(No Model.)

# G. V. FOSBERY.

## GUN BARREL.

No. 329,303. Patented Oct. 27, 1885.

Fig. 2.

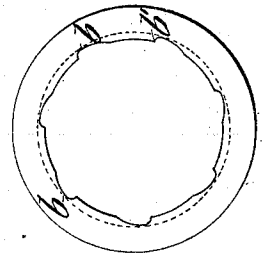
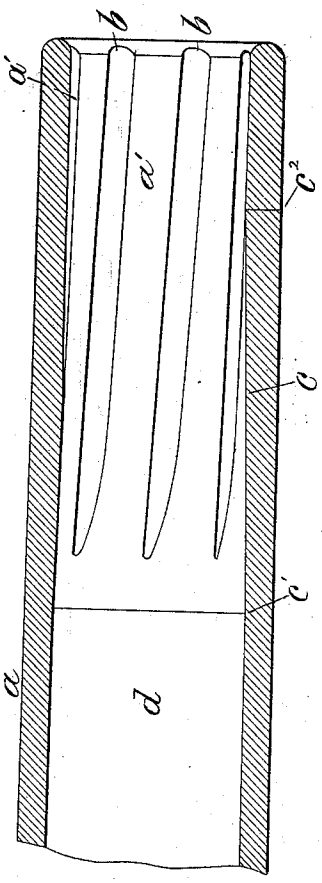



Fig. 1.




Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE V. FOSBERY, OF LIEGE, BELGIUM.

## GUN-BARREL.

SPECIFICATION forming part of Letters Patent No. 329,303, dated October 27, 1885.

Application filed August 18, 1885. Serial No. 174,723. (No model.) Patented in Belgium February 13, 1885, No. 67,870; in England June 20, 1885, No 7,568.

*To all whom it may concern:*

Be it known that I, GEORGE VINCENT FOSBERY, V. C., lieutenant-colonel, a subject of the Queen of Great Britain, residing at Liege, Belgium, have invented new and useful Improvements in Sporting-Guns, (for which I have obtained a patent in Belgium, No. 67,870, dated February 13, 1885, and for which I have applied for provisional protection in Great Britain, dated June 20, 1885, No. 7,568,) of which the following is a specification, reference being had to the accompanying drawings.

Sporting-guns for shooting small shot and also bullets are ordinarily provided with interchangeable barrels, one the usual shotgun-barrel and the other a rifle-barrel. Such guns are not only very expensive, but are inconvenient in use, as the barrels must be interchanged according to the use desired.

The object of my invention is to provide a shotgun-barrel which can be successfully and efficiently used with perfect accuracy in shooting small shot and also conical or similar bullets; and to such end the invention consists in a shotgun-barrel having its muzzle provided with a conical portion containing spiral or inclined grooves, which extend along and vanish at their inner ends within such conical portion in advance of the true cylindrical smooth bore of the barrel, such conical portion constituting what is known as a "choke-bore," whereby small shot can be fired with accuracy and conical or similar bullets can be shot and spun with success as regards distance and accuracy. The difference in caliber between the two parts of the barrel should, by preference, be about one millimeter, or one twenty-fifth ($\frac{1}{25}$) of an inch, and the choke or contracted part of the barrel should be about one inch long for a twelve-bore gun. The conical portion of the muzzle is provided with a number of grooves of any desired width. I have found it very advantageous to provide seven grooves, and to make these grooves narrower than the lands between them. The said grooves vanish at their inner ends in the conical portion of the muzzle in front or in advance of the smooth cylindrical part of the bore, and they are preferably made about from four-thousandths ($\frac{4}{1000}$) to six-thousandths ($\frac{6}{1000}$) of an inch in depth. By constructing the barrel in this manner a bullet which fits the cylinder part of the bore will receive a certain amount of compression when it reaches the rifled conical part of the muzzle. The said grooves are made either semicircular, square, or of other suitable shape in transverse section. By preference, however, they are rounded. Better results are, moreover, obtained by making them slightly deeper at their driving edge or side—that is to say, at the edge or side which imparts the rotatory impulse to the bullet—than at the other edge or side. They also increase in depth from the inner or rear end to the forward end of the muzzle.

In the accompanying drawings, Figure 1 is a longitudinal central section; and Fig. 2 is an end elevation showing part of a shotgun-barrel made in accordance with my present invention.

These figures are drawn to an enlarged scale to show the invention clearly.

*a* indicates the shotgun-barrel; *d*, the cylindrical smooth bore; *c*, the conical part of the muzzle which forms the choke or contracted part of the bore, and *b b* are the grooves, which increase in depth toward the driving edge or side *b'*. The conical portion *a* of the muzzle extends from the forward termination of the cylindrical smooth bore *d*, as at *c'*, to the line $c^2$, and in advance of this line the muzzle is preferably a true cylinder, as at *a'*. The spiral or inclined grooves *b* extend along the cylindrical part *a'*, and also along the conical portion *a* of the muzzle, the inner ends of all the grooves gradually vanishing within such conical portion in advance of the true cylindrical smooth bore *d* of the barrel, so that such inner terminations of the grooves present no obstructions or projections to interfere with successfully and accurately shooting small shot.

In using a shotgun having a barrel formed as above described for shooting bullets it is preferable to employ an elongated bullet having one or more annular grooves or channels in the cylindrical part thereof, which grooves or channels may, if desired, be filled with a lubricant. The diameter of the larger parts of this bullet should be equal or nearly equal to that of the cylindrical smooth bore *d* of the barrel.

A shotgun constructed according to my in-

vention has at sporting ranges the accuracy of a rifle of the same caliber. Hardened bullets and also explosive bullets may, with advantage, be employed in these guns.

A smooth-bore barrel has heretofore been provided with a rifled muzzle-section secured in position by a male and female screw connection, the smooth part of the bore being contracted immediately behind the inner ends of the grooves which form the lands of the rifled muzzle-section; but in such the inner ends of the lands formed by the grooves project inwardly beyond the plane of the smooth bore, and while such construction might be available in firing bullets, it would not be available for firing small shot, as is customary in shotguns, for the reason that the inwardly-projecting inner ends of the lands would materially interfere with the successful use of small shot. Besides this, the rifled section, as heretofore constructed, is a true cylinder interiorly, whereas in my invention the spiral grooves extend along the conical portion of the muzzle and vanish at their inner ends in such conical part in advance of the true cylindrical part of the bore, whereby the barrel is rendered available for firing and spinning conical bullets, while it can be used as a shotgun without materially interfering with the shot or destroying its accuracy when so used.

Having thus described my invention, what I claim is—

1. A shotgun-barrel having its muzzle provided with a conical portion constructed with spiral or inclined grooves which extend along such conical portion and vanish within the same at their inner ends in advance of the cylindrical smooth bore for rendering the barrel available for accurately shooting small shot and also conical or similar bullets, substantially as described.

2. A shotgun-barrel having its muzzle formed integral therewith, and provided with a cylindrical portion, $a'$, and a conical portion, $a$, containing spiral or inclined grooves $b$, which extend along the cylindrical and conical portions and vanish at their inner ends within such conical portion of the muzzle in advance of the cylindrical smooth bore $d$, substantially as described.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE V. FOSBERY.

Witnesses:

EMMELINE GEORGIANA FOSBERY,

R. S. MENZIES.