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(54) **ARCHERY BOW WITH SKIDPROOF HANDLE GRIP**

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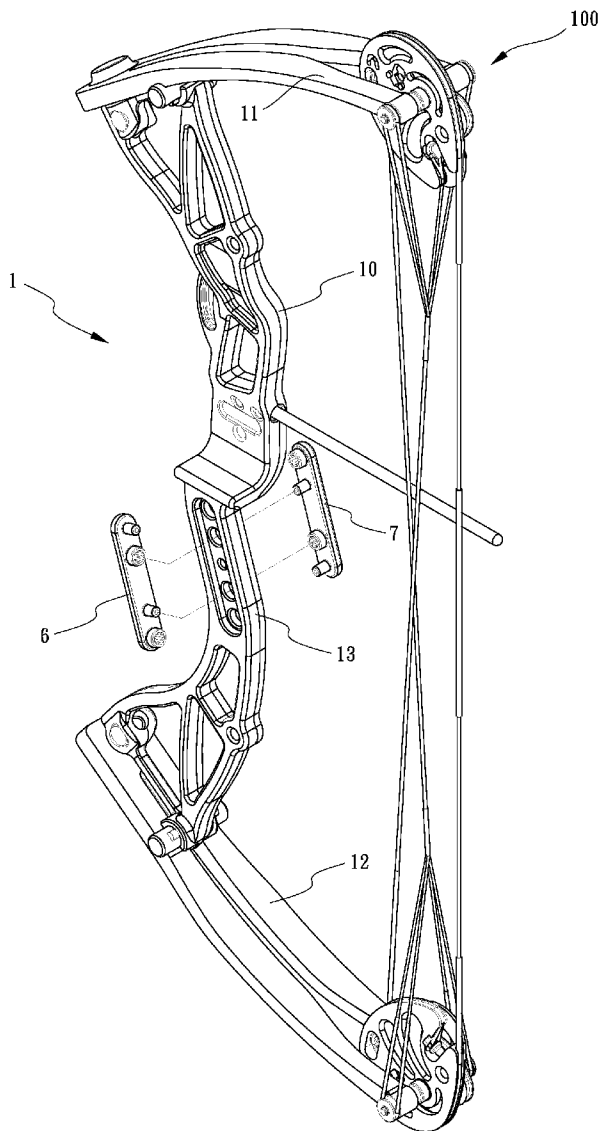
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(57) **ABSTRACT**

An archery bow includes a bow body, a first grip pad and a second grip pad. The bow body has a handle portion and a first through hole transversely defined in the handle portion. Each of the first and second grip pads is integrally formed of a resilient plastics material. Specifically, the first grip pad has an inner surface and an outer skidproof surface at opposite sides thereof, and is formed on the inner surface with a positioning stud detachably press-fit in the first through hole from one side of the handle portion. The second grip pad has an inner surface and an outer skidproof surface at opposite sides thereof, and is formed on the inner surface with a receptacle detachably press-fit in the first through hole from the opposite side of the handle portion so as to engage with the positioning stud of the first grip pad.

