

No. 891,211.

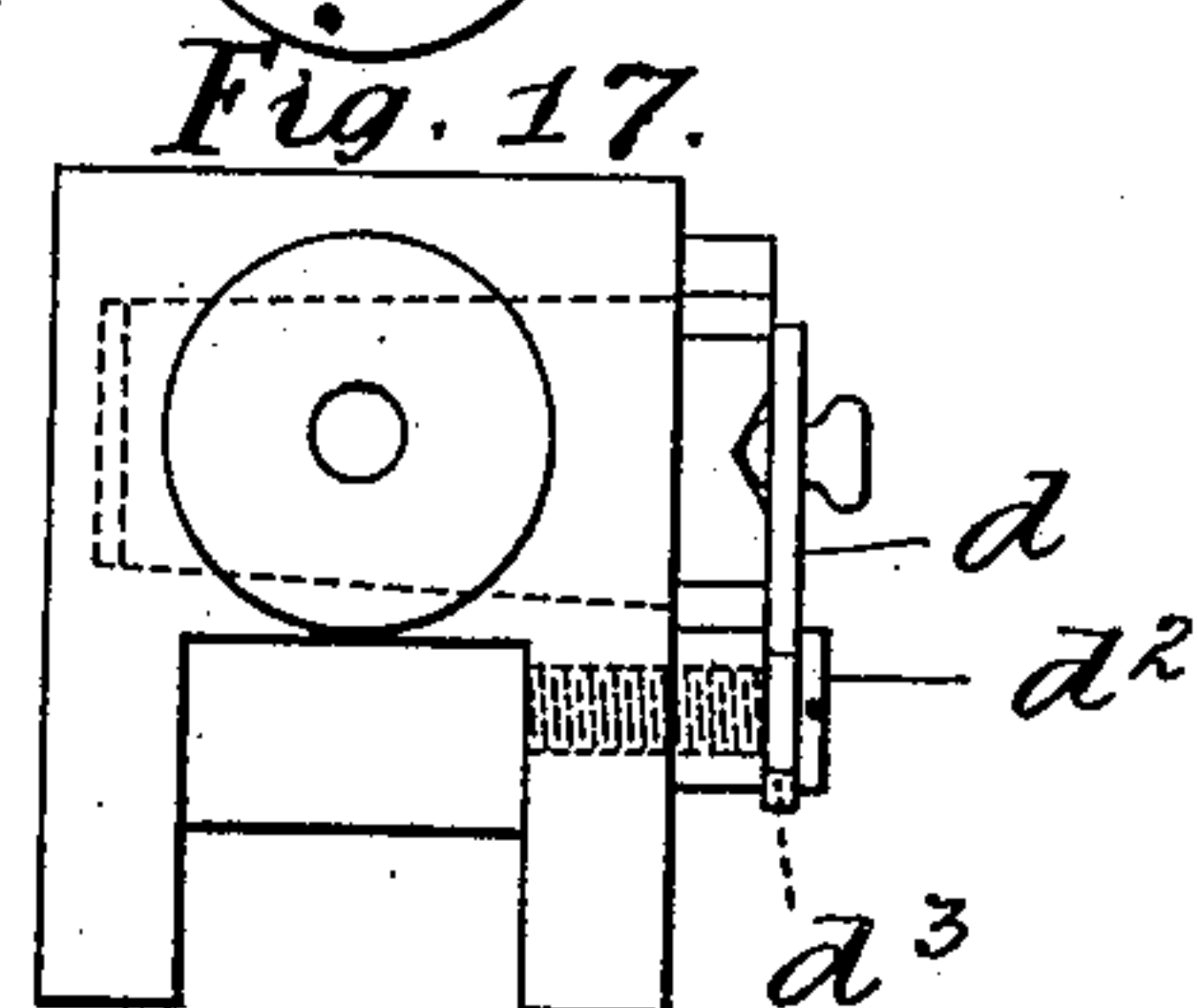
