

W. H. WRIGHT & G. L. THORNE.
Bow and Arrow.

No. 213,083

Patented Mar. 11, 1879.

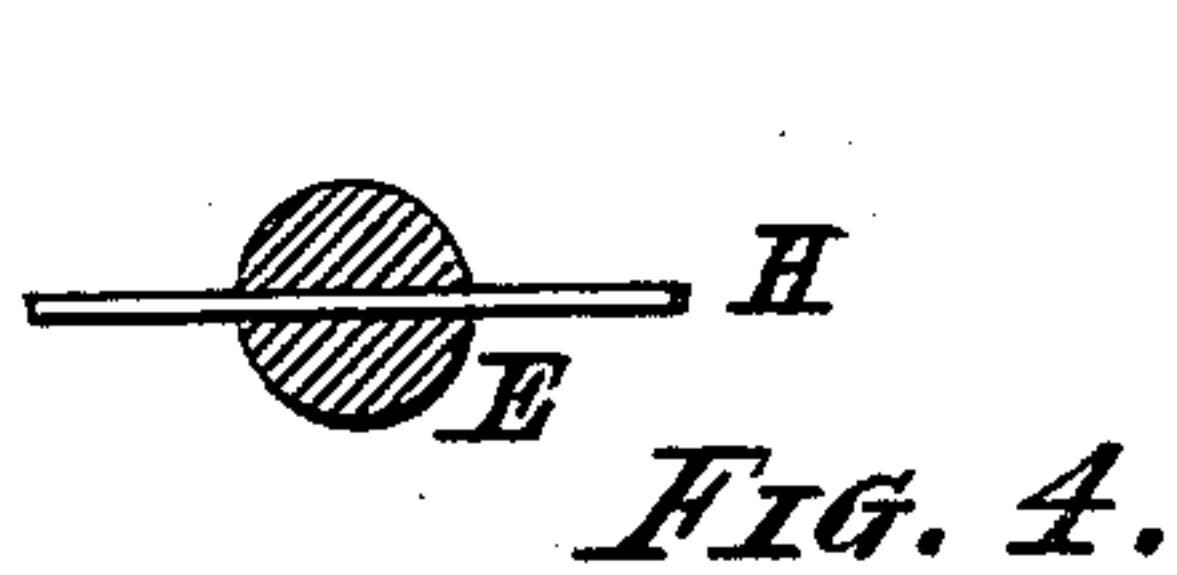


FIG. 4.



FIG. 3.

