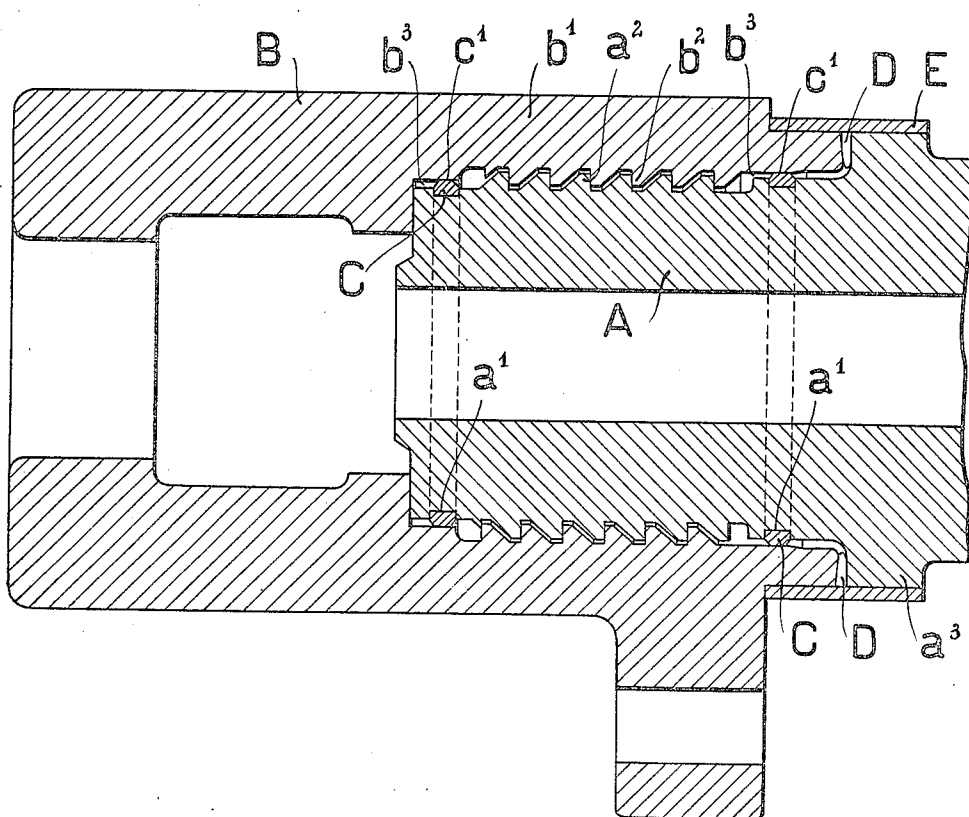


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 GUN BARREL WITH A BREECH PIECE SCREWED ON AN A-TUBE.
 APPLICATION FILED DEC. 3, 1920.

1,393,057.

Patented Oct. 11, 1921.



Inventor
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 By *Knights*
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UNITED STATES PATENT OFFICE.

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GUN-BARREL WITH A BREECH-PIECE SCREWED ON AN A-TUBE.

1,393,057.

Specification of Letters Patent.

Patented Oct. 11, 1921.

Application filed December 3, 1920. Serial No. 428,087.

To all whom it may concern:

Be it known that I, JOHN VOLLMER, residing at Essen, Germany, a citizen of the German Republic, have invented a certain new and useful Improvement in Gun-Barrel with a Breech-Piece Screwed on an A-Tube (for which I have filed application in Germany, May 18, 1917), of which the following is a specification.

This invention relates to gun-barrels having a breech-piece screwed on an A-tube. The object of the invention is, chiefly, to provide an arrangement which will render it possible to assemble and disconnect easily and without injury to the screw thread the breech-piece and the A-tube.

The drawing represents a longitudinal section of the parts in question of a constructional example of the invention.

The gun-barrel consists of an A-tube A and a breech-piece B, the latter being formed with a jacket portion b^1 which envelops the rear portion of the A-tube. The connection between the A-tube and the breech-piece is obtained by means of the screw threads $a^2 b^2$, which are so designed that during the operation of screwing the two parts together, a certain amount of clearance exists, both in the axial and in the radial direction between the screw thread a^2 of the A-tube and the female thread b^2 in the breech-piece, the clearance in the radial direction remaining even after the assembling operation is completed. The A-tube is cut, both in front and in rear of the thread a^2 , with annular grooves a^1 for the reception of a ring C made of a comparatively soft material, brass, for instance. The external cylindrical surfaces c^1 of the rings C are intended to bear against cylindrical surfaces b^3 prepared in the breech-piece B. Conical wedges D are driven into recesses the walls of which lie on the front end face of the breech-piece and, on the other hand, on the rear face of a collar a^3 formed on the A-tube, the wedges D being secured in position by a ring E fixed over the collar a^3 .

The operation of screwing the breech-piece on the A-tube is performed, with great ease, owing to the clearance existing in the screw connection $a^2 b^2$. When the operation is nearing its end, the surfaces c^1 of the

rings C bear against the surfaces b^3 of the breech-piece B, so as to accurately center the A-tube within the breech-piece. On the screwing operation being completed, the recesses for the wedges D are bored, the wedges driven in and secured by means of the ring E. Owing to the action of the wedges, the screw threads $a^2 b^2$ are made to bear against each other in the axial direction with so great a pressure as to insure a rigid connection between the breech-piece and the A-tube. The clearance existing in the radial direction between the threads $a^2 b^2$ remains and is not lost even when the A-tube expands on firing. The pressure then set up is supported by the surfaces $c^1 b^3$, so that "gripping" of the screw thread is prevented. Neither can "gripping" occur on the bearing surfaces $c^1 b^3$, since the rings C are made of softer material than the A-tube and breech-piece, and are flattened out by excessive pressure. In case of need, therefore, the wedges D having previously been removed, the breech-piece can be unscrewed from the A-tube by a slight effort and without injury to one of the parts.

Claims.

1. A gun barrel and breech-piece screw-threadedly united, said union being formed so as to provide a radial clearance between the parts, said gun barrel and breech-piece being formed with bearing surfaces on both sides of said screw-threads, said surfaces being curved concentrically to the bore axis of the gun barrel and cooperating to maintain said radial clearance when the parts are screwed together.

2. A union for a gun barrel and breech-piece characterized by the provision of screw-threads on the gun barrel, cooperating screw-threads on the breech-piece, said screw-threads being so formed as to allow a clearance radially between the screw-threads of the gun barrel and breech-piece, said breech-piece being provided with cylindrical bearing surfaces, rings of comparatively soft material secured to said gun barrel and contacting said cylindrical bearing surfaces, to maintain said radial clearance.

3. An arrangement for connecting a gun barrel and breech-piece comprising screw-threads formed upon the gun barrel, cooper-

ating screw-threads formed upon the breech-
piece, said screw-threads being so formed as
to provide a clearance axially and radially
when the breech-piece is connected to the
5 gun barrel, means disposed between said
breech-piece and gun barrel for maintaining
said radial clearance and wedges inserted
between abutting faces of said gun barrel

and breech-piece for closing the axial clear-
ance between said cooperating screw-threads. 1

The foregoing specification signed at Es-
sen, Germany, this 24th day of June, 1920.

JOHN VOLLMER.

In the presence of—

HANS GOTTMANN,
JOHANN DECKERS.