114,362

PATENT SPECIFICATION

Application Date, May 25, 1917. No. 7541/17.
Complete Left, Nov. 14, 1917.
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PROVISIONAL SPECIFICATION.

Improvements in and relating to Projectiles for use with Toy Guns and the like.

We, BRITAINS LIMITED and FREDERICK BRITAIN, the latter a subject of the King of Great Britain and Ireland, and both of 28, Lambton Road, Hornsey Rise, in the County of Middlesex, Manufacturers and Patentees, do hereby declare the nature of this invention to be as follows :—

This invention relates to projectiles for use with toy guns and the like and the primary object is to provide means contained within or forming part of the projectile itself by which the same may be given the desirable twist or spin about its longitudinal axis to enable the projectile to maintain the proper position during flight, such twist or spin being in guns hitherto produced by the rifling of the barrel.

In the Specification of Application No. 105,728 applied for by Britains Limited and William Britain there is disclosed a projectile composed of two members, one adapted to be retained within the gun and the other to be projected therefrom on firing, with a firing spring enclosed by said members and means for normally retaining same in connected condition and releasing the forward member for discharge.

Whilst the present invention is particularly applicable to such a two-part projectile it is not essentially limited to use therewith but may be applied to conceivable structures wherein the stationary part of the projectile of the aforesaid specification is included in or forms part of the gun itself or the firing mechanism thereof, and having this broader application in view the invention consists in providing the forward or releasable member, which in the case last mentioned may be regarded as the projectile proper, with a number of ratchet teeth or equivalents preferably positioned within the nose thereof and adapted to be engaged by the end of the firing or projecting spring when assembling the two members, during which operation one of the members is given an axial rotation in relation to the other member for the purpose of producing torsion in the spring, the end of same being held in engagement with one of the aforesaid ratchet teeth. The act of assembling the two projectile members will thus both tension and torsion the spring so that on release of the connecting means, (which may be a rod as described in the specification above mentioned or any other appropriate or desired device) the forward member or projectile will be discharged and at the same time given axial twist or spin due to the relaxation of the torsion of the spring.

The projectile members may be provided with marks or graduations to indicate the desired degree of relative axial motion to be given them in the setting or

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assembling operation and also with co-operating projections and notches or other registering means to prevent relative turning after assemblage.

For use in said assembling operation we may use a device comprising a base or plate having thereon a guide or socket member for receiving the end of the stationary projectile member, this base having upstanding ribs, projections or the like between which the end of the connecting element or means is held to prevent axial rotation thereof and thus permit the projectile members to be readily interconnected.

Dated this 25th day of May, 1917.

For the Applicants,

HERBERT HADDAN & Co.,
Chartered Patent Agents,
31 & 32, Bedford Street, Strand, W.C. 2, London.

COMPLETE SPECIFICATION.

Improvements in and relating to Projectiles for use with Toy Guns and the like.

We, BRITAINS LIMITED and FREDERICK BRITAIN, the latter a subject of the King of Great Britain and Ireland, and both of 28, Lambton Road, Hornsey Rise, in the County of Middlesex, Manufacturers and Patentees, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

This invention relates to projectiles for use with toy guns and the like, and the primary object is to provide means contained within or forming part of the projectile itself by which the same may be given the desirable twist or spin about its longitudinal axis to enable the projectile to maintain the proper position during flight, such twist or spin being in guns hitherto produced by the rifling of the barrel.

In the Specification of Application No. 105,728 applied for by Britains Limited and William Britain there is disclosed a shell composed of two members, one, the holding member, being adapted to be retained within the gun and the other or projectile proper to be projected therefrom on firing, with a firing spring enclosed by said members and means for normally retaining same in connected condition and releasing the forward member for discharge.

