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(54) AN ARCHERY BOW

(71) We, VICTOR COMPTOMETER CORPORATION, of 3900 North Rockwell Street, Chicago, Illinois 60618, United States of America, a corporation of the State of Illinois, United States of America, do hereby declare the invention for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to an improved compound archery bow.

According to the present invention a compound archery bow comprises an elongated handle member having a longitudinal axis and spaced opposite end portions, a pair of limb members for mounting on said spaced end portions having inner end portions and outer end portions, a limb end portion receiving member affixed to each said handle end portion, a curved rib on each said receiving member extending transversely of said longitudinal axis for mounting one of said limb members, first threaded fastening means on each of said receiving members spaced longitudinally from said curved rib means for attaching one of said limb members, each said receiving member including flanges for aligning said handle member and said limb members, curved abutment groove means on each of said limb inner end portions for abuttingly pivotally supporting one of said limb members on said curved rib means in load bearing relationship therewith, said groove means being removably mounted on said limb members, a second threaded fastening means providing the only releasably securing connection between the handle member and each limb member, each said second fastening means being adapted to be associated with a respective said inner end portion and first threaded fastening means for adjustably fixedly mounting a said limb member on the associated said spaced end portion, load bearing means mounted on each of said inner end portions of said limb members for abutting load transferring engagement with the associated second threaded fastening means in each of a number of infinitely variable positions between a first position of minimum inclination of said inner end portion relative to the associated said spaced end portion providing maximum draw weight and a second position of maximum inclination of said inner end portion relative to the associated said spaced end portion providing minimum draw weight, said load bearing means including elongated slots in said inner end portions of said limb members extending longitudinally of said limb members for receiving a respective second threaded fastening means therewithin, each said receiving member overlying the associated said groove means and load bearing means, elongated abutment surfaces on said inner end portions of said limb members adjacent said slots for abutting engagement with said second threaded fastening means, cables attached to said bow for propelling an arrow from said bow, cable attachment means of each of said inner end portions for attaching said cables to said limb members, wheel means on the outer end portions of said limb members for rotatably supporting said cables, and draw string means attached to said cables for propelling an arrow from the bow and forming with the cables one uninterrupted path for transmitting a draw force.

A construction of preferred compound archer's bow is described by way of example with reference to the accompanying drawing in which:

Figure 1 is a side view of a compound bow;

Figure 2 is an enlarged perspective view of a cable adjustment assembly of the bow of Figure 1;

Figure 3 is an exploded perspective view

of the assembly of Figure 2;

Figure 4 is an enlarged perspective view of a limb mounting assembly of the bow of Figure 1;

Figure 5 is an exploded perspective view of the apparatus of Figure 4;

Figure 6 is an enlarged perspective view of an idler pulley assembly of the bow of Figure 1;

Figure 7 is an exploded perspective view of the apparatus of Figure 6;

Figure 8 is an enlarged perspective view of an eccentric wheel assembly of the bow of Figure 1;

Figure 9 is an exploded perspective view of the apparatus of Figure 8;

Figure 10 is an enlarged plan view of a part of the assembly shown in Figures 4 and 5;

Figure 11 is a side elevation, partly in cross-section, of the part of Figure 10.

In general, as shown in Figure 1, a compound bow 10, embodying illustrative presently preferred forms of the invention, comprises a handle member 12, which may be made of cast metal; a pair of limb members 14, 16; adjustable limb mounting assembly means 18, 20 on the opposite ends of the handle member and on the inner end of the limb members; a pair of cable members 22, 24; adjustable cable attachment assembly means 26, 28 fixedly mounted on inner end portion of the limb members; a pair of cable receiving idler pulley assembly means 30, 32 fixedly mounted on the outer end portions of the limb members; a pair of cable receiving eccentric wheel means assemblies 34, 36 fixedly mounted on the outer end portions of the limb members; and a pair of S-hook cable attachment members 38, 40 connecting the cable to a drawstring member 42.

