

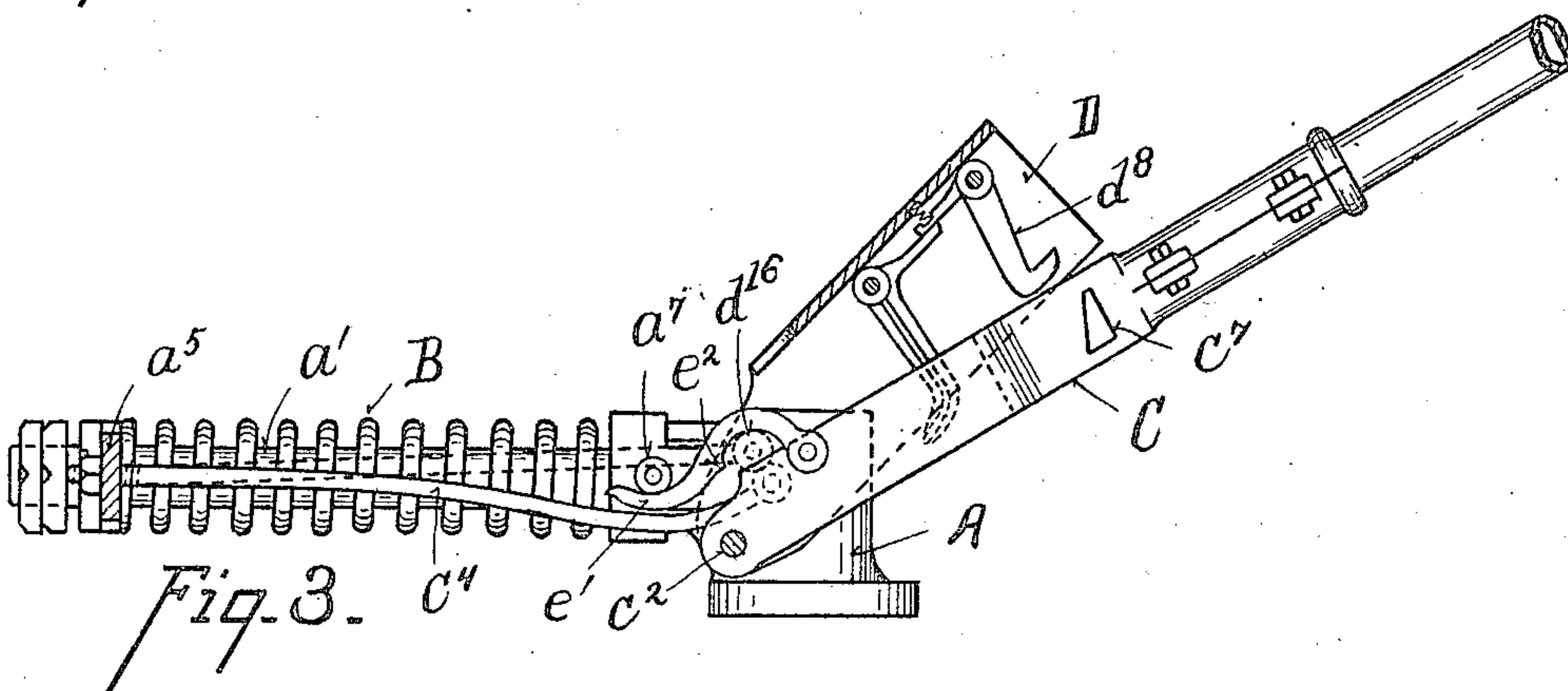
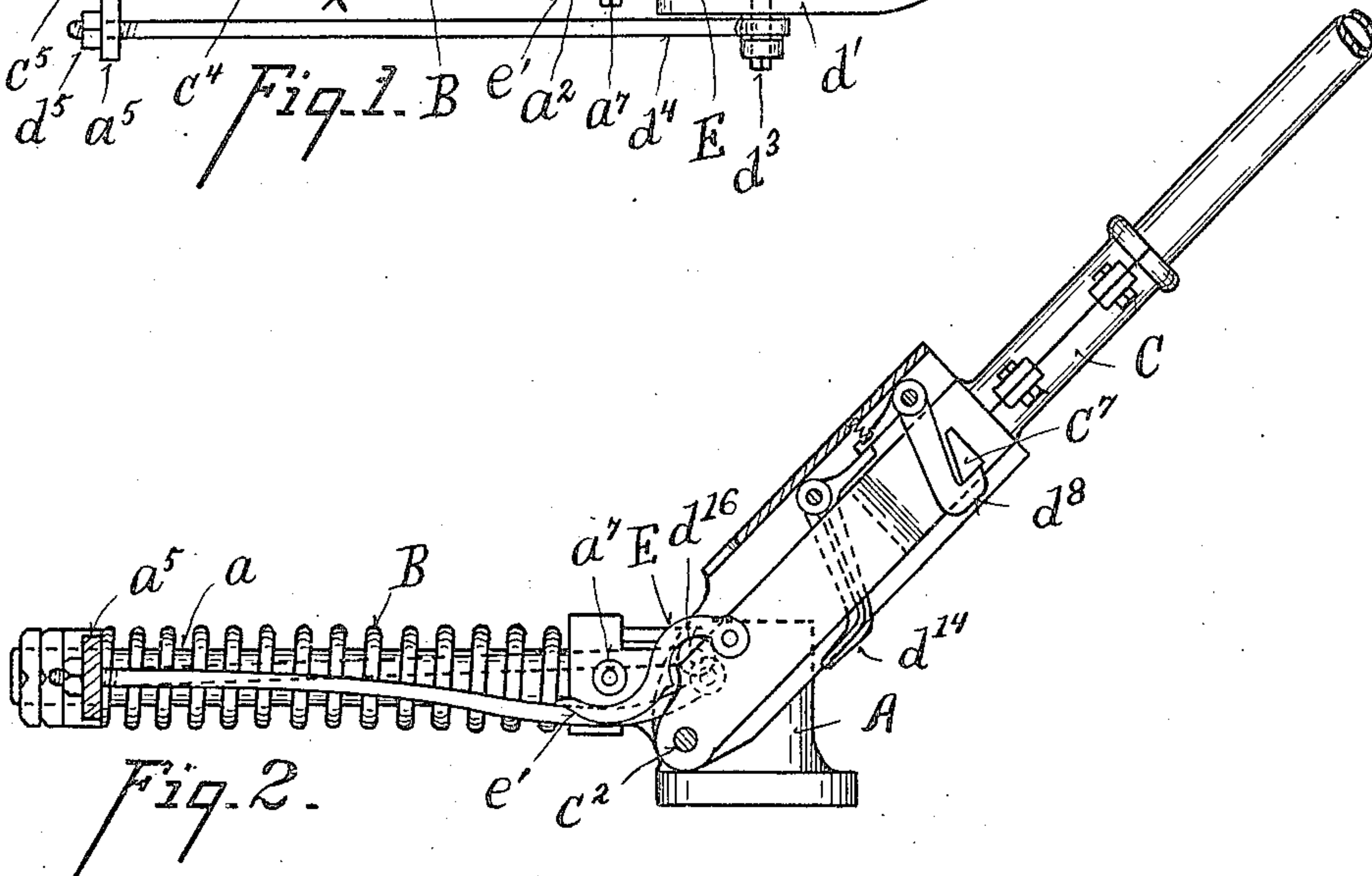