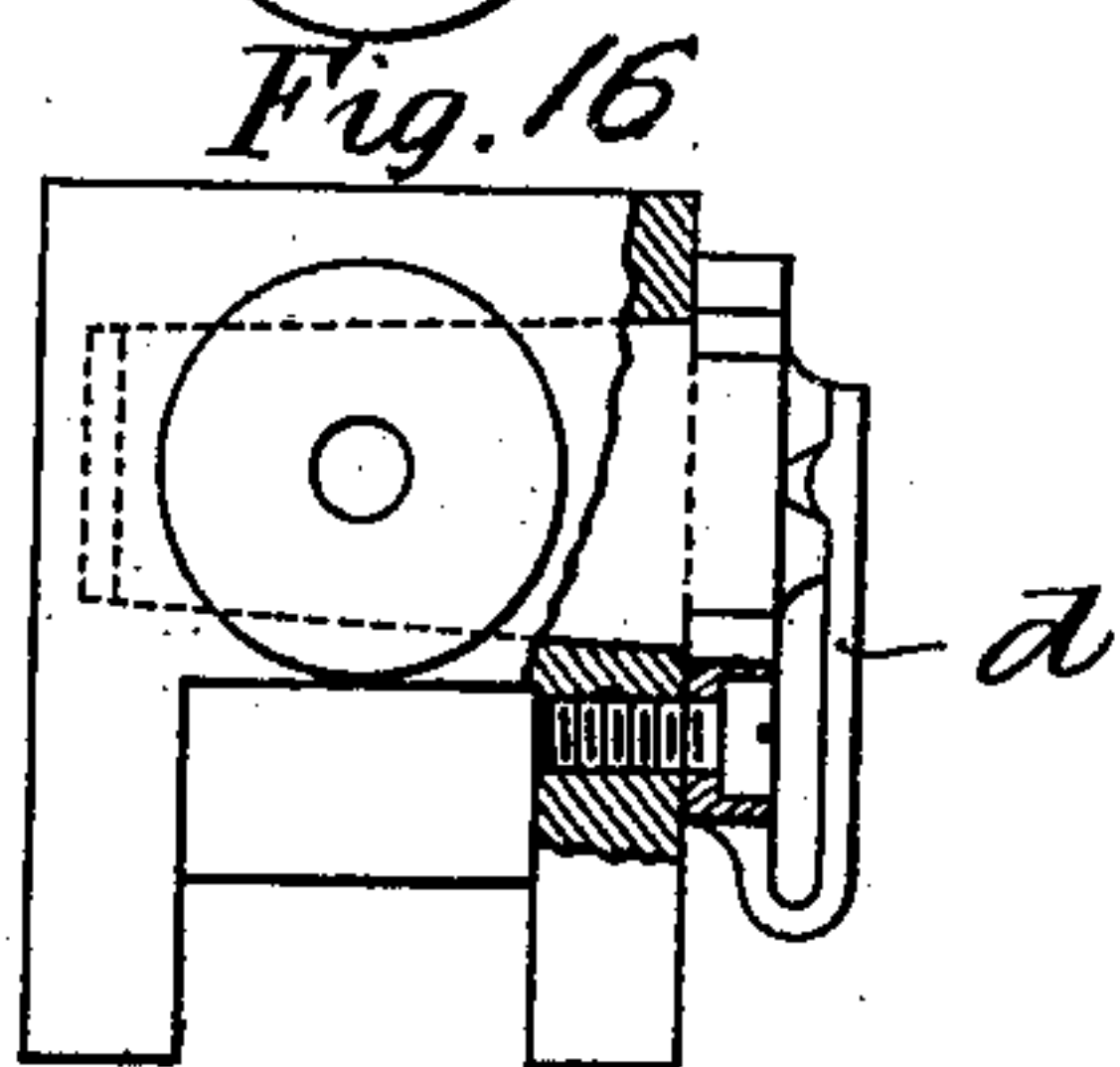
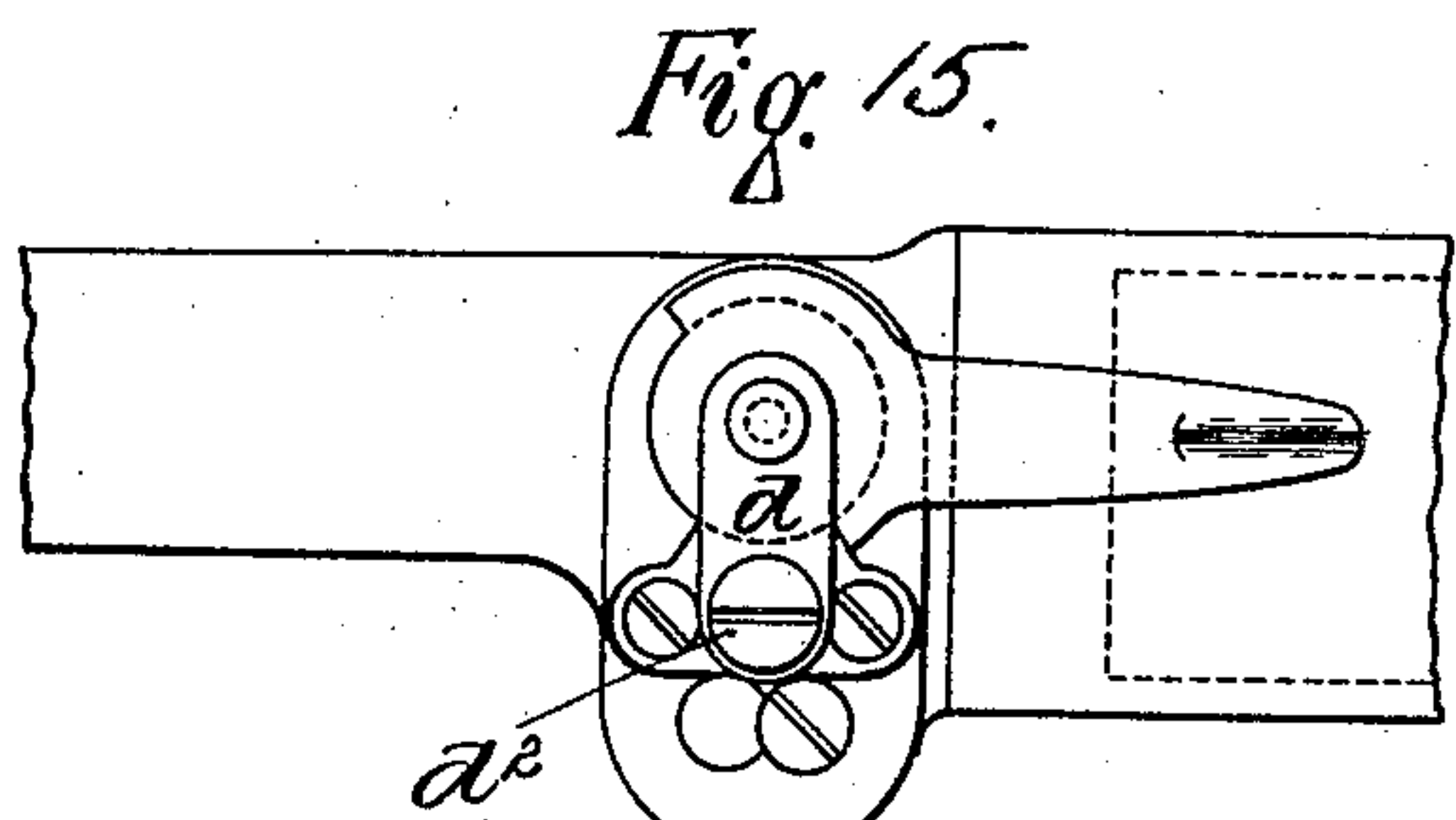
