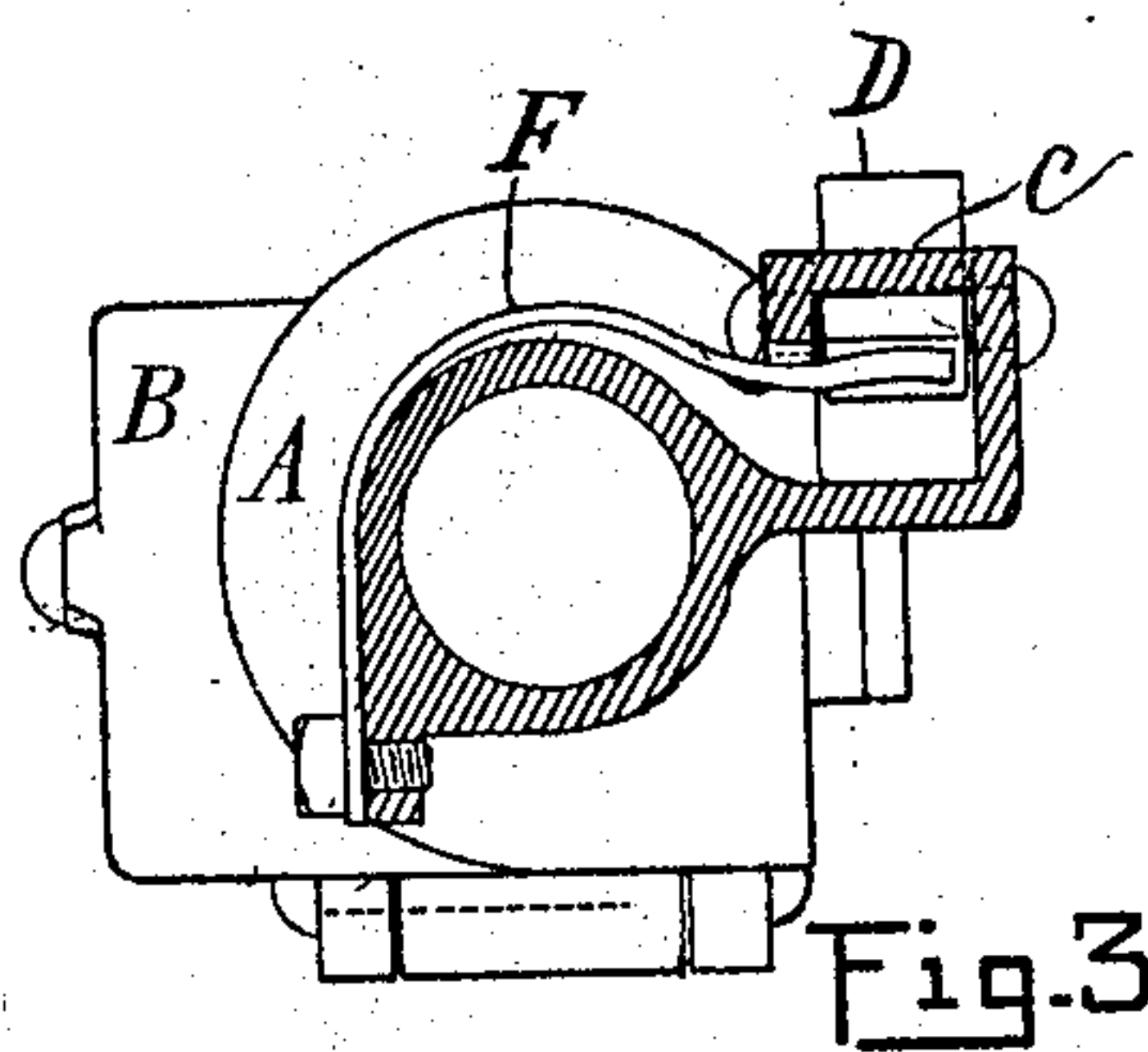
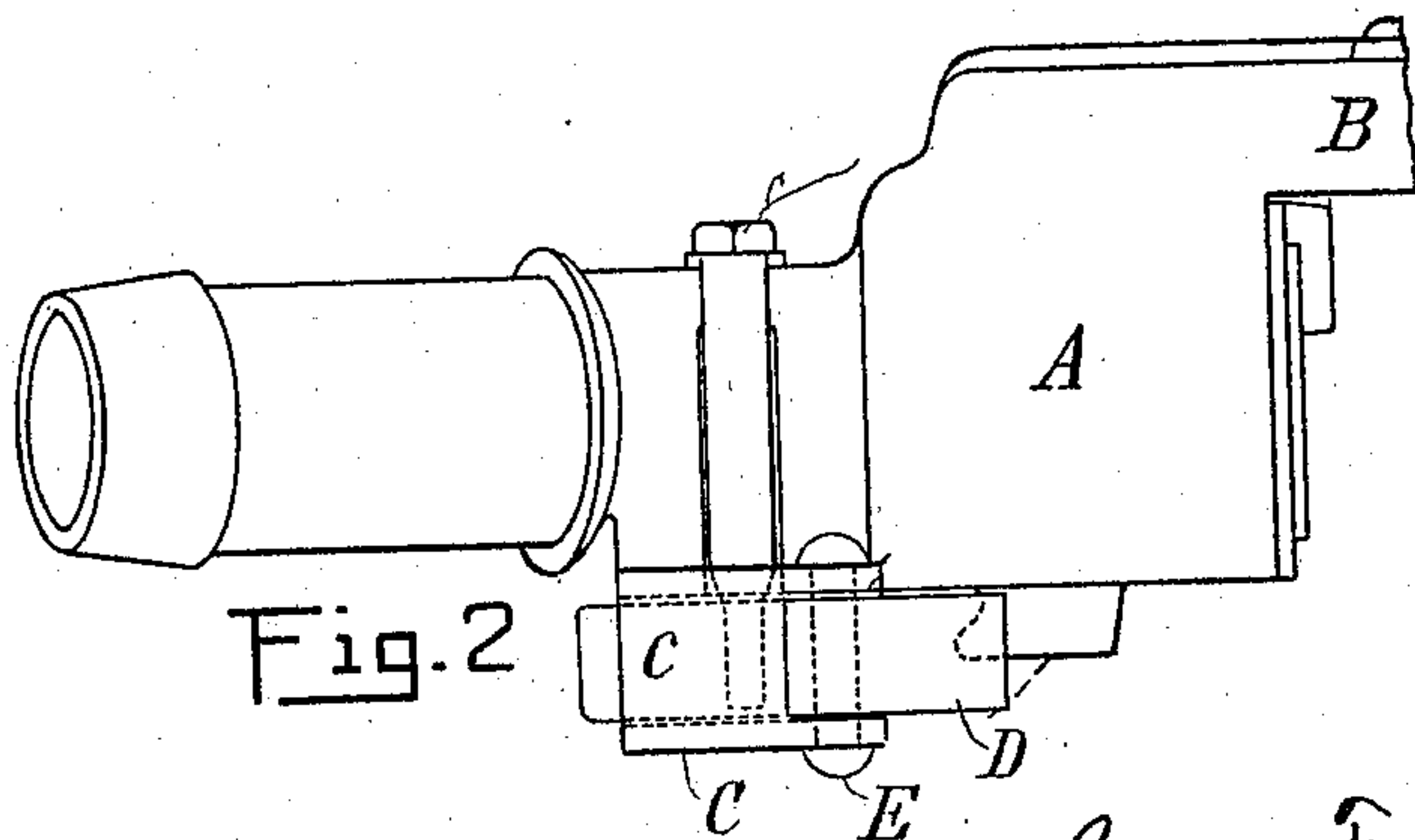