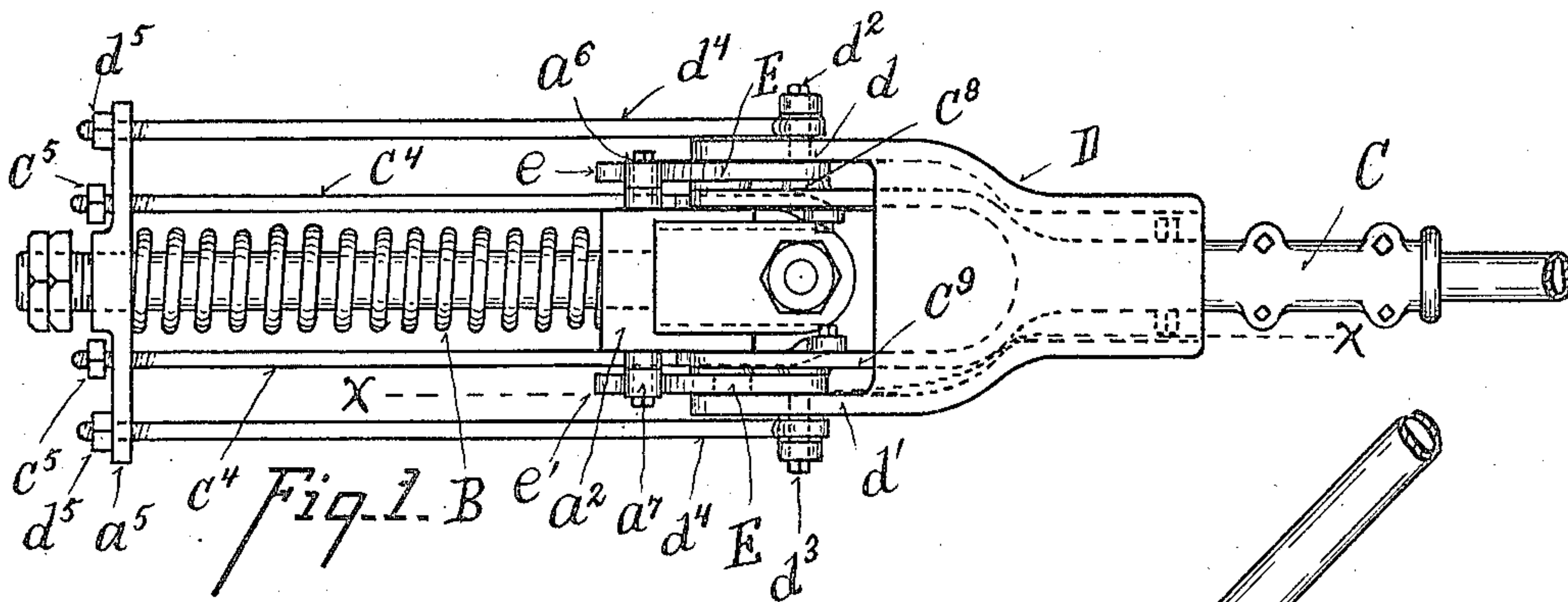
No. 875,215.