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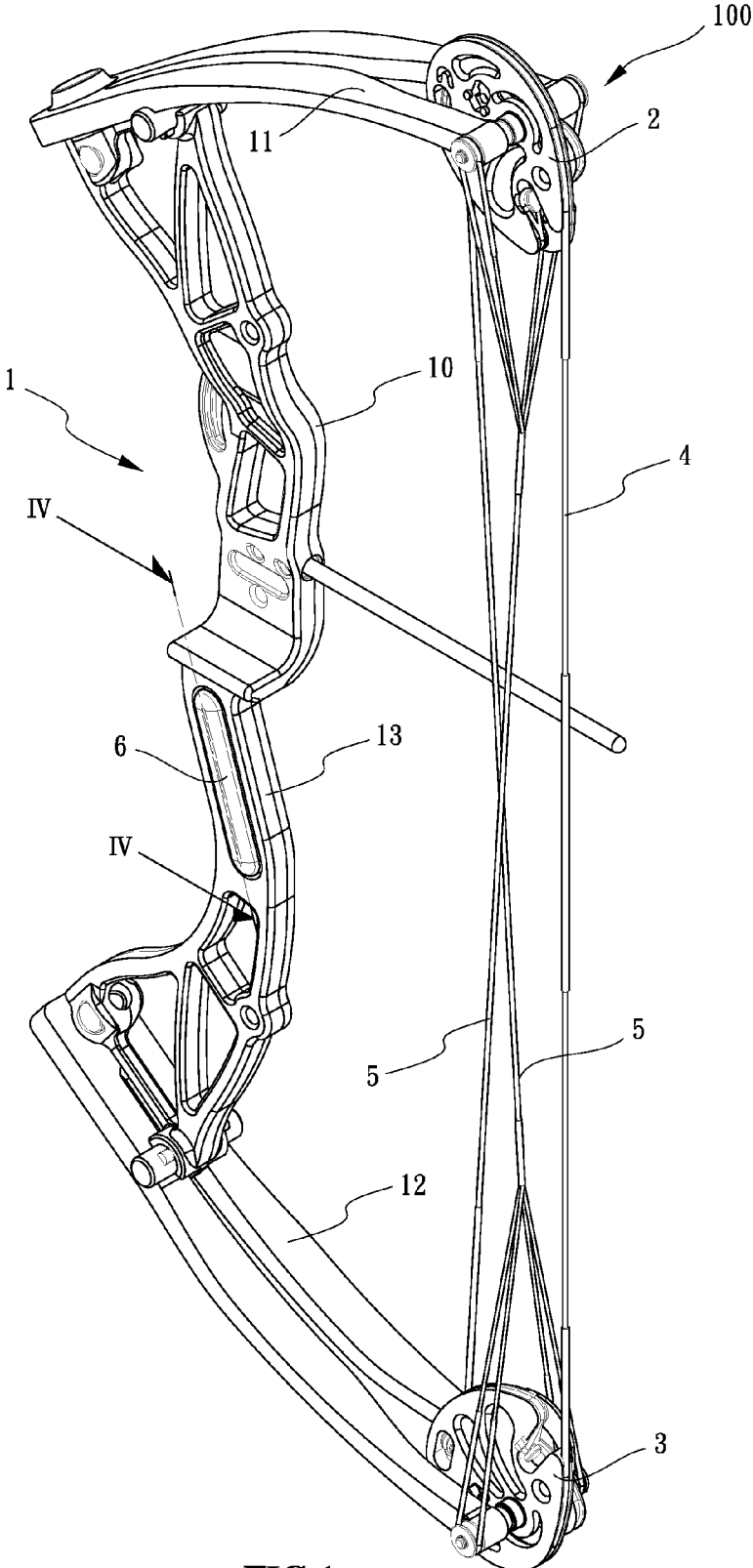