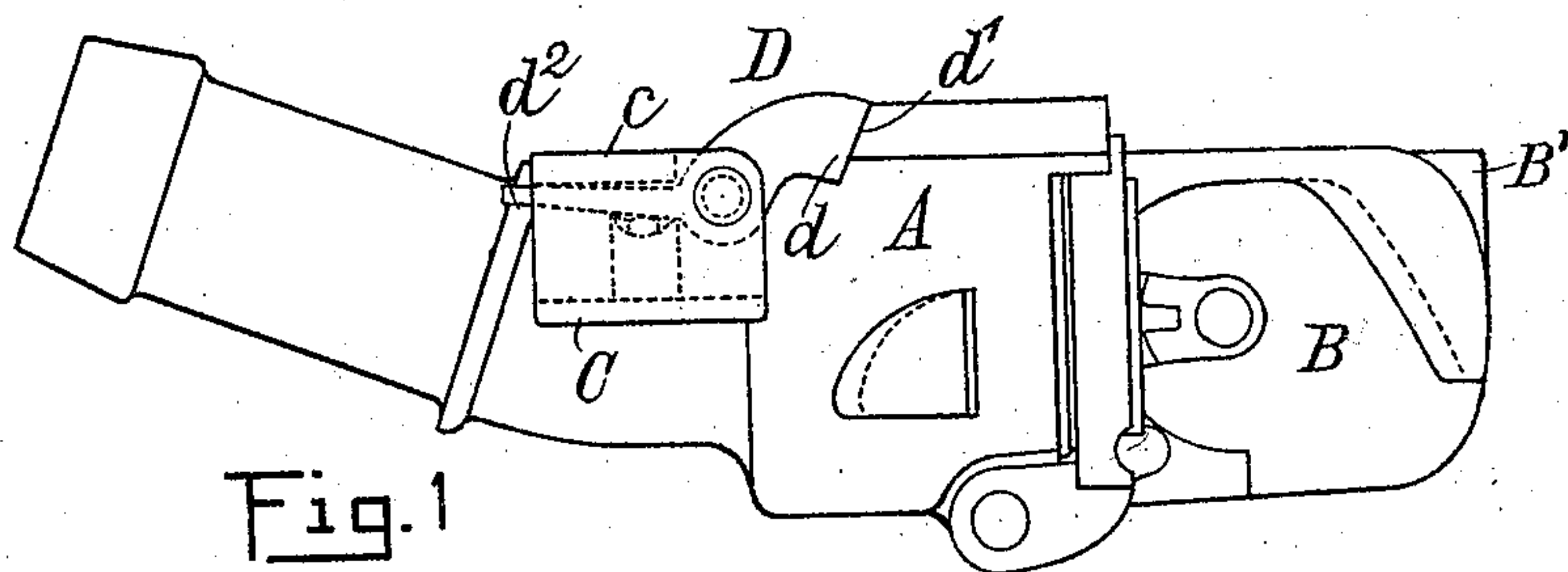
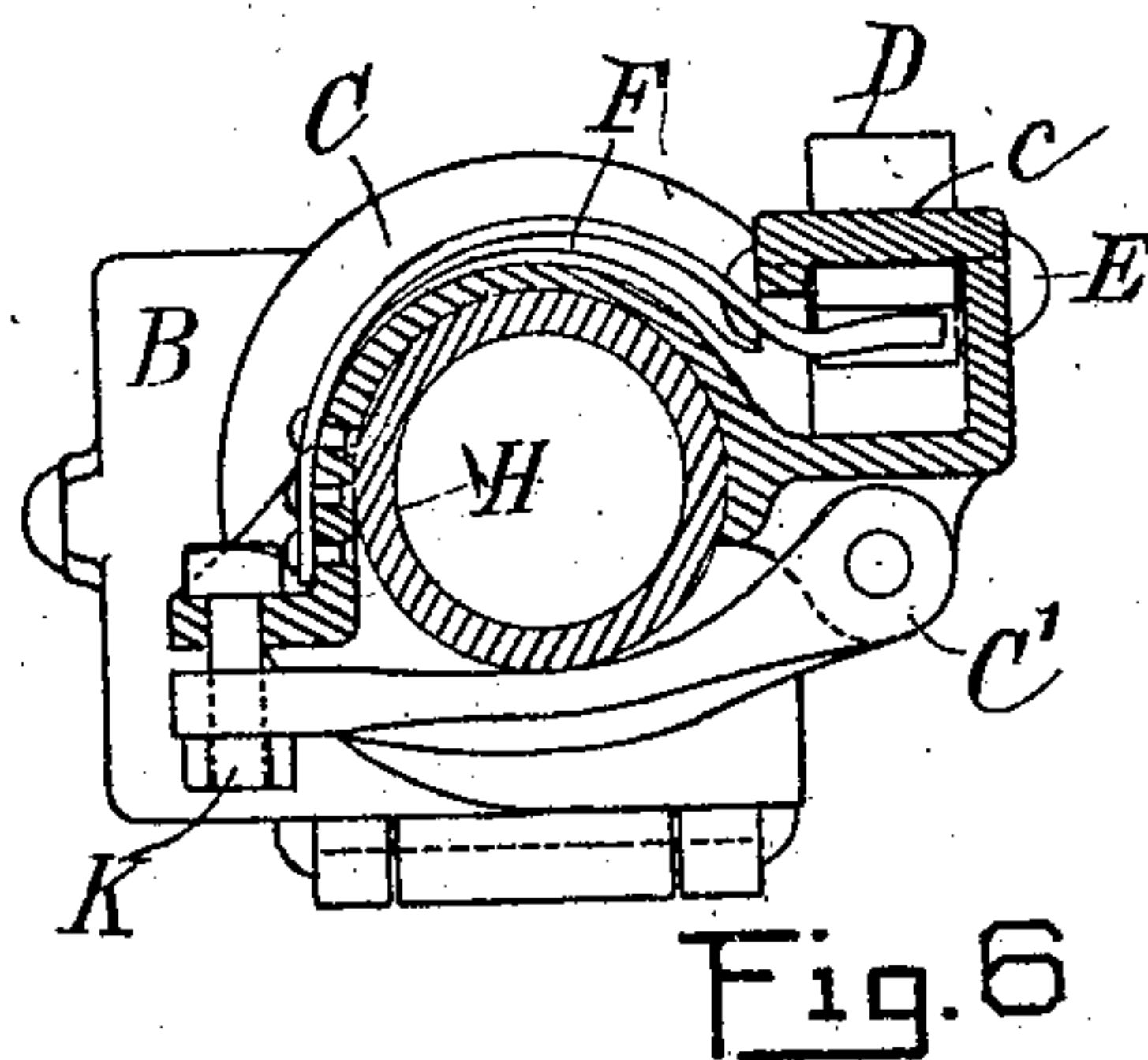