PATENTED DEC. 31, 1907.

F. M. ROSS.
TROLLEY POLE.

APPLICATION FILED MAR. 4, 1907.

2 SHEETS—SHEET 1.



Witnesses
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A. McCormack.

Inventor
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Attorney

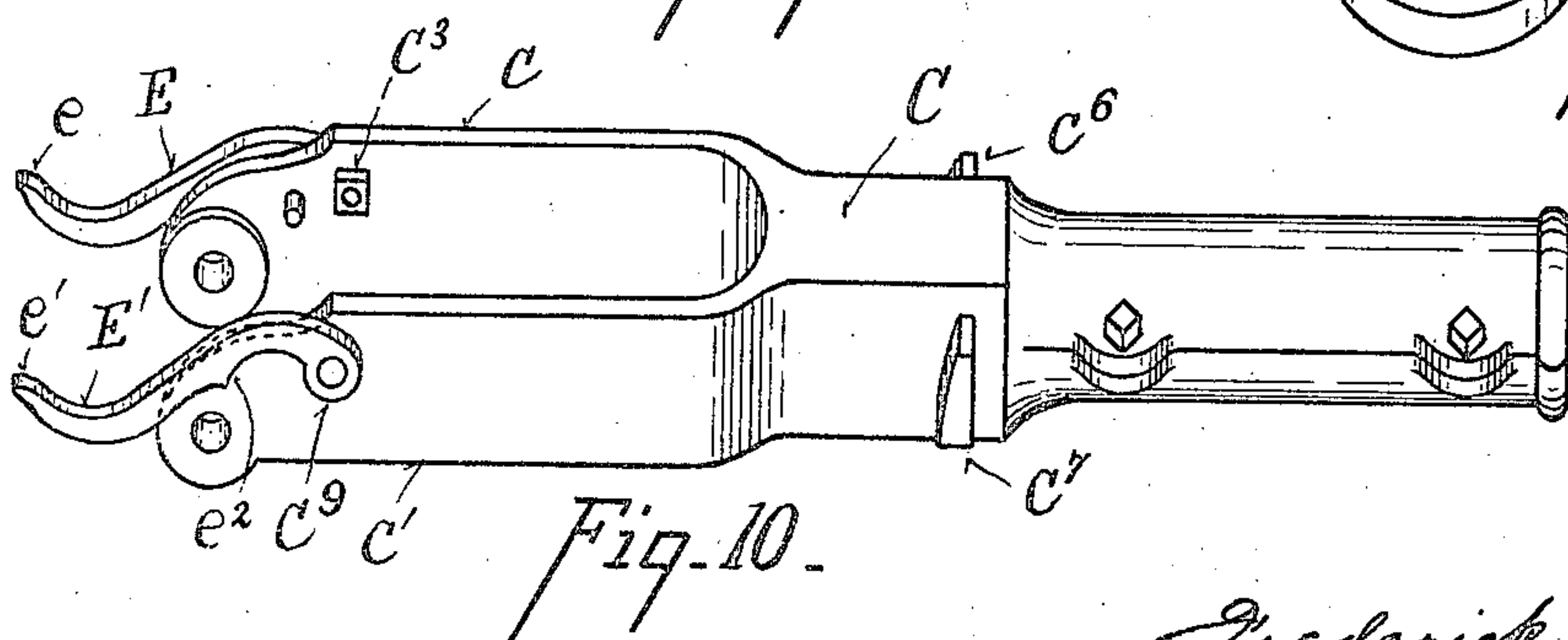
