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PATENT.

XI. - Gun making and artillery.

1. - Guns

Number 493.462

Silencer device, particularly applicable to firearms.

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[Patent deferred in accordance with article 11 § 7 of the law dated July 5, 1844, as amended by the law dated April 7, 1902].

The present invention concerns a silencer device, particularly applicable to firearms, consisting of a sleeve mounted at the end of the barrel of the weapon and enclosing two coils, nested one inside the other and having turns oriented in different directions, the projectile passing through the axial channel in the inner coil, The projectile passes through the axial channel in the inner coil, while the gases leaving the barrel split into two parts, one directed towards the inner periphery of the sleeve in the outer coil, the other passing through the axial channel in the inner coil, these two gas flows counteracting each other and gradually losing velocity until they leave the device.

The two coils, consisting of a helically wound metal strip, are braced by another metal strip, wound in the form of a cylinder between the coils' turns, preferably at mid-width, this reinforcing strip having perforations, holes or notches of any suitable shape to establish communication between the coils.

Several groups of these two coils can be assembled one after the other, changing the orientation of their turns and, consequently, the

direction of the gas flows flowing through them.

The attached drawing shows, by way of example, parts in axial vertical section, parts in external view with tearing, a mean of achieving of the invention.

At or near the end of the gun barrel *a*, a cylindrical sleeve *b* is fastened, by screwing or any other suitable means, inside which two coils are nested, one external *c*, the other internal *d*, whose turns are oriented in different directions; These coils are supported by a part *e*, preferably domed in the shape of a cap, held at a certain distance from the end of the gun barrel *a* by a spacer sleeve *f*, housed in the front end of the sleeve *b*. This cap *e* has a hole *e1* at its center, slightly larger in diameter than the projectile, which passes through an axial channel left free in the inner coil *d*; some of the blast gases follow the projectile and enter this inner coil, while most of the gases are diverted by the cap towards the periphery of the sleeve *b* and enter the outer coil *c* through openings *e2* beveled in the cap *e* following the tilt of the turns of this coil.

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Each coil *c* and *d* consists of a thin, helically wound metal sheet; the turns of these two coils are braced (to prevent them being crushed during the explosion by the sudden impact of the gases) by a metal sheet, *c1* and *d1* respectively, wound between these turns, preferably halfway along the width of the sheet used to form the coils; each coil is thus divided into two helical ducts: the outer coil *c*, into a duct between the coils of the coil, the inner wall of the sleeve *b* and the outer wall of the strip *c1*, and into a duct between the coils, the inner wall of the strip *c1* and the inner coil *d*; the latter is likewise divided into a helical duct between its coils, the outer coil and the outer wall of the strip *d1*, and a helical duct between the coils, the inner wall of the strip *d1*, and the axial channel for the passage of the projectile. These strips *c1* and *d1* have perforations, holes or notches of any desired shape, respectively *c2* and *d2*, making the two helical parts or ducts of each coil communicate with each other, as well as the inner coil *d* with the outer coil *c*. •

The gases flowing through these two coils in different directions (as indicated by the arrows in the drawing) counteract each other, so that their progress is delayed and they leave the sleeve at the end of the two coils at a much reduced velocity, with a notable reduction in noise. Preferably, the coils of the inner coil, which has a significantly smaller diameter than the outer coil, so as to maintain as far as possible equal paths for the gas flows in these two coils; alternatively, the coils of the inner coil can be moved closer together.

To increase efficiency, several of these groups of two coils can be mounted one after the other in the same outer sleeve, for example two groups as shown in the drawing; in this case, the two outer coils *c* have coils oriented in opposite directions, as do the two inner coils *d*, so that the gas flows leaving the first group have the same flow direction

of two coils *c*, *d* at an already reduced speed, are forced to change direction in both the outer and inner coils.

A chamber *g* is preferably left between the two groups of coils, with the two groups supported one on top of the other by the edges of the coil-reinforcing strips *c1* and *d1*, cut in a plane perpendicular to the gun barrel axis.

Alternatively, the strips *c1* and *d1* can be replaced by combs, placed between the coils to brace them and reinforce the coils; These combs will have teeth pointing outwards for the inner coil (so as to divert the gas flows flowing through the coils of the inner coil into the outer coil), while the teeth of the combs bracing the outer coil will be directed inwards so as to bring the gas flows from this coil back into the inner coil and thus obtain more effective neutralization of these two flows.