Referring now to Figures 2-3, each of the adjustable cable attachment assembly means 26, 28 comprsies a base plate member 44, which may be of cast metallic material, having a flat base surface 46 adapted to be abuttingly fixedly supported on a corresponding flat surface 48 on the inner end portion of the limb members by screw members 50, 52, 54 mounted in countersunk screw holes 56, 58, 60. An outwardly inclined abutment surface 62 at the inner end 63 of the plate member 44 extends at the same angle as the adjoining inclined surface 64 of an end plate 65 on the inner end of the limb member. A pivotable limb support means in the form of a semi-circular groove 66 extends transversely thereacross such that the plane of surface 62 is diametrically related to groove 66. A pair of spaced parallel inclined flange portions 68, 70 extend outwardly from the outer end 71 of the plate member and intersect surfaces 62 adjacent groove 66 to define a cable channel 72 therebetween. Flange portion 70 has spaced inner and outer wall portions 73, 74 connected by an outer wall portion 76 to define a housing cavity 78. A pair of axially aligned bores 80, 82 in flange portion 68 and inner wall portion 73 of flange portion 70 rotatably support a ratchet wheel shaft member 84 with shaft portion 85 being received in plastics bearing sleeves 86, 88 mounted in bores 80, 82. An enlarged bore 90 in outer wall portion 74 of flange portion 70, coaxial with bores 80, 82, is adapted to receive a ratchet wheel portion 92 of member 84. A flat annular outer surface 94, a polygonal bore 96 coaxial with the shaft portion 85 and adapted to receive an adjustment tool (not shown) such as an Allen wrench, and indicia and markings 98 on the outer surface 94 of member 84 are located flush with the outer surface of flange portion 70 in the assembled position of Figure 2. Ratchet means are provided on the periphery of wheel portion 92 adjacent outer surface 94 in the form of a plurality of relatively closely spaced alternating ribs 100 and grooves 102, there being 12 of each in the presently preferred embodiment. A retainer ring member 104 is mounted on a shoulder 106 on member 84 to hold the member 84 in the assembled position of Figure 2. A transverse bore 107 in shaft portion 85 is adapted to receive the end of the cable member, as shown in Figure 2, which is fixedly secured thereto by a plunger member 108 and set screw 109 mounted in shaft portion 85 and wound on the shaft portion in the assembled position. A ratchet dog member 110 is pivotally mounted in housing cavity 78 by a pin member 112 extending through a bore 114 in member 110 and axially aligned bores 116, 118 in wall portions 73, 74. A tapered protrusion 120 on one end of member 110 is received in the grooves 102 for abutting engagement with lugs 100. A tension spring member 122 located in housing cavity 78 is connected at one end to a spring attachment hole 124 in a depending lug portion 126 of member 110 and at the other end to a spring attachment pin 128 mounted in axially aligned bores 130 in wall portions 73, 74 to bias the protrusion 120 into restraining engagement with lugs 100. The mounting arrangement is such that an outer elongated flat outer surface 138 provides a pressure surface for receiving digitally applied force to pivot member 110 on shaft 112 against the bias of spring 122 to release member 84 by disengaging movement of protrusion 120 relative to lugs 100.

Referring now to Figures 4, 5, 10 and 11, each of the adjustable limb mounting assembly means 18, 20 comprises a mounting plate member 150 having spaced parallel side wall portions 152, 154 connected by a

transverse end wall portion 156 and a bottom wall portion 158 to define a central cavity 160 of generally rectangular peripheral configuration. An outer rim portion 162 having a flat U-shaped outer surface 163 surrounded by an outer tapered peripheral border surface 164, extends outwardly from side wall portions 152, 154 and end wall portion 156 to provide an U-shaped abutment surface 165 therebeneath engageable with the side surface 166 of the inner end portion of the limb members opposite limb surface 48 adjacent an U-shaped slot 167 extending through the inner end portions of the limb members to define spaced parallel limb end flange portions 168, 169. Rim portion 162 and abutment surface 165, Figure 11, are inclined relative to wall portions 152, 154, 156 at an included angle of approximately 105° as indicated at A. An elongated slot 170 is centrally located in bottom wall portion 158 with a closed curved end portion 171 located closely adjacent end wall portion 156 and an opposite open end portion aligned with the opening between side wall portions 152, 154. A convexly curved abutment surface 172 is provided about slot 170 a the bottom of cavity 160 with opposite spaced elongated portions 174, 176 on opposite sides of slot 170 connected adjacent slot end portion 171 by a transverse portion 177 and terminating adjacent the open end portion of slot 170 by intersection with inclined surfaces 178, 180 of bottom wall portion 158. Member 150 is suitably fixedly mounted in limb slot 167 with the outer surfaces of wall portions 152, 154, 156 frictionally and/or adhesively engaged with the side surfaces of limbs slot 167 by ribs and grooves 182, 184 in side wall portions 152, 154, and ribs 185, 186 extending outwardly from side wall portions 152, 154. The mounting arrangement is such that the outer surface 187 of the bottom wall portion 158 of member 150 is coplanar with end surface 64 of the limb plate member 65, Figure 2, and with surface 62 of member 44.