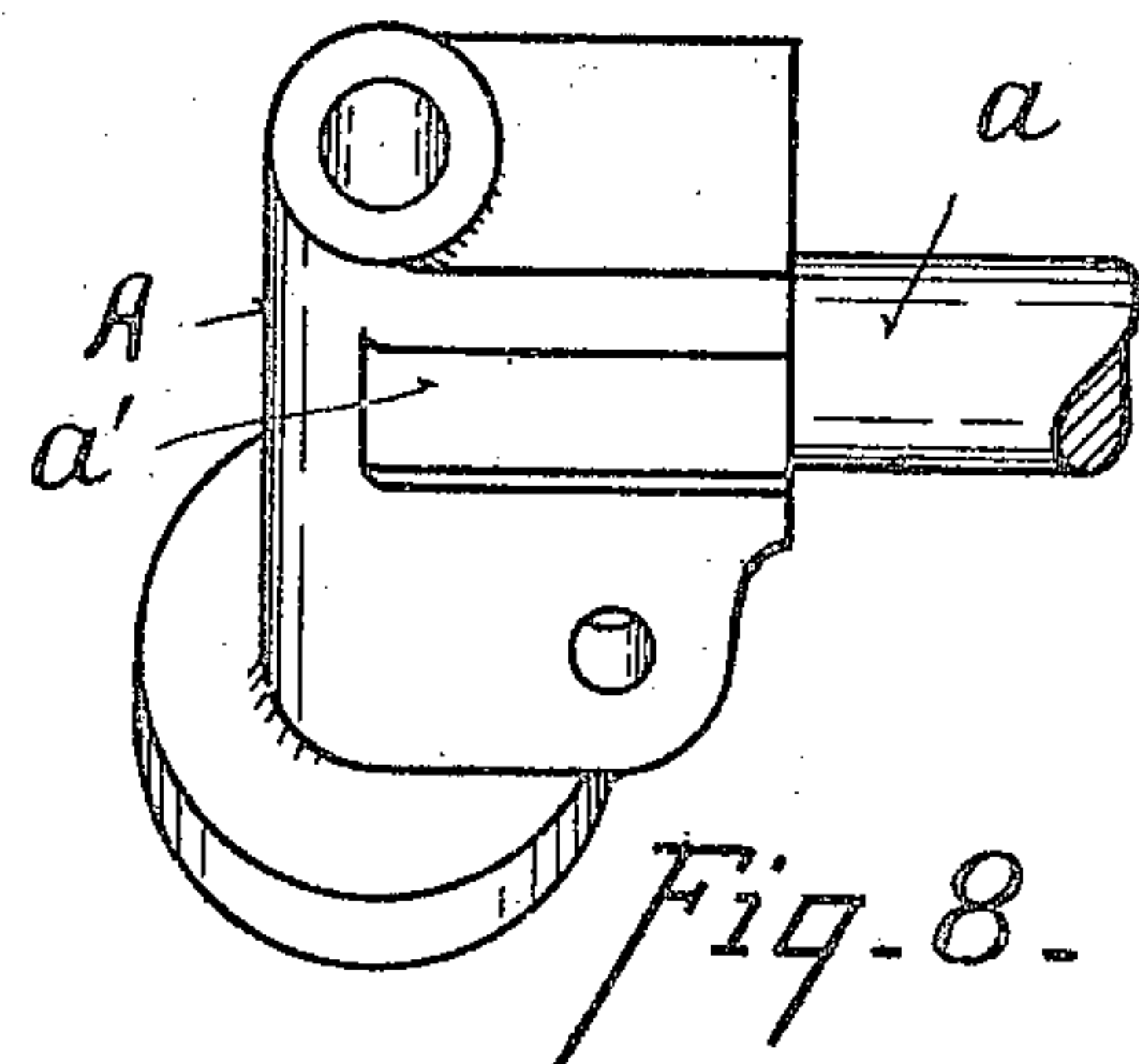
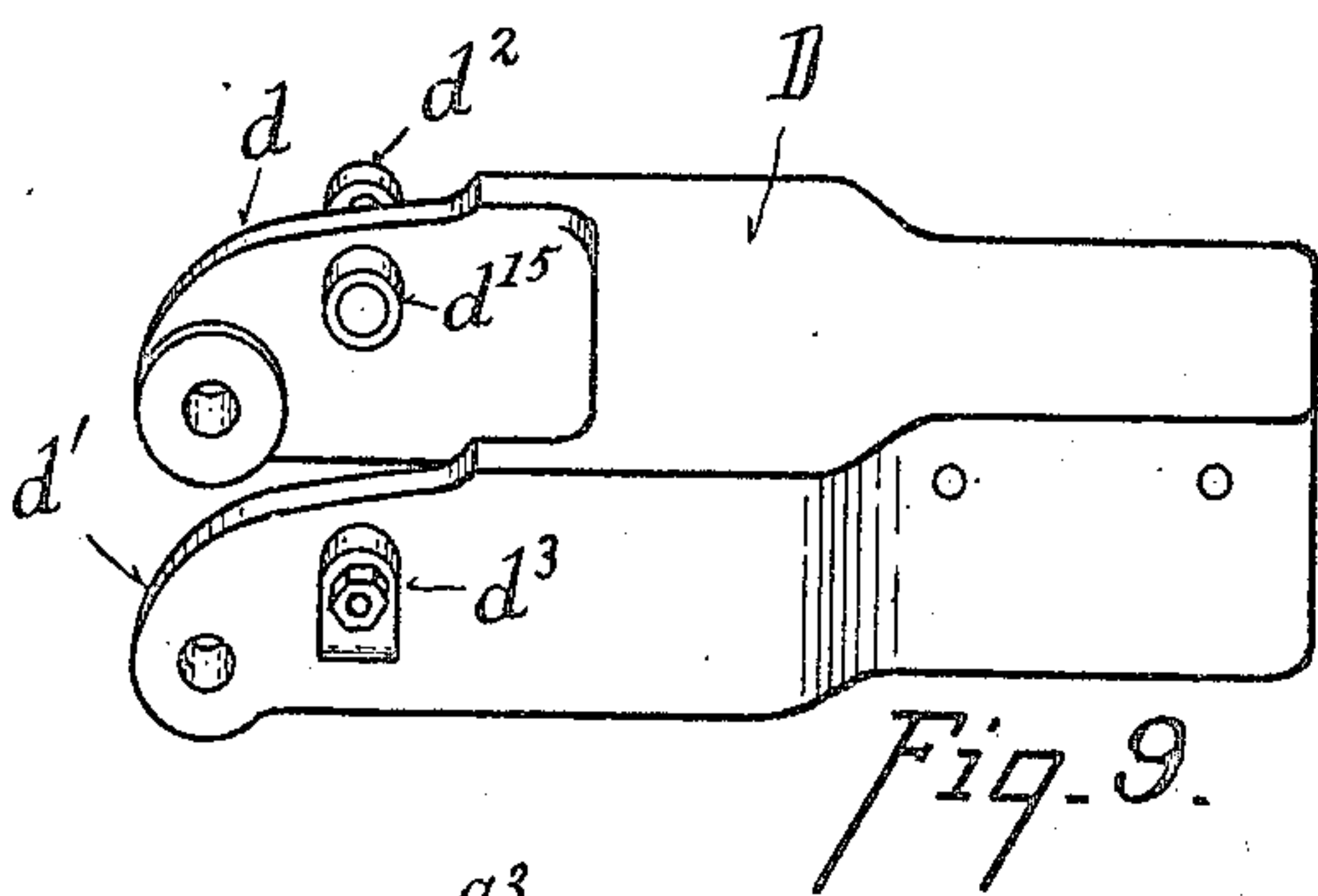
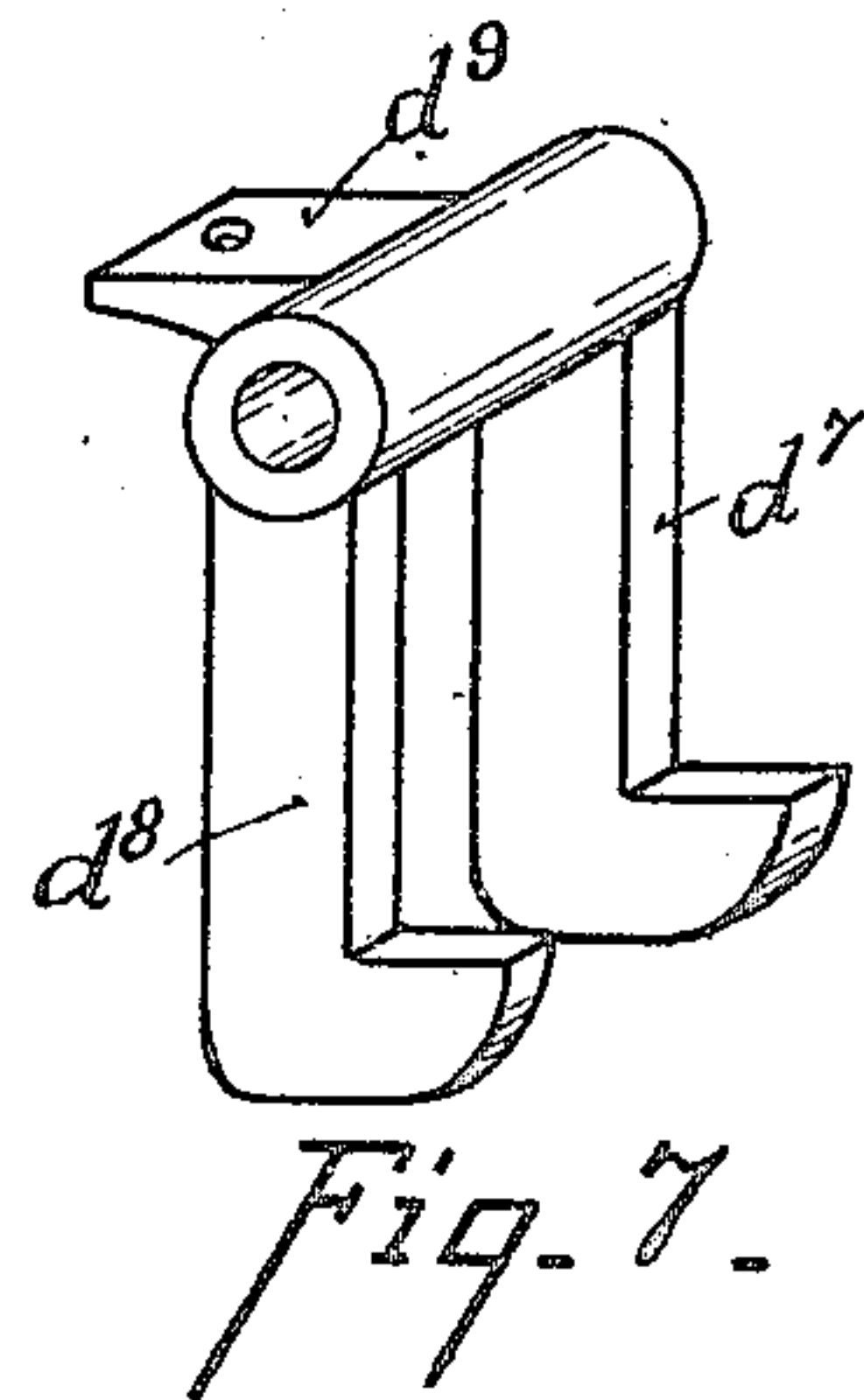
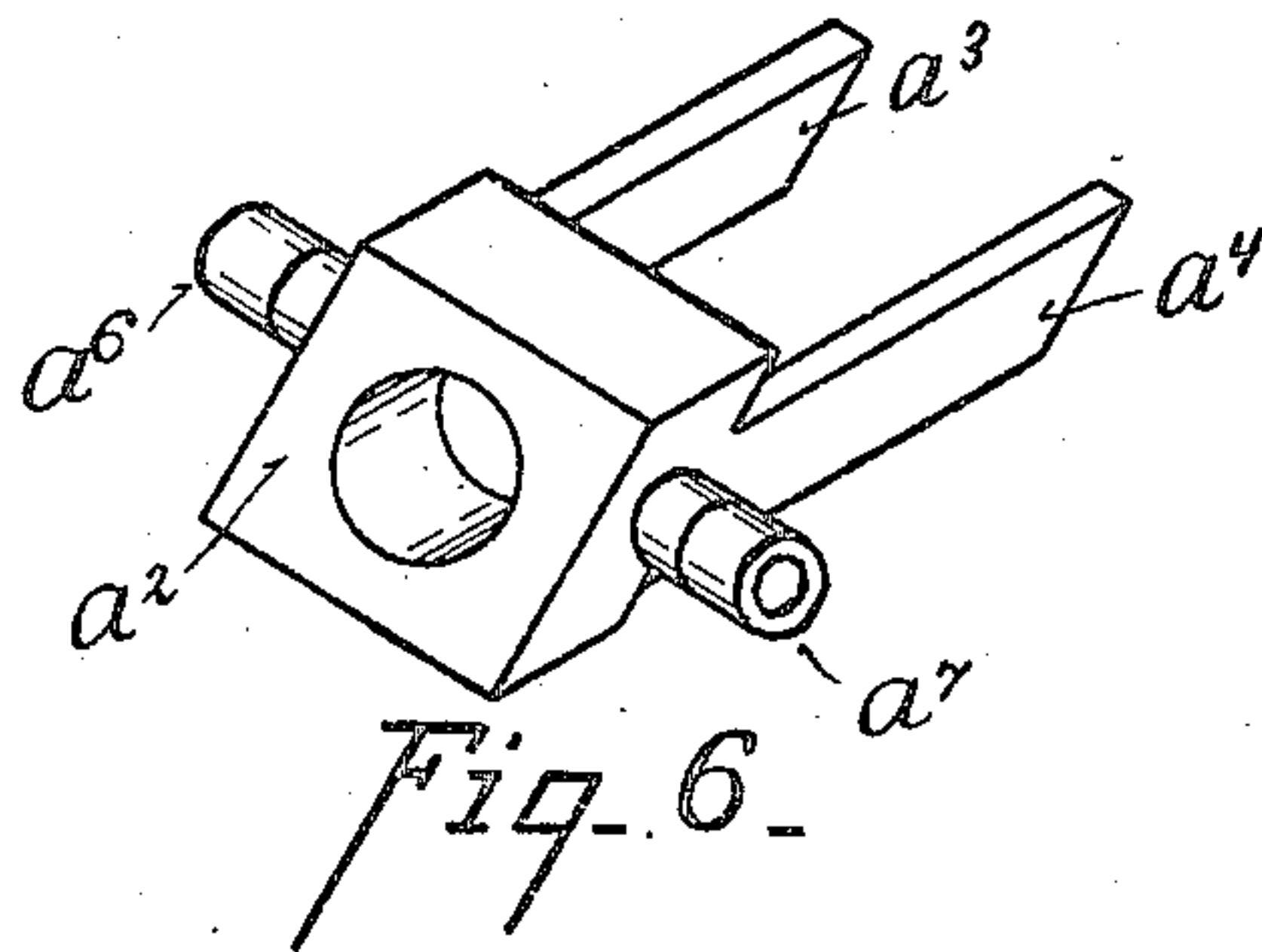