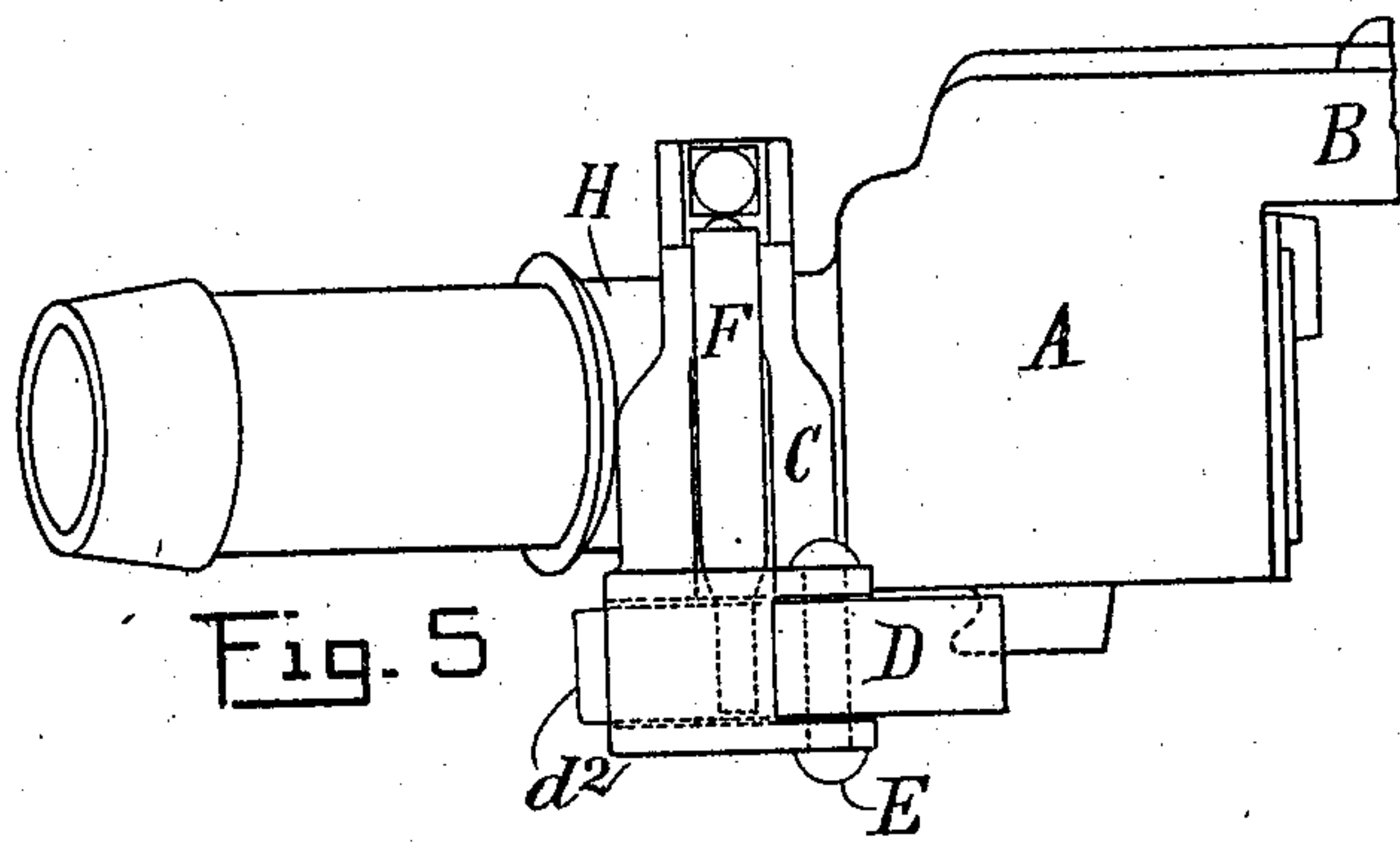
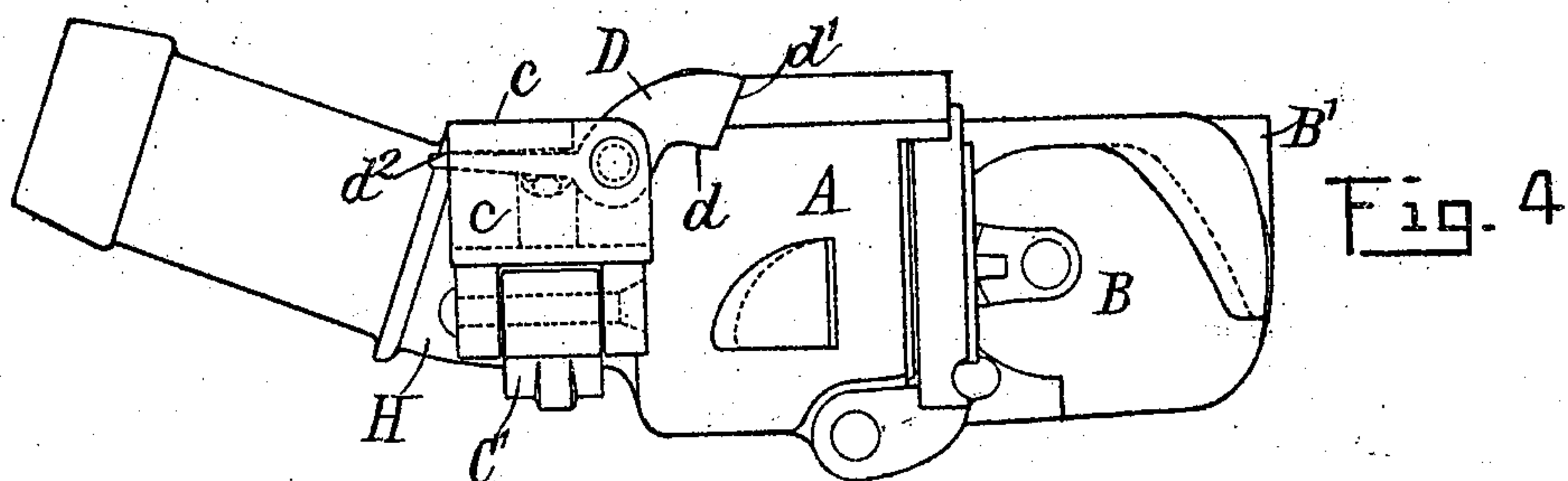