Referring again to Figures 4 and 5 assembly means 18, 20 further comprise a flat mounting plate surface 190 on the end portion of handle member 12 having a round semi-circular rib portion 192 extending transversely thereacross at the outer end and a central transverse threaded opening 194 located at the inner end in inwardly spaced relationship to the rib portion 192. A pair of spaced opposite parallel flange members 196, 198 and an end wall portion 200 extending transversely about surface 190 define a limb end receiving cavity 202 thereabout. The mounting arrangement is such that coplanar limb end surfaces 62, 64, 187 may be located in closely spaced relationship to handle end surface 190 with rib portion 192 matingly pivotally supportively received in groove 66 in load bearing relationship therewith.

In order to adjustably secure the limb members on the handle member, a threaded bolt member 200 having a bolt head 202 providing a load bearing shoulder 204 is threadably mounted in threaded bore 194 in association with load bearing means engageable with curved abutment surface 172 of member 150 in the form of a flat thin bearing member 206 of good frictionless material such as Nylon with a curvature corresponding to surface 172 and having a bolt receiving opening 207 and a square rectangular peripheral configuration; an elongated load supporting metallic washer member 208 having a curved inner surface 210 corresponding in curvature to surface 172, a bolt receiving opening 211, a rectangular peripheral configuration generally corresponding to the configuration of cavity 160 so as to be loosely confined therewithin in slidable supportive relationship with surface 172, and an outwardly protruding abutment stop portion 212 limiting movement of the member 208 in the assembled position; a first steel washer member 214 engageable with the outer surface of member 208; a fiber bushing washer member 216; and a second steel washer member 218 engageable with bolt head surface 204. The mounting arrangement is such, as shown in Figure 4, that the bolt member may be tightened against the tension forces of the cables 22, 24 and bow string 42 to obtain load bearing engagement of the end portion of the limb member with the end portion of the handle member. In order to tighten and loosen the bolt member polygonal bore 220, adapted to receive a tool such as an Allen wrench, is provided in head portion 202 which in the assembled position is located at least in part within the cavity 160.

The angular position of the limb member relative to the handle member 12 may be adjustably varied by varying the location of bolt member 200 relative to the limb member in cavity 160 and slot 170. Such adjustment is enabled by slot 66 and rib 192 which provide for pivotal movement of the limb member relative to the handle member and by curved load bearing surfaces 172 and 210 which provide for sliding arcuate movement of the limb member relative to the bolt member. In this manner, the eccentric wheel members 34, 36 on the outer ends of the limb members 14, 16 may be variously uniformly located along arcs having centers at the pivotal axes provided by slots 66 and ribs 172. In order to facilitate adjustment and to provide an initial tuning position for the proper positioning of the bow limbs relative to the bow handle, the bow limbs

are initialy tested at the factory after manufacture and assembly and a linear mark 220, Figure 5, is placed on the side surface 222 of the inner end portion of each limb member such that, when the marks are aligned with the outer edges 224 of one of the flange portions, Figure 4, the bow limbs are in an initial tuned condition of adjustment whereat subsequent equal amounts of turning of bolt members 200 for each limb will result in maintaining a substantially tuned bow condition. The tuning marks are placed on the limb members at a maximum weight pull position whereat the coplanar limb member surfaces 62, 64, 184 have a minimum amount of inclination relative to handle member surface 190. The maximum weight pull obtainable with the particular bow may be positively defined by engagement of surfaces 62, 64, 184 with surface 190 so as to preclude overloading of the bow.

Referring now to Figures 6 and 7, the cable receiving idler pulley assembly means 30, 32, each comprise an idler pulley wheel member 230 freely rotatably mounted on a pin member 232 supported in a support bracket member 234 between spaced flange portions 236, 238 by retainer ring members 240, 242. A pair of spaced flange portions 244, 246 mount a connecting pin member 148, having an axis transverse to the axis of pin member 232, secured thereto by retainer rings 250, 252. A base member 254 has a transverse bore 256 rotatably supporting pin member 248 with Nylon bearing washers 258, 260 mounted between the side surfaces 262, 264 and flange portions 244, 246. An annular support pad portion 266 on member 254, having an inclined abutment surface 268, abuts flat support surface 270 of a support plate 272 having an inclined limb abutment surface 274 corresponding to the inclination of the adjacent surface 276 of the limb member. A threaded mounting screw 278 extends through a mounting hole in the limb member, through the hole 280 in support plate 272 and into a threaded bore (not shown) in pad portion 266 to hold the pulley assembly on the limb member with the axis of pin member 248 extending generally transversely to the longitudinal axis of the limb member parallel to the adjacent limb surface 276. The bracket member 234 is pivotally supported to enable limited pivotal movement generally parallel to the longitudinal axis of the bow limb member as confined by flange portions 244, 246 and surfaces 262, 264. The pulley member 230 is freely rotatably supported on pin member 232 which provides a variably positionable axis of rotation generally outwardly inclined relative to limb surface 276. The pulley assembly is located relatively closely adjacent the inner end 282 of an elongated slot 284 which extends to the outer end of the limb members to define a pair of spaced parallel finger portions 286, 288, Figure 8.

