# United States Patent [19]

**Henry**

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[54] **TUBULAR SHAPED PROJECTILE FOR SPORTING GAMES**


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[52] **U.S. Cl.** ..... **273/106 R,** 273/DIG. 6

[51] **Int. Cl.** ..... **A63b 65/00**

[58] **Field of Search** ..... 273/106 R, 106 B, 84, 95 F, 273/128 R



[56] **References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 1,935,370 | 11/1933 | Nekuda | 273/95 F |
| 2,121,989 | 6/1938 | Schnase et al. | 273/84 X |
| 2,377,498 | 6/1945 | Jacke | 273/106 R |
| 2,640,699 | 6/1953 | Garbo | 273/128 R UX |
| 2,993,696 | 7/1961 | Demaline | 273/95 F |
| 3,179,412 | 4/1965 | Niederberger | 273/106 R X |
| 3,649,017 | 3/1972 | Kirkpatrick | 273/106 R |

FOREIGN PATENTS OR APPLICATIONS

| | | | |
|---|---|---|---|
| 375,413 | 6/1932 | Great Britain | 273/95 F |



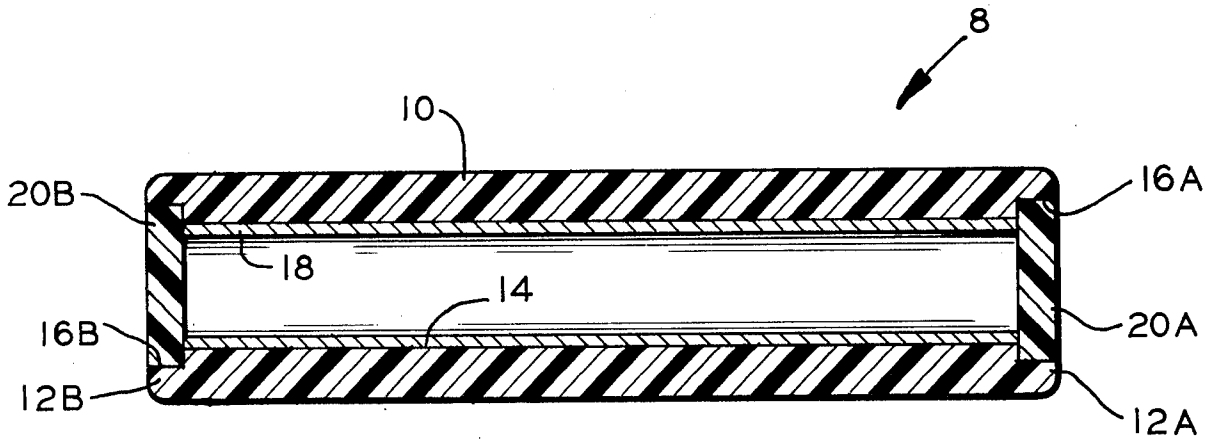
*Primary Examiner*—Paul E. Shapiro



[57] **ABSTRACT**

A longitudinally oriented and cylindrically shaped tubular member used primarily to serve as the intended projectile to be struck with a club or other similar objects as one step in the play of a sporting game, said tubular member being comprised of a resilient material such as Nylon, and having a cylindrically shaped cavity throughout its entire length, and wherein said cavity may be lined with a hollow steel sleeve inserted within the cavity, which cavity member is open at each respective end and is so adapted to receive a circular end plug to seal the cavity on each end.