FIG.1

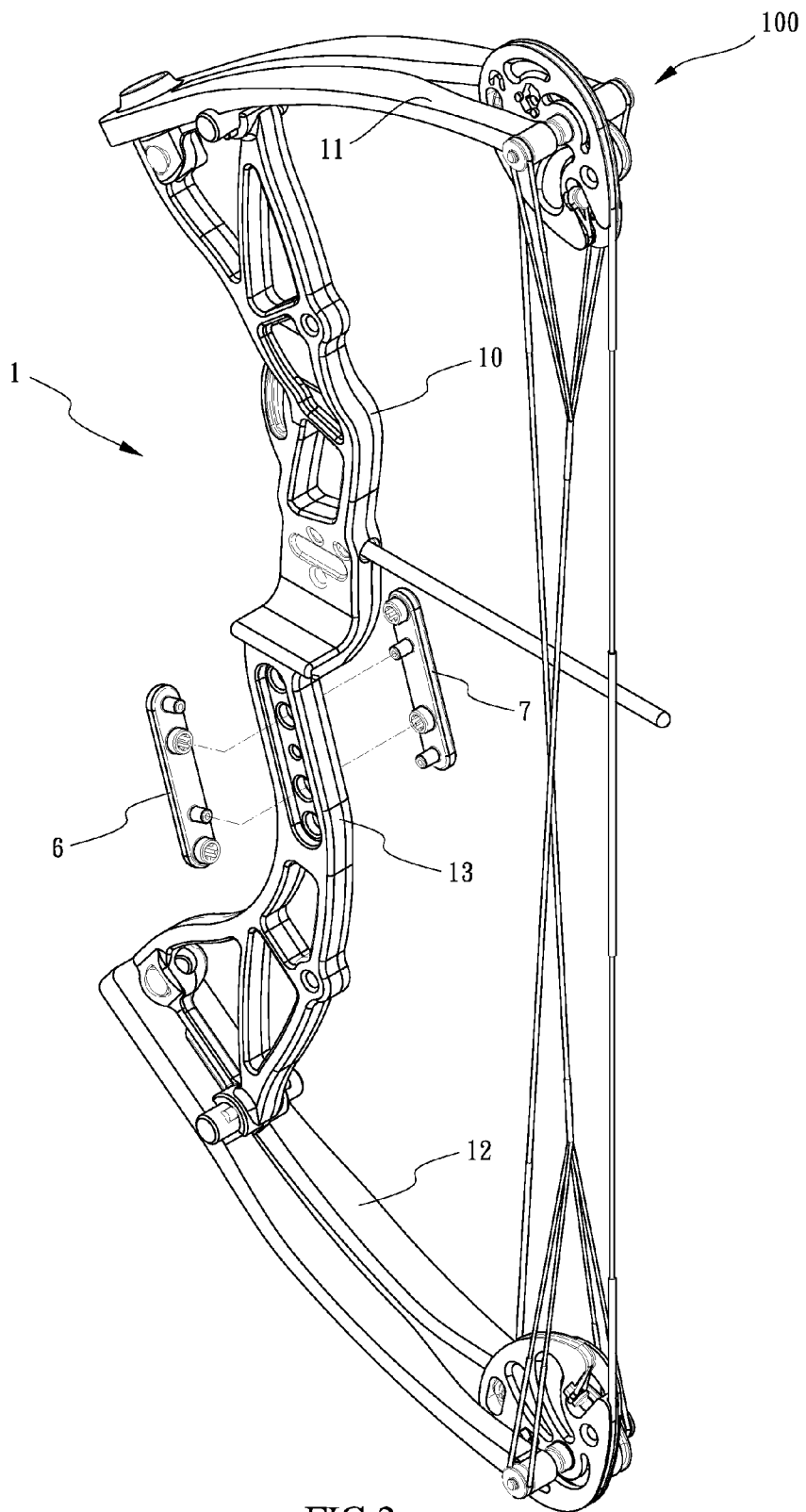


FIG.2