Referring now to Figures 8 and 9, the cable receiving eccentric wheel means assemblies 34, 36, each comprise an eccentric wheel member 300 rotatably mounted on a pin member 302 by a pair of needle bearing units 304, 306 supported in axial adjacent relationship in a bore 308 in member 300 located in axially offset eccentric relationship to the central axis of the wheel member. A pair of axially protruding bearing housing portions 310 have annular side surfaces 312 adjacent which are mounted thrust washers 314, 316. A pair of shaft bearing members 31-8, 320 are fixedly mounted on the tips of the limb finger portions 286, 288 and supportively receive the end portions of pin member 302 which are retained therewithin by retainer ring members 322, 324. A pair of annular cable grooves 326, 328 are provided on the periphery of the wheel member 300 with radially extending bore means 330 providing a cable passage connecting the grooves 326, 328. An axially extending threaded bore 332 intersects cable passage 330 and receives a threaded set screw 334 by which the position of the cable relative to the wheel member 300 may be adjustably fixed. As is conventional, a portion of the cable supported in groove 326 and a portion supported in groove 328 are connected by a portion extending through passage 330. A plurality of radially extending linear adjustment marks 336 are provided on the side surface 338 of the wheel member 300 for cooperative associaton with the adjacent edge 340 of the limb fingers portions to provide means for determining the rotational position of the wheel members relative to one another and relative to the limb finger portions. Suitable indicia 342 may be associated with the linear marks 336 such as, for example, numerals extending from a central 0 position to circumferentially oppositely spaced 1, 2, and 3 positions.

In operation, the draw weight of the bow may be adjusted by inserting a tool into socket 220 of adjustment bolt 200 and turning the adjustment bolt. The arrangement is such that every 1/2 turn of the bolt changes the draw weight by approximately 1 pound. Each bolt of each assembly 18, 20 is to be turned an equal amount so that the draw weight is the same in each limbs, the mark on each limb providing a starting position of equal maximum draw weight. In addition, each bow may be calibrated by the manufacturer to provide the purchaser with a chart showing the relationship between the number of half-turns of the bolt members and the decrease in draw

weight from the starting position.

The draw length of the bow may be adjusted by winding or unwinding equal lengths of the cable on the shaft portion 85 of each of the assemblies 26, 28, the arrangement being such that 1/2 turn of the shaft portion 85 results in approximately 1 inch change in draw length. In order to turn shaft portion 85, a suitable tool is inserted in opening 96 and the tool may be used to rotate the member 84 when the ratchet member 100 is automatically disengaged from the ratchet wheel portion 92 by turning the shaft 84 to wind up the cable or by pressing against surface 138 to enable unwinding of the cable. When the member 84 has been rotated to the desired position, the ratchet member is automatically re-engaged during winding up of the cable or is released and spring 122 returns it to the latched position during unwinding of the cable. If it is desired to replace a cable member, the member 84 is fully unwound and set screw 109 is loosened to enable removal of the end of the cable from bore 107.

In order for a compound bow to function properly, the eccentric wheel members must turn in unison and the amount of eccentricity must be constant. In accordance with the present inventon, each bow is tested by the manufacturer and the correct relationship of the timing marks 336 on the eccentric wheel members 300 is noted and that information is supplied to the purchaser of the bow on a specification tag which is attached to the bow. If the position of the timing marks on the eccentric wheel members do not correspond to the specified positions, the relative positions of the wheel members may be adjusted by lengthening or shortening the cable members by rotation of the shaft members 84 as hereinbefore described.

The apparatus of the present invention also enables easy replacement of the various parts and components of the bow and easy tuning of the bow after replacement of parts.

