M. L. WOOD.

EXPANDING BULLET.

APPLICATION FILED NOV. 19, 1914.

1,134,797.

Patented Apr. 6, 1915.

2 SHEETS—SHEET 1.

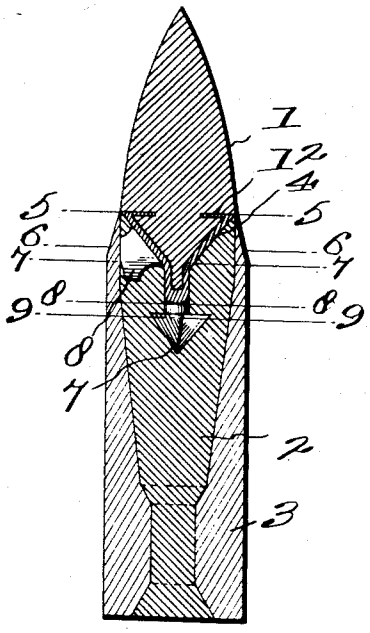

Fig. 1.

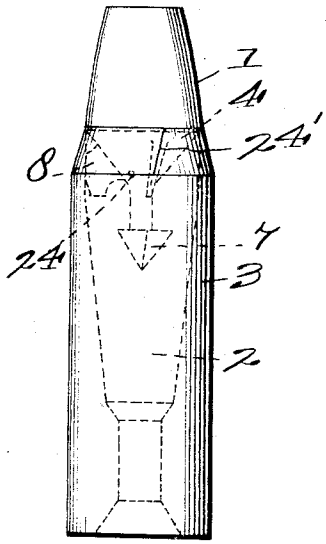

Fig. 2.

Fig. 3.

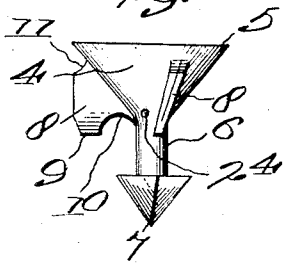

Fig. 4.

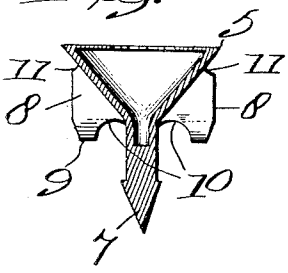

Fig. 5.

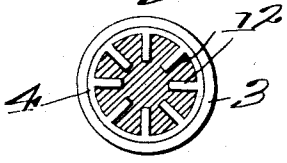

Fig. 6.

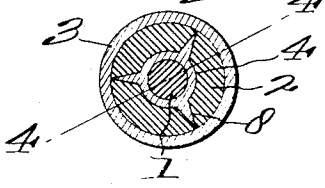

Fig. 7.

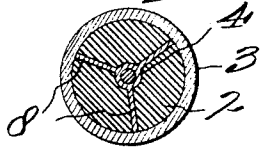

Fig. 8.

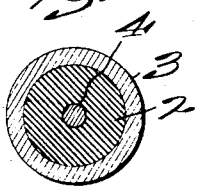

Fig. 10.

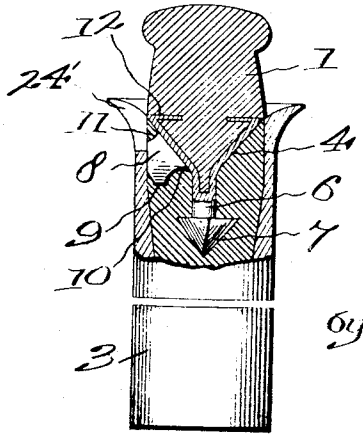

Fig. 9.

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2 SHEETS—SHEET 2.

Fig. 11.

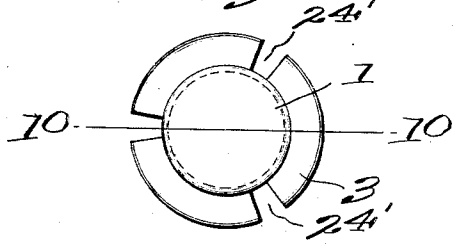


Fig. 14.

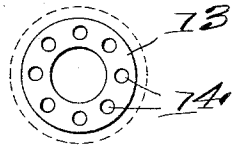


Fig. 12.

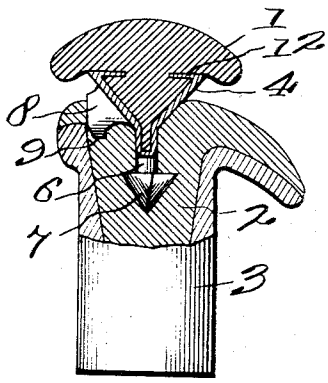


Fig. 13.

