Jan. 23, 1962 P. J. GUBASH 3,017,874

BOW MAGAZINE

Filed Aug. 26, 1959

FIG. 1.

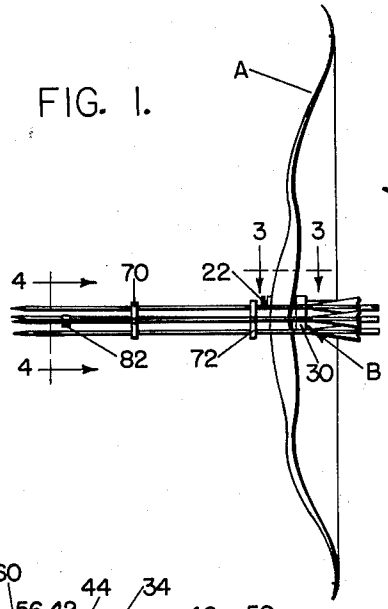
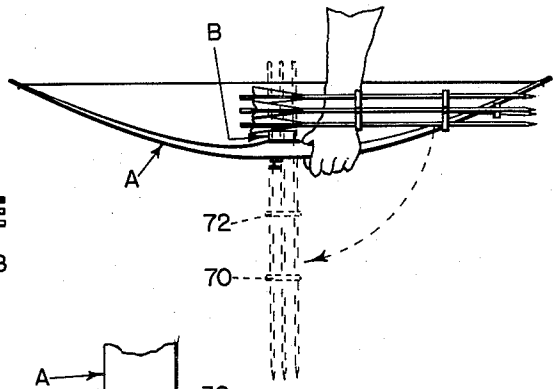


FIG. 2.



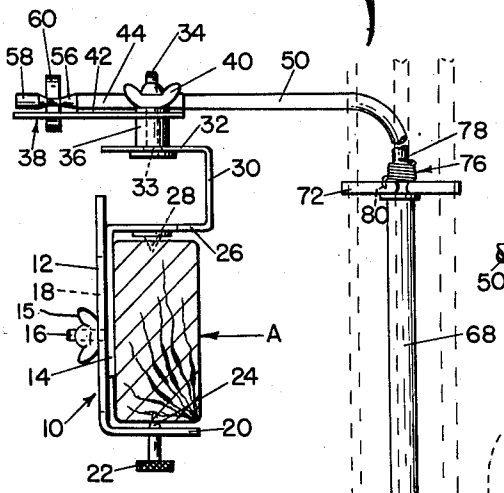


FIG. 3.

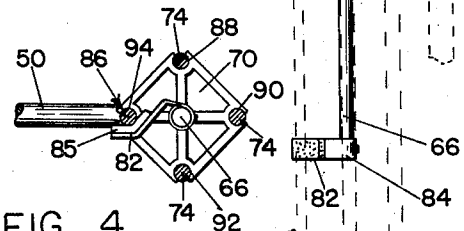


FIG. 4.

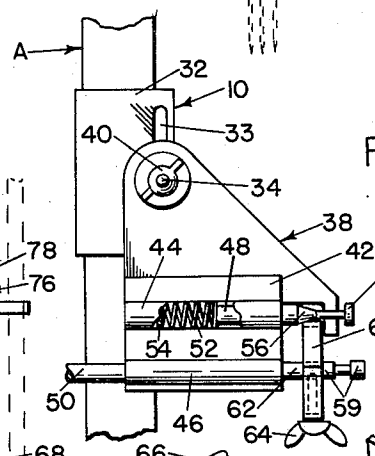


FIG. 5.

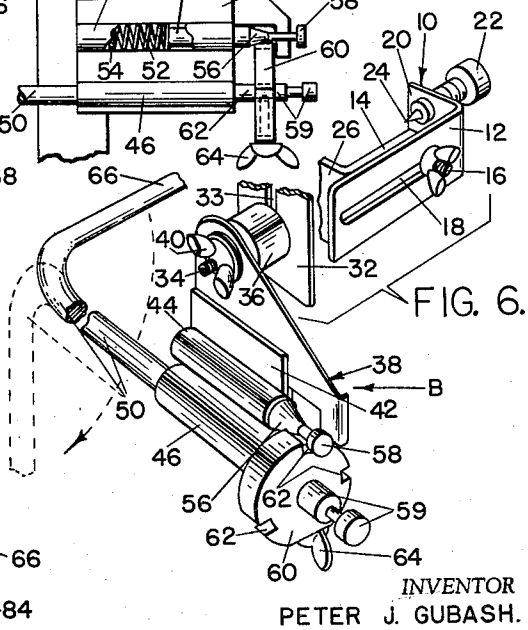


FIG. 6.