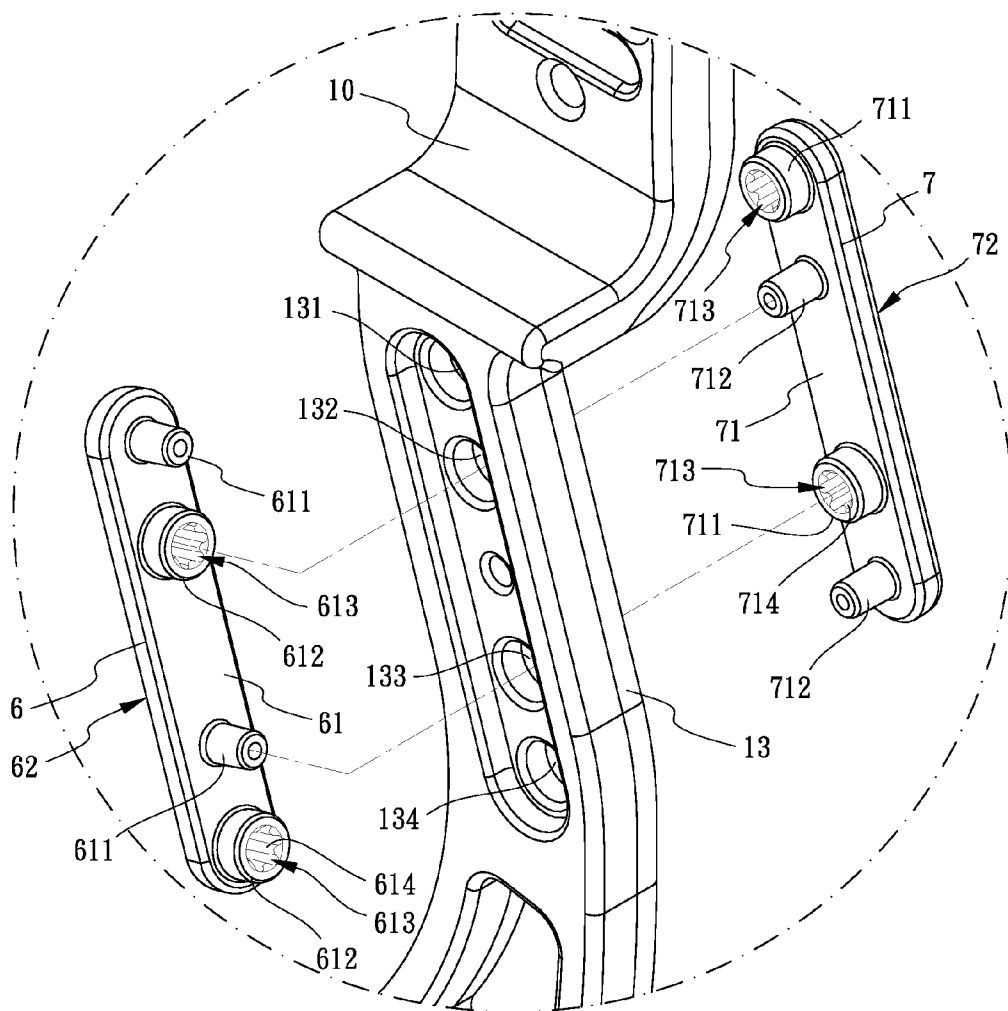


FIG.3

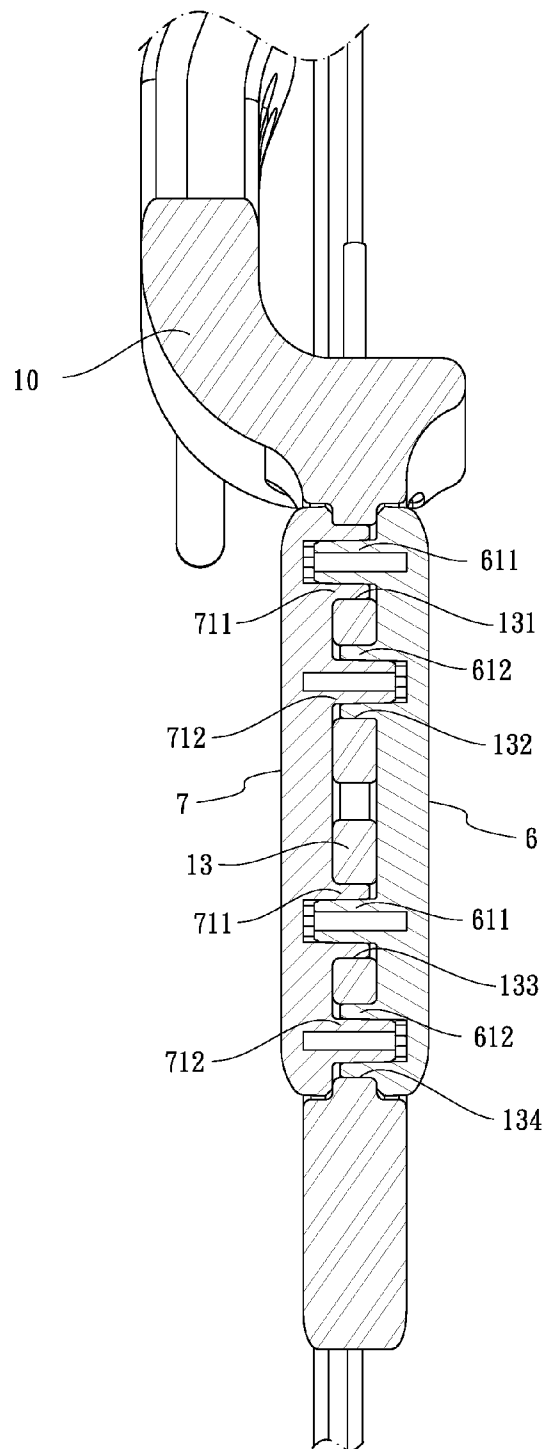


