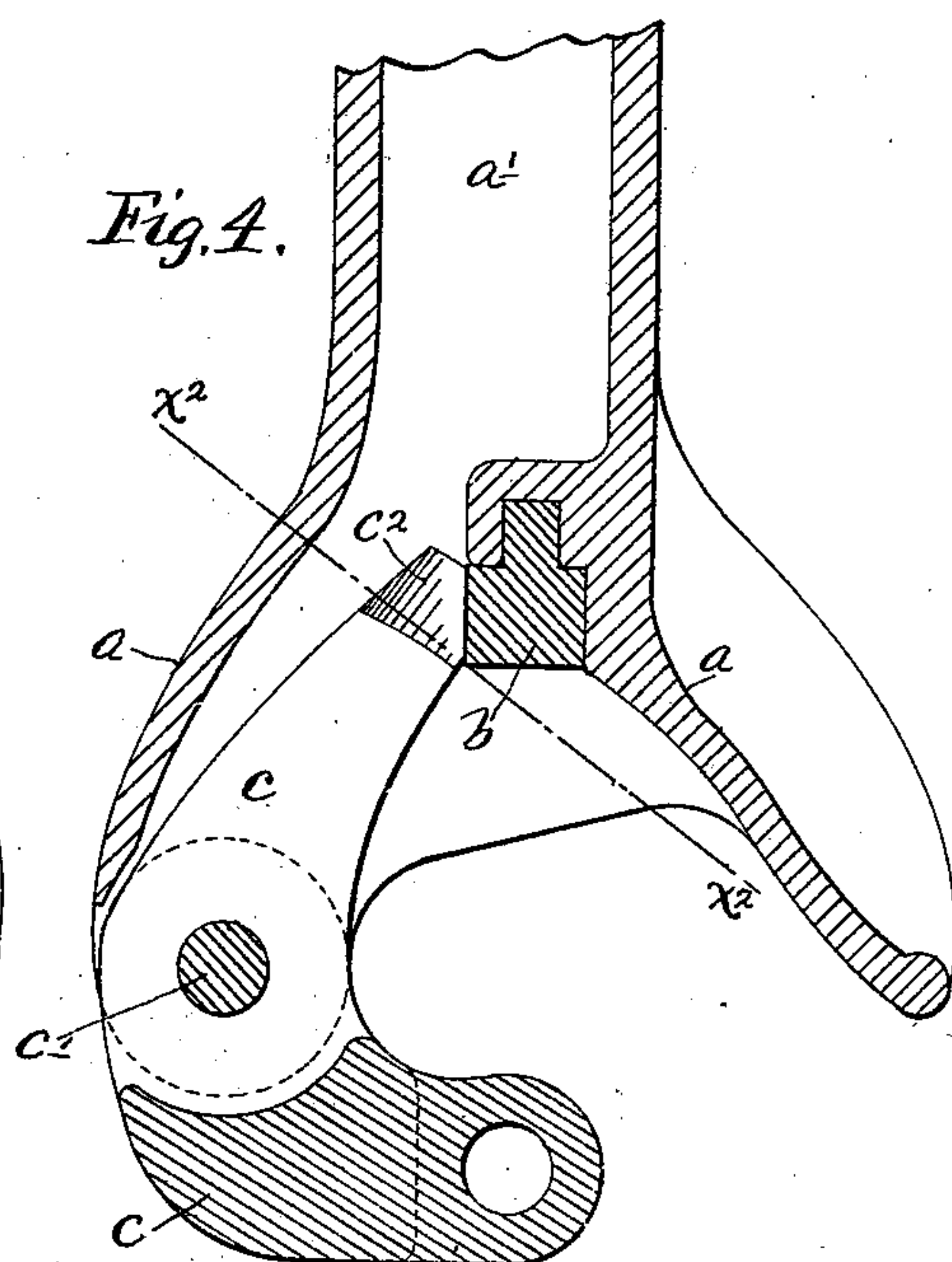