The invention has been described above more specifically in its application to firearms, but it goes without saying that this silencer device can also be used for other purposes, for example as a silencer for internal combustion engines.

SUMMARY.

The object of the invention is:

1) A silencer device, particularly applicable to firearms, consisting of a sleeve mounted at the end of the gun barrel and enclosing two coils, nested one inside the other and having turns oriented in different directions, the projectile passing through the axial channel provided in the inner coil, while the gases, at the barrel outlet, are divided into two parts, one directed towards the inner periphery of the sleeve in the outer coil, the other passing through the axial channel in the inner coil, these two gas flows counteracting each other and gradually losing velocity until they exit the device;

2) An achievement in which the two coils, consisting of a helically wound metal strip, are braced

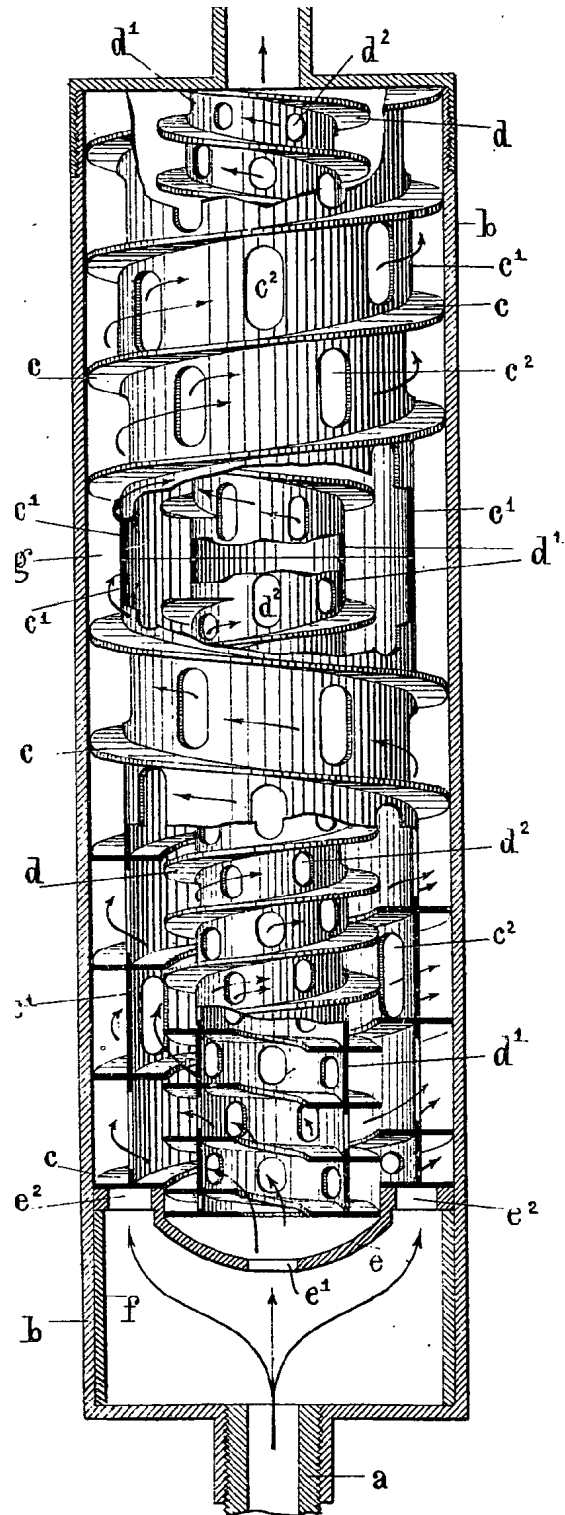
by another metal strip, wound in the form of a cylinder between the turns of the coils, preferably at mid-width thereof, this reinforcing strip comprising perforations, holes or notches of any shape suitable for establishing communication between the coils.

3) The arrangement, in succession in the same sleeve,

changing the orientation of their turns from one group to the next, and consequently the direction of the gas flows flowing through them.

Jivko BARLOWATZ.

By proxy:
Dony and Lejeune.



Certificate of Accuracy

This is to certify that the attached translation, from French to English, is an accurate translation of the document:

18. FR493462A_Barlowatz & 17. FR492535A_Rossignol

I, Freddie Colsoul, declare under penalty of perjury that I understand the French language and the English language and that, to the best of my knowledge and belief, the statements in the English language in the attached translation have the same meanings as the French statements in the language in the original document, a copy of which I have examined.

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