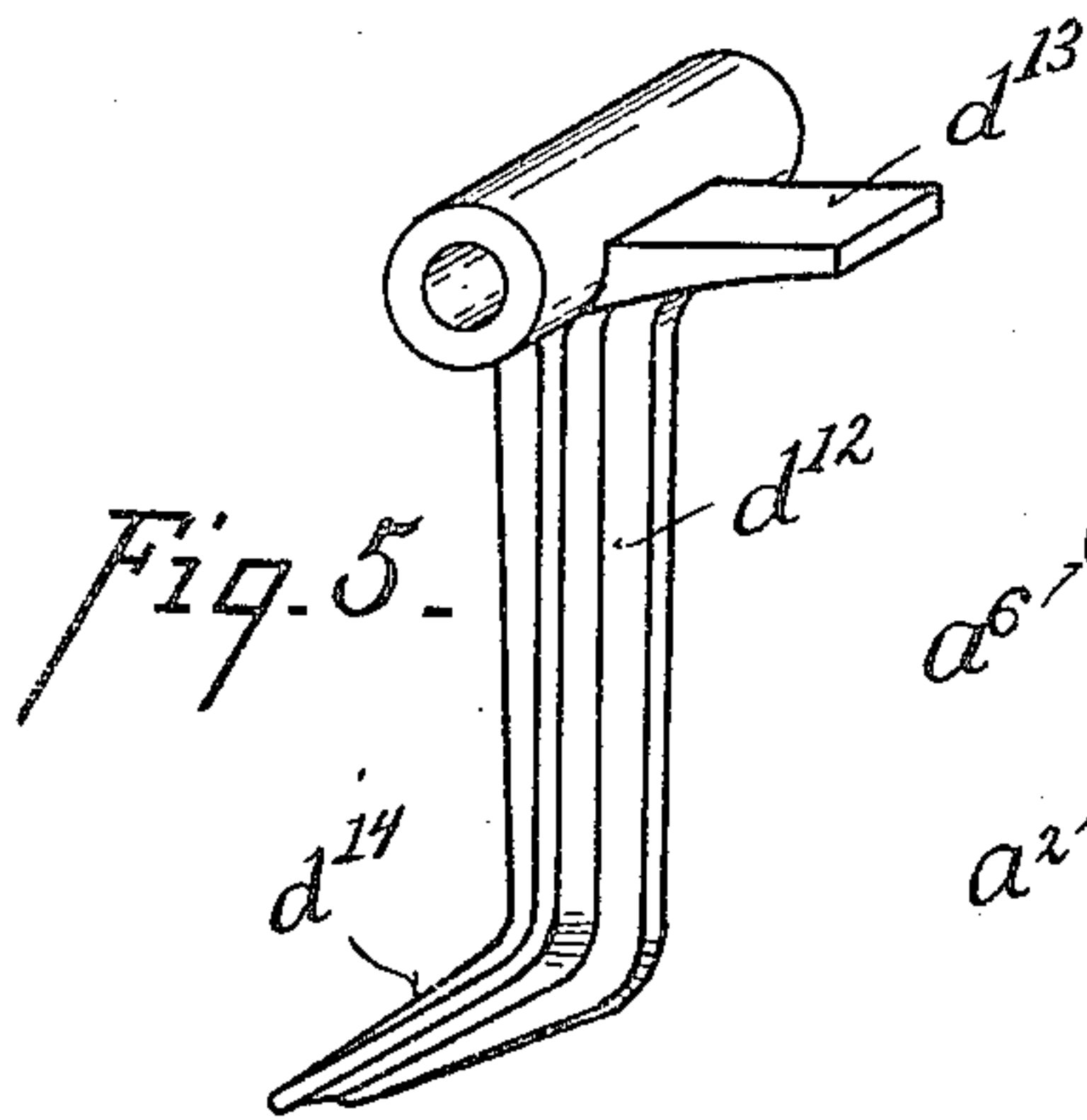
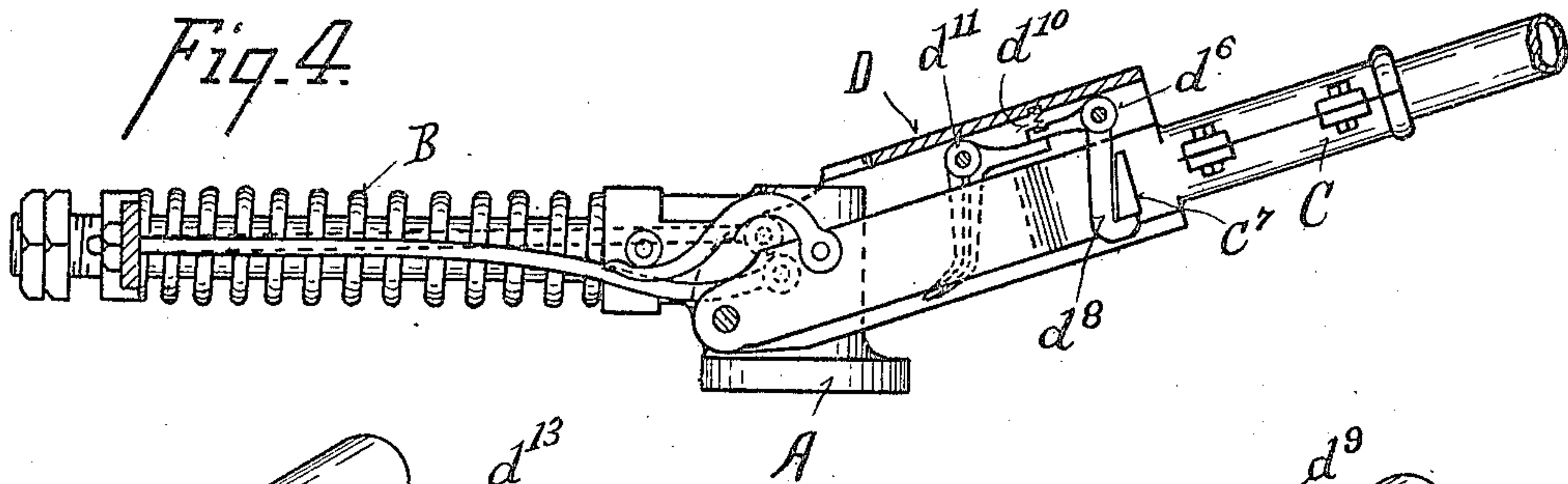
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UNITED STATES PATENT OFFICE.