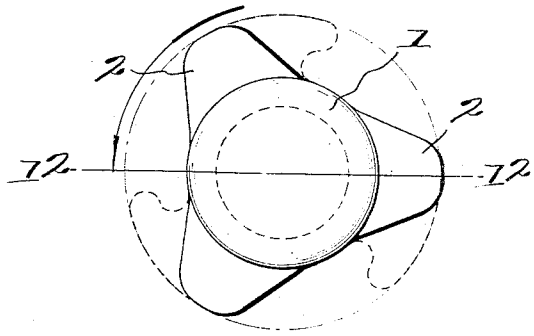


Fig. 18.

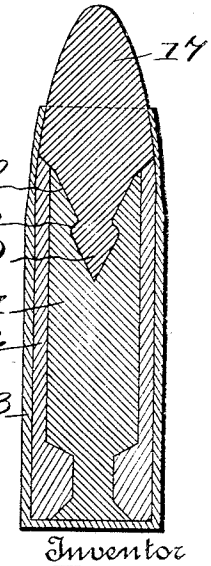


Fig. 16.

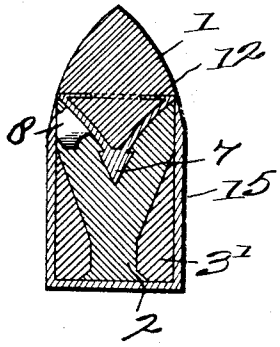


Fig. 15.

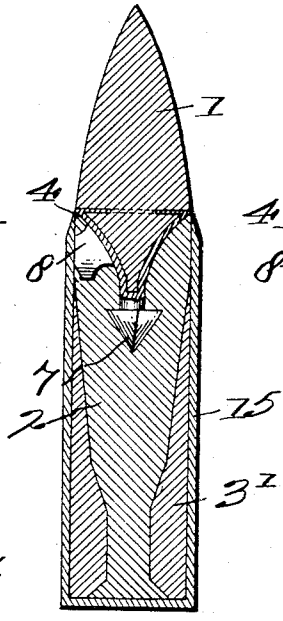
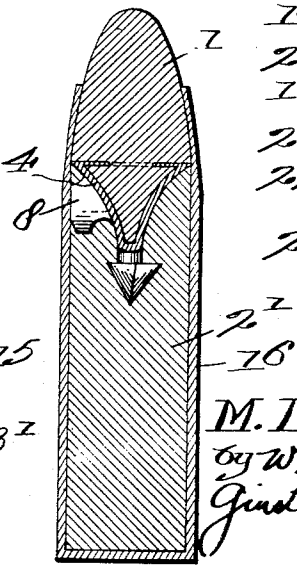


Fig. 17.



Witnesses
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UNITED STATES PATENT OFFICE.

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EXPANDING BULLET.

1,134,797. Specification of Letters Patent. Patented Apr. 6, 1915.

Application filed November 19, 1914. Serial No. 873,028.

To all whom it may concern:

Be it known that I, MOSES L. WOOD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Expanding Bullets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in expanding bullets, and consists more particularly in improved expanding bullets for use in hunting large and dangerous game that can be employed in the standard modern rifles to give the same trajectories and ranges with the same sights as the present approved types of bullets.

It is well known that the ordinary bullets used in modern rifles bore but a small hole in the game, with consequent small wounding effect, so that the game is thereby not sufficiently incapacitated to prevent it from escaping.

The present invention aims to provide a bullet which will expand upon encountering the skin of the animal, and which will continue to progressively expand upon penetrating the soft tissues and bone to thereby destroy a large area of the latter, in order to prevent the exercise of the limb in effecting escape.

A further object of the present invention resides in providing a bullet of the above character which will be constructed to expand to a maximum and inflict a severe wound calculated to have practically immediate stopping effect on the victim.

The invention also contemplates the provision of an expanding bullet which will be of few and simple parts, economical of manufacture and readily assembled; and the invention is susceptible of a variety of modifications, several embodiments of which are illustrated and hereinafter described and claimed.

With these and other objects in view the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