WHAT WE CLAIM IS:—

1. A compound archery bow comprising an elongated handle member having a longitudinal axis and spaced opposite end portions, a pair of limb members for mounting on said spaced end portions having inner end portions and outer end portions, a limb end portion receiving member affixed to each said handle end portion, a curved rib on each said receiving member extending transversely of said longitudinal axis for mounting one of said limb members, first threaded fastening means on each of said receiving members spaced longitudinally from said curved rib means for attaching one of said limb members, each said receiving member including flanges for aligning said handle member and said limb members, curved abutment groove means on each of said limb inner end portions for abuttingly pivotally supporting one of said limb members on said curved rib means in load bearing relationship therewith, said groove means being removably mounted on said limb members, a second threaded fastening means providing the only releasably securing connection between the handle member and each limb member, each said second fastening means being adapted to be associated with a respective said inner end portion and first threaded fastening means for adjustably fixedly mounting a said limb member on the associated said spaced end portion, load bearing means mounted on each of said inner end portions of said limb members for abutting load transferring engagement with the associated second threaded fastening means in each of a number of infinitely variable positions between a first position of minimum inclination of said inner end portion relative to the associated said spaced end portion providing maximum draw weight and a second position of maximum inclination of said inner end portion relative to the associated said spaced end portion providing minimum draw weight, said load bearing means including elongated slots in said inner end portions of said limb members extending longitudinally of said limb members for receiving a respective second threaded fastening means therewithin, each said receiving member overlying the associated said groove means and load bearings means, elongated abutment surfaces on said inner end portions of said limb members adjacent said slots for abutting engagement with said second threaded fastening means, cables attached to said bow for propelling an arrow from said bow, cable attachment means on each of said inner end portions for attaching said cables to said limb members, wheel means on the outer end portions of said limb members for rotatably supporting said cables, and draw string means attached to said cables for propelling an arrow from the bow and forming with the cables one uninterrupted path for transmitting a draw force.

2. A bow as claimed in claim 1 and further comprising indicia means associated with said limb members for establishing a uniform maximum draw weight position for each of said limb members.

3. A bow as claimed in either preceding claim and wherein each said second threaded fastening means comprises a bolt member having a threaded shaft portion and a head portion with a load bearing surface, a washer mounted between said elongated abutment surface and said bolt

member, an abutment surface on said washer corresponding to said elongated abutment surface on said inner end portion of the associated said limb member for slidably adjustably supporting said washer on said longated abutment surface, and a load bearing surface on said washer for load bearing engagement with said load bearing surface on said bolt member for holding said washer in load bearing engagement with said elongated abutment surface.

4. A bow as claimed in claim 3 and comprising a load bearing housing mounted on each inner end portion of a limb member for receiving the associated washer and bolt member, a cavity in said loading bearing housing, said elongated slot means and said elongated abutment surface being located in said cavity, and said washer and said bolt member being located within said cavity.

5. A bow as claimed in any one of the preceding claims, wherein each said cable attachment means comprises a pair of rotatable shafts for attaching end portion of said cables to said limb members and for winding and unwinding said cables to change the draw length of said bow.

6. A bow as claimed in claim 5, wherein each said cable attachment means comprises ratchet means associated with said shaft for making uniform incremental adjustments in the length of the cable wound on said shaft.

7. A bow as claimed in claim 6 and said cable attachment means further comprising a cable attachment housing fixedly mounted on each said inner end portion of a limb member for receiving a shaft and end portions of the associated cable and ratchet means, a pair of elongated spaced parallel flange portions on each said housing extending generally parallel to the longitudinal axis of said bow, a cable cavity defined by and extending between said flange portions, said shaft being rotatably supported in said flange portions and extending across said cable cavity transversely to the longitudinal axis of said bow.

8. A bow as claimed in claim 7, wherein each said ratchet means comprises a ratchet wheel on said shaft, a ratchet dog member adapted to releasably engage and disengage said ratchet wheel, and pivot means on said cable atachment housing for pivotally supporting said ratchet dog member for pivotal movement between an engaged position relative to said ratchet wheel preventing rotation of said shaft means and a disengaged position relative to said ratchet wheel permitting rotation of said shaft means.

9. A bow as claimed in claim 8, and further comprising a ratchet means cavity in said cable attachment housing, said ratchet wheel and said ratchet dog member being mounted in said ratchet means cavity, spring means associated with said ratchet dog member to bias said ratchet dog member to the engaged position, and a pressure surface on said ratchet dog member for applying digital forces to move said ratchet dog member to the disengaged position against the bias of said spring member.