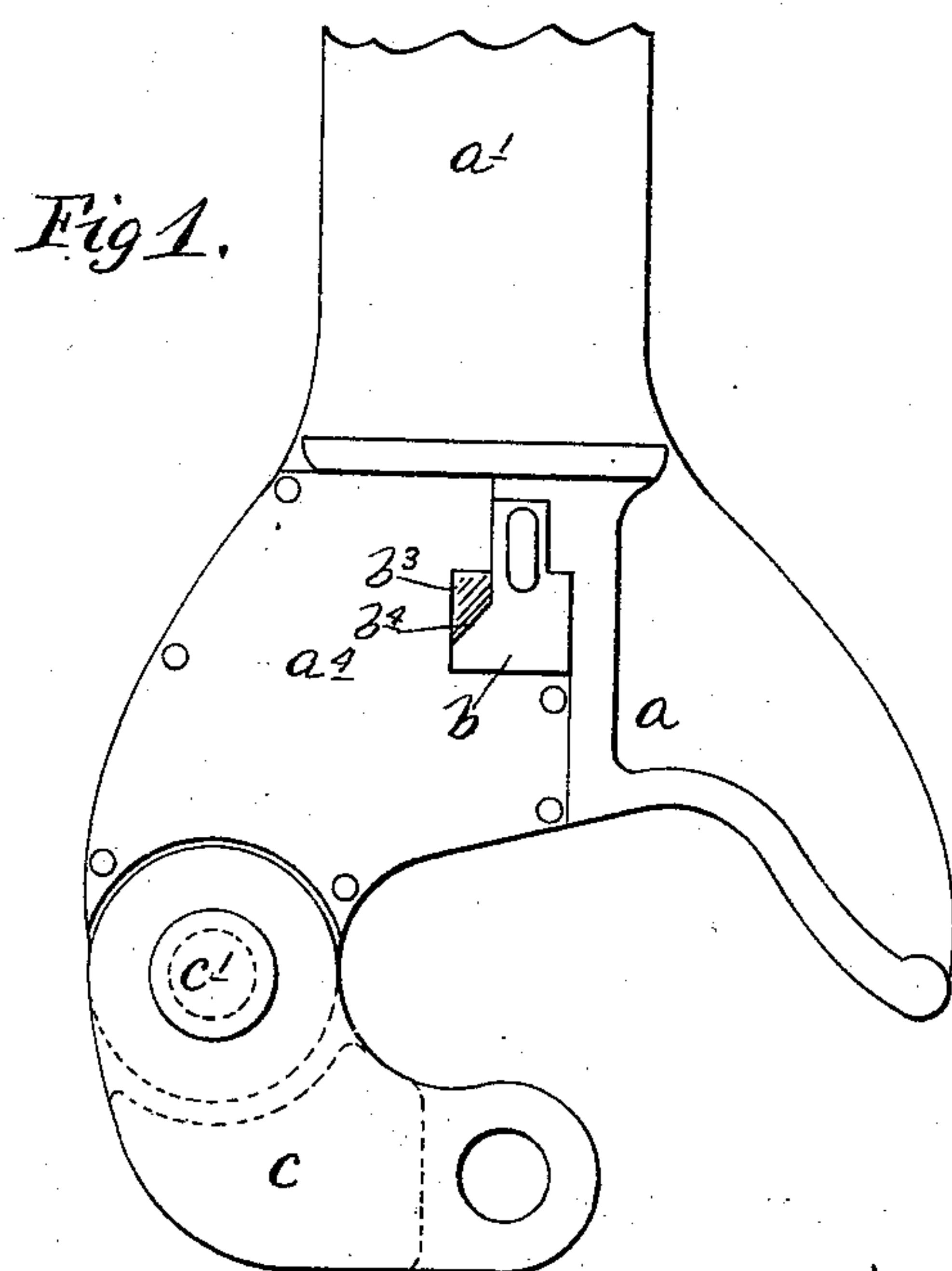
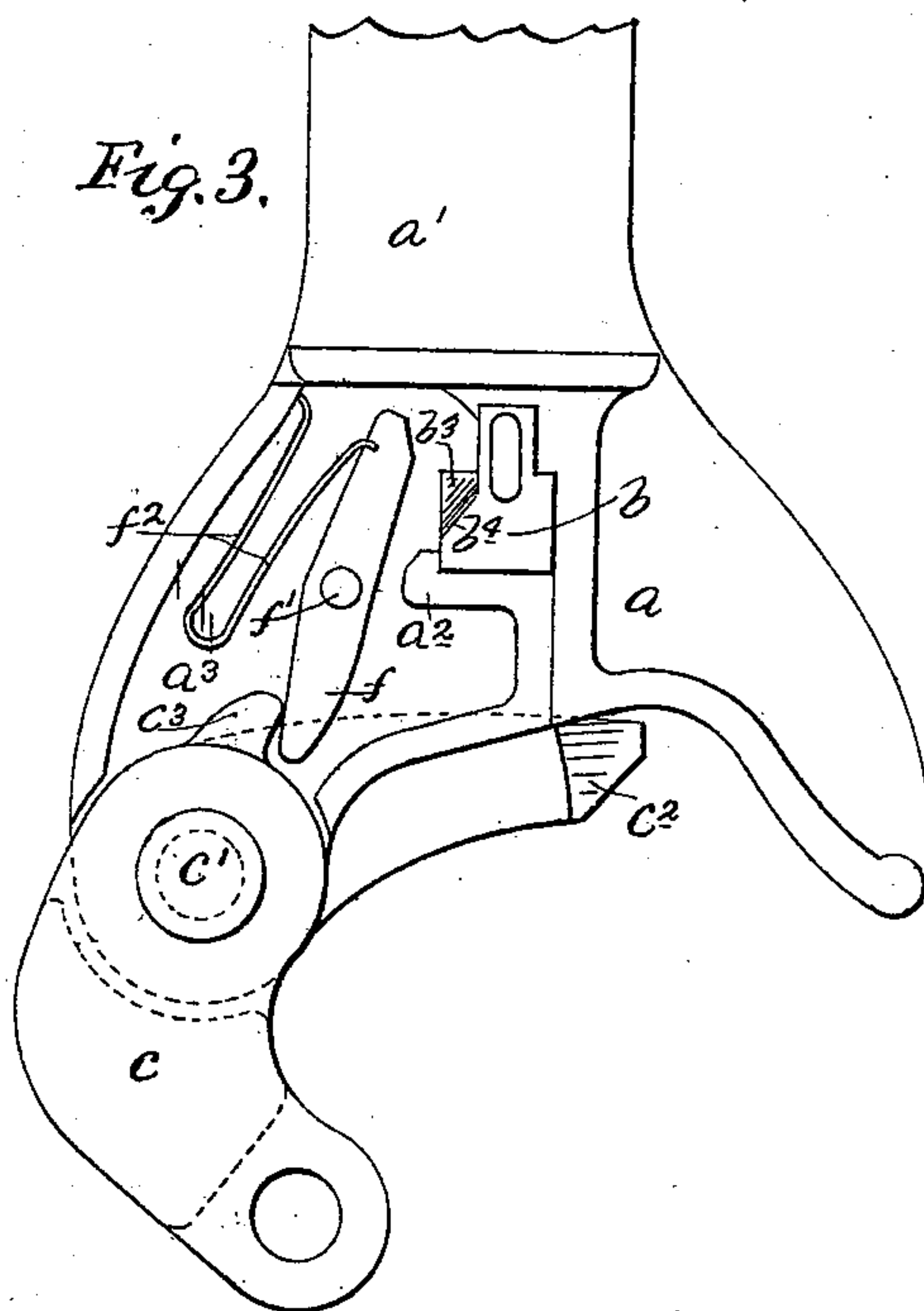
