

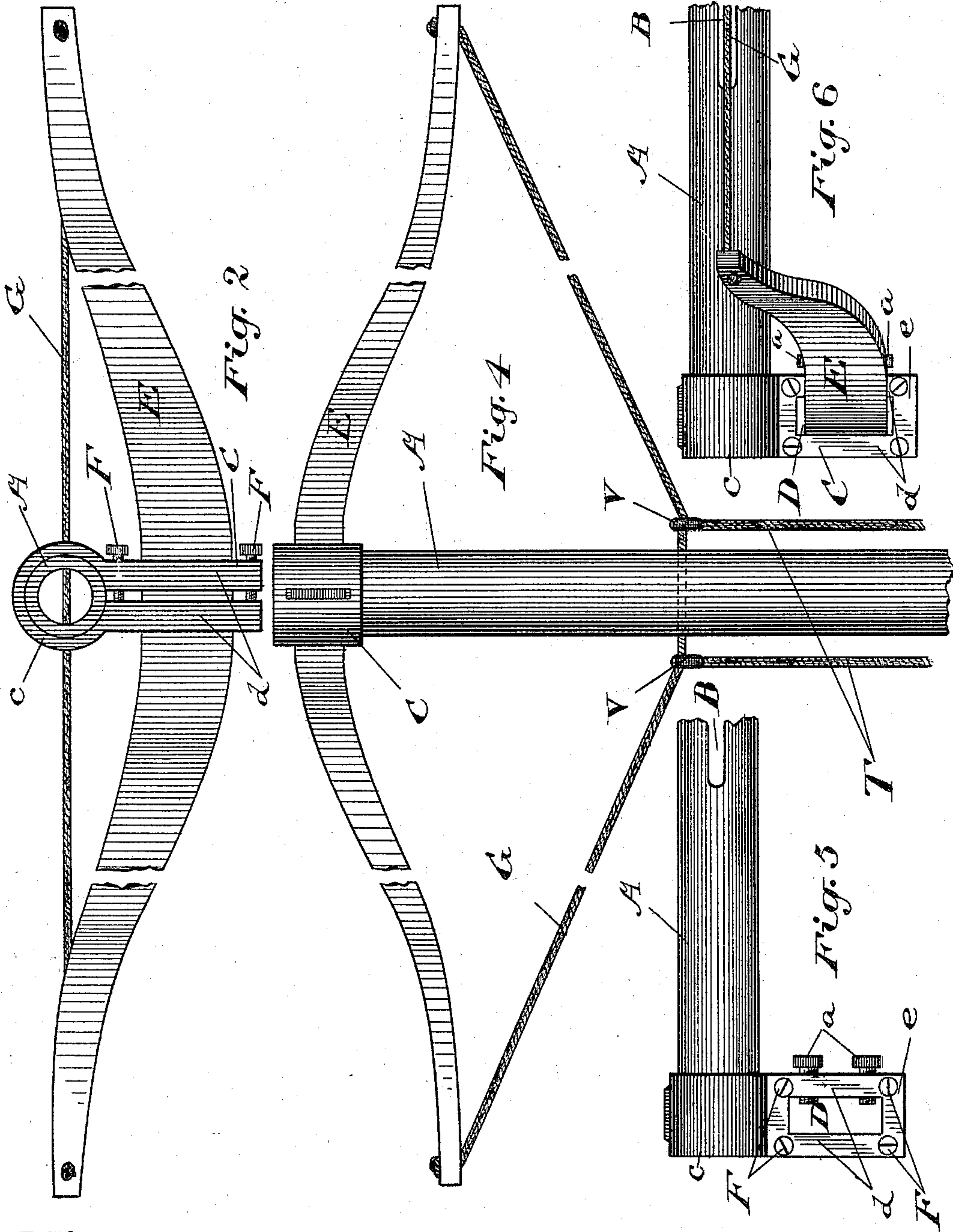
(No Model.)

2 Sheets—Sheet 2.

J. A. COATES.
CROSS BOW.

No. 537,817.

Patented Apr. 23, 1895.



Witnesses

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Inventor

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by
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UNITED STATES PATENT OFFICE.

JOHN A. COATES, OF SANDWICK, CANADA.

CROSS-BOW.

SPECIFICATION forming part of Letters Patent No. 537,817, dated April 23, 1895.

Application filed March 8, 1894. Renewed January 7, 1895. Serial No. 534,133. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. COATES, of Sandwick, in Comox district, in the Province of British Columbia, Canada, have invented certain new and useful Improvements in Cross-Bows; and I hereby declare that the following is a full, clear, and exact description of the same.

The object of this invention is to devise a simple, effective and easily operated and constructed cross bow; and the invention consists essentially of the device hereinafter set forth and more particularly pointed out in the claim.

In the drawings, Figure 1 is a side view of the complete cross bow. Fig. 2 is an end view looking toward the muzzle. Fig. 3 is a side view of the stock and rear portion of the barrel with parts broken away. Fig. 4 is a plan view of the muzzle end of the barrel and the bow. Figs. 5 and 6 are side elevations of the muzzle end of the barrel. Fig. 7 is a cross sectional view of the stock on the lines *a— a* Fig. 1. Fig. 8 is a longitudinal section of the arrow. Fig. 9 is a view showing the breech.

Like letters and figures of reference refer to like parts throughout the specification and drawings.