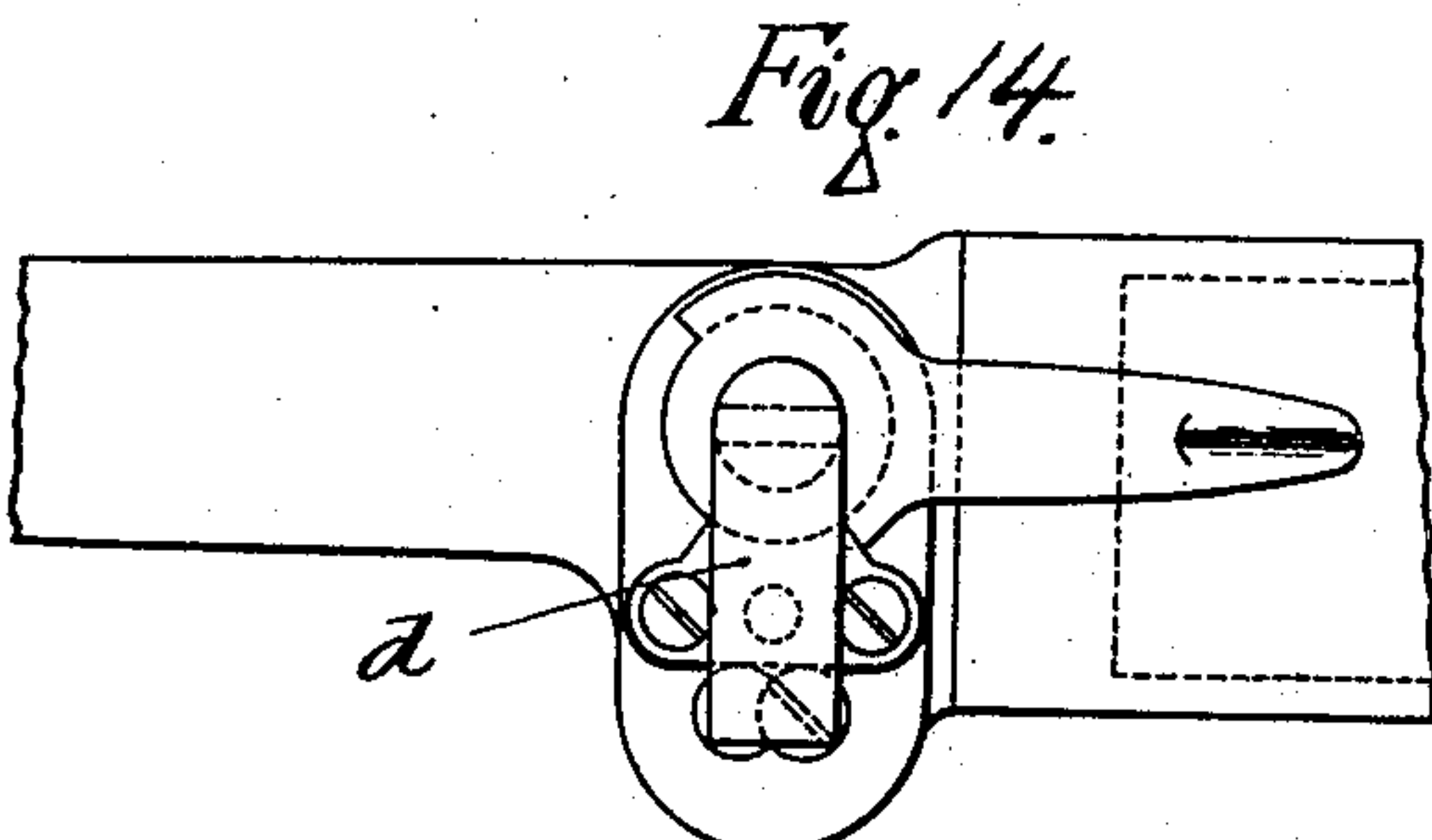
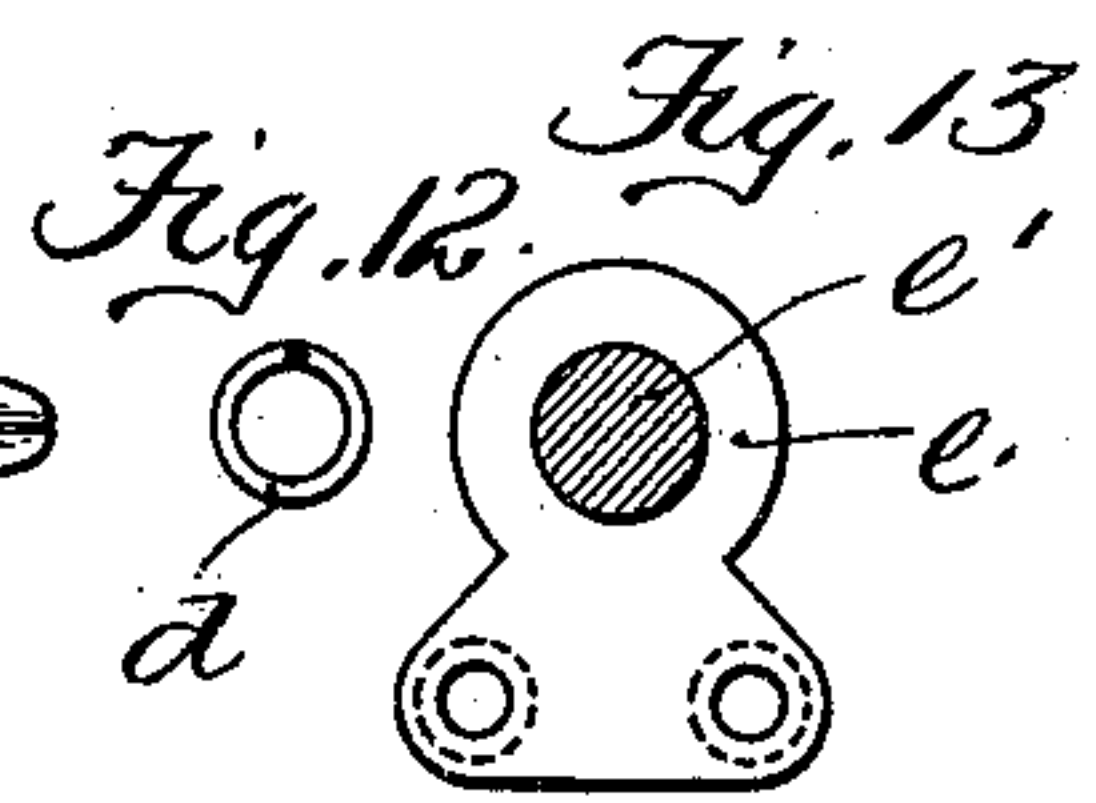