10. A bow as claimed in claim 9, and wherein said groove means is located on said cable attachment housing.

11. A bow as claimed in any one of the preceding claims and further comprising a limb receiving cavity on each of said end portions of said handle member defined by spaced flange portions extending generally parallel to said longitudinal axis, a transverse flange portion extending generally transversely to said longitudinal axis, and a flat wall surface extending transversely between said spaced flange portions and said transverse flange portion, said curved rib mean being located on said flat wall surface opposite said transverse flange portion adjacent the outermost portion of said limb receiving cavity.

12. A bow as claimed in claim 11 as appendant to claim 10, wherein said load bearing housing and said cable attachment housing and said inner end portions of said limb members having coplanar surfaces defining a limb end side surface generally corresponding to said flat wall surface of said limb receiving cavity and receivable therein in close proximity to said flat wall surface, and said groove means being located on said limb end surface for receiving said rib means with said limb end side surface in close proximity to said flat wall surface in said limb receiving cavity.

13. A bow as claimed in claim 8, and further comprising a socket in one end of each shaft for receiving a tool to turn said shaft to wind said cable thereon.

14. A bow as claimed in claim 13, wherein said end portions of said shafts are located substantially flush with the outermost surfaces of said flange portions.

15. A bow as claimed in claim 13 or claim 14, and further comprising a cable receiving bore extending radially through an intermediate portion of each said shaft and adapted to receive an end portion of said cable to attach said cable to said shaft, an axially extending bore at the other end of said shaft intersecting said cable receiving bore, and set screw means in said axially extending bore for engaging and holding said cable in said cable receiving bore.

16. A bow as claimed in claim 11, wherein said first threaded fastening means extends through said flat wall surface between said spaced flange portions adjacent said transverse flange portion.

17. A bow as claimed in claim 2, wherein the indicia means is associated with said

wheel means for establishing uniform rotation timing conditions of said wheel means.

18. A bow as claimed in any one of the preceding claims and said wheel means comprising pin means for rotatably supporting each said wheel means, an elongated slot at the outer end portion of each limb member, housing means mounted on opposite sides of said elongated slot on the outer end portion of each limb member for mounting said pin means, hub means in said wheel means for receiving said pin means and needle bearing means in said hub means for rotatably supporting said wheel means on said pin means.

19. A bow as claimed in any one of the preceding claims, and further comprising pulley means on the outer end portions of said limb members for rotatably supporting said cables about axes generally outwardly inclined relative to said limb members, and bracket means mounted on the outer end portions of said limb members for movably pivotally supporting said pulley means about axes extending generally transversely to said longitudinal axis to enable variable pivotal displacement of said pulley means relative to said bracket means.

20. A bow as claimed in claim 19 and wherein each said bracket means comprises a pad member fixedly mounted on said limb members, an inclined surface on said pad member abutting said limb members, a flat mounting surface on said pad member opposite said inclined surface, a pivot arm member fixedly mounted on said pad member, a flat abutment surface on said pivot arm member abuttingly engaging said flat mounting surface on said pad member, a pair of spaced flat parallel side surfaces on said pivot arm member extending generally parallel to said longitudinal axis and outwardly relative to said flat abutment surface, a first pivot pin mounted in said pivot arm member and extending generally transversely to said longitudinal axis through and beyond said side surfaces, a bracket means pivotally mounted on said first pivot pin, a first pair of parallel spaced flange portions on said bracket member extending generally parallel to said side surfaces and pivotally mounted on said pivot pin, a second pair of parallel spaced flange portions on said bracket member extending generally transversely to said first pair of parallel spaced flange portions, a second pivot pin mounted on and extending transversely between said second pair of parallel spaced flange portions, and said pulley means being rotatably mounted on said second pivot pin.

21. A bow as claimed in any one of the preceding claims and further comprising socket means in one end of each said second threaded fastening means for receiving a tool to turn said second threaded fastening means to variably adjust the associated said limb member relative to said handle member between said first position and said second position.

22. A bow as claimed in any one of the preceding claims, wherein each said elongated abutment surface comprises curved surfaces on either side of the associated slot.

23. A compound archery bow substantially as herein described with reference to and as shown in the accompanying drawings.

KINGS PATENT AGENCY LIMITED
By
J. B. KING,
Director,
Registered Patent Agent,
146a, Queen Victoria Street,
London EC4V 5AT.
Agents for the Applicants.

