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(54) Rifled choke for whole-shot hunting firearms.

(57) The invention relates to a rifled choke consisting of a drilled sleeve mainly tapering in the shot ejection direction and which has multi-start rifling (4) inside in relation to the calibre to be used and features a variable spiraling angle toward the ejection outlet so as to enhance spin. The rear segment (1) has attachments (6,7,8) for fitting to the muzzle of the barrel to be used with the appropriate internal threading (8).

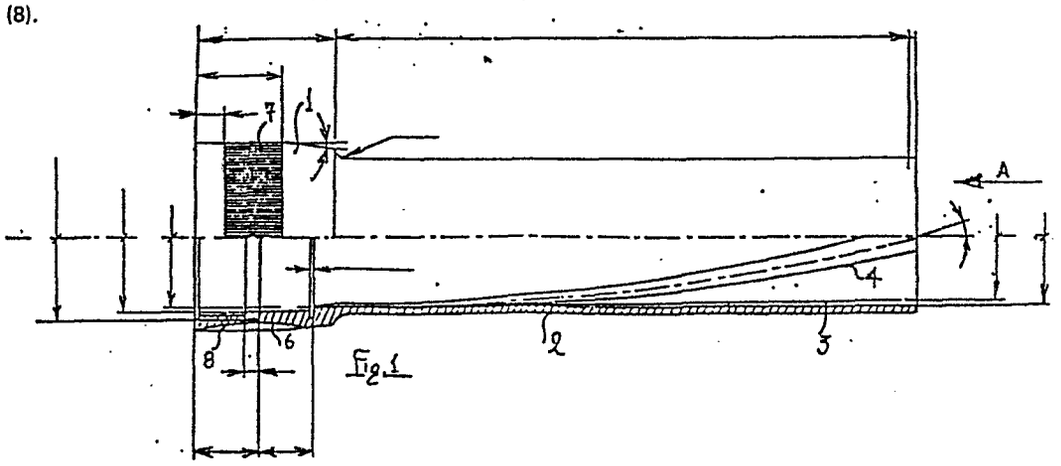

Fig. 1

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RIFLED CHOKE FOR WHOLE-SHOT HUNTING FIREARMS.

The invention relates to a so-called choke to be fitted to the muzzle of a conventional type hunting firearms so as to modify its ballistics. In the specific case of a shot-loading firearm, and more particularly for one used in wild-boar hunting, the rifling in the choke imposes a spin on the bullet so that its trajectory is maintained, a fact which is evidenced in an improved shot pattern as demonstrated by a series of tests using single-shot cartridges fired under identical conditions by the same firearm with and without the choke.

Ballistics studies have shown how barrel length, its tapering and its proper internal rifling can affect bullet trajectory, factors which have formed the basis of the development of firearms. Many hunting firearms are still made today with a smoothbore, and it is only by virtue of the invention of the choke that the hunter has been able to adjust as desired the performance of the firearm which can by said device be extended and its choke modified.

It was not until recently that the rifling has been

employed exclusively in the choke, leading to evident cost savings.

In this way, the choke acts as an extension as well as a tapering variator so as to impart a proper spin to the shot which turns on its own axis in the final segment of the bore.

This invention performs said functions by means of a hollow sleeve being threaded at the rear end to match the threading of the barrel, and having an initially cylindrical pattern and thickness slighly larger than the following tapered segment, i.e. tapered in the direction of ejection, which terminates in a final segment again with a cylindrical pattern. The intermediate tapered and final cylindrical segments have a number of internal grooves in relation to bore calibre. Said grooves have a uniform rectangular profile and act to vary the spiraling angle in the final segment so as to enhance the spin effect which results in enhanced spin of the shot.

These and other objects and advantages of the invention will become more apparent in the following description which shall be interpreted as illustrative and not in a limiting sense.

In Table 1, figures 1 and 2, are shown a cross section and front section of the invention related to a choke, and more specifically for a calibre 12.