Whilst the present invention is particularly applicable to a shell such as just described it is not essentially limited to use therewith but may be applied to conceivable structures wherein the holding member is included in or forms part of the gun itself or the firing mechanism thereof, and having this broader application in view the invention consists in providing the releasable member or projectile proper, with one or more ratchet teeth or equivalents preferably positioned within the nose thereof and adapted to be engaged by the end of the firing or propelling spring when setting the said releasable member or assembling the two members, during which operation one of the members is given an axial rotation in relation to the other member for the purpose of producing torsion in the spring, the end of same being held in engagement with one of the aforesaid ratchet teeth. The act of setting the projectile will thus both compress and torsion the spring so that on release of the connecting means, (which may be a rod as described in the specification above mentioned or any other appropriate or desired device) the forward member or projectile will be discharged and at the same time given axial twist or spin due to the relaxation of the torsion of the spring.

An embodiment of the invention is represented in the accompanying drawings wherein :—

Figure 1 shows a longitudinal section of a projectile and its holding member similar to that described in the prior specification above referred to with the parts thereof separated.

Figure 2 is a similar view to Fig. 1 with the said parts connected and showing also a device for use in assisting the assembling of said parts.

Figures 3 and 4 are respectively a plan view and section of said assembling device.

To refer more particularly to Figs. 1 and 2 the base or holding member *a* of the shell is provided interiorly with a forwardly extending central boss *b* leaving a space *c* around same and its wall for reception of one end of a coiled spring *d*, the space being shown as tapered so that the spring is retained therein. The boss itself is bored along its centre for reception of a rod *e* the rear bent end e^1 of which is housed within a recess *f*. The nose member *g* of the shell, or the projectile proper, fits loosely into the end of the forward end of the base member *a* and when the members are assembled is prevented from turning relatively thereto as by means of notches on one member engaged by lugs or projections on the other member or by other registering means. The said nose member is hollowed as at *h* to receive the other part of the coiled spring *d* and the extreme forward end of this spring is caused to engage one of a series of ratchet teeth *i* provided near the forward end of the nose member so that in assembling the two members by giving an axial rotation to one of said members in relation to the other and forcing the two members together both torsion and compression of the spring will be effected.

The two shell members are normally held assembled by the aforesaid rod *e* which extends through both, and whose forward end passes through a slot *j* in the nose of the member *g* and is bent to engage the edge of said slot the spring being compressed and torsioned between the two members and these held together by the rod.

The nose member *g* or projectile proper is fired as by means described in the aforesaid specification or by any other method which will release it from the holding effect of the rod *e* and it will be readily seen that on this release the said member will be both projected and given an axial spin or twist by the relaxation of the spring by the expansion and uncoiling of same respectively.

The members *a* and *g* may be provided with marks or graduations to indicate the desired degree of relative axial motion to be given them in the setting or assembling operation.

For use in said assembling operation we may use a device comprising a base or plate *l* having thereon a guide or socket member *m* for receiving the end of the stationary holding member *a* this base having upstanding ribs, projections or the like *n* between which the rear bent end e^1 of the rod *e* or other connecting element used is held to prevent axial rotation thereof and thus permit the members *a* and *g* to be readily assembled.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is :—

1. A projectile for use with toy guns comprising a member propelled by a spring element, characterized by said member being provided with means for engaging the propelling element whereby when setting said member the propelling element is prepared to impart to said member, on firing, spin or twist about its longitudinal axis.

2. A projectile according to Claim 1 wherein the propelled member is provided with one or more ratchet teeth with which the end of the propelling spring is held in engagement during the setting operation.

3. A device for use in setting a projectile having the propelled member according to Claims 1 and 2 comprising a base or plate provided with a socket to receive a stationary holding member, said base having means for retaining against axial rotation a part which holds the projectile normally secured to said stationary holding member.

Dated this 14th day of November, 1917.

For the Applicants,

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Fig. 1.