FIG.4

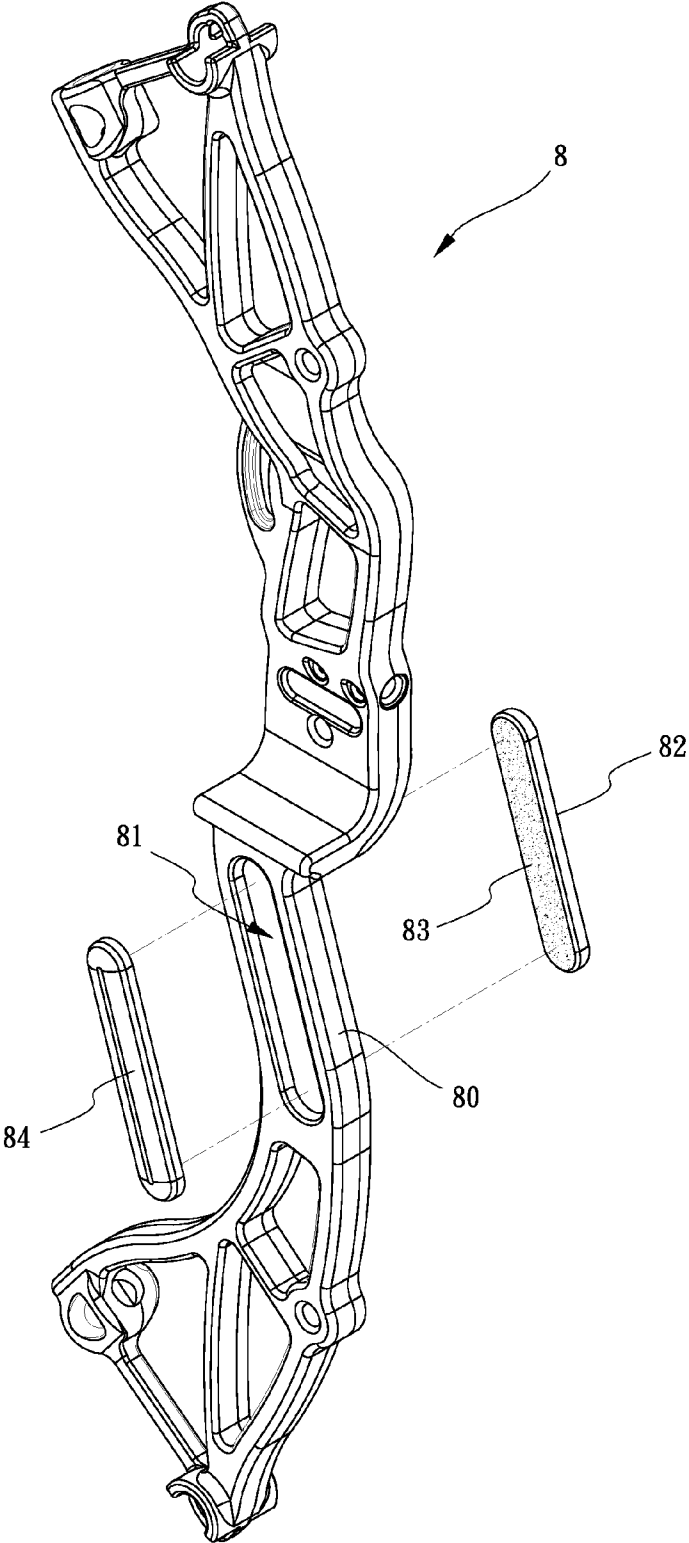


FIG.5 (Prior art)