The number 1 refers to the initial cylindrical segment, 2 to the intermediate tapered segment, 3 to the final cylindrical segment, 4 to the raised rifling, 5 to the rifling spaces which is this embodiment are six in number, 6 to the lock pin raiser, 7 to the grip knurling, and 8 to the internal thread matching, that of the bore which is not shown.

In essence, the manufacturing features, the dimensions, the materials, the form and the like pertaining to said invention can be varied without departing from the scope of this invention. Furthermore, all parts shall be considered replaceable by other, technically equivalent parts.

PATENT CLAIMS

1. Rifled choke for whole-shot hunting firearms, including a drilled sleeve of uniform diameter in the initial bore segment which then tapers in the middle segment and again becomes of uniform diameter in the final segment of the bore in the direction of projectile ejection.

2. Rifled choke for whole-shot hunting firearms, as set forth in claim 1 which further includes an initial cylindrical segment with a slightly greater thickness than that of the following segments and has an internal thread matching the external one of the barrel on which it is fitted.

3. Rifled choke for whole-shot hunting firearms, as set forth in the preceding claims which includes a central and end segments with spiral rifling.

4. Rifled choke for whole-shot hunting firearms, as set forth in the preceding claims which includes a rifling having a series of six 30°-grooves with a rectangular profile, specifically designed for calibre 12, which grooves can be reduced to four 45°-grooves for calibre 20.

5. Rifled choke for whole-shot hunting firearms,

as set forth in the preceding claims which includes a spiral groove pitch, estimated at approximately 14-20°, which is accentuated in the final segment and leads to enhanced spiraling so as to impose a greater spin on the projectile.

6. Rifled choke for whole-shot hunting firearms, as set forth in the preceding claims which includes a progressively raised rifling so that the solids and hollows initially coincide while the ridges and grooves are height differentiated in the final segment.

7. Rifled choke for whole-shot hunting firearms, as set forth in the preceding claims which includes the optimal dimensions measuring 19 mm for the cylindrical segment, 75 mm for the rifled tapered segment, 9 mm for the rifled cylindrical segmente and 2 mm for the final segment without rifling while the diameters of the tapering segment vary from 18.6 mm to 18.4 mm, thus matchin the rifling groove and ridge, respectively, in the model designed for a 12-calibre bore.

8. Rifled choke for whole-shot hunting firearms, as set forth in the preceding claims which includes a rifled segment of approximately 66 mm and a tepering, measured as the gap between diameters, of between 15.8 and 15.2 mm in the model designed for a 20-calibre bore.

9. Rifled choke for whole-shot hunting firearms, as set forth in the preceding claims which includes the phenomenon of whole shot trajectory maintenance, a fact which can also be demonstrated with multi-shot filled cartridges.