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BOW MAGAZINE

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This invention relates to archery and is more particularly concerned with an apparatus useful in providing an automatic magazine for supporting at least four arrows in a position close to the firing position and which will enable a bowman to fire at least five arrows without taking his eyes from the target or without lowering the bow.

In recent years hunting with a bow has become an increasingly popular sport and some states have special seasons for hunters using this type of equipment. Due to the inherent slow firing of a bow it is necessary that great skill be used by the hunter in stalking game because most shots with a bow are standing shots and if the first shot is missed the hunter rarely gets a second shot.

With these thoughts in mind the instant invention contemplates an apparatus which will enable a bowman to fire at least five arrows in rapid succession, at a standing target or game which is in motion. The device is readily attachable on any type of bow and embodies an arm which is adjustably swingable from a position extending forwardly from the bow to a position which is substantially parallel with the bow. The arm is provided with notched mounts for supporting the arrows in parallel relation. These mounts are attached to a sleeve which is rotatable about the swingable arm. A torsion spring is mounted on the arm having one end secured thereto while the other end is secured to one of the notched mounts. The extended end of the arm is provided with a tab which extends at a right angle therefrom into the rotating path of the arrow which is closest to the normal firing position of the arrow to be fired. As an arrow is removed from its mount, the sleeve, the notched mounts and the remaining mounted arrows rotate clockwise, the shaft of the next to be fired arrow coming to rest on the tab. The procedure is repeated until all the arrows have been fired.

A feature of the instant invention resides in the provision of a device which will allow the arm to swing parallel with the bow so that when the huntsman is stalking game through heavy underbrush the arrows will not hinder his travel or become entangled in the brush. Should a target be sighted the hunter may release the arm from the parallel position to a position which is forward of the bow and then raise the bow to a firing position.

Another feature of the instant invention is the provision of a device which is readily adjustable to fit various types of bows. Further adjusting positions allow the hunter to align the arrows relative to the bow as he desires.

An additional feature of the instant invention is the presentation of an automatic arrow magazine which is extremely light in weight, durable and constructed with few moving parts and which may be produced economically and thereby distributed at a relatively low cost to archers.

These and other features and advantages will become apparent from the following description taken in connection with the drawings wherein:

FIGURE 1 is a side view of a bow upon which is mounted the new device showing the arrows in firing position.

FIGURE 2 is a side view of a bow as it is carried while not in use and showing the new device in a position substantially parallel with the bow.

FIGURE 3 is an enlarged transverse sectional taken on line 3—3 of FIGURE 1 and looking in the direction of the arrows.

FIGURE 4 is a vertical sectional view taken on line 4—4 of FIGURE 1.

FIGURE 5 is an end elevation of the new invention—portions of a bow being shown broken away.

FIGURE 6 is a perspective view of the major portion of the new invention.

FIGURES 1 and 2 show a conventional bow indicated generally by the letter A. The arrow magazine is generally indicated by the letter B and includes a clamping bracket which is generally indicated by the numeral 10. This bracket includes a portion 12 which is adjustable relative to a second portion 14. The portion 14 is provided with a stud 16 which projects through a slot 18 in the portion 12. The bracket portions 12 and 14 are clamped together with a wing nut 15 on the stud 16. The bracket portion 12 is provided with a right angular portion 20 provided with a set screw 22 having a pointed end 24. The bracket portion 14 includes a right angular portion 26 and is provided with barbs or points 28 which are opposite and directed toward the portion 20 and its adjustable point 24. As best seen in FIGURE 3 the bow A is positioned between the points and held therein when the set screw 22 is tightened.

The portion 26 is connected to a right angular portion 30 parallel to the portion 14 which in turn is connected to a bracket plate 32 which is parallel to and spaced from the portion 26. This bracket plate is provided with a slot 33 to accommodate a threaded bolt 34 which is inserted through a spacer sleeve 36 and through a primary support bracket 38. A wing nut 40 is provided on the stud 34 to hold the parts assembled. The bracket 38 is provided with a bearing plate 42 which supports journals 44 and 46 for a release plunger 48 and rotatable arm 50.

As best seen in FIGURE 5 the plunger is inserted into the journal or sleeve 44. An expansion spring 52 is positioned between the end of the plunger and a closed end 54 within the sleeve 44. The plunger is also provided with a frusto conical portion 56 and finger knob 58 for purposes later to be described.

The sleeve 46 is provided to journal the arm 50 which extends therethrough having a substantial portion extending beyond the end of the sleeve 46. This end portion 59 of the arm 50 rotatably supports a disc 60 having notches 62 disposed into the peripheral surface thereof. The disc 60 is secured in a desired position by a set screw 64 which is threaded into the disc 60 seating itself into the registering adjacent portion of the end portion 59. The purpose of this arrangement will be later described in some detail.

