

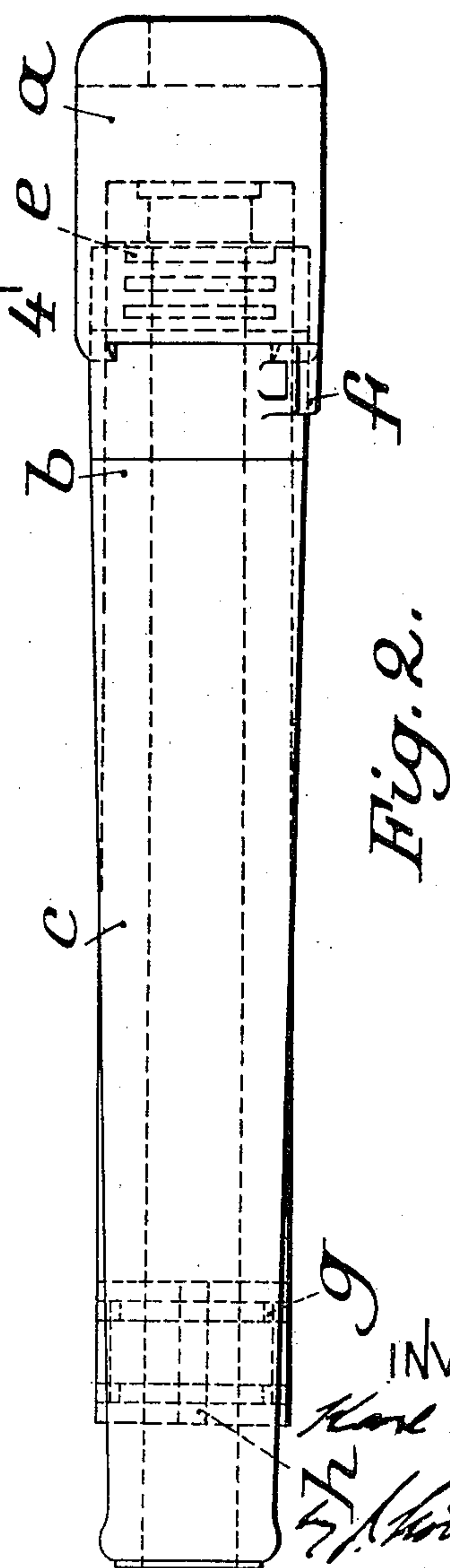