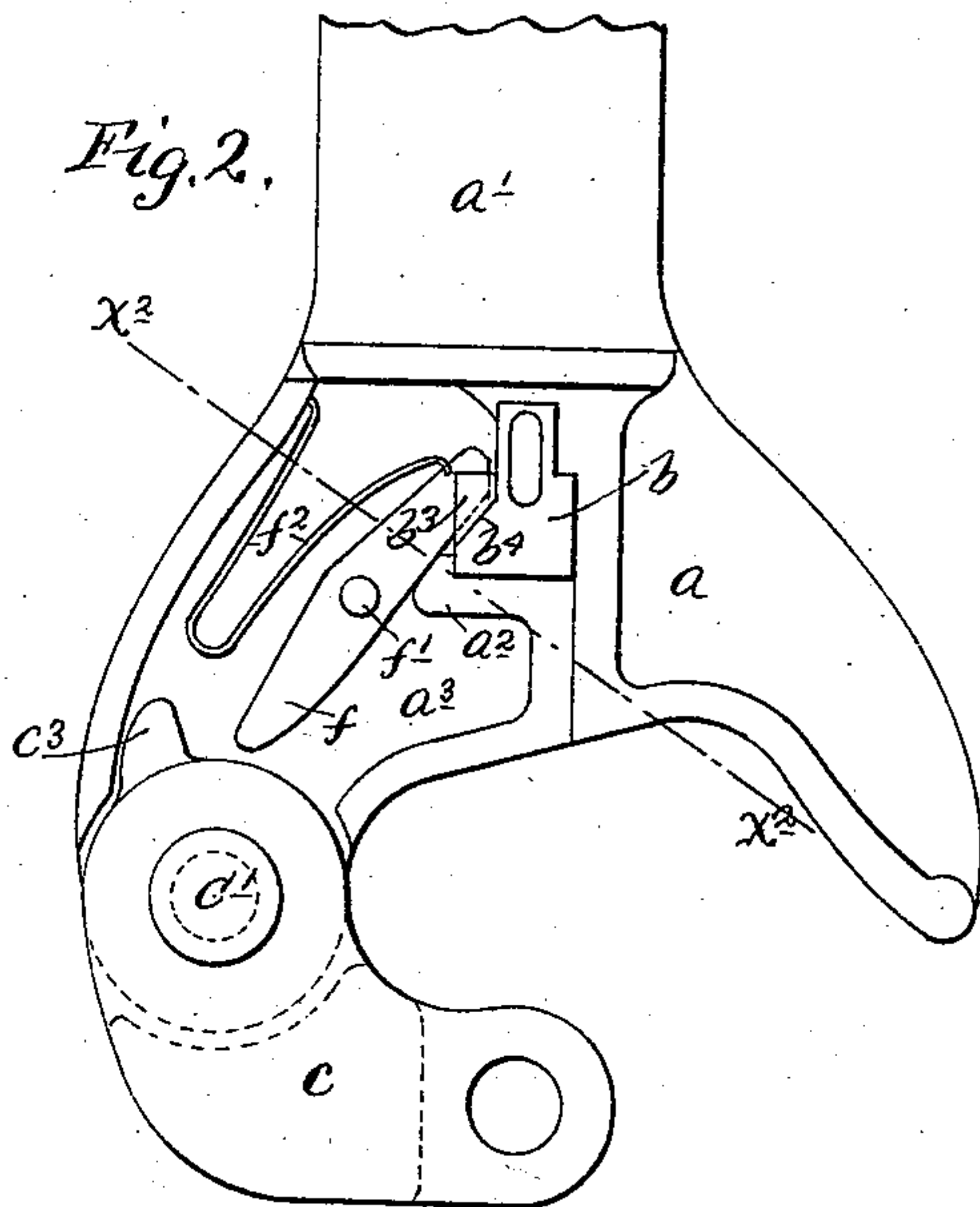
(No Model.)