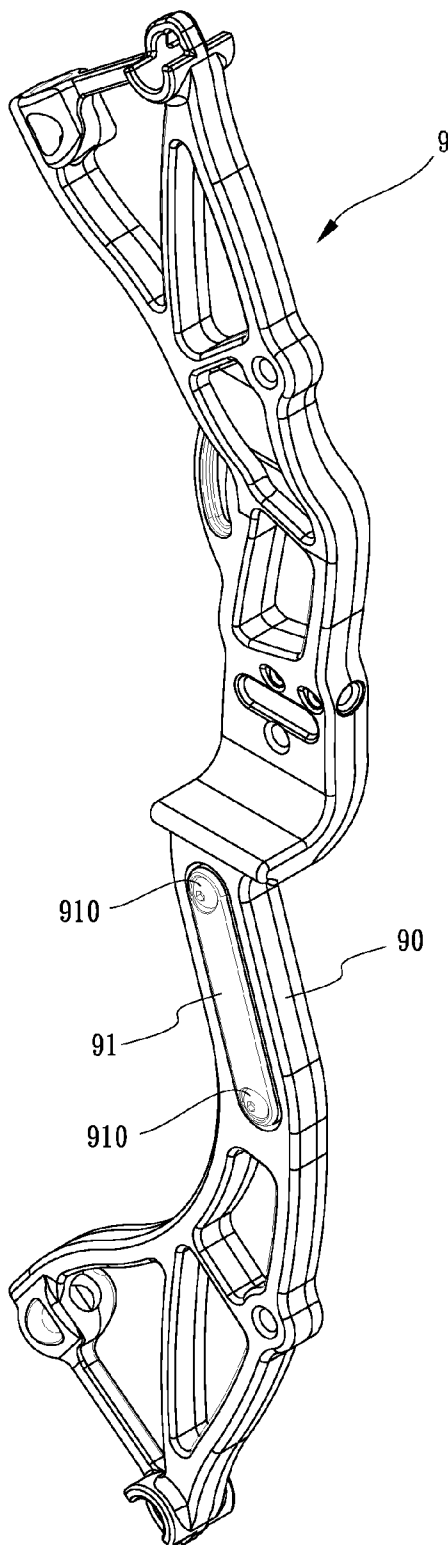


FIG.6 (Prior art)

## ARCHERY BOW WITH SKIDPROOF HANDLE GRIP

### BACKGROUND OF THE INVENTION

**[0001]** 1. Field of the Invention

**[0002]** The present invention relates to an archery bow and more particularly to an archery bow with a skidproof handle grip.

**[0003]** 2. Description of the Related Art

**[0004]** A conventional archery bow includes a bow handle or riser **8**, as shown in FIG. 5. The riser **8** has a grip that is comprised of two parts **82, 84** joined to the opposite sides of a handle portion **80** of the riser **8** by means of adhesives **83**. Specifically, two recesses **81** (but only one is shown) are defined in the riser **8** to receive the respective parts **82, 84**. The two parts **82, 84** are generally made of a resilient plastic material to provide tactile comfort and flexibility. However, upon the parts **82, 84** are stuck onto the riser **8**, they can hardly be removed or replaceable. By the way, the riser **8** is produced at relatively higher cost due to the use of adhesives **83**.

**[0005]** Another type of a bow riser **9** is shown in FIG. 6. The riser **9** has two grip members **91** (but only one is shown) which are fastened to the opposite sides of a handle portion **90** of the riser **9** by means of suitable screws **910** the inner ends of the threaded shanks of which are engaged with the internal threads of tapped holes in the handle portion **90** of the riser **9**. It is clear that not only are such, exposed screws **910** unsightly but they also render the grip members **91** uncomfortable.

### SUMMARY OF THE INVENTION

**[0006]** Accordingly, it is an object of the present invention to provide an improved archery bow with a handle grip which is aesthetically pleasing and provides a good tactile quality to permit the archer to comfortably grip the handle grip with one hand.

**[0007]** It is another object of the present invention to provide an improved archery bow with a handle grip which is easy to fabricate and be produced at relatively low cost.

**[0008]** The foregoing and other objects and advantages are attained, according to the present invention, by an archery bow comprising a bow body, a first grip pad and a second grip pad. The bow body has a handle portion and a first through hole transversely defined in the handle portion. Each of the first and second grip pads is integrally formed of a resilient plastics material, such as rubber. In particular, the first grip pad has an inner surface and an outer skidproof surface at opposite sides thereof, and is formed on the inner surface with a positioning stud detachably press-fit in the first through hole from one side of the handle portion. The second grip pad, on the other hand, has an inner surface and an outer skidproof surface at opposite sides thereof, and is formed on the inner surface with a receptacle detachably press-fit in the first through hole from the opposite side of the handle portion so as to engage with the positioning stud of the first grip pad.

**[0009]** Preferably, the bow body further has a second through hole transversely defined in the handle portion. The first grip pad is further formed on the inner surface with a receptacle detachably press-fit in the second through hole from one side of the handle portion. And, the second grip pad is further formed on the inner surface with a positioning stud detachably press-fit in the second through hole from the opposite side of the handle portion for engagement with the first grip pad. Thus, the first and second grip pads can be easily

and quickly engaged to each other and disposed on opposite sides of the handle portion of the bow body.