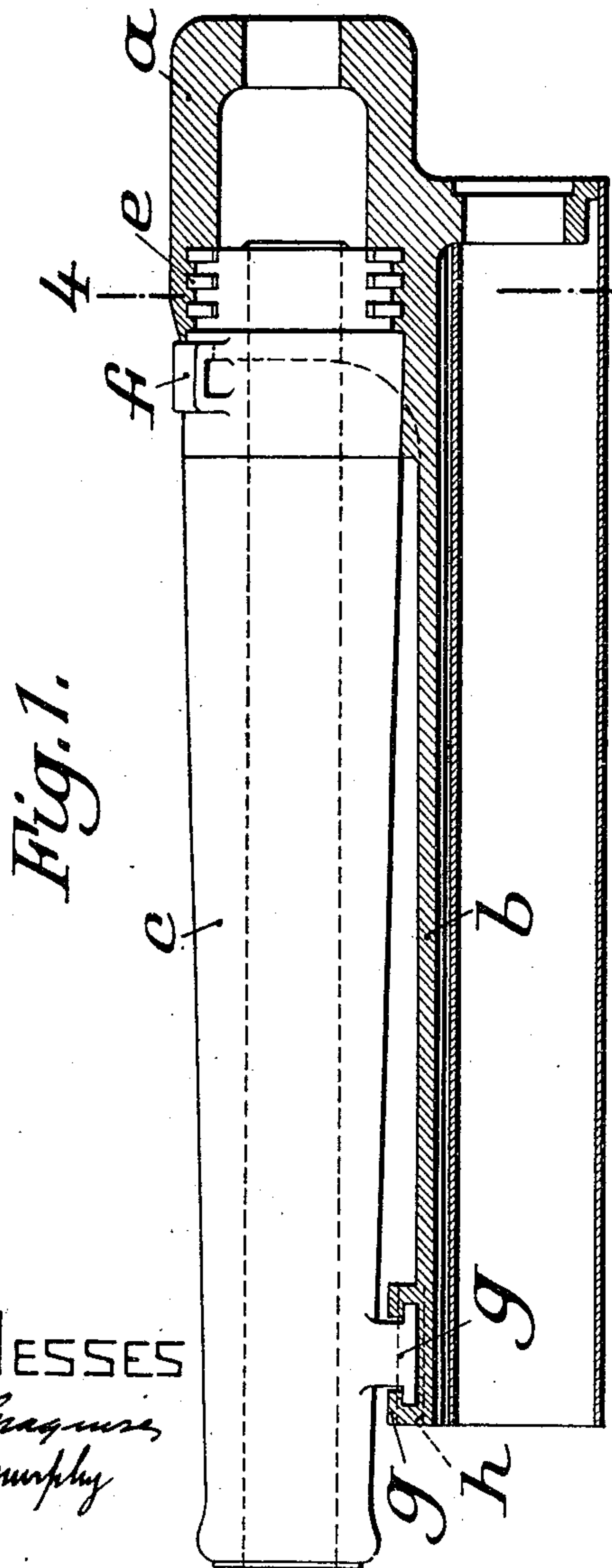
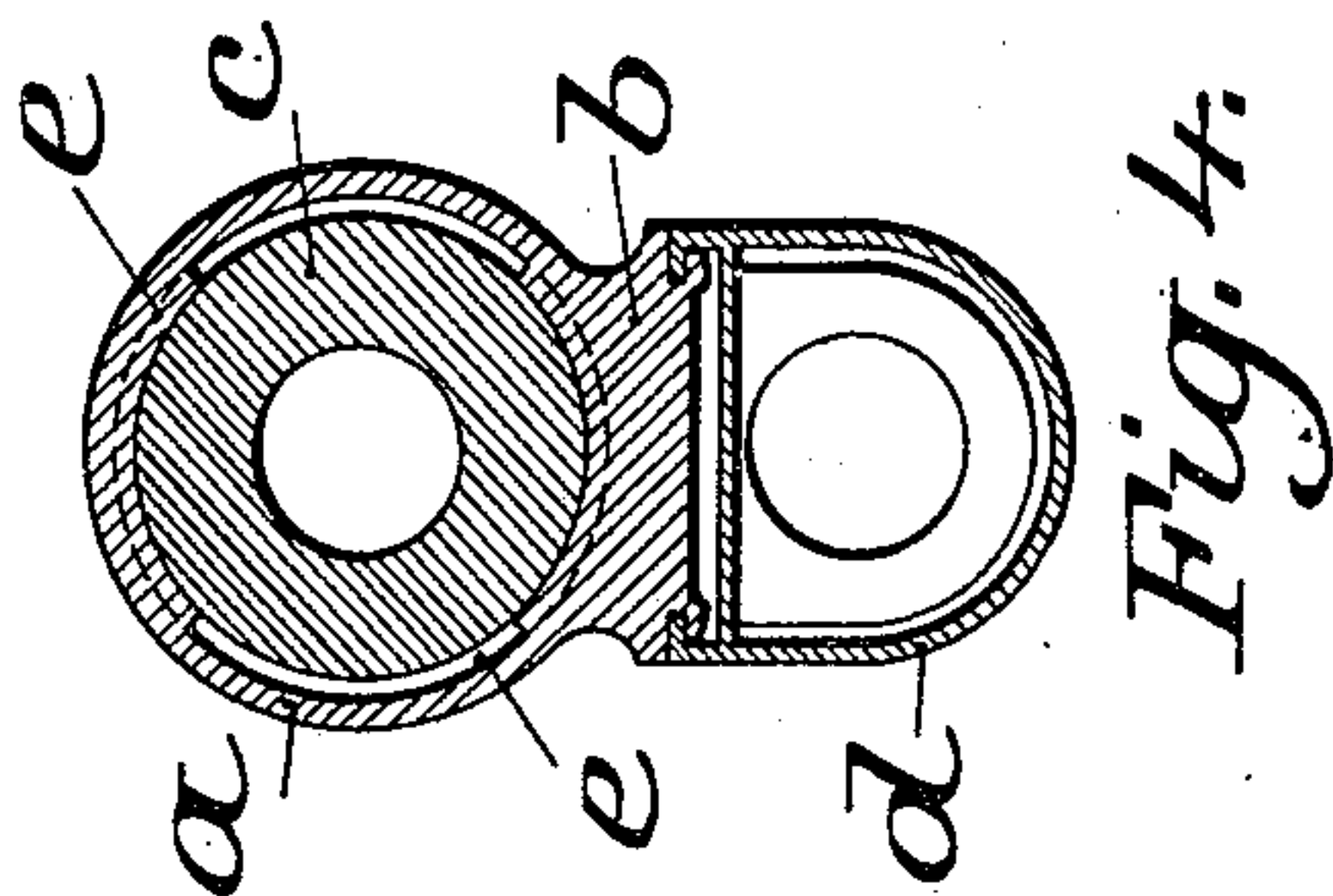