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1562314 COMPLETE SPECIFICATION

4 SHEETS *This drawing is a reproduction of the Original on a reduced scale*

Sheet 1

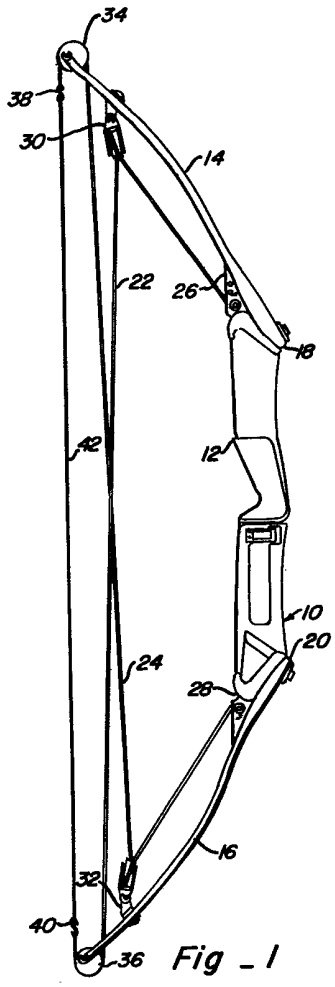


Fig _ 1

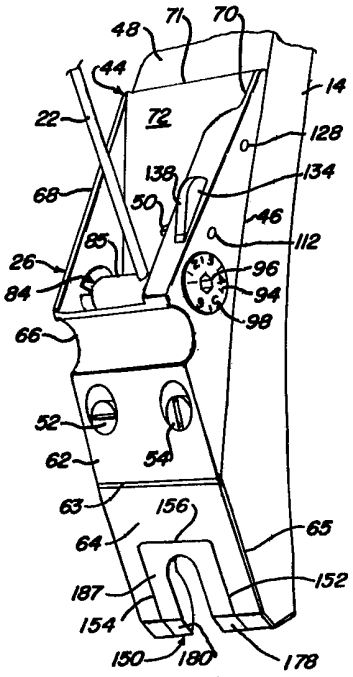


Fig _ 2

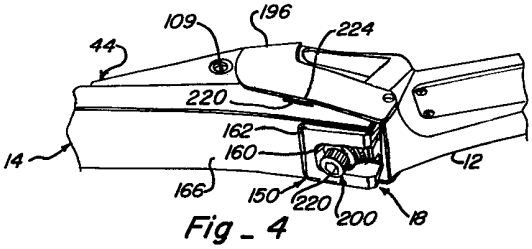


Fig _ 4

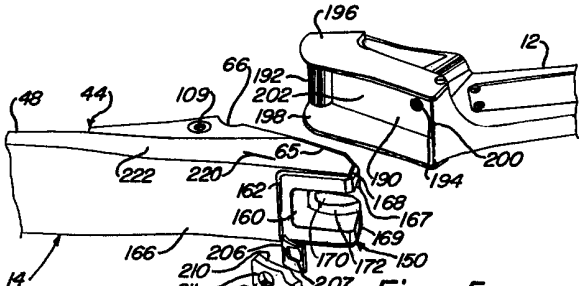
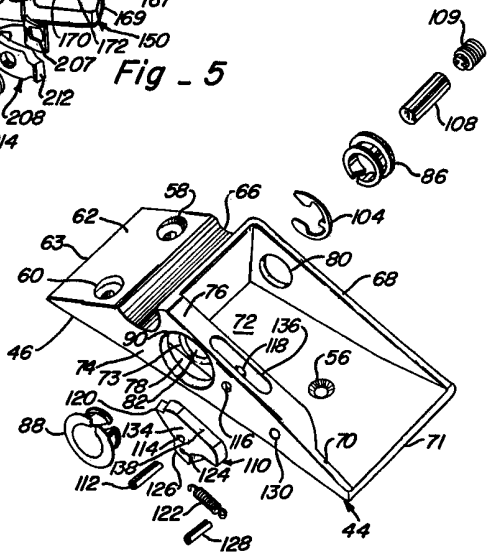