The seal gun consists essentially of an ordinary gun or rifle barrel A, in each side of which is formed a longitudinal slot B extending from the lock to a point at or near the muzzle. The muzzle end of the barrel A is screw threaded to receive a screw threaded clamp C. The clamp C consists of a split collar *c* having four downwardly projecting lugs *d*, two arranged at each side of the barrel A; the two lugs on one side of the barrel coupled together by an end piece *e*, and the other two lugs on the opposite side of the barrel coupled together by a similar end piece. It might here be stated that the lugs *d* on each side of the barrel are arranged to form a slot D, arranged at right angles to the line of the barrel A. Within the slot D is located a bow E set up a little at each end to allow the string to run from end to end of the slot B. The bow E is held within the slot D by means of set screws *a*, *a*, passing through one of the lugs *d* on each side of the barrel A. The opposite lugs *d* on each side of the barrel A are provided with screw threaded holes through

which pass screws F to tighten the clamp on the barrel A.

By reference to the drawings it will be noticed that the barrel A is not slotted quite to the clamp C, in order that the said barrel will retain its proper shape and rigidity. Connected to each end of the bow E is the bow string G.

It will be noticed by reference to the drawings that the slot B is enlarged at the lock end of the barrel to permit of the bow string passing over the top of the sear H. The sear H consists of a piece of metal substantially the shape shown in the drawings, and is pivoted between its middle and upper end to the gun stock I. The upper end of the sear H projects to a point level with the top of the longitudinal portion of the slot B, and the rear side of the top of the sear H is cut away to form a substantially rectangular shaped shoulder J, against which rests the bow string E when the bow is bent to discharge the arrow K. The lower end of the sear H engages with the upper end of the trigger L, and bearing against the back of the sear H is one end of the curved spring M, the opposite end of which is secured to the gun stock I.

The object of the spring M is to hold the lower end of the sear H continually engaged with the upper end of the trigger L, and to return the sear H to its normal position, or that position indicated in Fig. 1 of the drawings, immediately after the bow string has been discharged, and to hold the said sear in this position to again receive the bow string and hold it until again discharged. The upper end of the trigger L is held against the lower end of the sear H by means of a spring N secured to the gun stock I' in front of the trigger L and sear H. This construction permits the sear to set itself the moment it is fired, and the trigger released by the finger.

The butt of the gun stock I is hollowed out or recessed to form a frame for a chamber O, and secured to each side of the butt of the gun stock is a strap P. Journaled in the strap P is a pin Q which passes through the gun stock from side to side, and may be fitted at one end with a crank in order that the said pin can be rotated. Rigidly mounted upon the pin Q is a drum or reel S, upon which is wound strings T. Each string T passes out

of the gun stock I on its respective side of the said gun stock through an opening U, and connected to the end of each string T on the outer side of the gun stock is a flat blunt hook
 5 V, which is intended to be hooked to or upon the bow string G, to draw the said bow string back to engage with the shoulder J of the sear H.

The arrow consists of a hollow shaft W having a metallic head X fitted to and closing one
 10 end of the shaft W, and a plug Y fitted to and closing the opposite end.

In the operation of the device the hooks V are hooked upon the bow string G, and the
 15 strings T are wound upon the drum or reel S, to draw back the bow string G to engage with the shoulder J of the sear H. The arrow is then inserted into the barrel in contact with the bow string G. The hooks V are released
 20 from the bow string G, and the trigger L is drawn back until the lower end of the sear H is raised, and the upper end of the sear H is lowered to permit of the bow string being released from the shoulder J of the said sear,
 25 and the bow drawing upon the string causes the string to discharge the arrow from the barrel A. The shaft of the arrow, it might be stated, is wound with thread or string, in order that it will tightly fit the barrel, and in
 30 the event of the barrel being rifled, the arrow during its discharge and in its flight will receive a motion similar to the motion of a rifle bullet. The seal naturally floats, and the arrow being hollow assists the seal to a very
 35 slight degree to remain on the level of the water.

In Fig. 9 I have shown the barrel provided with a breech which consists of a breech piece

2 hinged to the top and butt end of the barrel A. In this figure it will be noticed that
 40 in order to protect the bow string G said string is provided with a follower 3 preferably of metal, which is provided with a hook shaped end 4 to engage with the shoulder J of the sear H. I find it advisable to use this follower 3,
 45 but do not confine myself to do so.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a cross bow the combination of a barrel,
 50 a longitudinal slot formed on each side of the barrel from the lock toward the muzzle, a clamp encircling the muzzle end of the barrel a bow held by said clamp, a bow string
 55 connected to each end of the bow and traveling in said slot, a sear pivotally connected to the stock, a trigger to upset the sear, a spring to hold the lower end of the sear in engagement with the trigger, a spring to hold the
 60 trigger in engagement with the sear, the upper end of the sear extending above the level of the slot in the barrel, and provided with a substantially square shoulder with which engages the bow string, a reel rigidly mounted upon a revoluble spindle journaled in the
 65 stock, strings wound upon said reel and passing through openings in the stock, each string provided with a flat blunt hook to engage with and draw the bow string to the sear, substantially as and for the purpose specified.

Sandwich, February 14, 1894.

JOHN A. COATES.

In presence of—

A. B. FRASER,
 ARTHUR LEE.