No. 816,029.

PATENTED MAR. 27, 1906.

J. F. McELROY.
HOSE COUPLING.
APPLICATION FILED MAR. 23, 1904.

2 SHEETS—SHEET 1.



Witnesses
L. L. Shaw
S. P. Clark.

James F. McElroy Inventor

by E. M. Britton Att'y.

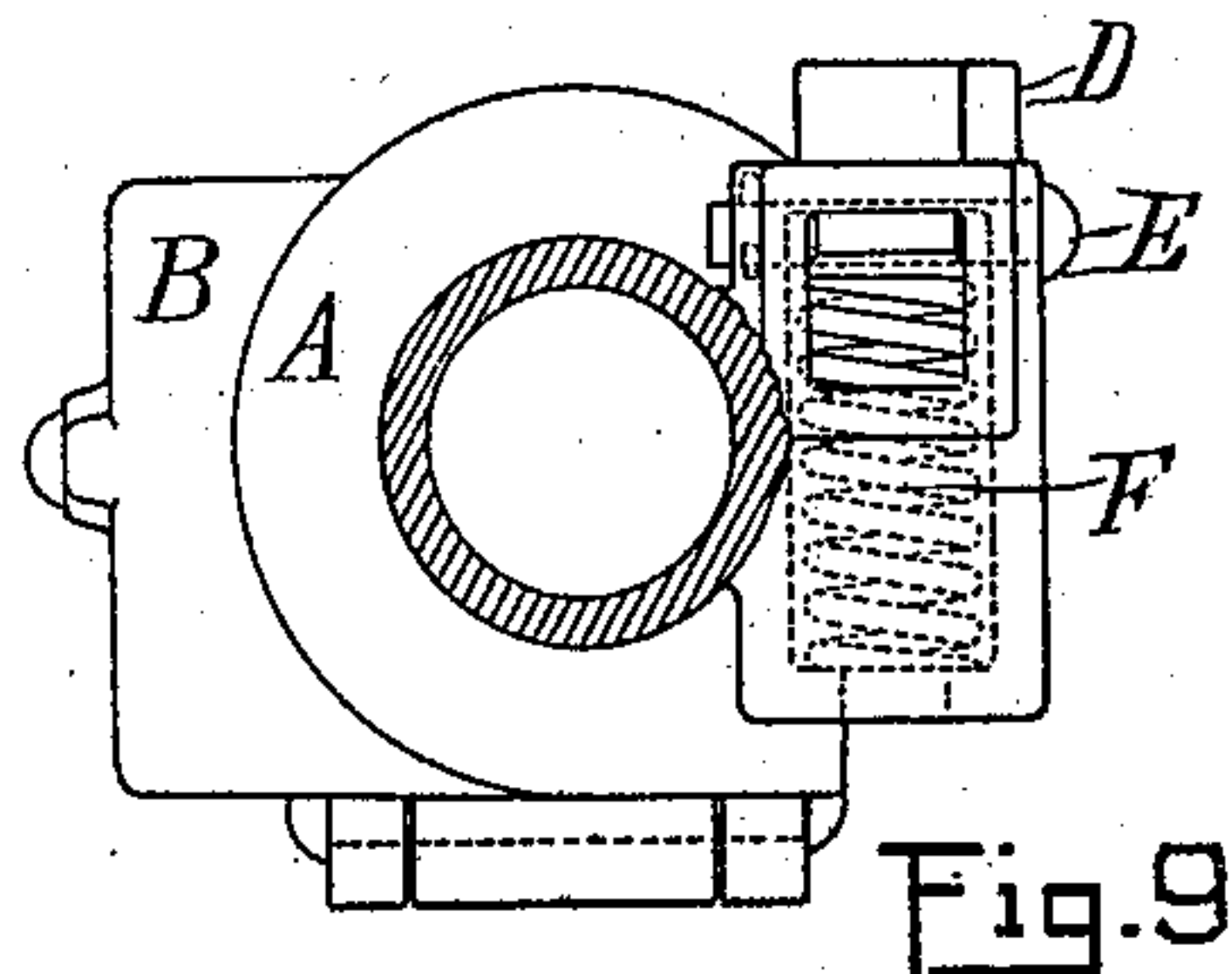
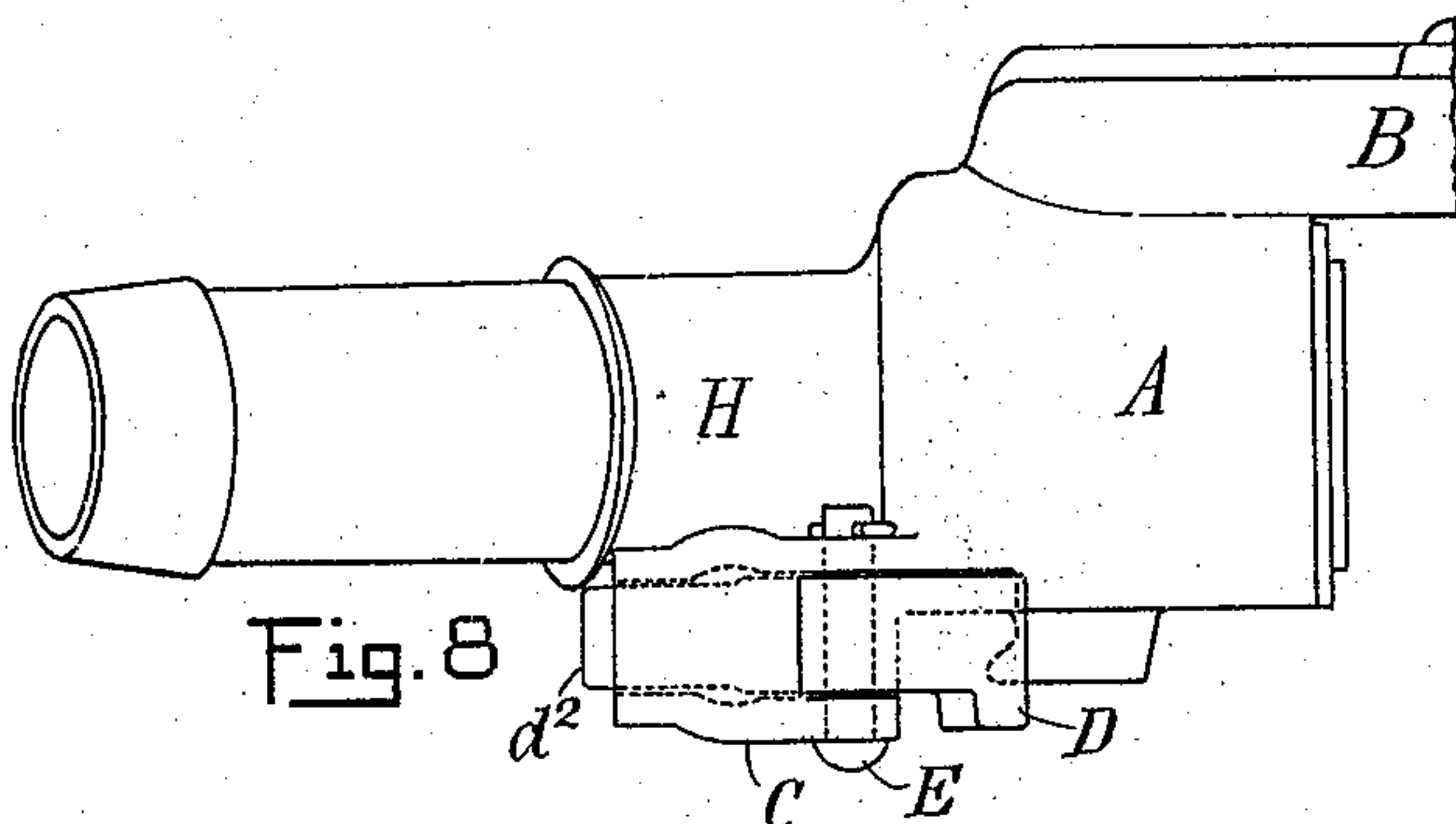
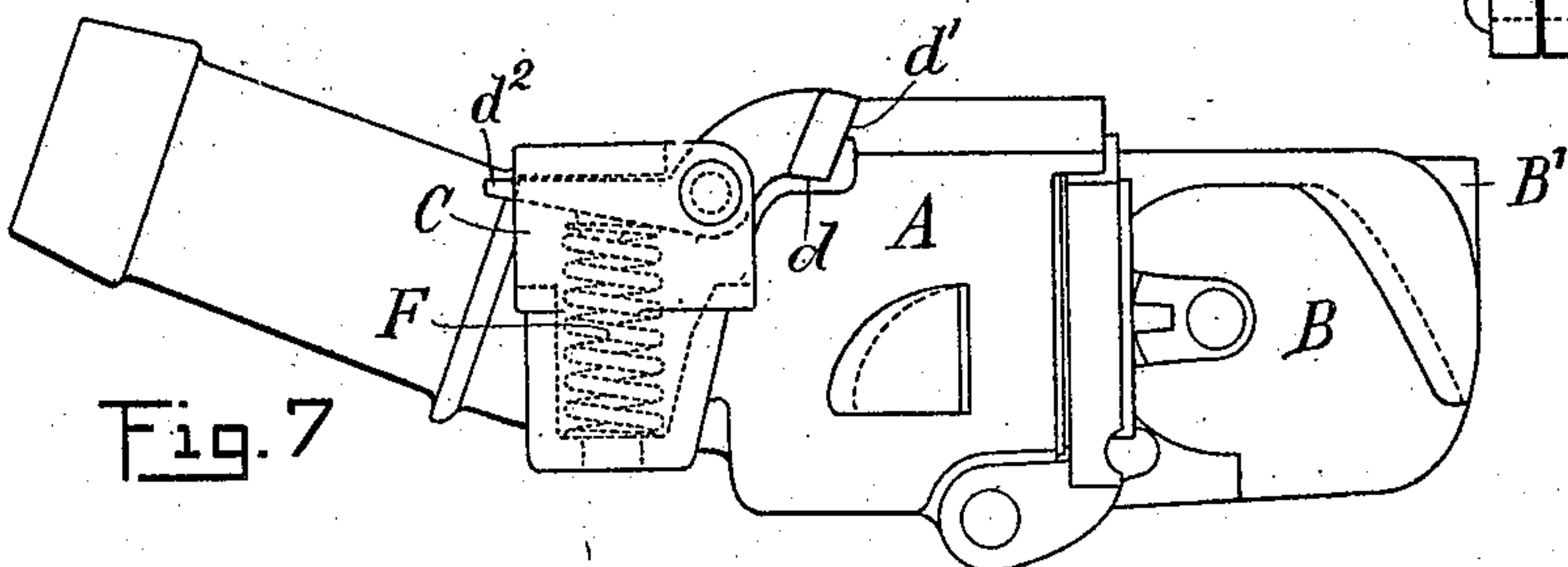
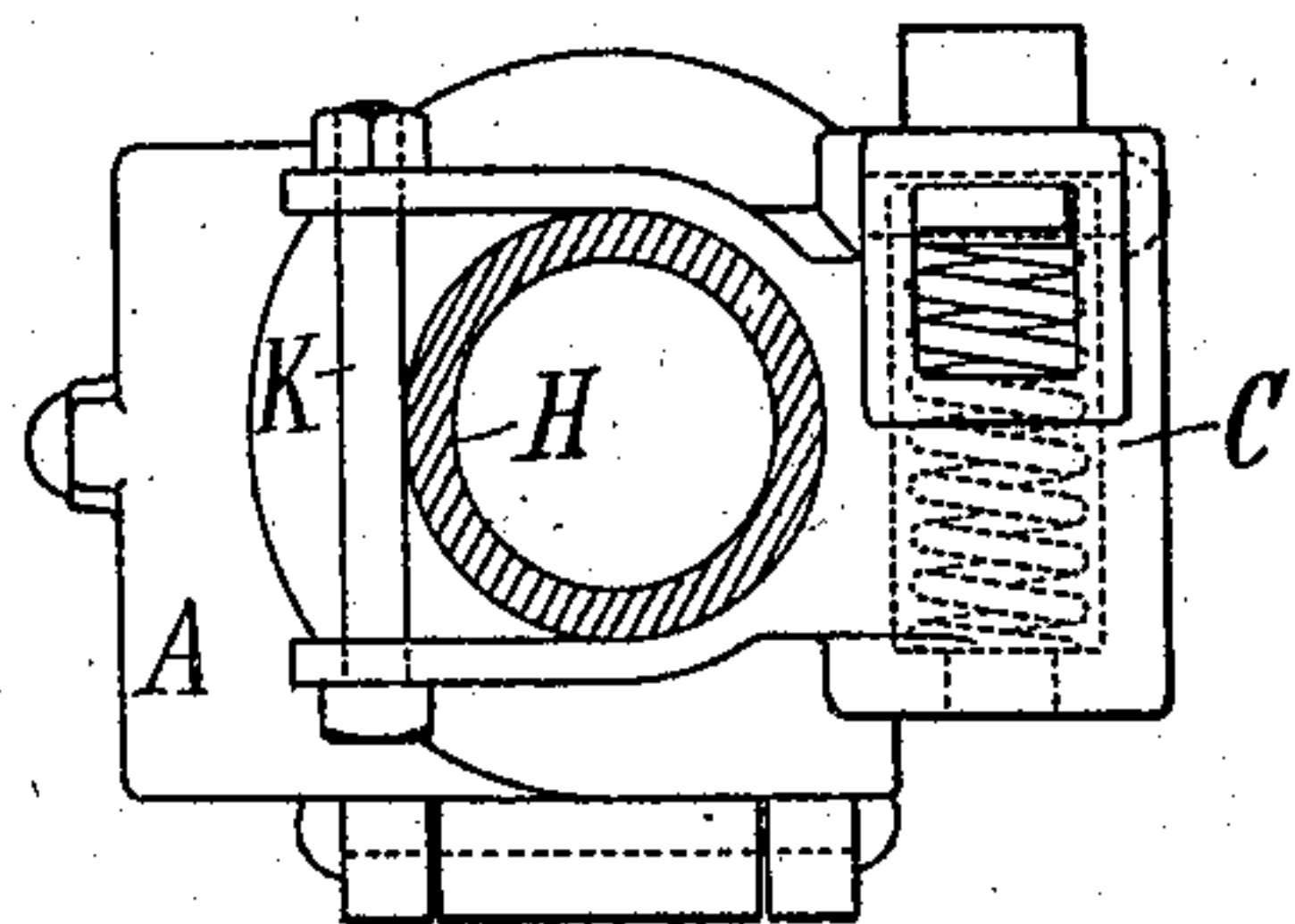