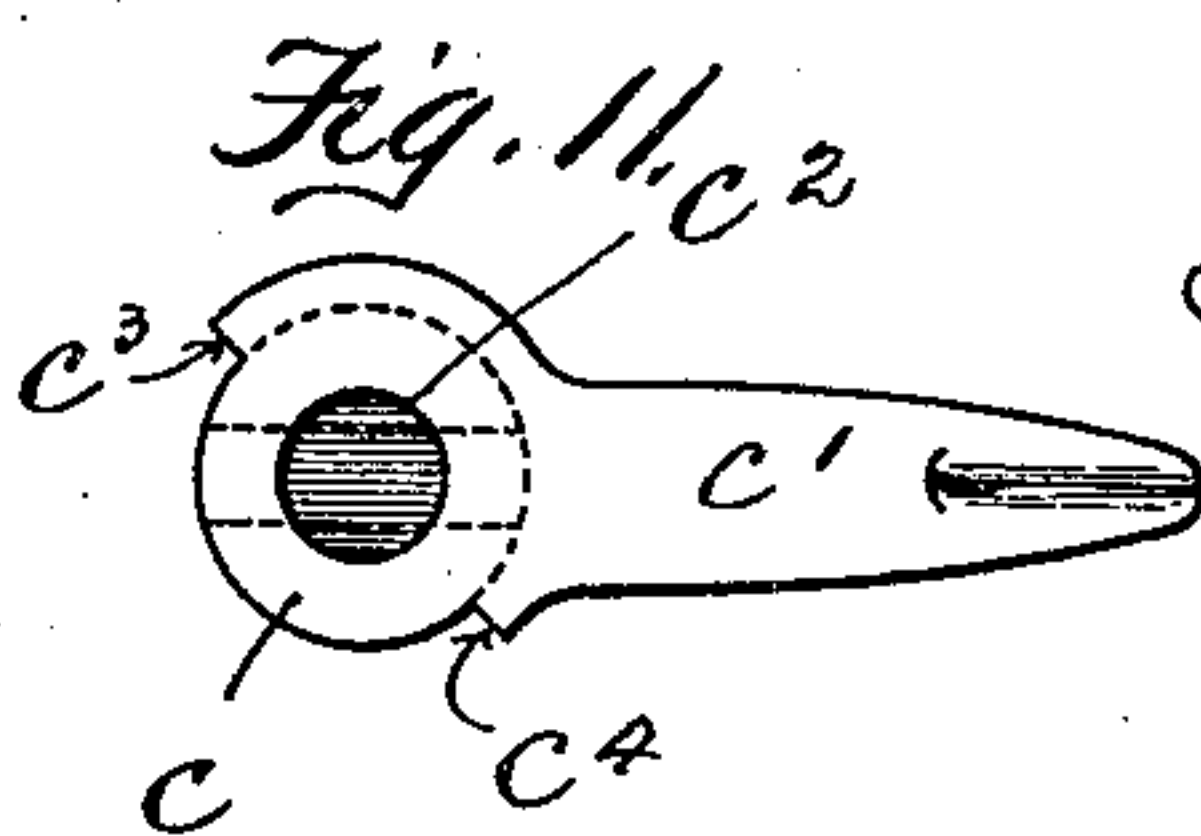