In the accompanying drawings forming a part of this application, and in which similar reference symbols indicate corresponding parts in the several views: Figure 1 is a longitudinal central sectional view of one form of an expanding bullet constructed in accordance with the present invention. Fig. 2 is an elevational view of the same. Fig. 3 is a detail elevational view of a form of expanding core employed in conjunction with the present invention. Fig. 4 is a longitudinal central sectional view of the same. Fig. 5 is a cross sectional view taken on the line 5—5 of Fig. 1. Fig. 6 is a cross sectional view of the expanding bullet taken on the line 6—6 of Fig. 1. Fig. 7 is a cross sectional view of the same taken on the line 7—7 of Fig. 1. Fig. 8 is a cross sectional view taken on the line 8—8 of Fig. 1. Fig. 9 is a similar view taken on the line 9—9 of Fig. 1. Fig. 10 is an elevational view, partly in section, of the improved bullet shown partly expanded. Fig. 11 is a top plan view of the partly expanded bullet as illustrated in Fig. 10. Fig. 12 is an elevational view of the bullet illustrating substantially the final expanded condition of the same. Fig. 13 is a top plan view of the expanded bullet as shown in Fig. 12. Fig. 14 is a top plan view of a slightly modified form of expanding core. Fig. 15 is a longitudinal central sectional view of an expanding bullet made in accordance with a slightly different design. Fig. 16 is a longitudinal central sectional view of a revolver bullet constructed in accordance with the present invention. Fig. 17 is a longitudinal central sectional view of another modified form of expanding bullet; and Fig. 18 is a similar view of a still further modified form of expanding bullet.

Referring more particularly to the drawings, 1 designates the head of the improved bullet which may be constructed sharp-pointed, as illustrated in Figs. 1 and 15, round-pointed, as illustrated in Figs. 17 and 18, or flat, as disclosed in Fig. 2. The head 1 of the bullet may be constructed of any suitable material, preferably lead or lead alloy, possessed of the property of expanding upon contact and penetration, to the end of checking the speed of the bullet to permit expansion of the body, as hereinafter more fully described.

It will be understood that the head 1 may be formed of a composition consisting of a relatively hard base combined with a cast lead point and may be made to conform to

any approved design and construction, of which there are a variety of forms well known in the art.

The body 2 of the improved bullet is of any standard shape and design, and composed of any material commonly employed in present types of bullets; and the same may be inclosed by a jacket 3, provided to take the rifling of the gun barrel, or such jacket may be omitted, as desired. The body 2 is preferably formed of a tough lead alloy, and is united to the head 1 of the bullet by means of an expanding core, illustrated more particularly in Figs. 3 and 4, to consist of a hollow inverted conical body 4, constructed with a sharp peripheral basal edge 5, preferably of a diameter substantially equal to the diameter of the mold in which the bullets are to be cast. The conical body 4 of the expanding core is merged at its apex into a shank 6, formed at its lower end into a barb 7. Projecting from the body 4 of the expanding core are a plurality, preferably three, of ribs 8, the same extending obliquely or spirally, as will appear from an inspection of Fig. 3, and provided with rearward cutting edges 9, for dividing the material of the body 2 when the same is being expanded, as will hereinafter more fully appear. The ribs 8 are further formed with horizontally registering notches 10 and 11 in the lower and upper edges thereof, respectively, to receive the material of the body 2, whereby to form continuous rings of the metal to withstand the centrifugal action during flight. As advantageously disclosed in Fig. 5, from the base of the conical body 4 are fingers 12 projecting radially inward, arranged to afford a purchase for the metal of the head 1 which is received into the conical body, as will be understood. The expanding core may be constructed of any suitable metal hard enough to cut the lead alloy of which the body 2 of the bullet is formed, and I preferably employ a high grade tough steel annealed soft, and the core may be drop forged or stamped hot from suitable blanks, or manufactured in any other manner found desirable.

Referring more particularly to Fig. 14 of the drawings, as here illustrated I may dispense with the fingers 12, as shown in Fig. 5, and form the expanding core with an inwardly-disposed and annular flange 13, provided with perforations 14 for the passage of the metal of the head 1.

Referring more particularly to Figs. 15 and 16, wherein are illustrated a slightly modified form of rifle and revolver bullets, respectively, the jacket 3′ is of reduced diameter, as over that in the preferred form of my invention illustrated in Fig. 1, and constitutes but an auxiliary jacket over which an outer relatively thin jacket 15 may be applied. The outer jacket 15 may be constructed in any ordinary manner to take the rifling of the gun or revolver barrel, as the case may be.

In the two forms of my invention already described, the jackets for the body of the improved expanding bullets preferably extend substantially to the base of the conical body 4 of the expanding core. For a certain character of work, and in some instances it may however be desirable to extend the jackets considerably farther, and for such uses the design of bullet as illustrated in Fig. 17 may be employed to advantage; and the same is preferably constructed of a solid cylindrical body 2′ inclosed by a jacket 16 projecting, as shown, to a point substantially centrally of the rounded head.

In Fig. 18 of the drawings I have illustrated still another modification of which the invention is capable, and the same comprises a head 17 constructed with a conical base 18 formed with a suitably shaped barb 19 forming, with the base 18, a shoulder 20 for engagement by the metal of the body 21 to secure the same together. The body 21 is, as will be understood, inclosed by inner and outer jackets 22 and 23 respectively, the latter outer jacket 23 preferably extending beyond the joint between the head and body of the bullet for protecting and securing the parts against displacement during flight.