E. C. WASHBURN.
CAR COUPLING.

2 Sheets—Sheet 1.

No. 556,035.

Patented Mar. 10, 1896.



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Fig. 6.

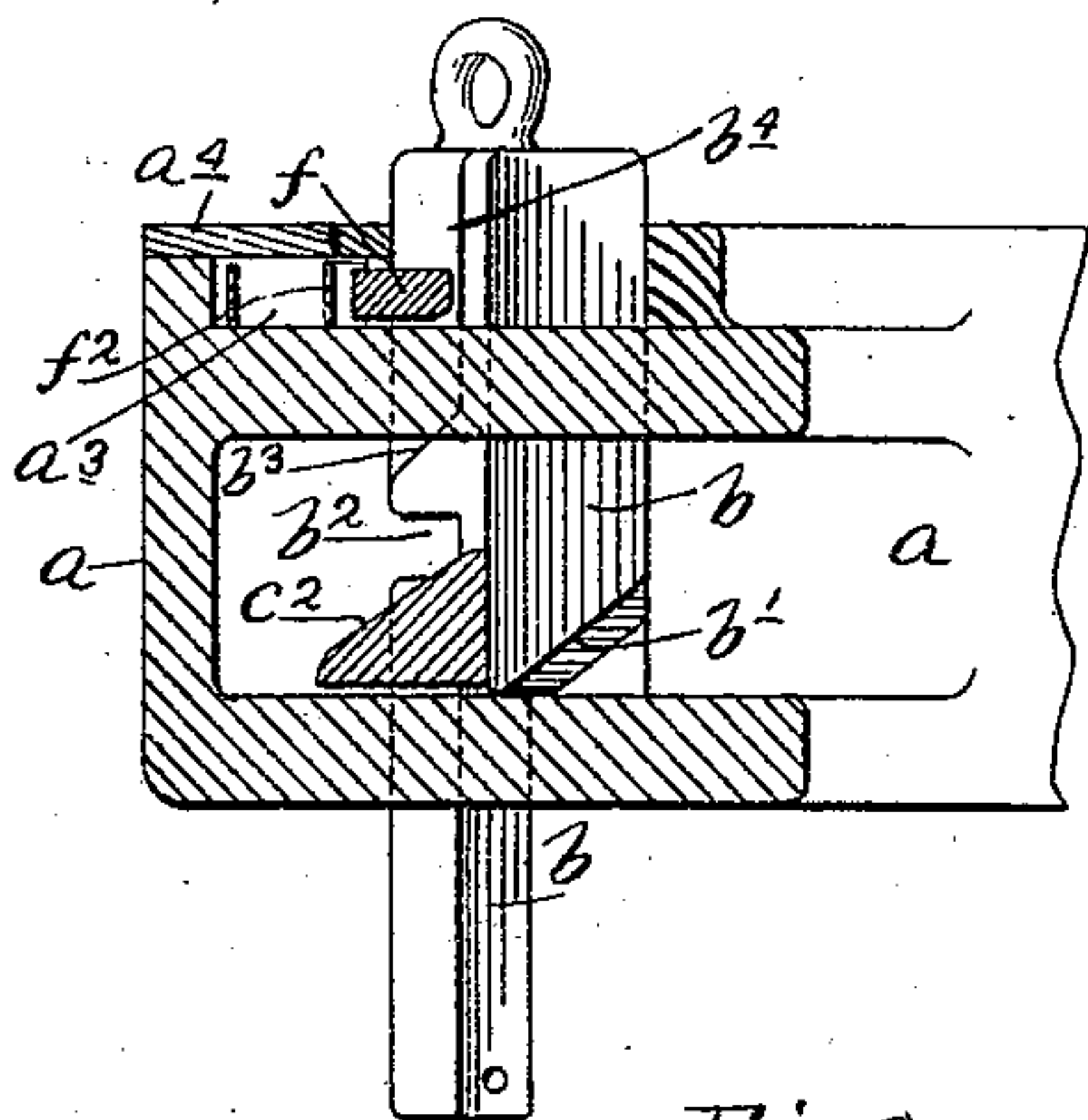


Fig. 7.