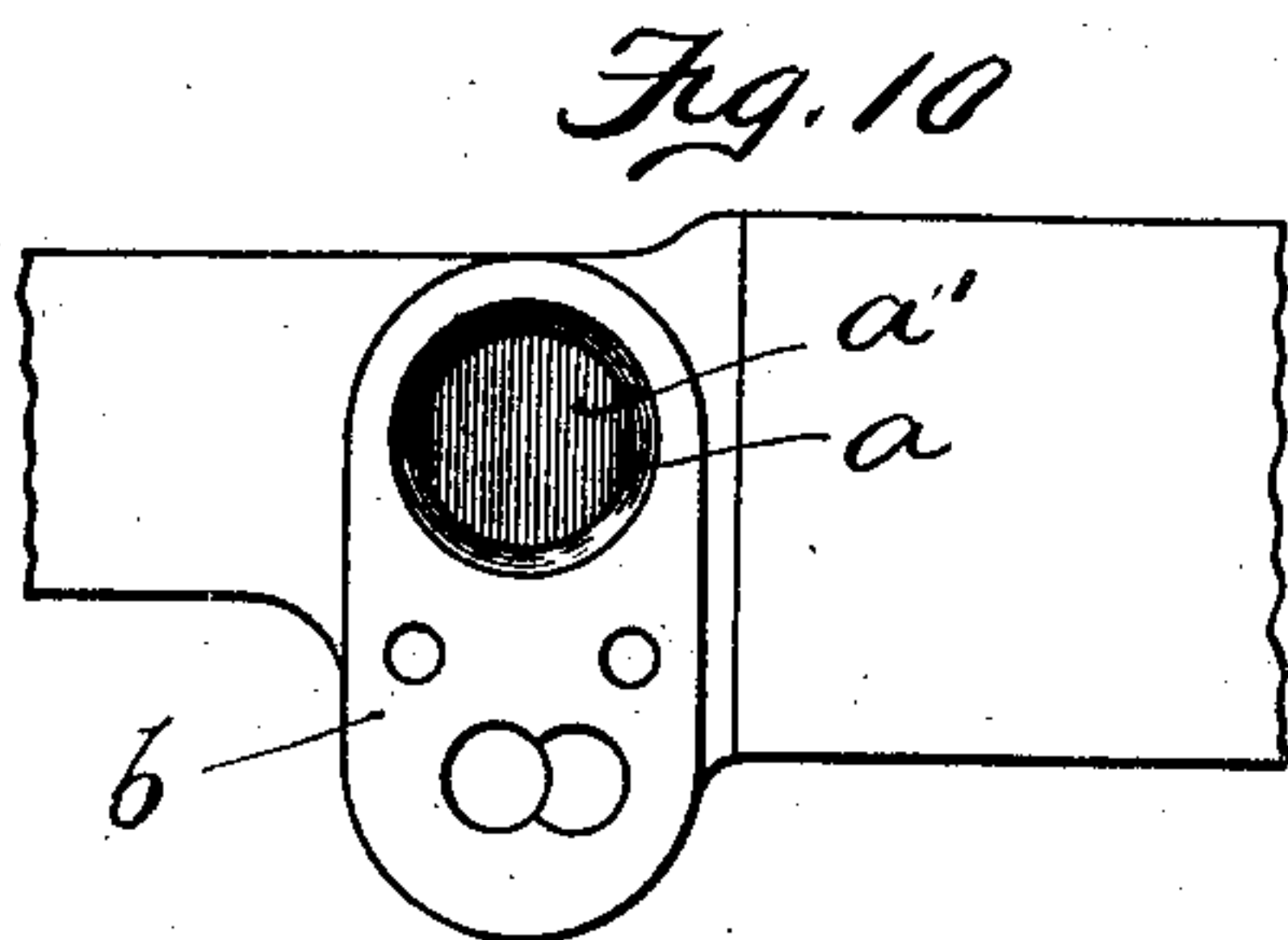
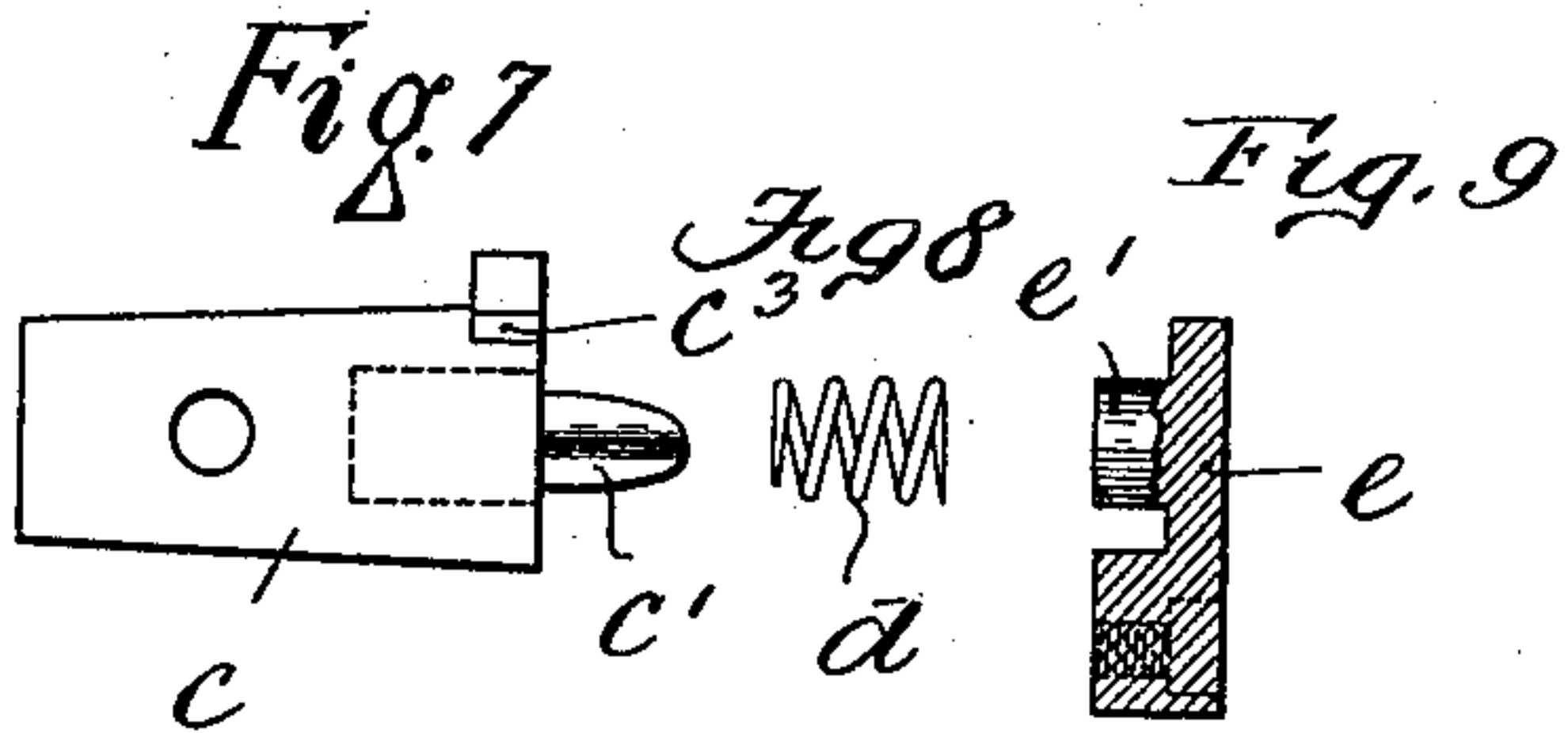
