

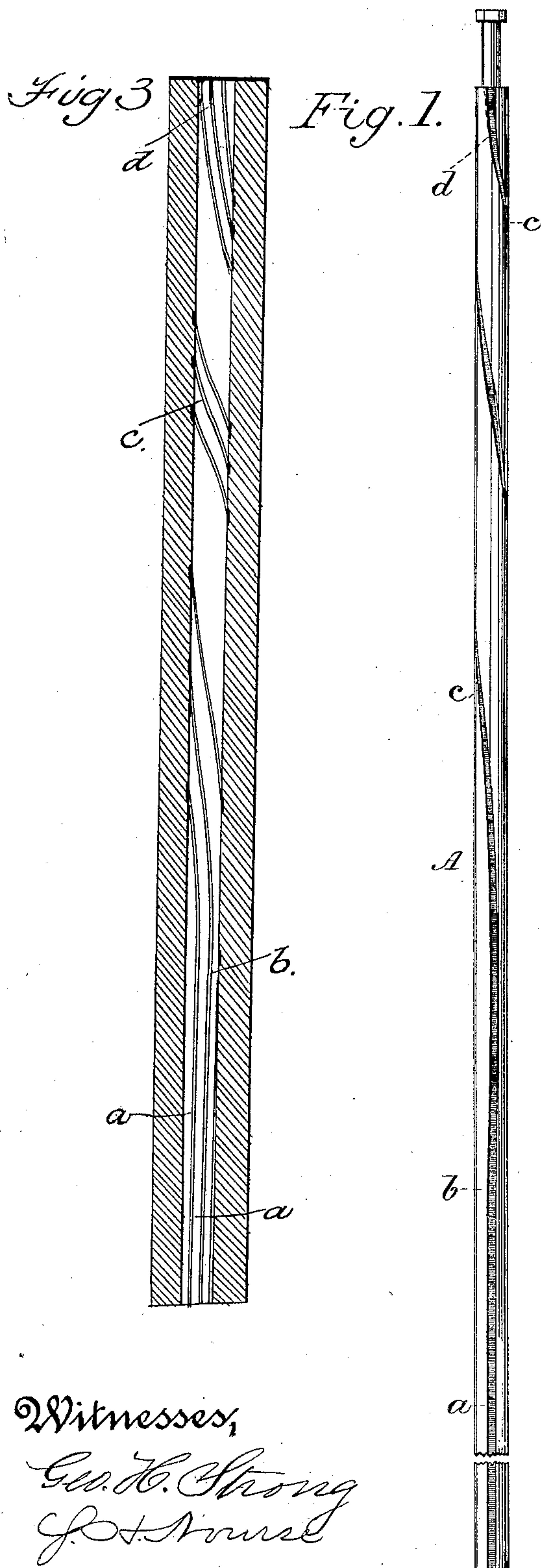
(No Model.)

A. SCHNEIDER.

RIFLING GUNS.

No. 300,515.

Patented June 17, 1884.



Witnesses,

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UNITED STATES PATENT OFFICE.

ALOIS SCHNEIDER, OF SAN FRANCISCO, CALIFORNIA.

RIFLING GUNS.

SPECIFICATION forming part of Letters Patent No. 300,515, dated June 17, 1884.

Application filed November 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALOIS SCHNEIDER, of the city and county of San Francisco, and State of California, have invented an Improvement in Rifling Guns; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the rifling of guns; and it consists of channels or grooves by which rotary motion is imparted to the ball, the first portions of which from the breech are nearly or quite parallel with the axis of the bore. The grooves then turn slightly to the right before commencing the twist to the left. This latter twist is an increasing or gain twist to a point within an inch or two from the muzzle or outer end, from which the twist is continued out with an even or regular turn.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of the guide by which a gun is rifled, showing the straight portion of the groove upon one side, and the twist or screw portion near the muzzle. Fig. 2 is a cross-section. Fig. 3 is a longitudinal section of a gun-barrel rifled.

It is usual in rifling guns to commence the twist of the rifling at the breech with a regular pitch, which continues through the length of the bore, or becomes what is known as a "gain-twist" or an increasing pitch. In either case this screw-like spiral presents considerable resistance, because the ball must be simultaneously started forward and also in rotation with its initial movement.

My invention can be illustrated by means of the guide or bar A—such as is ordinarily used in the work of rifling a gun-barrel—as well as by a sectional view of the barrel itself, as shown in Fig. 3. This guide has grooves formed in it to direct the tool or cutter from end to end of the barrel, thus forming the spiral or other grooves. As many grooves are made in the guide as there are grooves to be cut in the barrel; but in the drawings I have shown but two, to avoid confusion. In the present case the first portion, *a*, of the groove is made nearly or quite parallel with the axis of the bore of the gun, and extends about one-third of its length, more or less. From this point a slight curve to the right is made, as at *b*.

This may be from one-eighth to three-sixteenths of an inch out of the straight line; or in some cases I may make the whole length of the parts *a* and *b* of the groove to incline gradually to the right, so as to distribute the inclination over the whole distance. The groove then inclines to the left and passes around the guide with a gradually-increasing spiral, *c*, until the desired twist is attained at from one and a half to two inches from the front end. From this point the spiral is completed in a regular twist, *d*, of the same pitch with the latter portion of the increasing spiral *c*. By rifling a gun in this manner the first force of the exploding charge forces the bullet into the grooves of the rifling, and it is driven to the point where the reverse curve *b* commences without any spiral motion being imparted to it. In the reverse curve *b* it is turned slightly back, and then enters the increasing spiral *c*, where it is given its highest rotary velocity, finally passing through the remaining regular spiral *d* just before it emerges from the gun, its flight being steadied by this portion of the rifling. The propelling force of the powder is greatest when the ball reaches the spiral portion of the rifling, and it is impelled through this portion, receiving its rotary and projectile velocity within the last third or less of the entire length of the barrel.

It will be manifest that this principle of rifling can be applied to guns of any caliber, ordnance, &c., with equally good results.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The improvement in rifling guns, consisting in channeling the interior of the gun with grooves, the first portions of which nearest the breech are nearly or quite parallel with the axis of the bore, the second portions form a slight curve opposite to the final spiral, and the third portions form an increasing spiral to or near the muzzle of the gun, substantially as herein described.

In witness whereof I have hereunto set my hand.

ALOIS SCHNEIDER.

Witnesses:

S. H. NOURSE,
H. C. LEE.