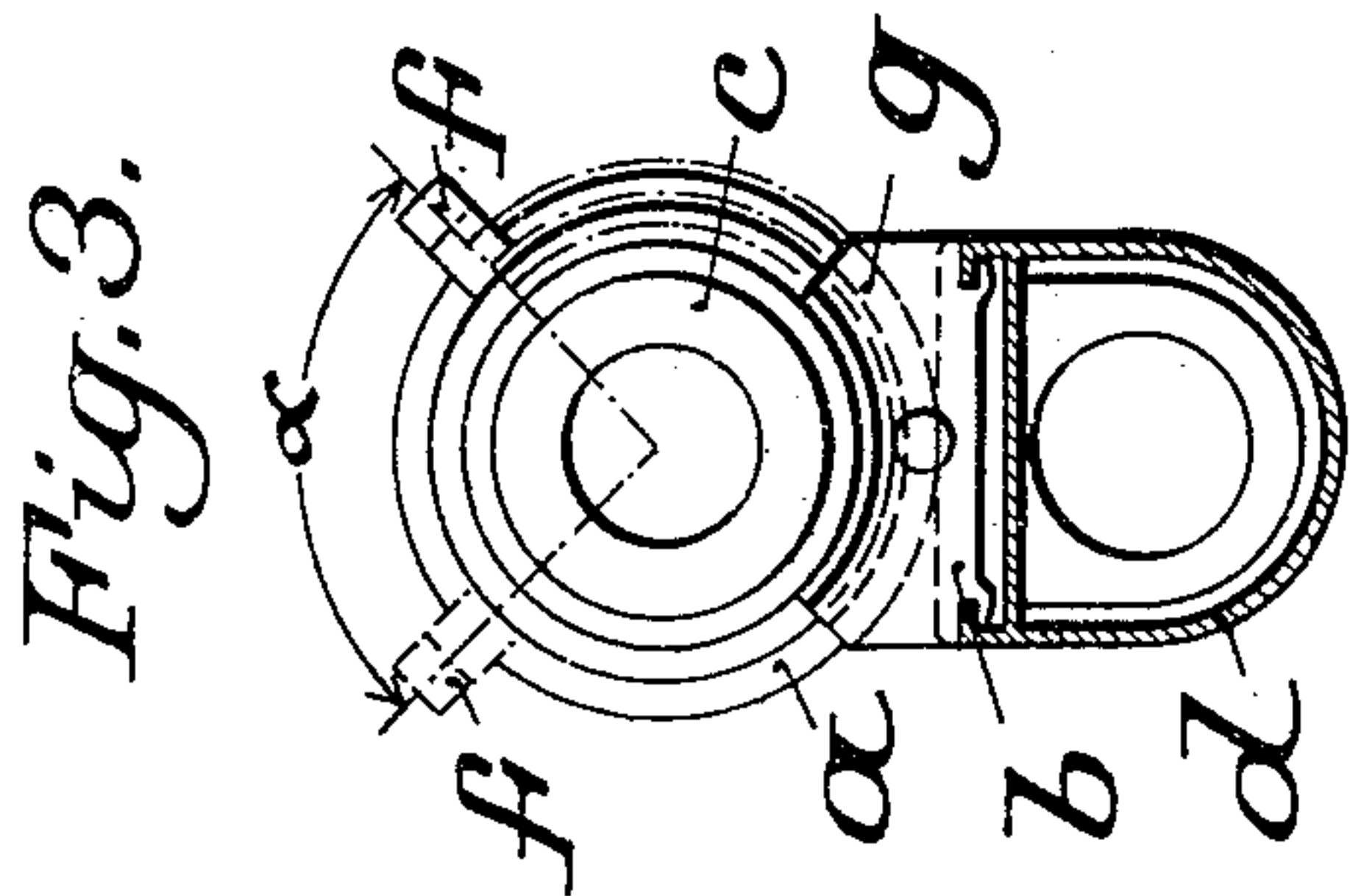
K. VÖLLER.
GUN.