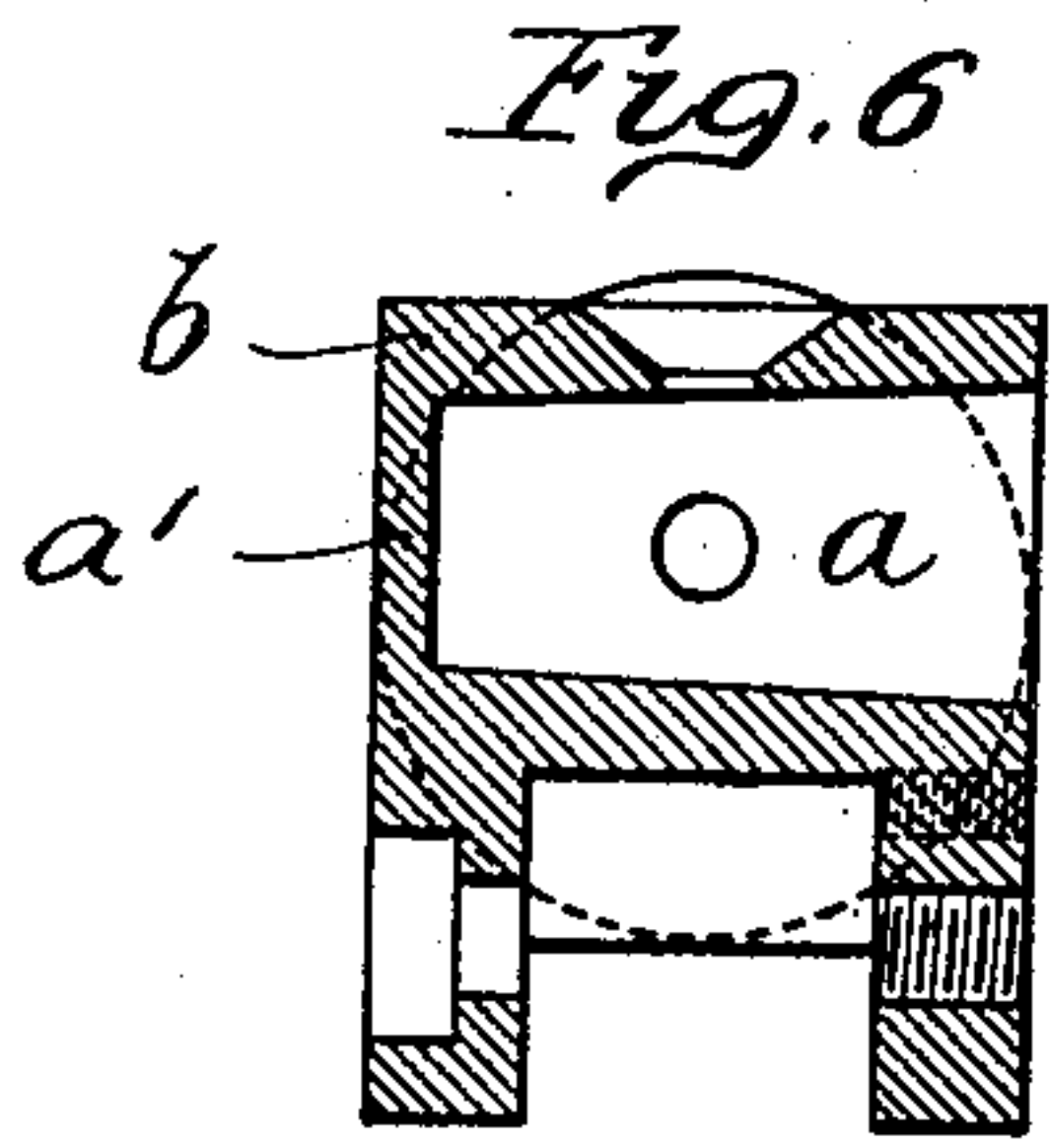
PATENTED JUNE 16, 1908.