**[0010]** More specifically, the positioning stud of the first grip pad is substantially cylindrical. The receptacle of the second grip pad has a substantially cylindrical recess for receipt of the positioning stud of the first grip pad. And, the second grip pad is formed with a plurality of axially extending ribs on an inner wall surface of the cylindrical recess in the receptacle to grip the positioning stud of the first grip pad.

**[0011]** Further benefits and advantages of the present invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0012]** FIG. 1 is a perspective view of an archery bow in accordance with the preferred embodiment of the present invention;

**[0013]** FIG. 2 is a partly exploded perspective view of the archery bow shown in FIG. 1;

**[0014]** FIG. 3 is a partial enlarged view of the archery bow shown in FIG. 2;

**[0015]** FIG. 4 is a cross-sectional view of the archery bow taken along the line IV-IV in FIG. 1;

**[0016]** FIG. 5 is a prior art; and

**[0017]** FIG. 6 is another prior art.

### DETAILED DESCRIPTION OF EMBODIMENTS

**[0018]** With reference to FIGS. 1 through 4, there is shown a preferred embodiment of the archery bow **100**, which is directed to a handheld compound archery bow. The archery bow **100** generally includes a bow body **1**, two pulleys **2, 3**, a bowstring **4**, cables **5**, a first grip pad **6** and a second grip pad **7** (FIG. 2).

**[0019]** The bow body **1** includes a riser **10** and a pair of upper and lower limbs **11, 12** respectively extending outwardly from the opposite ends of the riser **10**. The riser **10** has a handle portion **13** on which the first and second grip pads **6, 7** are mounted. The pulleys **2, 3** are rotatably mounted on tips of the limbs **11, 12**. The bowstring **4** as well as the cables **5** are wrapped around the pulleys **2, 3** and disposed therebetween. Each of the first and second grip pads **6, 7** is integrally formed of a resilient plastics material, such as rubber, to provide skidproof properties.

**[0020]** Referring to FIG. 3 in view of FIG. 2, the riser **10** has a plurality of through holes **131-134** transversely defined in the handle portion **13**. The first grip pad **6** has an inner surface **61** and an outer skidproof surface **62** at opposite sides thereof. On the inner surface **61** of the first grip pad **6** is two positioning studs **611** and two receptacles **612**. Besides, a plurality of bumps (not shown) are formed on the outer surface **62** of the first grip pad **6** to increase hand grip friction. Similarly, the second grip pad **7** has an inner surface **71** and an outer skidproof surface **72** at opposite sides thereof. On the inner surface **71** of the second grip pad **7** is two receptacles **711** and two positioning studs **712** corresponding to the positioning studs **611** and the receptacles **612** on the first grip pad **6**. And, a plurality of bumps (not shown) are formed on the outer surface **72** of the second grip pad **7** to increase hand grip friction.

**[0021]** As illustrated in the cross-section of FIG. 4, the two positioning studs **611** and the two receptacles **612** of the first grip pad **6** are detachably press-fit in the four through holes



131-134 respectively from the left side of the handle portion 13 of the riser 10. On the other hand, the two receptacles 711 and the two positioning studs 712 of the second grip pad 7 are detachably press-fit in the four through holes 131-134 from the right side of the handle portion 13 of the riser 10 so as to engage with the two positioning studs 611 and the two receptacles 612 of the first grip pad 6. In such a manner, the first and second grip pads 6, 7 can be quickly assembled together or be detached from each other for replacement if needed.

[0022] More specifically, the positioning studs 611 of the first grip pad 6 are substantially cylindrical. Each of the receptacles 711 of the second grip pad 7 has a substantially cylindrical recess 713 for receipt of the respective positioning stud 611 of the first grip pad 6. Moreover, the second grip pad 7 is formed with a plurality of axially extending ribs 714 on an inner wall surface of the cylindrical recess 713 in each of the receptacle 711 to grip the respective positioning stud 611 of the first grip pad 6. Similarly, the positioning studs 712 of the second grip pad 7 are substantially cylindrical. Each of the receptacles 612 of the first grip pad 6 has a substantially cylindrical recess 613 for receipt of the respective positioning studs 712 of the second grip pad 7. The first grip pad 6 is formed with a plurality of axially extending ribs 614 on an inner wall surface of the cylindrical recess 613 in each of the receptacle 612 to grip the respective positioning studs 712 of the second grip pad 7. As such, the engagement between the first and second grip pads 6, 7 are enhanced, and therefore the first and second grip pads 6, 7 are prevented from easily falling off the handle portion 13 of the riser 10.