APPLICATION FILED OCT. 13, 1910.

989,453.

Patented Apr. 11, 1911.

2 SHEETS—SHEET 1.



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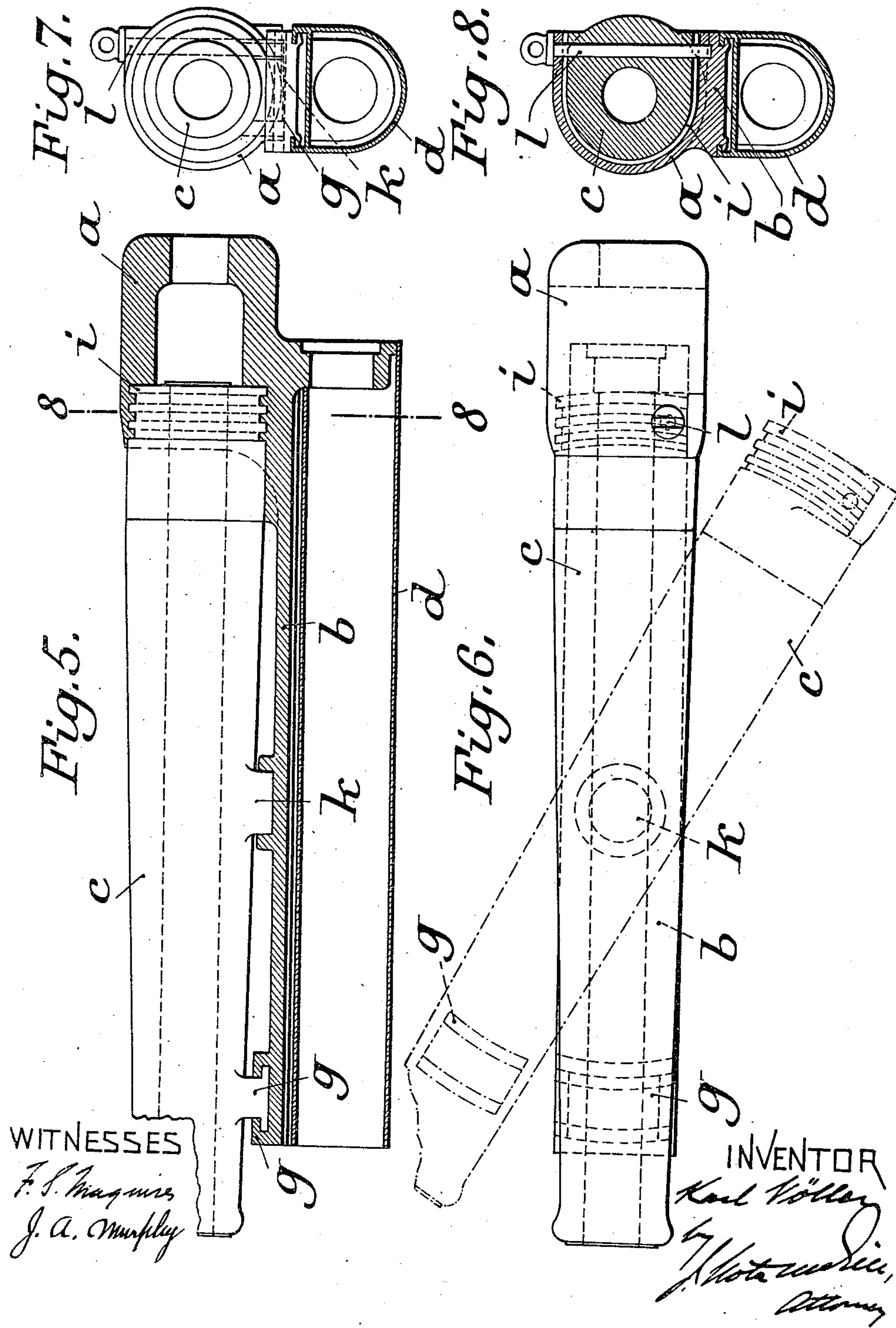
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