The arm 50 extends transversely of the bow as best seen in FIGURE 3 and is bent to form an extension 66 which projects forward of the bow a substantial distance when in an operative position such as is illustrated in FIGURES 1 and 3. This extension rotatably supports a tubular sleeve 68 which extends over the major portion of the extension 66. A pair of notched arrow mounts 70 and 72 are secured at opposite ends of the tube. These mounts have a plurality of angularly spaced notches 74 extending inwardly from the peripheries of the mounts. It has been found that 4 notches disposed into the corners of a mount which is substantially square and which is formed of a live rubber substance is preferable since more than four arrows mounted and carried by the bow would be somewhat awkard and cumbersome for a bowman to handle.

The rotation of the tube or sleeve 68 is controlled by a torsion spring 76 which is wound around the extension adjacent the rearward end of the sleeve 68. One end 78 of the spring 76 extends into and is secured to the ex-

tension 66 which the other end 80 is disposed into and secured to the mount 72.

A retainer tab 82 is secured to the outer end 84 of the extension 66 and is provided with a bumper pad of foam rubber 85 for purposes later to be described.

Thus it will be seen that when the notches 74 of the mounts 70 and 72 are fitted with arrows 86—88—90 and 92 the shaft 94 of the arrow 86 comes to rest on the foam rubber bumper 85 on the tab 82. Before mounting the arrows the sleeve 68 and its mounts are rotated counter clockwise a distance sufficient to tighten the spring 76. Thus when the arrow 86 is removed for firing by the bowman the tube and mounts will automatically rotate clockwise causing the shaft of the arrow 88 to come to rest on the tab 82 and be in position for subsequent firing.

The plunger 48 and the notched disc 60 as previously described allow the bowman to swing the extension and mounted arrows into a position which is substantially parallel with the bow. This arrangement permits the arrows to be held close to the bow and out of the way of heavy underbrush and the like when the bowman is stalking game through such terrain. When the bow is held upright or in a firing position such as is shown in FIGURE 1 he need only apply a small amount of pressure on the plunger 48 thereby releasing the conical portion 56 from the notches 62 of the disc in which it is engaged. Gravity will cause the extension and its mounted arrows to swing downwardly. The plunger will reseat and lock into the next notch on the disc 60 thereby locking the extension and mounted arrows into the position shown in full lines in FIGURE 2. A repeat of the above described procedure while the bow is held in the position shown in FIGURE 2 will return the extension and arrows to a firing position.

By loading the arrow magazine and holding an additional arrow in readiness for firing, five arrows can be shot in a matter of seconds without lowering the bow or looking away from the target. After the first arrow is fired, the archer grasps the notched end of the arrow resting against the tab 82 and moves this arrow laterally about two and one half inches into firing position. As each arrow is removed, it is replaced by the next arrow in the magazine until the supply is depleted.

The device as shown in the drawings and as described in the specification is designed for firing by right handed bowmen. To adapt the device for use by left handed bowmen the parts are simply reversed so that the magazine attaches to the opposite side of the bow from that shown in the figures.

In accordance with the patent statutes, I have described the principles of construction and operation of my improvement in bow quivers, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A magazine for supporting a plurality of arrows for use in combination with a bow, said magazine including clamp means attaching it to a bow, a support bracket adjustably connected to said clamp means, an arm rotatably mounted on said support bracket, a plunger slidably mounted on said support bracket adjacent said arm, a pair of sleeves on said support bracket for mounting said arm and said plunger, a notched disc rotatably mounted on the end of said arm adjacent said plunger, a conical portion on said plunger adapted to selectively engage said notches in said disc for holding said rotatable arm in one selected position, an extension on said arm extending at a right angle therefrom to a position substantially forward of the bow, an elongated arrow support rotatably supported on said extension, and resilient means normally biasing said arrow support in one rotative direction about its longitudinal axis.

2. A magazine for supporting a plurality of arrows for use in combination with a bow, said magazine including means attaching it to a bow, a support bracket adjustably connected to said attaching means, an arm rotatably mounted on said support bracket, a sleeve on said support bracket for rotatably mounting said arm, cooperable means on said support bracket and on said arm for controlling rotation of said arm, an extension on said arm extending at a right angle from said arm to a position normally forward of the bow, rotatable means on said extension for detachably supporting a plurality of arrows, said cooperable means including a plunger slidably supported on said support bracket for reciprocal movement parallel with said arm and a notched disc on the end of said rotatable arm engageable with portions of said plunger for locking said arm in one selected position.

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