Aug. 2, 1938. O. R. SMITH 2,125,591

BOW AND ARROW CONSTRUCTION

Filed May 17, 1937

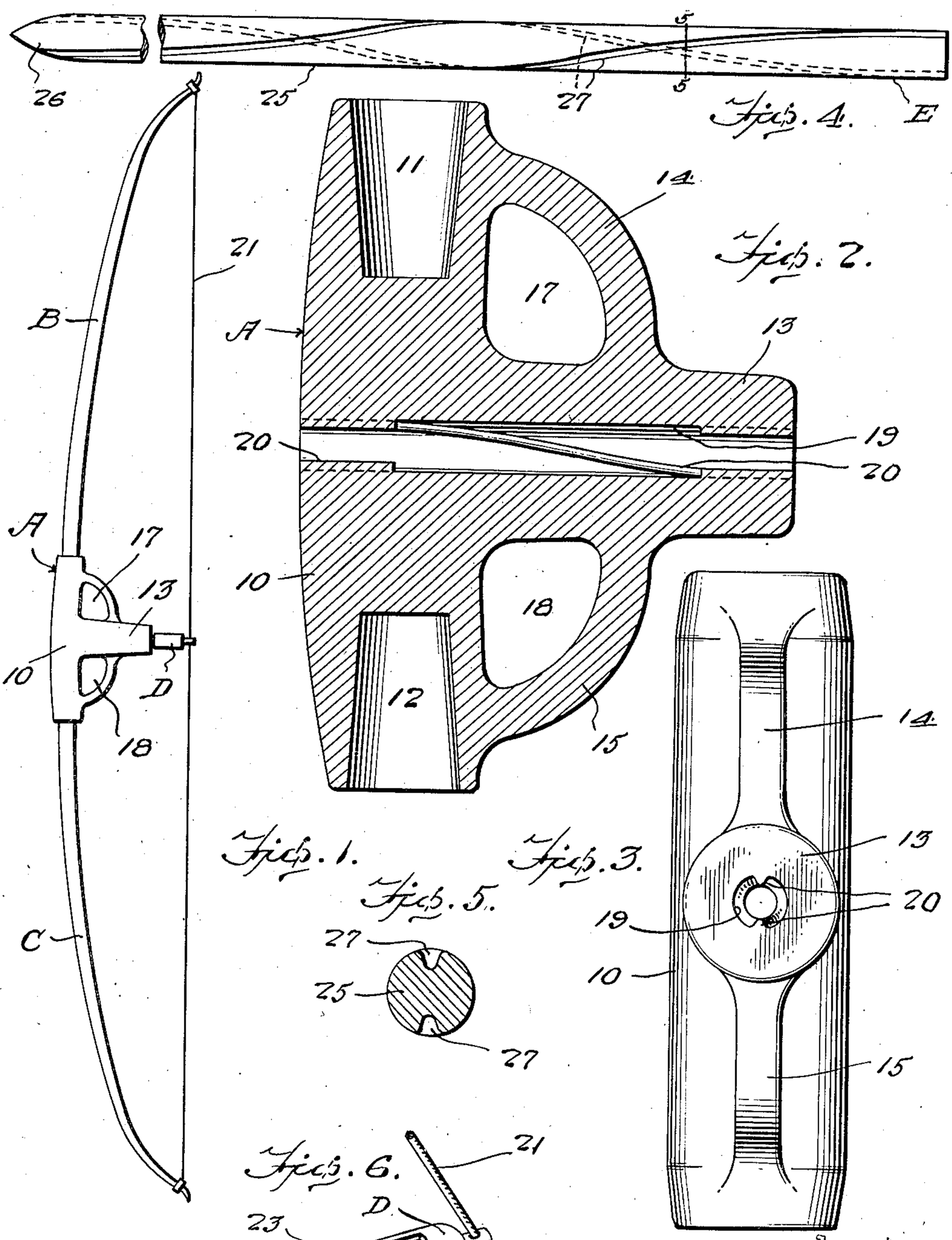

Fig. 4.

Fig. 2.

Fig. 1.

Fig. 3.

Fig. 5.

Fig. 6.

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Patented Aug. 2, 1938 2,125,591

UNITED STATES PATENT OFFICE

2,125,591

BOW AND ARROW CONSTRUCTION

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Application May 17, 1937, Serial No. 143,188

2 Claims. (Cl. 124—24)

My invention relates to a bow and arrow construction and is designed to provide a construction of the type specified wherein,

1. The bow, bow string and arrow will all operate in a common plane during discharge of the arrow and thereby eliminate the usual tendency of the arrow to cant or whip.