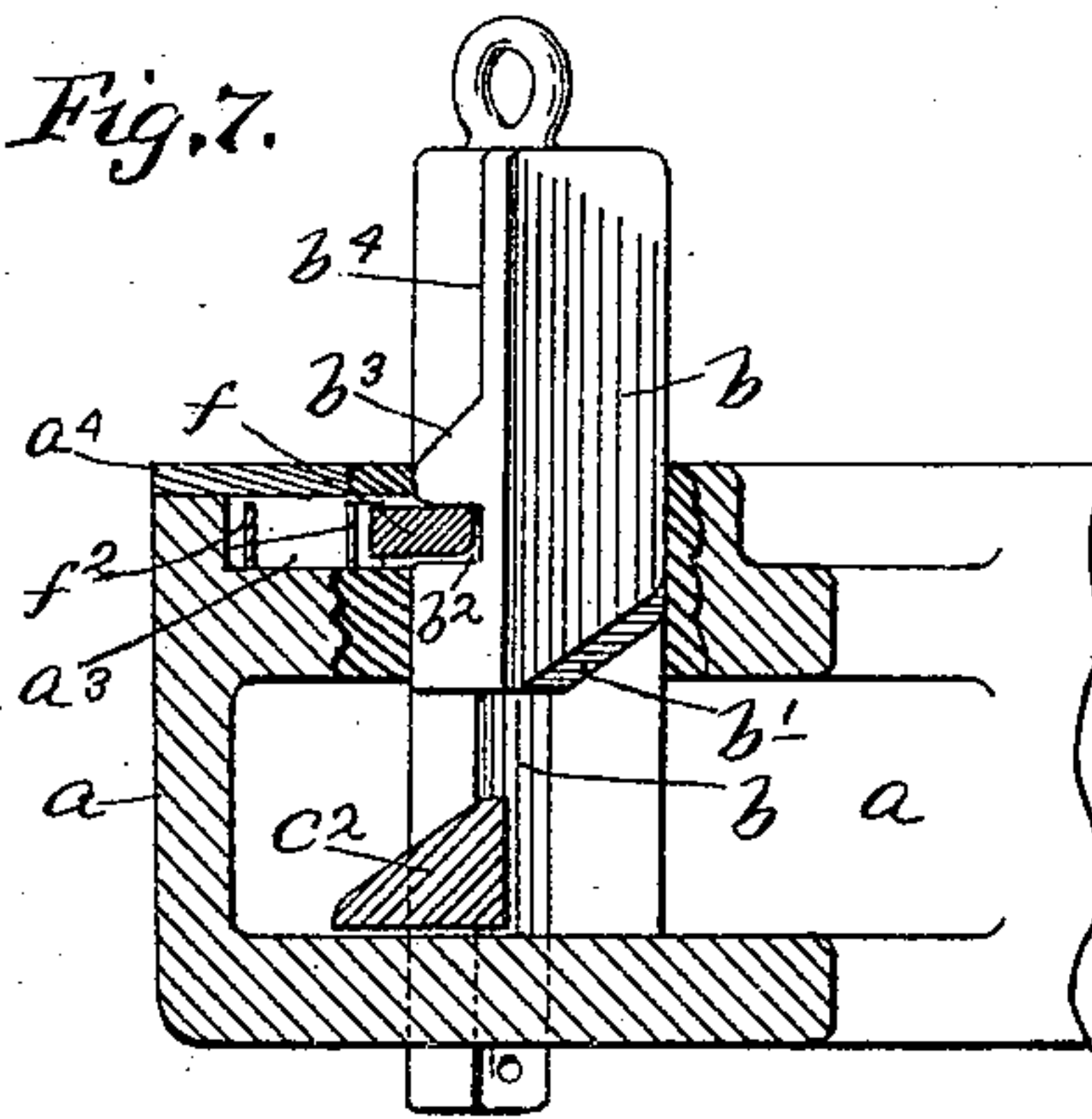


Fig. 8.