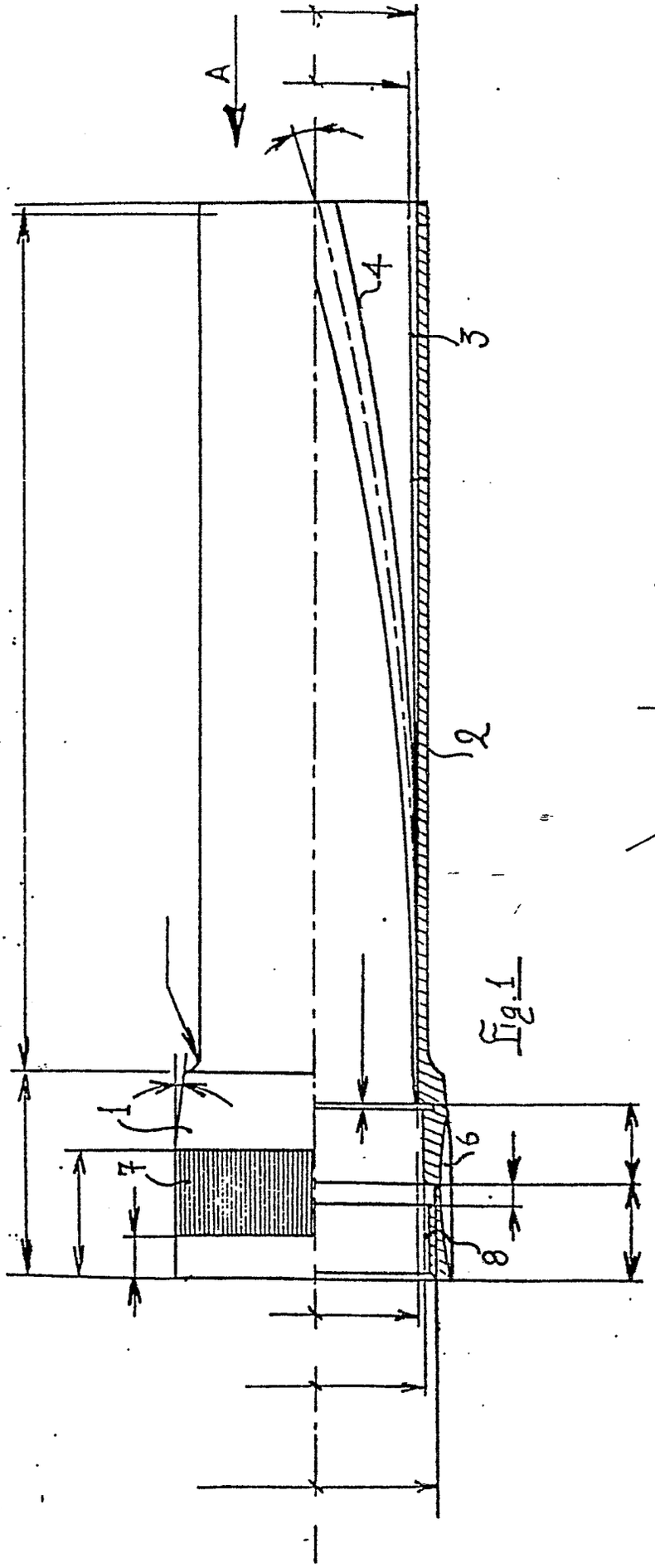

Fig.1

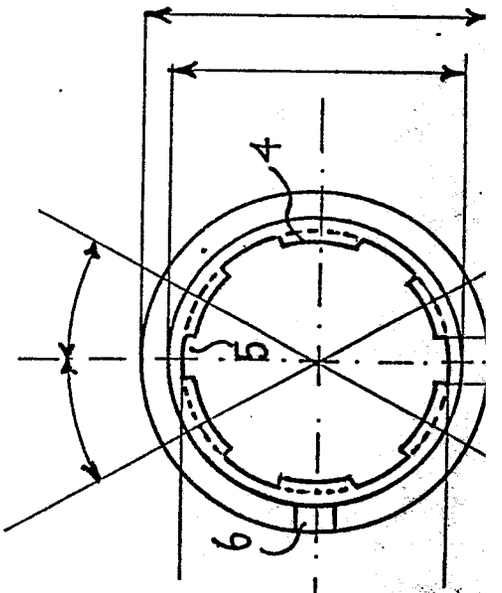

Fig.2

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EUROPEAN SEARCH REPORT

0199680

Application number

EP 86 83 0078

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int Cl 4)
Y	US-A-3 163 953 (BRIDGE) * Column 2, lines 15-62; figure 4 *	1-3,5, 9	F 41 C 21/18
Y	FR-A-2 310 545 (TORNAS) * Page 3, lines 21-36; page 4, lines 1-35; page 5, lines 9-15; page 6, lines 13-19; figures 1-4 *	1-3,5, 9	
A	US-A-3 367 055 (POWELL) * Column 5, lines 45-52; figure 4 *	1	
A	US-A-2 700 839 (FINLAY)		TECHNICAL FIELDS SEARCHED (Int Cl 4)
A	DE-A-2 723 813 (WALTHER)		F 41 C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26-06-1986	VAN DER PLAS J.M.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
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P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

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