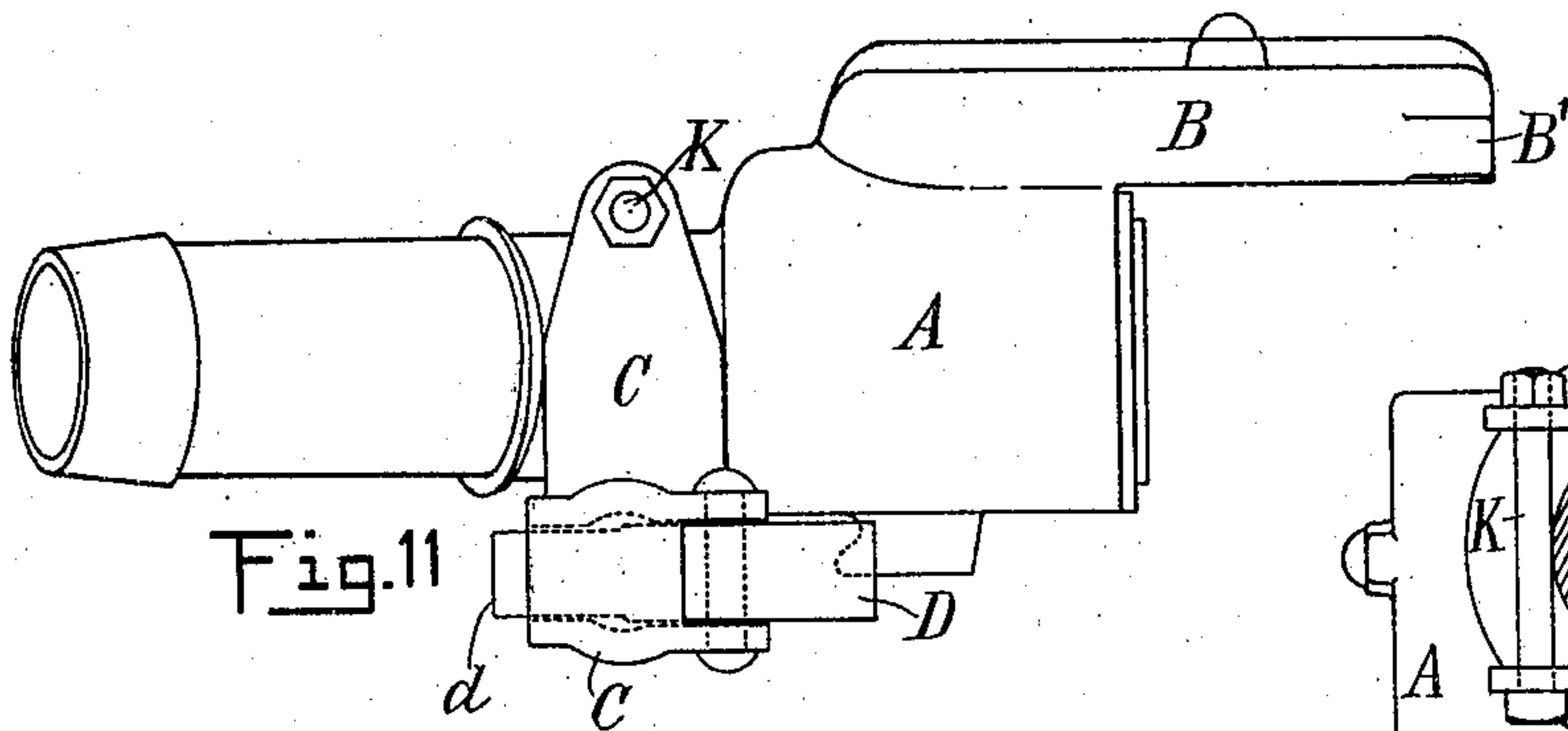
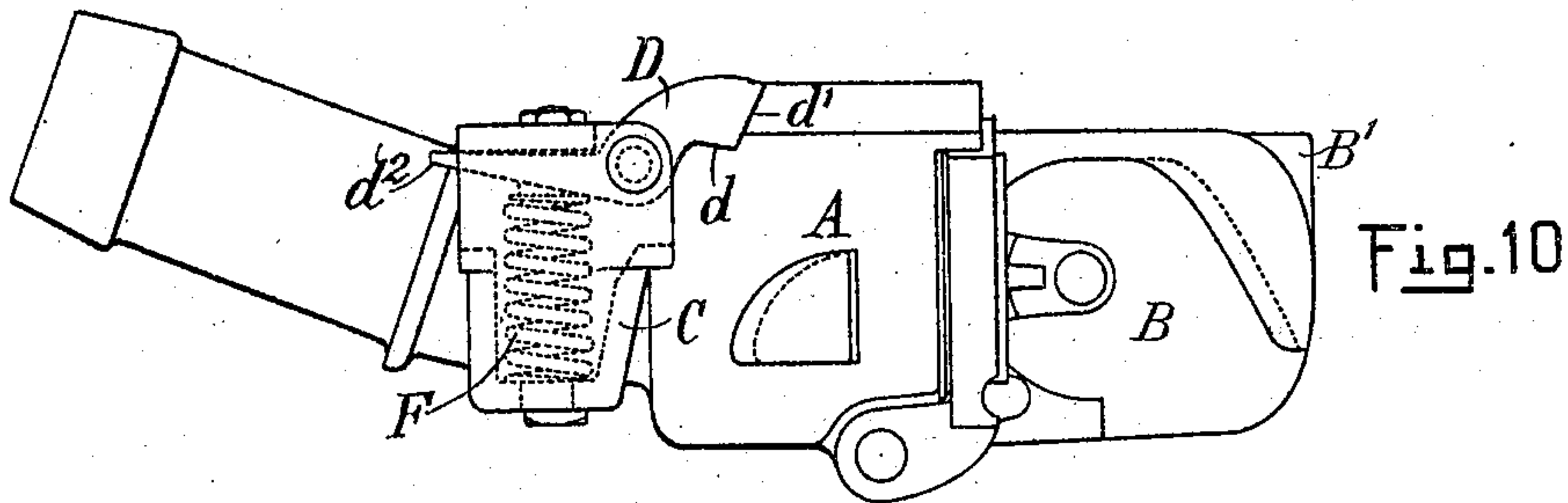
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APPLICATION FILED MAR. 23, 1904.