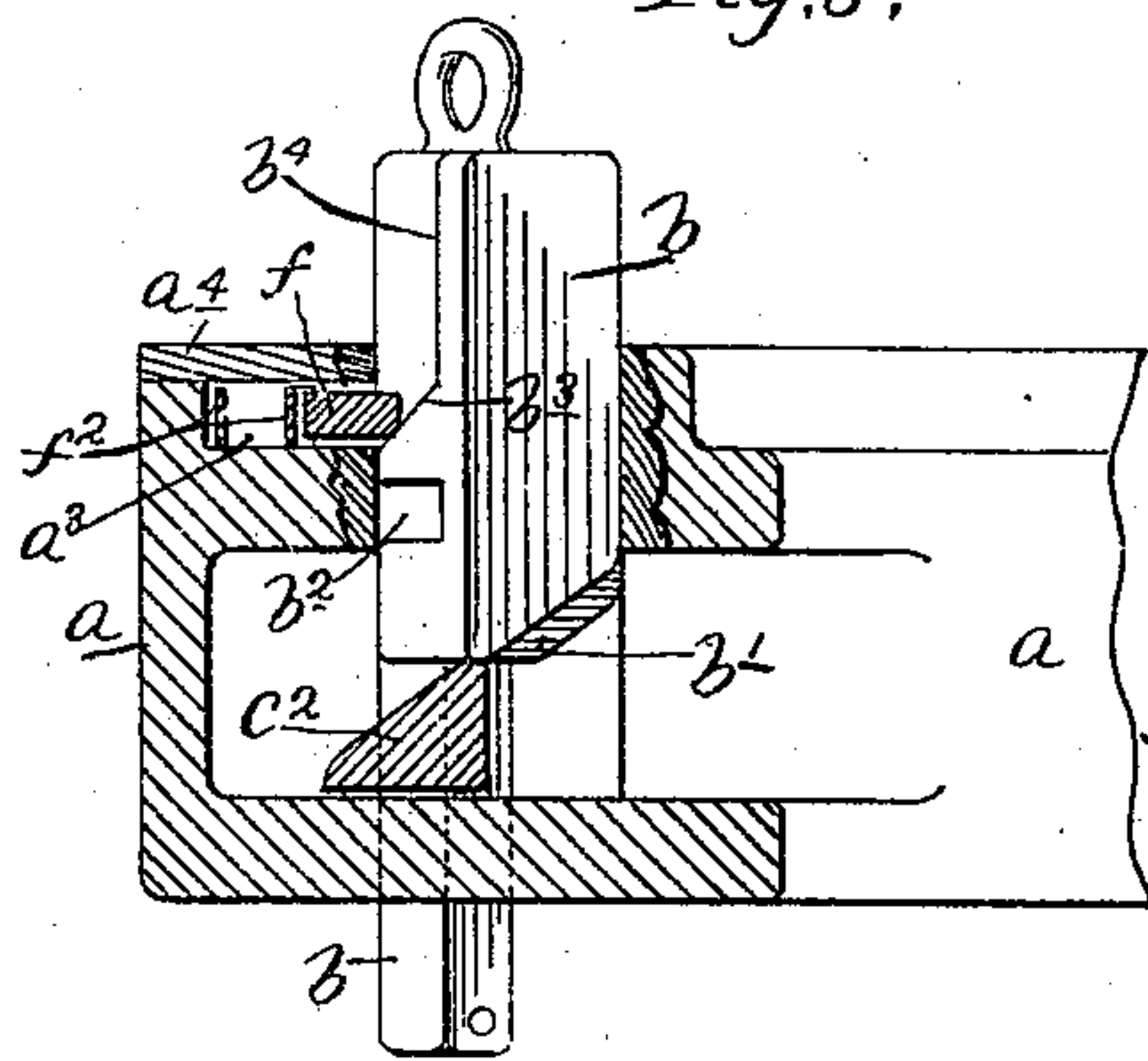


Fig. 9.