A. H. M. DRIVER & G. NORMAN.

AIR GUN.

APPLICATION FILED NOV. 19, 1906.

2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE

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AIR-GUN.

No. 891,211.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed November 19, 1906. Serial No. 344,106.

To all whom it may concern:

Be it known that we, AUGUSTUS HENRY MURRAY DRIVER and GEORGE NORMAN, subjects of the King of Great Britain, residing at Small Arms Factory, Armory Road, Small Heath, near Birmingham, England, have invented certain new and useful Improvements in Air-Guns, of which the following is a specification.

10 This invention has relation to air-guns and air-rifles of that type in which the barrel and breech block are made solid with a chamber containing the main-spring and plunger and in which a rotary loading-plug is mounted
15 transversely within the said breech-block and formed with a pellet chamber adapted, when the plug is operated by means of an external lever, to be brought either into vertical line with a charging aperture in the top of the
20 breech-block to permit of the introduction of a pellet thereinto, or into line with the bore of the barrel and with the air passage from the spring chamber, so as to present the inserted pellet in the proper position for firing. In
25 ordinary arms of this type, the loading plug, which is of taper form, is fitted within a taper hole having both its ends open to the opposite sides of the breech block, and is retained in position by means of a washer and a screw
30 applied to its smaller end. This method of securing the plug is not, however, satisfactory as the screw is apt to become loose from shock, and necessitates the use of keeper-screws or equivalent supplementary means
35 to prevent the connecting screw from working out.

The object of the present invention is to provide rifles and guns of the type above referred to with improved loading plug arrangements in which the thrust or effort of a
40 suitably-applied spring or spring-device is utilized to keep the plug in its proper position, to prevent same from working out or becoming loose, and to automatically take
45 up or compensate for all wear, so that the joints of the breech are always kept air-tight, while incidentally this method of securing the plugs admits of the taper hole in the breech block being closed at the one end,
50 thus leaving the corresponding side of the said block solid, which reduces the number of joints at the breech and minimizes the risk of air escaping therethrough.