**2 Claims, 3 Drawing Figures**



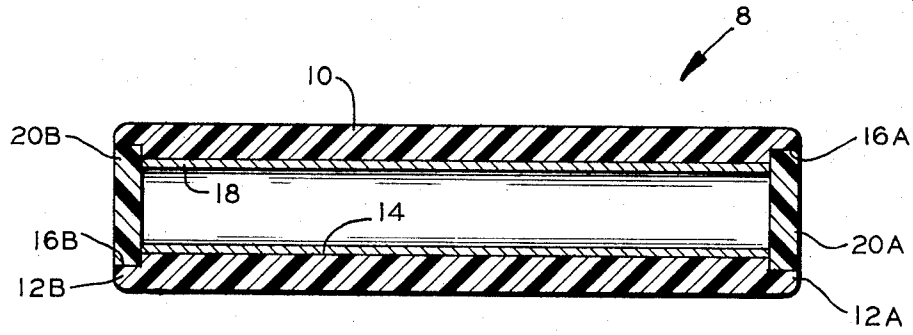



FIG. 1

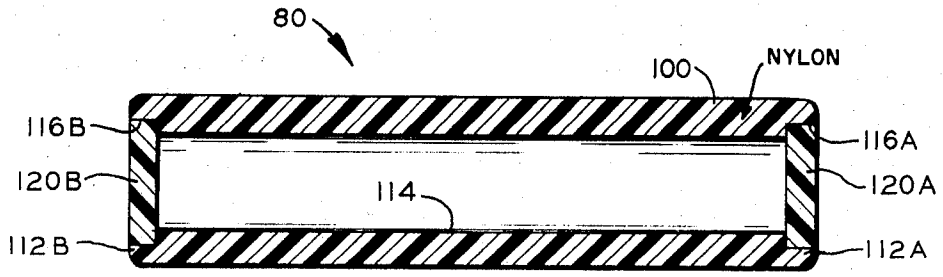



FIG. 2

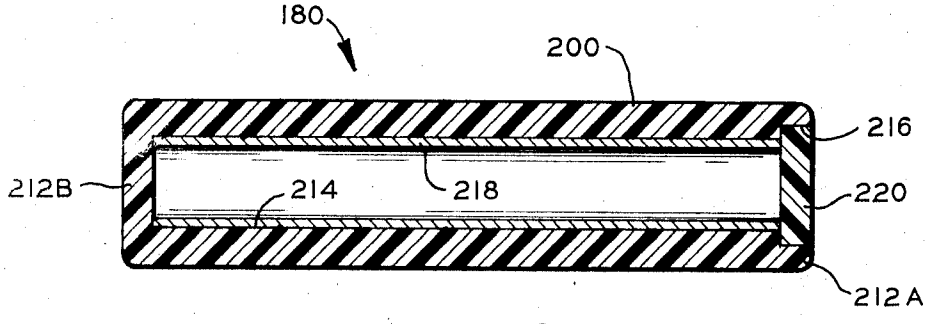



FIG. 3

# TUBULAR SHAPED PROJECTILE FOR SPORTING GAMES

## BACKGROUND OF THE INVENTION

Projectiles of various sizes and shapes are used frequently in the prior art of sporting games. One of the most common shapes used is a round projectile such as a baseball. Certain games, however, used an elongated or cylindrically shaped projectile to be propelled towards target zones upon the impact of a club member. One such type of projectile is used in the game described in the U.S. Pat. No. 2,993,696 (Demaline). It is the type of projectile shown in the Demaline patent to which this invention is directed as an improvement feature. One disadvantage of the usual cylindrical projectile is the lack of durability. This problem is readily apparent because frequent striking of the projectile by clubs of hardened materials. On the one hand, the projectile must be sufficiently hard and durable to withstand repeated strikings. On the other hand, the projectile must be sufficiently resilient and lightweight in order to serve as an optimal projectile. If, for instance, the composition of the projectile is of a material of high density, it will be too heavy for ideal propulsion upon impact by the club. Consequently, one can see the need for some durable but lightweight construction for a projectile of the type described herein. It is to this problem that this invention is directed, and the objects of this invention are construed accordingly, as follows:

It is thus an object of this invention to provide an improved projectile for sporting games of the type using an elongated projectile;

It is another object of this invention to provide a durable projectile for a sporting game;

Other and further objects of this invention will become manifest upon a reading of the description in conjunction with the following drawings:

## DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view in section of the bar construction, showing the preferred embodiment of the subject invention;

FIG. 2 is a side elevational view of the projectile showing an alternate embodiment for the subject invention.

FIG. 3 is a side elevational view of the projectile showing another alternate embodiment of the subject invention.

## DESCRIPTION OF THE GENERAL EMBODIMENT

The invention is a unique tubular construction for a projectile for sporting games which is comprised mainly of a cylindrically shaped and longitudinally extending tubular member, which is in turn composed of a durable resilient material such as nylon or hard rubber. The tubular member has a longitudinally extending inner cavity of equal diameter throughout its entire length and is open at each end. The central cavity has a central longitudinally extending axis which is congruent with the central longitudinal axis of the tubular member itself. As a result of this latter axial relationship with the tubular member this tubular member and the central cavity are symmetrical relative to one another. Inserted in the cavity of the tubular member is a metallic tubular sleeve which serves as a liner and strengthening member of the overall tubular projectile. This tubular sleeve has an outer diameter equal to the inner diameter of the central cavity of the tubular member, and as a consequence the sleeve fits snugly within the cavity as a support-member. On each end of the tubular member where the cavity opens to the outside there is a plug member affixed at the end of such cavity to seal the inner cavity.