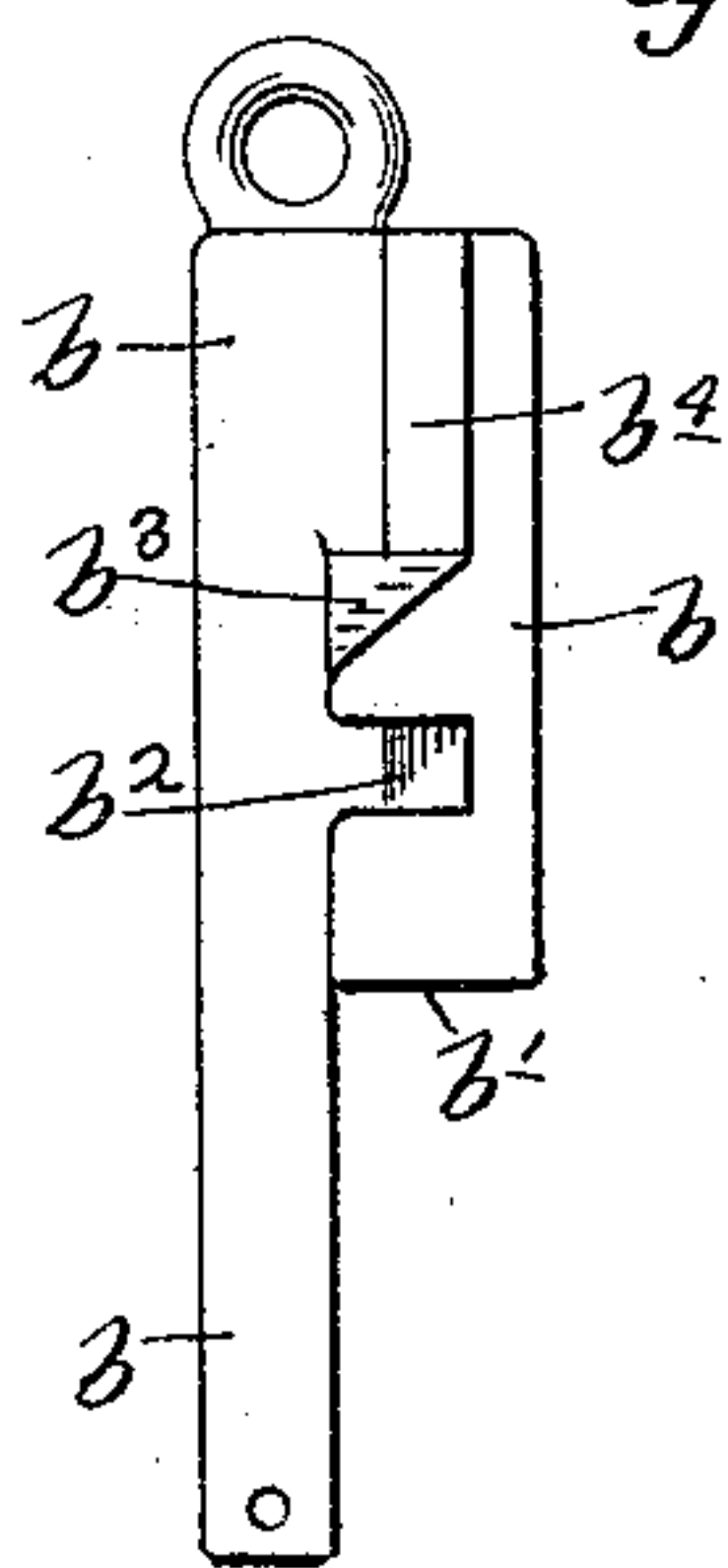
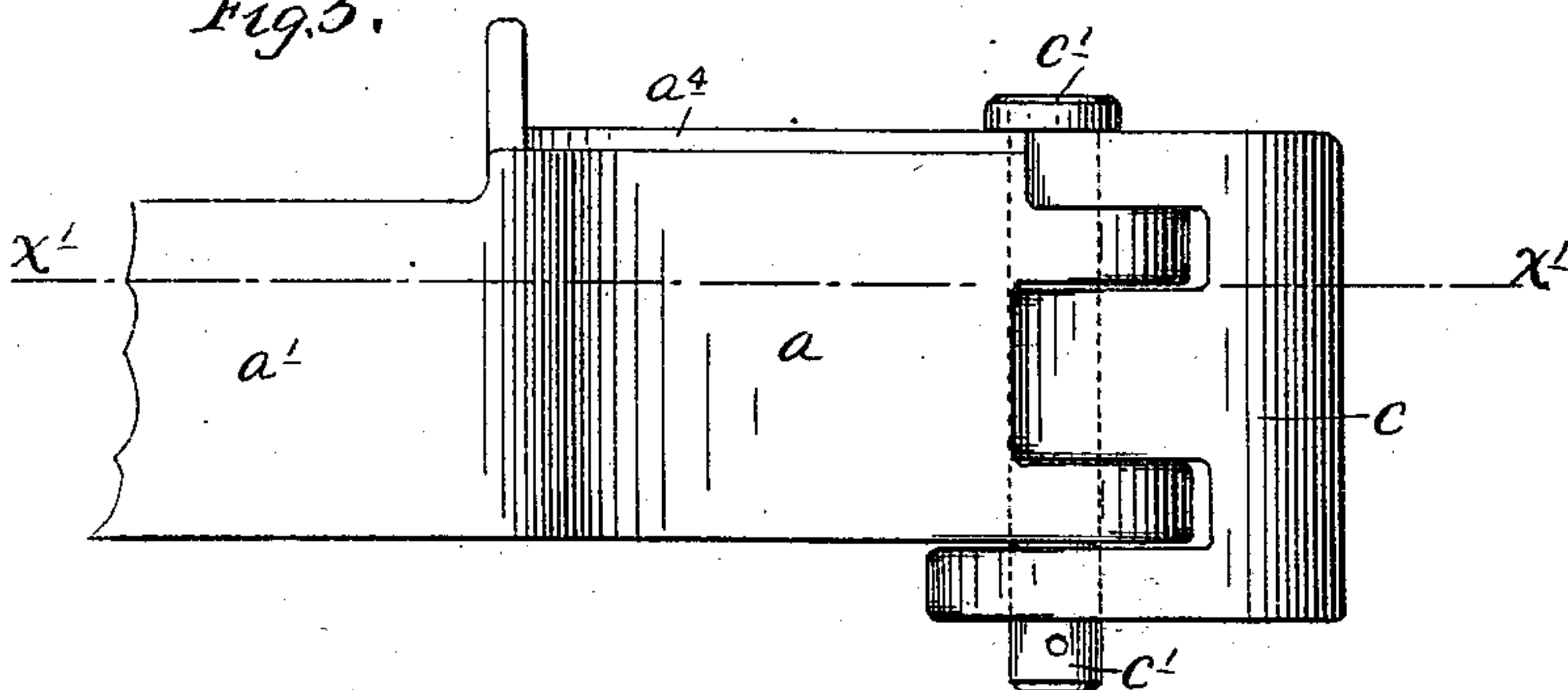


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWIN C. WASHBURN, OF MINNEAPOLIS, MINNESOTA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 556,035, dated March 10, 1896.

Application filed May 4, 1895. Serial No. 548,101. (No model.)

To all whom it may concern:

Be it known that I, EDWIN C. WASHBURN, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Car-Couplings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved car-coupler of the "twin-coupler" type.

To this end my invention consists of the novel features of construction hereinafter described and defined in the claims.

The accompanying drawings illustrate the preferred form of my invention, wherein like letters refer to like parts throughout the several views.

Figure 1 is a plan view of the coupler-head. Figs. 2 and 3 are plan views of the coupler-head, showing the coupling-hook, respectively, in its locked and open positions, some parts being removed. Fig. 4 is a horizontal section taken through the coupler-head on the line $x'x'$ of Fig. 5. Fig. 5 is a left side elevation of the coupler. Figs. 6, 7, and 8 are vertical sections taken on the lines x^2x^2 of Figs. 2 and 4, looking toward the rear, illustrating the different positions of the locking-pin; and Fig. 9 is a detail view of the locking-pin removed.

a is the recessed coupler-head, formed integral with the draw-bar a' and provided with the vertically-movable locking pin or dog b .