The expanding core, as employed in the present invention, and the jackets for the body of the improved bullet, are manufactured separately in accordance with any approved method, and the bullet may be assembled in the molds now ordinarily used. An amount of metal is initially poured into the mold sufficient to form the head 1 of the bullet. The expanding core is thereupon inserted into the mold and, centered and guided by the contact of the ribs 8 with the wall of the mold, is forced by a plunger to compress the molten lead until the same is forced through a vent 24 formed in the conical body 4. The lead is thereupon permitted to set, when the plunger is withdrawn and the jacket inserted and moved into place. The metal of the body of the bullet is now poured into the interior of the jacket and flows between the ribs 8 of the expanding core and embeds the shank 6 and barb 7, so as to unite and firmly connect the head 1 with the body of the bullet. In cases where the outer jacket is to be used, the same may be subsequently applied, or the various steps of manufacture and assembly may be varied in any suitable manner, as required.

The action of my improved expanding bullet is as follows: On striking the skin of the game or other object, due to the resistance encountered, the head 1 of the bullet will be suddenly checked in its velocity, and the momentum of the body will cause

the same to be driven forward on the conical body 4 of the expanding core to thereby force the same forwardly, as indicated in Fig. 10. As the bullet proceeds through the soft tissues the head 1 will be expanded in proportion to the resistance offered, and will consequently result in the further and proportional expansion of the body thereof. As illustrated to advantage in Fig. 13, the body 2 of the bullet during its expansion will be severed by the knife edges 9 of each of the ribs 8, so that the metal of the body will issue in a plurality of segmental portions. Such portions, as indicated, will, by reason of the high velocity of the rotation of the bullet, be constrained to spread and take the form shown substantially by the dotted lines in the figure referred to. To cooperate with this division of the metal of the body 2, the jacket 3 is preferably slotted, as indicated at 24′ in Fig. 2, each slot being arranged preferably opposite the respective rib 8, and produced spirally to divide the jacket at its upper end into a plurality of segments corresponding to the number of ribs employed on the expanding core. As will appear from an inspection of Fig. 12, the projecting portions of the expanded body 2 will be caught by the tissues as the bullet proceeds, and will be turned rearwardly away from the head, thereby decreasing the friction on the conical body 4 and allowing still further advance of the body 3 to increase the diameter of the bullet. On striking a large bone, the body 2 is driven home on the cone 4, the segments of the jacket are forced out and bent rearward and spread sidewise by the rotation of the bullet. It will be understood that the bullet will expand to a diameter substantially twice that of the original bullet, and will offer a large surface sufficient to destroy a maximum area of the bone, insuring disablement of the animal.

It is obvious that those skilled in the art may vary the details of construction and arrangements of parts without departing from the spirit of my invention, and therefore I do not wish to be limited to such features except as may be required by the claims.

I claim:

1. An expanding bullet of the character described comprising a head constructed of soft expansible material, a body of expansible material, a conical joint formed between said head and body for expanding the material of the latter by the momentum thereof when the velocity of the head is checked upon contact and penetration, and a barb for assisting to closely unite said head and body, substantially as described.

2. An expanding bullet of the character described comprising a head, a body formed of soft expansible material, a conical core molded between said head and body for uniting the same together and adapted to expand the material of the body upon contact and penetration of the bullet, and a barb connected to said core and molded in the material of said body, substantially as described.

3. An expanding bullet of the character described comprising a head, a body of soft expansible material, a core located between said head and body for connecting the same together and adapted to expand the material of said body upon contact and penetration of the bullet, and ribs projecting from said core for severing and dividing the material of the body into segments as the same is expanded, substantially as described.

4. An expanding bullet of the character described comprising a head, a body of soft expansible material, a hollow core molded in said head and body for connecting the same together and adapted to expand the material of the body upon contact and penetration of the bullet, and fingers projecting into the interior of said hollow core whereby to afford a purchase for the material of said head, substantially as described.

5. An expanding bullet of the character described comprising a head of soft expansible material, a soft expansible body, a core molded between said head and body and adapted to expand the material of the latter upon contact and penetration of the bullet, and a plurality of spirally arranged ribs projecting from said core and provided with rear cutting edges for severing and dividing the material of said body during expansion of the same, substantially as described.

6. An expanding bullet of the character described comprising a head of soft expansible material, a soft expansible body, a hollow core molded between said head and body and adapted to expand the material of the latter upon contact and penetration of the bullet, a plurality of fingers projecting into the interior of said hollow core and adapted to afford a purchase for the material of said head, a shouldered barb formed on said core and incorporated in the material of said body, and a plurality of stiffening ribs projecting from said core for severing and dividing the material of said body during the expanding movement thereof, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

MOSES L. WOOD.

Witnesses:
GEORGE A. FOOTE,
FRANK WALTHER.