J. FUCHS.

RIFLE.

APPLICATION FILED APR. 19, 1921.

1,428,081.

Patented Sept. 5, 1922.

Fig. 1

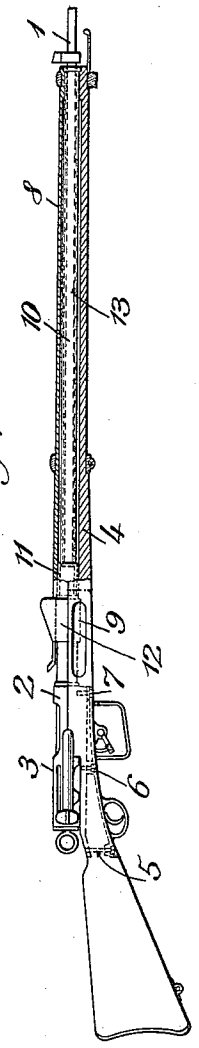


Fig. 2

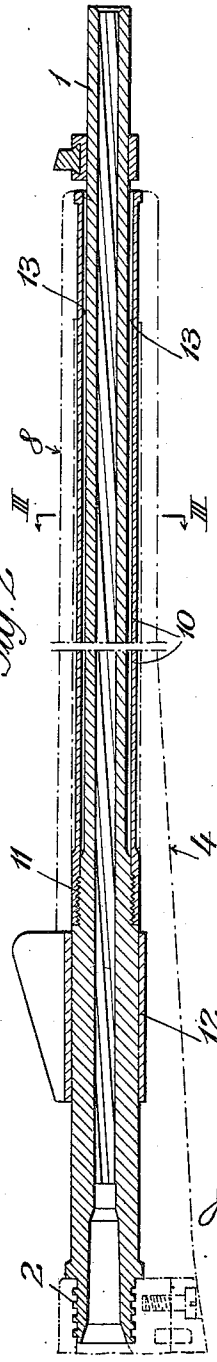
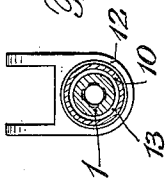


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHANN FUCHS, OF APPENZELL, SWITZERLAND.

RIFLE.

Application filed April 19, 1921. Serial No. 462,624.

(GRANTED UNDER THE PROVISIONS OF THE ACT OF MARCH 3, 1921, 41 STAT. L., 1313.)

To all whom it may concern:

Be it known that I, JOHANN FUCHS, a citizen of the Republic of Switzerland, residing at Appenzell, Switzerland, have invented certain new and useful Improvements in Rifles (for which I have filed an application in Switzerland Apr. 16, 1920, Patent No. 88,203); and I do hereby declare the following to be a clear, full, 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in rifles and particularly to a device for preventing that deviation of the shots caused by the influence of the support.

It is an undeniable fact that the marks show considerable differences when the rifle rests in its front part either upon a support or when it is pressed sideways against a support or when the firing is carried out free-handed. When the rifle is supported in its front part all the shots are above the mark by a definite amount as compared with the results obtained in free-hand shooting, although, when firing, the foresight is for instance put below the object in exactly the same manner in both cases. The deviation of the shots in the vertical direction varies with the point in which the rifle is supported, i. e., the nearer said point is to the muzzle of the barrel the more the shots are above the mark. In the same way a lateral deviation of the shots occurs when the rifle is in its front part pressed against a side support for the purpose of steadying it.

This deviation is caused by the influence of the support on the barrel of the rifle, and it can be explained in many ways, for instance by a displacement of the nodal points of the oscillations caused by the pressure of the explosion gases or by the influence on the elastic line of the bent barrel caused by the reaction pressure acting at the point of support.

It has been proposed to surround the barrel of a rifle with a steel tube for protecting the barrel against outside influences. In this construction, however, inner rings have been provided for strengthening the tube which surround and support the barrel so that any outside pressure acting upon the steel tube is transmitted to the barrel and such a tube cannot and is not intended to prevent the deviation of the shots which is likely to be caused when resting the rifle on a support.

The object of the present invention is to eliminate the influences of the support and to avoid the faults in the marks caused by said influences.