FREDERICK M. ROSS, OF NEWPORT, KENTUCKY.

TROLLEY-POLE.

No. 875,215.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed March 4, 1907. Serial No. 360,342.

To all whom it may concern:

Be it known that I, FREDERICK M. ROSS, a citizen of the United States of America, and resident of Newport, county of Campbell, State of Kentucky, have invented certain new and useful Improvements in Trolley-Poles, of which the following is a specification.

The object of my invention is a trolley pole which while it will follow the trolley wire through the various inequalities which are usually found in the height of the same from the ground, will not fly forward should the trolley wheel become disengaged from the wire, but will fall backward with a regulated force and will remain in its lowered position until the conductor of the car has pulled down upon the trolley ropes and set the trolley pole in its normal condition. This object is attained by the means illustrated in the accompanying drawings, in which,

Figure 1 is a plan view of the base of the trolley pole and of a part of the lower end of the pole. Fig. 2 is a view partly in side elevation and partly in section upon line $x-x$ of Fig. 1. Fig. 3 is a view similar to Fig. 2 but showing the parts in the position to which the pole falls after the trolley wheel has jumped off the wire. Fig. 4 is a view similar to Fig. 3 showing the position to which the conductor must lower the pole in order to bring the parts to their normal position. Fig. 5 is a detail perspective view of the trigger, the striking of which against the journal post releases the latch which holds the trolley pole and the yoke in their normal position to each other. Fig. 6 is a perspective view of the collar which surrounds the horizontal supporting bar of the coiled spring. Fig. 7 is a perspective view of the latch carried by the yoke. Fig. 8 is a perspective view of the pivot post. Fig. 9 is a similar view of the yoke. Fig. 10 is a similar view of the lower end of the trolley pole.

Referring to the parts: The pivot post, A, is mounted upon a stationary post upon the top of an electric car and has projecting from it a horizontal supporting bar, a , for supporting the coiled spring, B. Post, A, has upon its sides, recesses, a' , as shown in Fig. 8 and upon the bar, a , a collar, a^2 , is mounted with its arms, a^3 , a^4 , lying in the slots, a' . Supporting rod, a carries a sliding plate, a^5 , between which and the collar, a^2 , a coiled spring, B, is mounted in the usual

manner. The lower end, C, of the trolley pole has legs, c , c' , which straddle the pivot post, A, and are pivoted at their lower ends upon a pin, c^2 , carried by the pivot post, A. Upon the inside of the legs, c , c' , are studs, c^3 , which carry rods, c^4 , with their other ends projecting through perforations in the plate, a^5 and receiving nuts, c^5 .