c is the coupling-hook pivoted at its angle to the coupler-head by means of a pivot-pin c' . The tail or inner end of this coupling-hook c is beveled to form a cam-surface, as shown at c^2 , which cam-surface c^2 co-operates with a cam or beveled lock-shoulder b^1 on the lock-pin b and serves, under the closing movement of the coupling-hook, to automatically raise said locking-pin for passing the same, and then to permit the lock-pin to drop and lock the coupling-hook in its closed position. I also provide a retaining device for holding the locking-pin in its uppermost or unlocking position until the heel of the coupling-hook has passed the same, and provide, also,

a co-operating tripping device to release the retaining device from the lock when the coupling-hook has reached a predetermined point in its opening movement, so as to permit the locking-pin to drop into its normal or operative position. The said retaining device, as shown, is in the form of a lever f , pivoted at f' to the upper face of the coupler-head, and subject to the action of a spring f^2 , which tends to throw the rear end of the said lever against the locking-pin and into engagement with a notch b^2 in the said pin b when the pin is raised into its uppermost position, as shown in Figs. 2 and 7. The forward end of the said lever f extends into the path of a tripping-lug c^3 , projecting rearward from the coupler-head and so located that it will engage with the said lever f when the coupling-hook has reached a predetermined point in its opening movement, and thereby throw the rear end of the lever f outward against the tension of the spring f^2 , so as to clear the locking-pin b and permit the same to fall into its normal or operative position.

The inward movement of the rear end of the lever f is limited by a stop-lug a^2 on the coupler-head. The locking-pin b is provided directly above the notch b^2 with a beveled cam-surface b^3 , and above the said cam-surface b^3 the pin is cut away or reduced, as shown at b^4 , so as to clear the rear end of the lever f when said lever is in its innermost position.

The cam-surface b^3 on the pin underlies the rear end of the lever f when the locking-pin b is in its lowermost position, as shown in Fig. 6, and serves as a check to prevent the locking-pin from being jumped out of its seat when suddenly thrown up by the heel of the coupling-hook into the position shown in Fig. 8, while at the same time the said cam-surface b^3 readily permits the locking-pin to be drawn up into the position shown in Fig. 7 for permitting the retaining-lever f to engage with the notch b^2 in the pin. The said cam-surface b^3 in co-operation with the spring-held lever f serves the further function of insuring and quickening the drop of the locking pin or dog after the heel of the coupling-hook has passed behind the pin or into its coupled position. This is due to the fact that when the locking-pin b is raised up by the heel of the coupling-

hook the cam-surface b^3 will come into contact with the rear end of the spring-held lever f , as shown in Fig. 8, and hence as quick as the heel of the coupling-hook has passed the pin the tension from the spring f^2 will co-operate with gravity to instantly throw the pin down into its lowermost or normal position.

The face of the coupler-head a is recessed, as shown at a^3 , to form a suitable seat for the retaining-lever f and its spring f^2 , and a detachable cover a^4 overlies said parts for holding the same in position and protecting the same from dirt.

From the foregoing statements it must be obvious that my improved coupler has all the well-known advantages of the ordinary standard twin coupler with the addition of certain other advantages peculiar to my improvement. The fact that the locking-pin can be set up in its unlocking position and there held without the separation of the cars, so as to permit the coupling-hooks to open subsequently when the cars are pulled apart, is a most important advantage for convenience in cutting out cars. The further fact that when the coupling-hooks assume their open or uncoupling positions the locking-pin is automatically released from the retaining device, so as to permit the pin to drop back into its lowermost position, so as to be ready for the automatic coupling action, removes all objection which would otherwise be incidental to the retaining device.

The coupler is quick and positive in its action and is of simple and cheap construction.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination with the coupler-head, of a locking pin or dog, mounted for vertical movement therein, a coupling-hook pivoted to said head, the tail portion of which co-operates with a cam action on said locking-pin,

to raise the same under the closing movement of said hook, and an intermediate retaining device between said coupling-hook and locking-pin, adapted to be set while said coupling-hook is closed to hold said locking-pin, a step above and higher than its extreme cammed position, and to be tripped by the opening movement of said coupling-hook, substantially as described.

2. The combination with the coupler-head, of a locking pin or dog, mounted for vertical movement therein, a coupling-hook pivoted to said head, the tail portion of which co-operates with a cam action to raise said locking-pin, under its closing movement, a spring-held retaining device for holding said locking-pin above its unlocking position, arranged to be tripped by the opening movement of said coupling-hook, and a cam-surface on said locking-pin which, when said pin is cammed upward to pass the tail of said coupling-hook, is subject to the downward camming action of said spring-held retaining device, substantially as and for the purpose set forth.

3. The combination with the recessed coupler-head a , provided with the lever-stop a^2 , of the locking pin or dog b seated in said head, provided with cam-surfaces b^1 and b^3 , the notch b^2 and reduced portion b^4 , the coupling-hook c , pivoted at c^1 , and provided with the cam or beveled tail end c^2 and the trip-lug c^3 , and the retaining-lever f , subject to the action of a spring f^2 and said trip-lug c^3 , and engageable in turn, with said notch b^2 and cam-surface b^3 of said locking-pin, substantially as and for the purpose set forth.

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

EDWIN C. WASHBURN.

Witnesses:

JAS. F. WILLIAMSON,
F. D. MERCHANT.