According to the invention means are provided whereby the barrel is protected from a point near the back-sight to the muzzle, so that when the forward end of the rifle is rested on a support for firing, the barrel shall not be subjected to pressure in a radial direction to the barrel.

Preferably a sleeve consisting of a metal tube is provided which is rigidly connected at its rear end to the barrel, the inside diameter of said tube being larger than the outside diameter of the barrel. The tube is conveniently fixed to the thickened rear portion of the barrel. In this case it is advantageous to use a tube of a uniform inside diameter whereas the barrel is tapered towards its muzzle in the known manner, so that the annular intermediate space between tube and barrel increases towards the muzzle.

One mode of carrying the invention into effect is shown by way of example on the accompanying drawing in which:

Fig. 1 is a side view of a rifle,

Fig. 2 is a longitudinal section through a barrel provided with the device according to the invention, and

Fig. 3 is a cross-section along line III—III of Fig. 2.

1 denotes the barrel which is screwed in a known manner at 2 to the breech frame 3. The breech frame 3 is connected to the stock 4 by means of screws 5, 6 and 7. A tube 10 (Figs. 2 and 3) is provided which surrounds the barrel concentrically and through which the latter projects freely. This tube 10 is rigidly screwed at 11 to the thickened rear end of the barrel near the point at which the sleeve 12 carrying the back sight is fixed to the barrel. On the thickened portion of the barrel in front of the sleeve 12 screw

threads are provided for screwing the tube 10 thereto. The bore of the tube is uniform throughout its length. The barrel is tapered towards its muzzle in a known manner so that the radial distance 13 or clearance between the tube 10 and the barrel 1 increases towards the muzzle.

The shell of the tube 10 may be thickened at the portion which is provided with the thread and the tube may further be provided with ribs not shown extending in the longitudinal direction.

The barrel together with the tube may be arranged within the hand-guard and the stock (Fig. 1) which supports the tube 10.

The metal tube itself may act as and replace the hand-guard, and it can be provided with slots in a similar manner to the cover tube of a machine gun. In this case the stock will only extend as far as the dotted line indicated in Fig. 1.

The hand-guard and the part of the stock may be made of wood and form a tube which surrounds the barrel with radial play. But in this case these parts must be sufficiently rigid and their connection to the barrel must be so rigid as to prevent a bending of these parts from being transmitted to the barrel.

When the rifle is now fired in a position in which the rifle is put on a rest or pressed against a side rest the tube 10 will be slightly deflected on account of the reacting forces but these forces are not transmitted to the barrel. The barrel will deflect owing to the action of its cantilevered weight but this deflection will remain exactly the same as if the rifle were supported at a point below the back-sight when shooting free-handed. In consequence thereof the deviations from the mark which have hitherto occurred when the rifle is put on a rest are avoided and it is immaterial at which point and in which direction the rifle is supported, the marks obtained will be the same when the aiming is carried out in the same way.

I claim:

1. A rifle comprising a barrel, a protecting sleeve spaced from and surrounding the barrel and secured thereto at its rear end and forming with the latter an annular intermediate free space extending substantially the length of the barrel, whereby when the rifle is supported, for firing, the barrel will not be subjected to a radial pressure, a sight on the barrel in front of the sleeve, and a sight located adjacent the rear end of the latter.

2. A rifle comprising a barrel, a metal tube spaced from and surrounding the barrel and secured thereto at its rear end and forming with the barrel an annular intermediate free space extending substantially the length of the barrel, whereby when the rifle is supported for firing, the barrel will not be subjected to a radial pressure, a sight on the barrel in front of the tube, and a sight located adjacent the rear end of the barrel.

3. A rifle comprising a barrel tapered towards its muzzle and having a thickened rear portion, a metal tube spaced from and surrounding the barrel and having a uniform diameter throughout its length and fixed to the thickened rear portion of the barrel, said barrel and tube forming an annular intermediate free space extending substantially the length of the barrel, whereby when the rifle is supported for firing, the barrel will not be subjected to a radial pressure, a sight on the barrel in front of the tube, and a sight located adjacent the rear end of the latter.

In testimony that I claim the foregoing as my invention, I have signed my name.

JOHANN FUCHS.