[0023] Preferably, the first grip pad 6 is substantially elliptic and therefore contoured by longitudinal and lateral symmetry. The second grip pad 7 has a profile substantially identical to that of the first grip pad 6 and therefore has a substantially elliptical profile shape. As shown in FIG. 3, when rotated in 180 degrees, the first grip pad 6 is actually identical to the second grip pad 7 in shape and in size. This configuration is beneficial in that the first and second grip pads can be made by the same mold and therefore be mass-produced at relatively low cost. And the proper control of materials and supplies can be a lot easier.

[0024] It is noted that, in this embodiment, the archery bow 100 is a handheld bow where the handle portion 13 is disposed on the riser 10. However, in another example, the archery bow may be a crossbow where the handle portion is disposed on a crossbow stock.

[0025] As described above, the first and second grip pads 6, 7 can be quickly assembled together without adhesives or screws. Thus, the riser 10 not only is relatively pleasing in appearance but also provides a good tactile quality to permit the archer to comfortably grip the handle portion 13 of the riser 10 with one hand. Whenever the first and second grip pads 6, 7 are needed to be detached from each other for replacement, no particular tools will be needed.

[0026] It is to be understood that the disclosed embodiments are illustrative in nature and the invention is not to be limited to any one or more embodiments except as set forth in the following claims.

What is claimed is:

1. An archery bow comprising:
  - a bow body having a handle portion and a first through hole transversely defined in the handle portion;
  - a first grip pad integrally formed of a resilient plastics material, having an inner surface and an outer skidproof surface at opposite sides thereof, and being formed on the inner surface with a positioning stud detachably press-fit in the first through hole from one side of the handle portion; and
  - a second grip pad integrally formed of a resilient plastics material, having an inner surface and an outer skidproof surface at opposite sides thereof, and being formed on the inner surface with a receptacle detachably press-fit in the first through hole from the opposite side of the handle portion so as to engage with the positioning stud of the first grip pad.
2. An archery bow as recited in claim 1, wherein the bow body includes a riser and a pair of limbs extending outwardly from the opposite ends of the riser; and the riser is provided with said handle portion thereon.
3. An archery bow as recited in claim 1, wherein the first grip pad is formed with a plurality of bumps thereon to form the outer skidproof surface.
4. An archery bow as recited in claim 1, wherein the resilient plastics material from which the first grip pad is made is rubber.
5. An archery bow as recited in claim 1, wherein the first grip pad is contoured by longitudinal and lateral symmetry; and the second grip pad has a profile substantially identical to that of the first grip pad.
6. An archery bow as recited in claim 1, wherein the first and second grip pads are both substantially elliptic.
7. An archery bow as recited in claim 1, wherein the positioning stud of the first grip pad is substantially cylindrical; the receptacle of the second grip pad has a substantially cylindrical recess for receipt of the positioning stud of the first grip pad; and the second grip pad is formed with a plurality of axially extending ribs on an inner wall surface of the cylindrical recess in the receptacle to grip the positioning stud of the first grip pad.
8. An archery bow as recited in claim 1, wherein the bow body further has a second through hole transversely defined in the handle portion; the first grip pad is further formed on the inner surface with a receptacle detachably press-fit in the second through hole from one side of the handle portion; and the second grip pad is further formed on the inner surface with a positioning stud detachably press-fit in the second through hole from the opposite side of the handle portion for engagement with the first grip pad.
9. An archery bow as recited in claim 1, wherein the positioning stud of the first grip pad is substantially cylindrical; the receptacle of the second grip pad has a substantially cylindrical recess for receipt of the positioning stud of the first grip; and the second grip pad is formed with a plurality of axially extending ribs on an inner wall surface of the cylindrical recess in the receptacle to grip the positioning stud of the first grip pad.

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