2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES F. McELROY, OF ALBANY, NEW YORK, ASSIGNOR TO CONSOLIDATED CAR HEATING COMPANY, OF ALBANY, NEW YORK, A CORPORATION OF WEST VIRGINIA.

HOSE-COUPLING.

No. 816,029.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed March 23, 1904. Serial No. 199,560.

To all whom it may concern:

Be it known that I, JAMES F. McELROY, a citizen of the United States, residing at Albany, county of Albany, and State of New York, have invented certain new and useful Improvements in Hose-Couplers, of which the following specification and accompanying drawings disclose, as an illustration, one embodiment thereof which I now regard as the best out of the various forms in which the principles of the invention may be applied.

In the drawings, Figure 1 is a side elevation of my improved coupler. Fig. 2 is a plan thereof. Fig. 3 is a rear elevation, partly in section, thereof. Figs. 4, 5, and 6 are respectively the side elevation and plan and a rear elevation, partly in section, of a modification in which the spring-latch is separately attached. Figs. 7, 8, and 9 are respectively a side elevation, plan, and a rear elevation, partly in section, of another form of my device in which a spiral spring is employed; and Figs. 10, 11, and 12 are respectively a side elevation, a plan, and a rear elevation, partly in section, of an arrangement in which the spiral-spring form of the spring-latch is separately applied.

My invention relates to hose-couplers such as are commonly employed in steam-heating apparatus of railway-vehicles, and particularly to that type thereof in which a spring-latch is employed to maintain the connection of the couplers, but permitting them to be drawn apart when sufficient force is applied. The invention consists in an automatic spring-latch attached to one of the complementary parts of the coupler and adapted to be engaged by the other part and automatically or manually lifted thereby when the parts are coupled together and to then engage the said other part when the two parts are completely coupled and maintain them in engagement, although adapted to yield when sufficient force is applied to draw the parts away from each other.

In the accompanying drawings I show my improved latch applied to couplers of the well-known type in which each part is provided with a body portion adapted to abut against the corresponding body portion of the complementary part and also provided with a side wing adapted to overlap and engage with a lug on the body portion of the

complementary part when the two parts are coupled together.