2. Wherein spiral ribs and grooves are provided on the bow and arrow respectively which coact during arrow discharge to initiate axial rotation of the arrow, the walls of the grooves of the arrow coacting with the air during free flight to maintain the axial rotation of the arrow initiated by the ribs and grooves, such axial rotation causing the arrow to travel in a true path of increased accuracy;

3. Wherein the necessity of grouping arrows in lots in an effort to obtain corresponding arrows in each lot is eliminated;

4. Wherein the arrows and bow may be entirely machine made with resulting material decrease in expense of production and with resulting material increase in length of life; and

5. Wherein the bow is made up of detachably connected elements to provide the advantages of a knock down structure when not in use.

I will describe my invention in the best form known to me at present but it will be understood that the same is susceptible to changes in form and proportion and to desirable mechanical additions with the exercise of ordinary mechanical skill and without departing from the spirit of my invention.

In the drawing chosen to illustrate my invention the scope whereof is set forth in the appended claims:

Figure 1 is a side elevation of a bow embodying my invention,

Figure 2, an enlarged vertical section of the central or handle portion of the bow;

Figure 3, a view looking at the rear end of the handle portion,

Figure 4, a side view of an arrow constructed in accordance with my invention,

Figure 5, a section on the line 5—5 of Figure 4; and

Figure 6, a detail perspective view of the arrow socket carried by the bow string.

Referring to the drawing my improved bow is shown as comprising a central or handle section A and terminal resilient sections B and C. The handle section A is preferably formed of metal or fiber provided with a body portion 10 having opposite sockets 11 and 12 in which are detachably engaged the resilient sections B and C respectively. It will thus be apparent that the bow can be readily knocked down in the interest of convenient transportation or storage. The handle section further embodies a rearward extension 13 and bridge connections 14 and 15 extending from a point intermediate the extension 13 to points adjacent the outer ends of the body portion 10 to thereby provide thumb openings 17 and 18 and act as reinforcement ribs. Extending axially through the body portion 10 and extension 13 is a bore 19 whose wall is provided with spiral lands 20 for a purpose that will presently appear. The free ends of the sections B and C are connected by the usual bow string 21 which carries centrally a cylindrical socket D having a longitudinal split 22, forming resilient jaws 23 and 24, adapted to be moved inwardly toward each other by opposed finger pressures thereon.

My invention further embodies a specially constructed arrow E illustrated in Figure 4 which is machined true from raw or treated wood, metal or fiber and embodies a cylindrical shank or stem 25 and a pointed forward end 26. Formed in the arrow E and opening through both ends thereof are spiral grooves 27 adapted to receive respective lands 20 when the arrow E is loaded into the bore 19. Arrows produced by machining as just described will all correspond and eliminate the necessity of grouping now required in respect to hand produced arrows.

In using my improved bow and arrow the rear end of the latter is inserted in the forward end of the bore 19 with the lands 20 engaged in the grooves 27. The arrow is then moved rearwardly through the bore until its rear end is seated in the socket D. With the parts in this status the archer grips the socket D so that oppositely directed finger pressures will be exerted up the jaws 23 and 24 to thereby exert a light frictional grip upon the arrow. The bow string 21 and the arrow are then drawn rearwardly in the usual manner. During this drawing of the bow string and rearward movement of the arrow light pressure upon the jaws 23 and 24 will permit the arrow to rotate in response to the coaction of the aforesaid lands 20 and grooves 27. Upon release of the bow string 21 the arrow will be projected in the well known manner. However, during discharge movement of the arrow through the base 19 the coaction of the lands 20 and grooves 27 will initiate axial rotation of the arrow, while the resistance of the air against the walls of said grooves will serve to continue such axial rotation of the arrow during its free flight and thereby

enhance accuracy in either target shooting or hunting.

While I have shown the handle portion bore 19 provided with two spiral lands 20 and the arrow E with two spiral grooves 27 the number of these lands and grooves may be varied as desired as may also the pitch or lead thereof.

I claim:

1. An archery bow having a central handle, said handle including a body portion, oppositely disposed resilient bow elements carried by the body portion, a rearward extension on the body portion, said extension and body portion being provided with a bore through which an arrow travels during discharge, and bridging connections between the body portion and extension forming thumb openings, and acting as reinforcement ribs.

2. An archery bow including a body portion, oppositely disposed resilient bow elements carried by the body portion, a rearward extension on the body portion, said extension and body portion being provided with a common bore through which an arrow travels during discharge, said bore being provided with spiral lands extending the full length thereof for engaging full length spiral grooves of an arrow during discharge of the latter, a bow string connecting the resilient bow elements, and bridging connections between the body portion and extension forming thumb openings and acting as reinforcement ribs.

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