A yoke, D, is placed over the lower end, C, of the trolley pole, and has legs, d , d' , perforated at their lower ends and pivoted likewise upon pin, c^2 . Upon the outside of the legs, d , d' , are studs, d^2 , d^3 , upon which rods, d^4 , are journaled. The rods, d^4 , at their opposite ends project through plate, a^5 , and receive nuts, d^5 . The rods, d^4 , are shorter than the rods, c^4 , so that when the end of the pole, C, and the yoke, D, are in their normal position relatively to each other, such as shown in Figs. 1 and 2, the nuts, c^5 , do not contact the plates, a^5 , and the spring, B, exerts no tension upon the rods, c^4 . Yoke, D, carries near its upper end a transverse pin, d^6 , upon which is pivoted a latch with two downwardly projecting hooks, d^7 , d^8 , and which has a rearwardly projecting finger, d^9 . A coiled spring, d^{10} , is located between the finger, d^9 , and the upper face of the yoke. In the normal position of the lower end of the pole, C, and the yoke, D, hooks, d^7 , d^8 , engage lugs, c^6 , c^7 , projecting from the sides of the end, C, of the trolley pole. Yoke, D, likewise carries a transverse pivot pin, d^{11} , upon which is hung trigger, d^{12} , which has a finger, d^{13} , which stands normally under finger, d^{10} , and a downwardly projecting finger, d^{14} . The mechanism which is called into operation for disconnecting or uncoupling the yoke from the trolley pole when the wheel jumps the wire, having been above set forth, its operation will be described before proceeding to enumerate the elements brought into play, when it is desired to re-set the yoke and the pole in their normal position.

When the trolley wheel jumps the wire, spring, B, by its pressure on the plate, a^5 , through the rod, d^4 , throws the yoke, D, and the pole, C, forward suddenly, which brings the end, d^{14} , of the trigger into contact with the top of the pivot post, A. This causes the finger, d^{11} , to press upward on the finger, d^{10} , and draw the hooks, d^7 , d^8 , out of contact with the lugs, c^6 , c^7 . Thereupon trolley pole, C, drops of its own weight. After it has dropped a short distance it is retarded by the rods, c^4 , since the nuts, c^5 , because of the ro-

tation of the pole, C, about the pivot point, c^2 , will be brought into contact with the plate, a^5 . The drop of the pole is therefore cushioned.

5 The means of re-setting the yoke and the pole into their normal position to each other, that is, with the hooks, d^7 , d^8 engaging the lugs, c^6 , c^7 , is as follows:

10 Legs, c , c' , of the end of the pole have lugs, c^8 , c^9 , projecting outward from them upon which are mounted cam levers, E, E'. Cam levers, E, E', have their ends, e , e' , curved upward to take under lugs, a^6 , a^7 , which project outward from the collar, a^2 , and upon their under side have cams, e^2 , 15 which stand above and adjacent to lugs, d^{15} , d^{16} , which project from the inner sides of the legs, d , d' , of the yoke, D.

The operation of the parts for re-setting the 20 yoke and the pole in the normal position is as follows: As seen in Fig. 2, when the parts are standing in their normal position, the ends, e , e' , of the levers, E, E', stand below the fixed lugs, a^6 , a^7 . When the pole, C, 25 drops as shown in Fig. 3, the ends, e , e' , come in contact with lugs, a^6 , a^7 . The cams, e^2 , of the levers, E, E', then stand adjacent to but not in contact with the lugs, d^{15} , d^{16} , of the yoke, D. When, however, the pole, C, is 30 drawn downward, the cams, e^2 , press downward upon the studs, d^{15} , d^{16} , and draw the yoke, D, down into alinement with the pole, C, and cause the hooks, d^7 , d^8 , to take under the lugs, c^6 , c^7 . This again locks the yoke, 35 D, and the pole, C, together and puts the pole, C, under the domination of the spring, B, through the rods, d^4 . The conductor then by slackening up on the trolley ropes, can cause the spring, B, to carry the pole up- 40 ward, and then to adjust the trolley wheels upon the wire.

What I claim is:

1. In a trolley pole, the combination of a pivot post, a yoke pivoted upon the post, a 45 spring for exerting a normal pressure upon the yoke for carrying it upward, a trolley pole pivoted upon the pivot post, a latch carried by the yoke for coupling the pole and the yoke together and a trigger carried by the 50 yoke for actuating the latch to disengage the pole and the yoke when the same have been carried upward beyond a pre-determined point.

2. In a trolley pole, the combination of a

pivot post, a yoke pivoted upon the post, a 55 spring for exerting a normal pressure upon the yoke for carrying it upward, a trolley pole pivoted upon the post, a latch carried by the yoke for coupling the yoke and the pole 60 together and a means carried by the pole for engaging the yoke and drawing it downward and re-engaging the latch with the pole when the pole is drawn downward below a pre-determined point.

3. In a trolley pole, the combination of a 65 pivot post, a spring supporting rod projecting from the post, a pivot pin supported on the post, a yoke and a trolley pole journaled upon the pivot pin, a latch carried by the yoke and engaging the trolley pole, a trigger 70 carried by the yoke engaging the latch and adapted to contact the pivot post and disengage the latch and the trolley pole when the yoke and trolley pole have been carried up- 75 ward beyond a pre-determined point, a plate carried by the spring supporting rod, a coiled spring located between the plate and the pivot post, rods carried by the yoke passing through the plate and rods carried by the pole and passing through the plate, the rods 80 connecting the yoke and the plate being adjusted so that when the pole and the yoke are held together by the latch, the rods carried by the yoke are held by the spring coil and the rods carried by the pole are free and 85 are put under tension only when the pole and the yoke are disconnected.

4. In a trolley pole, the combination of the pivot post, a yoke and a pole pivoted upon the pivot post, a latch coupling the yoke and 90 pole, a means carried by the yoke for disengaging the latch from the pole when the yoke is carried upward beyond a pre-determined point, a cam lever pivoted upon the pole, a lug projecting from the yoke beneath the 95 cam lever, a lug secured to the pivot post and projecting outward above the outer end of the cam lever, so that when the pole is thrown downward below a pre-determined point, the yoke is carried down into aline- 100 ment with the pole so that the latch engages the pole and re-sets the parts in their normal positions relatively to each other.

FREDERICK M. ROSS.

Witnesses:

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