KARL VÖLLER, OF DUSSELDORF, GERMANY, ASSIGNOR TO RHEINISCHE METALL-
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GUN.

989,453.

Specification of Letters Patent.

Patented Apr. 11, 1911.

Application filed October 13, 1910. Serial No. 586,898.

To all whom it may concern:

Be it known that I, KARL VÖLLER, engineer, a subject of the German Emperor, residing at 17 Fülcherstrasse, Dusseldorf, Germany, have invented certain new and useful Improvements in Guns; 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.

In guns which can be taken to pieces for transportation the several pieces must not exceed a given length and weight. This is more particularly necessary in the case of guns for mountain batteries the parts of which must be of such dimensions that the mules or other animals will not be impeded thereby and can carry them for long distances.

Guns having a recoiling barrel have heretofore been constructed in such a manner that the gun barrel, the sliding carriage on which the barrel is mounted and the cradle on which the said carriage slides, are each a separate part and capable of being disconnected from one another. The gun barrel itself has also been made in several parts.

According to the present invention the gun barrel is separate from the breech-piece and this latter is combined with the sliding carriage to form a single piece. This construction provides parts that are about the same length so that the loads are more equally distributed for transport. Of course, it must be possible to securely affix the barrel to the breech-piece in assembling the parts.

The invention is illustrated in the accompanying drawings, two constructions being shown.

Figure 1 is a sectional elevation and Fig. 2 a plan of one construction, Fig. 3 is an end elevation and Fig. 4 a cross section on line 4—4 of Fig. 1. Figs. 5, 6, 7, and 8 are like views respectively of the second construction, Fig. 8 being a cross section on lines 8—8 of Fig. 5.

Referring to Figs. 1 to 4, the breech-piece *a* forms a single piece with the sliding carriage *b*, with and from which the barrel *c* can be connected and disconnected. The carriage *b* slides on the cradle *d*. A bayonet joint forms a suitable connection between barrel and the breech-piece. For example,