Figure 1 of the accompanying drawings

represents a side elevation of the breech part 55 of an air-rifle of the solid-barrel type which is fitted with improved loading plug arrangements in accordance with one form of this invention. Fig. 2 is a transverse vertical section of Fig. 1 upon the dotted line x . 60 Fig. 3 is another part sectional view, similar to Fig. 2 but showing the loading plug in elevation. Fig. 4 is a longitudinal section of Fig. 3 upon the dotted line x^1 and Fig. 5 is a similar section but taken upon the dotted 65 line x^2 in the plane of the pellet chamber in the plug. Fig. 6 is a sectional view of the breech block with the loading plug removed. Fig. 7 is a detail view of the loading plug. Fig. 8 is a detail view of the compression 70 spring removed from the loading plug. Fig. 9 is a sectional elevation of the plug retaining bracket. Fig. 10 is a side elevation of a portion of the barrel showing the breech block, the operative parts being removed 75 therefrom. Fig. 11 is a detail view of the loading plug removed from the breech. Fig. 12 is an end elevation of the spring. Fig. 13 is a sectional side elevation of the plug retaining bracket. Fig. 14 is a slightly modified 80 form of the invention showing the spring blade rigidly secured to the said bracket. Fig. 15 is a similar view to Fig. 14, showing the spring blade pivotally connected to the side bracket. Fig. 16 is a sectional 85 view of the breech taken at right angles on Fig. 14. Fig. 17 is an elevation of the breech taken at right angles on Fig. 15.

The same letters of reference indicate corresponding parts in the said Figs. 1 to 17. 90

In the construction represented in these figures, a taper or conoidal hole or socket a is formed transversely, from the left hand side, through the breech block b of the rifle, and the right hand or smaller end of this socket 95 is closed by the solid wall a^1 . The correspondingly-tapered loading plug c which has a turning fit within the said socket and carries an operating lever c^1 at its outer end, is also counterbored axially for a suitable distance to form both a chamber c^2 for the reception of a concealed thrust spring d and a bearing for a dowel-pin or cylindrical register e^1 which is carried upon the inner face of a rigid bracket or plate e and is designed to 100 serve both as an abutment for the outer end of the spring d and as a pivotal support for the loading plug which turns about the said 105

dowel-pin or register when the lever is operated for taking the pellet-chamber into either its loading or firing positions.

The concealed spring d is inserted, in a condition of compression, in the axial spring chamber of the plug and is confined therein by the register-pin on the said rigid bracket which thus takes the whole of the outward thrust of the said spring while the inward thrust is exerted against the loading-plug and tends to keep it up tight within its socket and to automatically compensate for any wear in the socketing parts.

The side bracket is attached to the breech block by a pair of screws e^2 or other means which will effectually resist the spring thrust and insure rigid support for the register-pin and the opposite edges e^3 , e^4 of the foot of the said bracket are adapted to cooperate with suitable shoulders c^3 , c^4 , upon the outer end of the plug, or upon the edge of its lever, to provide a system of stops for limiting the rotatory movement of the plug and preventing the turning of the same beyond the prescribed loading and firing positions.

Instead of arranging the thrust-spring in a counter-bored chamber in the plug and confining the same by the dowel-pin or bearing extension of the side bracket, a construction such as is represented in elevation in Fig. 14 and in partial section in Fig. 16 may be adopted, in which the end-thrust is applied to the plug by a spring blade or yielding tongue d which is attached at one end to the bracket while its other and free end bears against the outer face of the said plug and keeps the same tight within its socket. In the particular arrangement shown in the said Figs. 14 and 16, the spring blade is a fixture to the side-bracket, but it is obvious that, as a further alternative, (which is represented in Figs. 15 and 17) the said tongue d may be pivotally connected at its lower end to the side bracket (by means of a screw d^2 having a plain shank d^3) so as to admit of the device being turned clear of the end of the plug when it is desired to

withdraw the latter from its socket for cleaning or other purposes. If necessary the spring-limb shown in Figs. 14 to 17 may also be utilized as a means of retaining the plug in the firing position, or in the loading and firing positions, by providing the inner side of its free end with a tooth or rib which will engage with a groove or with one or other of a pair of grooves in the end of the dowel when the plug is set for firing or loading.

The means for applying spring end-thrust to the plug may obviously be varied or modified in other ways without departing from the present invention and may be used with plugs fitted into breech-sockets which are closed or left solid on the one side, or with breech blocks in which the plug socket is formed through from side to side.

To facilitate the charging of rifles and guns of the type to which the invention relates, the loading aperture in the top of the breech block may be made countersunk and sufficiently large to enable the pellet to be dropped through into the coincident chamber of the plug by the shooter's fingers, so that the charging rods which have usually to be employed may be dispensed with.

Having fully described our invention, what we desire to claim and secure by Letters Patent is:—

In an air-gun, the combination of a loading plug socket, a rotatable loading plug having a chamber in one end thereof, a compensating spring located in said chamber, a bracket secured on the body of the gun and having a register pin, the latter being adapted to engage the outer end of said chamber and serve as an abutment for the compensating spring.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

AUGUSTUS HENRY MURRAY DRIVER.
GEORGE NORMAN.

Witnesses:

HENRY L. KERRETT,
HARRY C. PRATT.