Fig _ 5



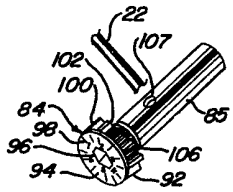


Fig _ 3

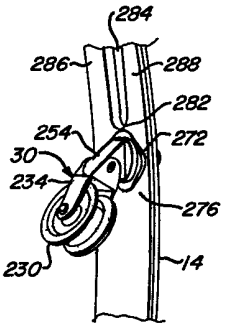


Fig_6

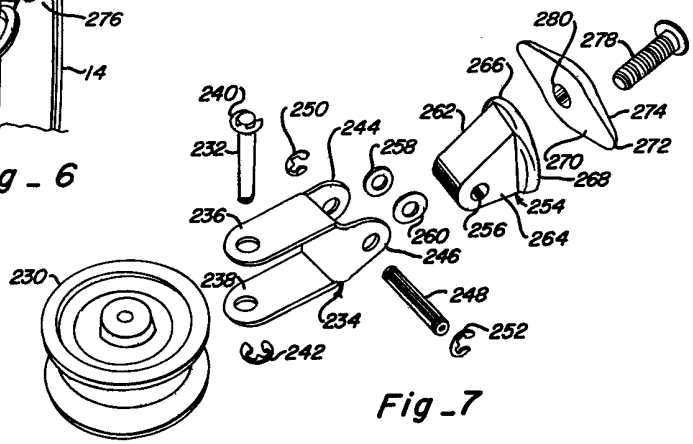


Fig_7

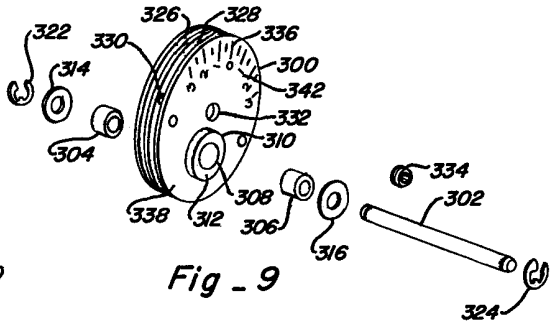


Fig_9

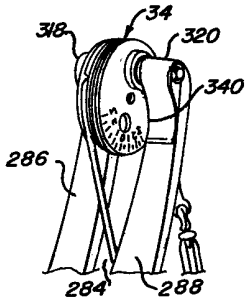


Fig_8

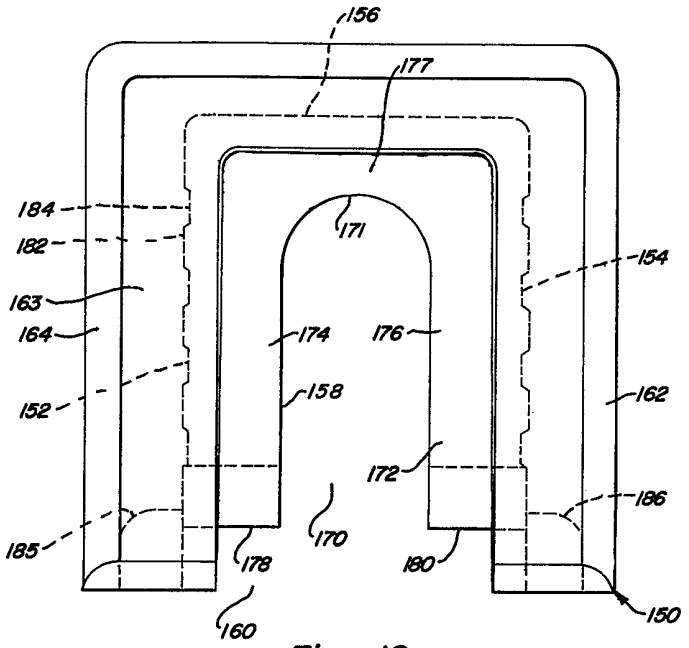

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Fig _ 10

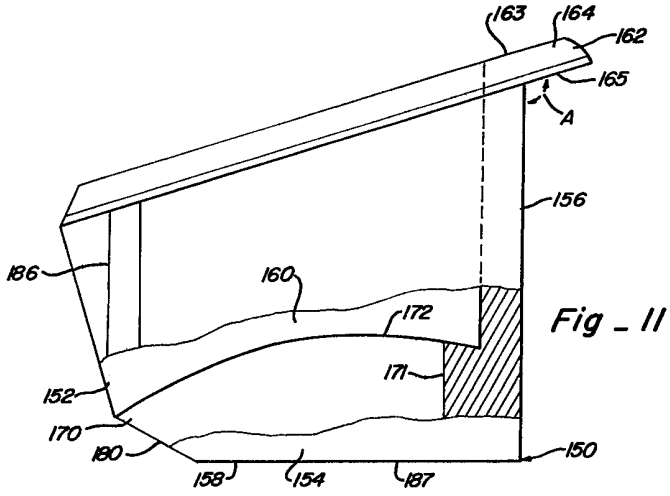
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Fig _ 11