Referring now to the drawings, and particularly FIG. **1**, in which a preferred embodiment is shown, a projectile **8** is shown. The basic member of projectile **8** is an elongated cylindrical tubular member **10**, as shown. This tubular member **10** is preferably constructed of a nylon material or similar hard rubber material so as to impart both a resiliency and durability to the projectile. Tubular member **10** has ends **12A** and **12B** respectively, as shown in FIG. **1**. Additionally tubular member **10** has a longitudinally extending inner central cavity **14**, of equal diameter throughout the entire length which cavity extends completely through tubular member **10** from end **12A** and **12B**. The central cavity **14** is equal diameter throughout the tubular member **10** and has a central longitudinal axis which is congruent with the central longitudinal axis of the tubular member **10**. Therefore, the tubular member **10** with its central cavity **14** is symmetrical throughout its length. This cavity **14** is enlarged at the respective ends thereof adjacent to ends **12A** and **12B** of tubular member **10**. This enlarged diameter areas **16A** and **16B** at such respective ends serves to receive sealing means, discussed below. Inserted in the cavity **14** is a metallic sleeve member **18** of hollow construction. Sleeve **18** has a diameter equal to the inner diameter of cavity **14** so that when it is inserted in place such sleeve fits tightly into the cavity. The sleeve **18** thus serves as a skeletal supporting member to impart strength to the tubular member **10** comprising the main element of the projectile **8**.

Affixed into the enlarged diameter areas **16A** and **16B** of cavity **14** are circular end plugs **20A** and **20B**. These end plugs have a diameter equal to the diameter of areas **20A** and **20B** respectively and thus when affixed into such areas as shown in FIG. **1**, serve to seal the cavity area **14** from outside dust or other foreign particles.

The projectile **8** thusly constructed is a durable unit, yet light enough to be able to fly a substantial distance upon impact. In FIGS. **2** and **3** are shown alternate embodiments in which the projectile is constructed in a variant form of that shown in FIG. **1**. These will be described below.

Referring to FIG. **2**, a projectile **80** is shown. Projectile **80** is comprised of a tubular member **100** which has ends **112A** and **112B**, as shown. Furthermore, tubular member **100** has a central cavity **114** which is similarly disposed as the central cavity **14** in tubular member **10**, as shown in FIG. **1**. In all respects, therefore, tubular member **100** is similar in constructional features to the tubular member **10**, as shown in FIG. **1**. There are enlarged diameter areas **116A** and **116B** at the ends of **112A** and **112B** of tubular member **100** which are adapted to receive circular end plugs **120A** and **120B** for sealing the cavity **114**. In the embodiment shown in FIG. **2**, there is no sleeve inserted within the cavity **114**.

In FIG. **3**, a third embodiment of the subject invention is shown. Specifically, a projectile **180** is shown being comprised of a base tubular member **200** having ends **212A** and **212B**. Tubular member **200** is cylindrical in shape and has a cylindrical cavity **214** disposed therethrough, except that in the embodiment shown in

FIG. 3, the cavity 214 is enclosed at the end 212B, thus, the only opening of the cavity is at end 212A on tubular member 212B. An enlarged diameter area 216 is machined in cavity 214 near end 212A, as shown. Inserted within the cylindrical cavity is a tubular sleeve member 218, which is of similar construction and function to tubular sleeve member as shown in FIG. 1. A circular end plug 220 is inserted into the enlarged cavity area 216 for sealing purposes.

The inventive concept for the projectiles as described above yeilds a tubular projectile which is both durable and resilient. The resultant resiliency provides a better projectile for flight path purposes, making the game more enjoyable, while the durability provides a more economical feature. The foregoing descriptions are of specific embodiments and are for description purposes only and not intended to limit the scope of the following claims.

What is claimed is:

1. A projectile for sporting games comprising:

a. A cylindrically shaped tubular member of nylon composition having a cylindrically shaped cavity within said tubular member;

b. A hollow metallic sleeve member inserted in said cavity as a support member; said metallic sleeve having a diameter equal to the diameter of the cavity in said tubular member;

c. Means for sealing said cavity at each end of the tubular member.

2. A projectile as described in claim 1 in which the sealing means on each end are circular plugs.

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