Referring to Fig. 1 of the drawings, A represents the body portion having the ordinary gasket or port face, and B the side wing of a coupler such as I have described. At one side of the body portion A and back of the same I cast an extension C, having two vertical lips between which is pivoted by the pivot E a latch D in the form of a lever shaped at its right end with a locking-surface d , arranged to overhang the corner B' of the overlapping wing B of the complementary part of the coupler when the two parts are coupled together and provided also with an inclined surface d' , adapted to be engaged by the wing of the complementary coupler and the latch thereby lifted when the two parts are brought together and the wing depressed into its locking position. The said lever D at its left-hand end has a projecting tongue d^2 , which bears upon the upper side of the extremity of a plate-spring F, which, as shown particularly in Fig. 3, is screwed to the opposite side of the coupler and then passed upward and across the upper side of the coupler with its tip resting underneath the tongue d^2 . By this arrangement the spring F tends to hold the lever D in the position shown in Fig. 1, with the tongue d^2 bearing against the under side of a cross-plate c , joining the two lips to the extension C, between which the lever D is pivoted. This being the normal position of the latch D, it will be remembered that when two couplers of this type are to be locked together they are approached until the lower edges of the meeting faces of the body portions abut, and they are then turned around a center coincident with the abutting lower edges aforesaid, during which operation the overlapping wings sweep downwardly across the sides of the overlapping body portion to engage with the retaining-lugs. At the same time the descending wings will strike the inclined faces d' of the respective latches and lift the same against the force of the spring F until finally the locking-faces d snap over the corners B' of the respective wings. The latches then serve to maintain the engagement of the two parts, and the springs F exert a positive downward pressure upon the wings to draw the meeting faces into still closer engagement. When, how-

ever, the two parts are uncoupled by a movement the reverse of that just described, the applied force will be sufficient to lift the latches against the power of the springs and
5 allow the two wings to escape each from its respective latch.

Referring to Figs. 4, 5, and 6, there is shown a similar arrangement wherein the extension C, that carries the latch, is made separable from the coupler, so as to be attached
10 to couplers of that description already in existence. For this purpose the extension C is provided with an arched portion adapted to be seated upon the upper side of the circular part H in the rear of the body portion A,
15 and a clamp C' is adapted to pass under the said circular portion H, and, being pivoted at one end of the said projection C and at the other end provided with an opening to receive a bolt K, the said bolt when its nut is
20 screwed on will draw the two parts C and C' together and clamp between them the circular portion H, so as to secure the latch-carrying projection firmly in place. The latch
25 will then be in the same position with relation to the other parts that it is in Figs. 1, 2, and 3, and it will operate in the manner already described.

In Figs. 7, 8, and 9 there is shown the same
30 latch D, arranged in every respect as in Figs. 1, 2, and 3, except that in place of the plate-spring F there is a helical spring F engaging the under side of the tongue d^2 to press it upward and seat it in a socket formed in the
35 projection C underneath the tongue d^2 . The action of the latch is the same as in the forms previously described.

In Figs. 10, 11, and 12 there is also shown the helical-spring arrangement; but in this
40 case the spring-carrying extension C is made detachable and is separately applied, as in the arrangement of Figs. 4, 5, and 6. In this instance the extension C is forked to embrace the circular portion H and has a curved surface which is seated against one side of the
45 said portion H. The outer ends of the fork are joined together by a bolt K, which serves to draw them inward and clamp between them the said portion H, so as to firmly secure thereto the spring-carrying extension. In
50 this form also the purpose and mode of operation of the latch is the same as in the forms previously described.

It is to be noted that the latch D lies parallel to the axis of the coupler and is located
55 at one side of the body portion, so as to be in a position to overhang and engage with the overlapping wing of the complementary part of the coupler when the two parts are in engagement.
60

The particular shape of the latching or retaining face of the latch and its inclined or lifting face may be of any desired description adapted to secure the results mentioned. It
65 is also an important feature that the latch

may be lifted manually instead of automatically by pressing with the thumb downwardly on the tongue d^2 or upwardly on either of the faces d d' . In each case it will be observed that the operative end of the
70 spring-latch exerts a direct pressure on the wing B of the complementary member in the direction of the locking-lug over which said wing hooks—that is, tangent to a circle concentric with the fulcrum at the lower edge
75 of the port face—which pressure is a direct application of yielding force tending to keep the interlocking members engaged, and hence maintain the port faces of the coupler parts in contact. Couplers have been made
80 in which the spring action was merely frictional, or if not wholly frictional then cam-like or wedge-like, whereby only one component of a resolved force acts in this direction. Such a locking action is evidently inferior to the action which I have described,
85 and couplers employing the former are much more likely to separate partially or accidentally and are much harder to separate or connect if the spring is made strong.
90

The above-mentioned novel feature is here claimed only for an automatically engaging and disengaging latch, being generically claimed in a separate application, Serial No. 198,285.
95

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a straight-port hose-coupler having two complementary parts engaging by a hinging motion about a fulcrum at the lower edge of their port faces, and provided with rigid, automatically-disengaging interlocking members off said fulcrum, of an automatically engaging and disengaging pivoted spring-latch supplementary
100 to the interlocking members and so disposed as to exert its main pressure in a direction counter to the uncoupling movement of the parts.

2. The combination with a hose-coupler
110 having two complementary parts connecting by a hinging motion about a fulcrum and having interlocking members, of an additional automatically engaging and disengaging spring-latch on one part cooperating with the other part and so disposed as to act thereon with a substantially unresolved yielding pressure about said fulcrum to hold the interlocking members together.
115

3. The combination with a hose-coupler
120 having two complementary parts connecting by a hinging motion about a fulcrum, of a forwardly-projecting wing, a locking member adapted to engage with a similar wing on the other coupler part, and an automatically engaging and disengaging spring-latch in the path of the complementary wing exerting a substantially unresolved pressure toward said locking member in a direction tangent to a circle concentric with the fulcrum.
125 130

4. The combination with a coupler of the type described, of a spring-latch D mounted in an extension C and provided with an upwardly-acting spring bearing against the tongue d^2 and provided with the retaining-face d and the lifting-face d' .

5. The combination with a coupler of the type described, of a separable latch-carrying extension C provided with clamping parts to embrace and clamp between them a portion of the coupler, and a spring-latch mounted

in said extension and adapted to engage the overlapping wing to the complementary part when the two parts are coupled together.

In witness whereof I have hereunto set my hand, before two subscribing witnesses, this 21st day of March, 1904.

JAMES F. McELROY.

Witnesses:

ERNEST D. JANSEN,

WILLIAM A. MORRILL, Jr.