at the rear end of the barrel a number of pairs of diametrically opposite lugs *e* of length equal to a quarter of the circumference are spaced at equal distances apart. Between these lugs are smooth cylindrical surfaces. The breech-piece is bored out and has on the inner surface of the bore corresponding counter lugs and smooth cylindrical surfaces, so that the barrel can be inserted into the breech-piece. By rotating the barrel on its axis through the angle α from the position shown in dotted lines in Fig. 3 to that shown in full lines, the barrel is rigidly connected with the breech-piece. A handle *f* on the end of the barrel for turning it also serves to limit such turning. The front end of the barrel may be fixed to the sliding carriage for instance by means of a claw coupling *g*, which is curved to the segment of a circle concentric to the axis of the barrel. The rear end of the barrel is inserted in the breech-piece and is then rotated on its longitudinal axis, which movement at the same time engages the two parts of the claw coupling and the barrel with the breech-piece. The reaction of the rifling which tends to rotate the barrel in a certain direction, can be made inoperative by making this direction that in which the barrel is rotated when it is fixed in the breech-piece. The handle *f* then prevents further rotation of the barrel in this direction. To prevent the barrel from rotating in the opposite direction a bolt *h* may be passed transversely through the claw coupling.

In the construction shown in Figs. 5 to 8, the lugs *i* extend over the whole of that portion of the periphery of the barrel that comes into contact with the breech-piece. The other end is connected with the sliding carriage by a claw coupling as in the previous construction. The connection in this case is not effected by rotating the barrel on its axis but by turning it about a vertical axis at right angles thereto, as indicated by the dotted lines in Fig. 6. To facilitate this turning movement the barrel may be provided at about the middle of its length with a pivot *k* turning in a suitable bearing in the sliding carriage. The engaging surfaces of the claw coupling and the lugs and grooves in the breech-piece are curved to a circle concentric to the axis on which the barrel turns, which in the case illustrated

coincides with the axis of the pivot $\frac{1}{2}$. The parts are locked by a bolt $\frac{1}{2}$ passing through the breech and the end of the barrel.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A gun having, in combination, a barrel, a carriage therefor, a breech-piece forming part of the carriage, and means for detachably connecting the barrel to the breech-piece.

2. A gun having, in combination, a barrel, a carriage therefor, a breech-piece forming part of the carriage, means for detachably connecting the barrel to the breech-piece, and other means for detachably connecting the barrel, near its outer end, directly to the carriage.

3. A gun having, in combination, a barrel, a carriage therefor, and a breech-piece constituting part of the carriage, said barrel and breech-piece having interlocking surfaces which are designed to be brought into coöperation by turning the barrel.

4. A gun having, in combination, a barrel, a carriage therefor, a breech-piece constituting part of the carriage, said barrel and breech-piece having at one end interlocking surfaces which are designed to be brought into coöperation by turning the barrel, and means near the other end of the barrel for detachably connecting it directly to the carriage.

5. A gun having, in combination, a barrel, a carriage therefor, and a breech piece constituting part of the carriage, said barrel and breech piece having interlocking surfaces which are designed to be brought into coöperation by turning the barrel on its longitudinal axis.

6. A gun having, in combination, a barrel, a carriage therefor, and a breech piece con-

stituting part of the carriage, said barrel and breech piece having interlocking surfaces which are designed to be brought into coöperation by turning the barrel on its longitudinal axis, and means for locking the barrel, at a point near its muzzle, to the carriage.

7. A gun having, in combination, a barrel, a carriage therefor, and a breech piece constituting a part of the carriage, said barrel and breech piece having corresponding segmental lugs which are designed to interlock when the barrel is turned on its longitudinal axis.

8. A gun having, in combination, a barrel, a carriage therefor, and a breech piece constituting a part of the carriage, said barrel and breech piece having corresponding segmental lugs which are designed to interlock when the barrel is turned on its longitudinal axis, said barrel and carriage having coupling members which are designed to interengage when the gun is so turned.

9. A gun having, in combination, a barrel, a carriage therefor, and a breech piece, said breech piece constituting part of the carriage, said barrel and breech piece having corresponding segmental lugs which are designed to interengage when the barrel is turned on its longitudinal axis, a stop for limiting the turning of the barrel, and co-operating coupling members, mounted, respectively, on the barrel and carriage and curved concentrically to the axis of the barrel.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

KARL VÖLLER. [L. S.]

Witnesses:

WALTER VONNEGUT,
ALFRED HENKEL.