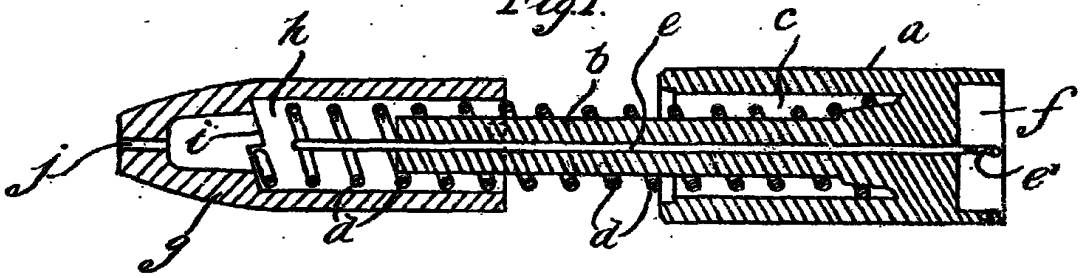


Fig. 2.

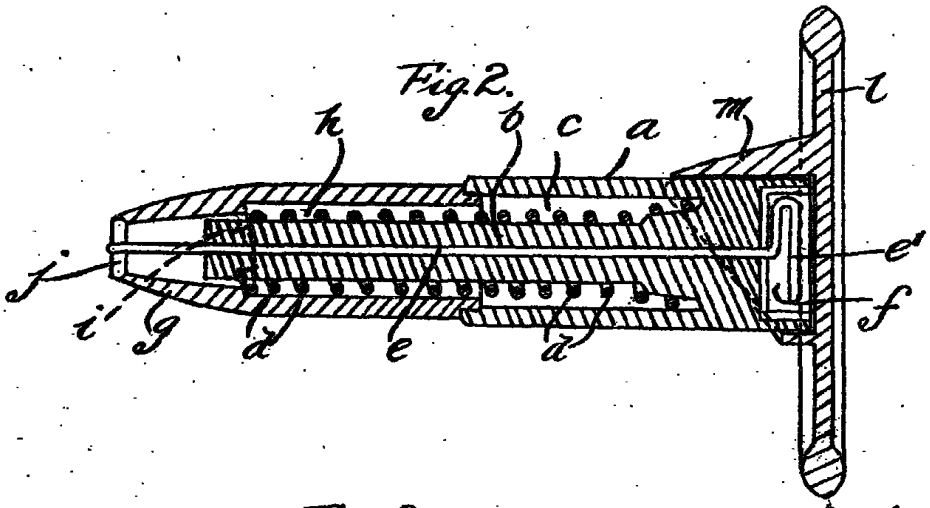


Fig. 3.

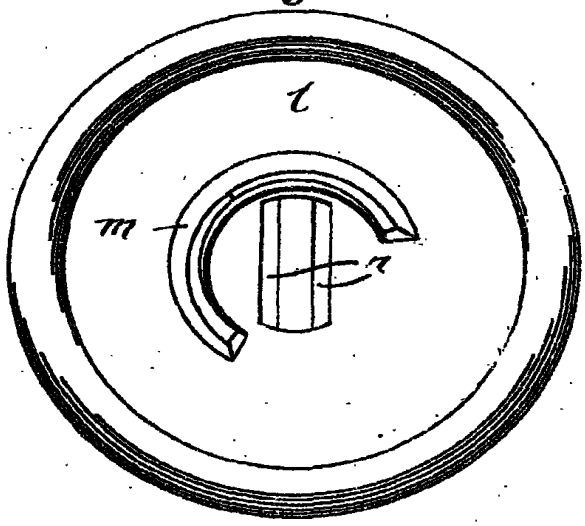
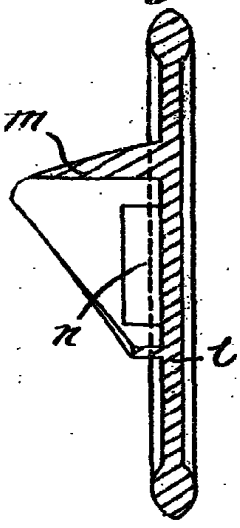


Fig. 4.



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