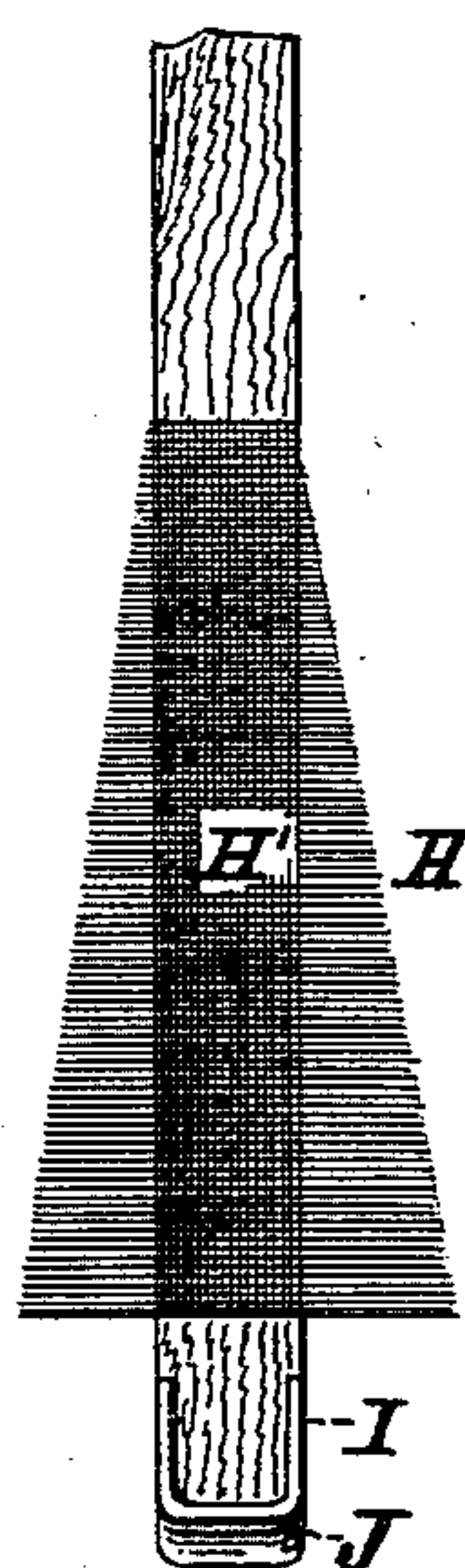


FIG. 1.

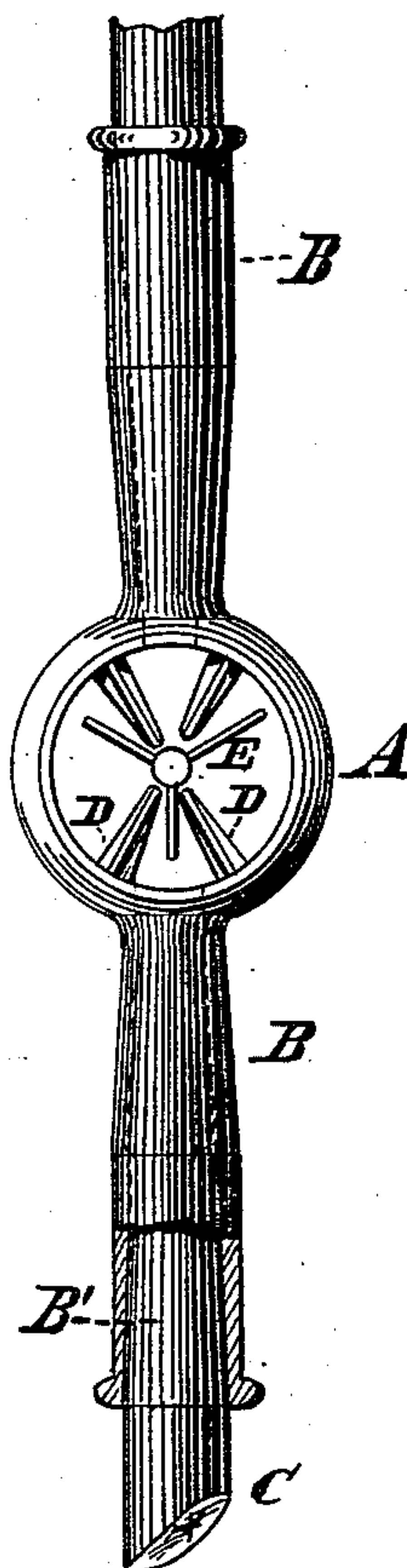


FIG. 5.

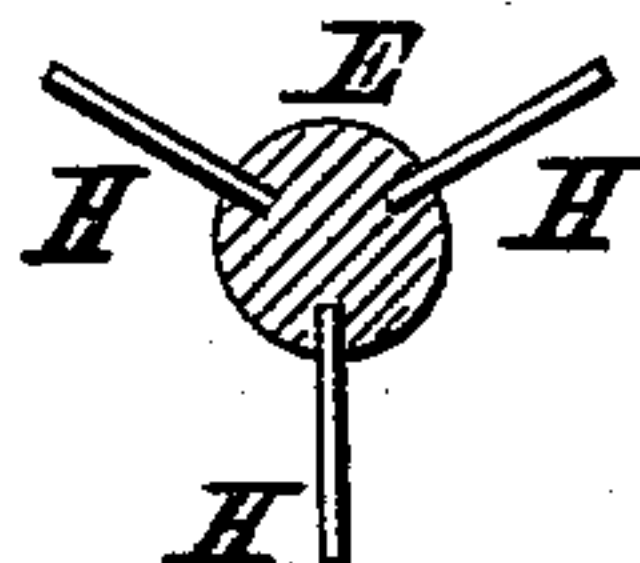
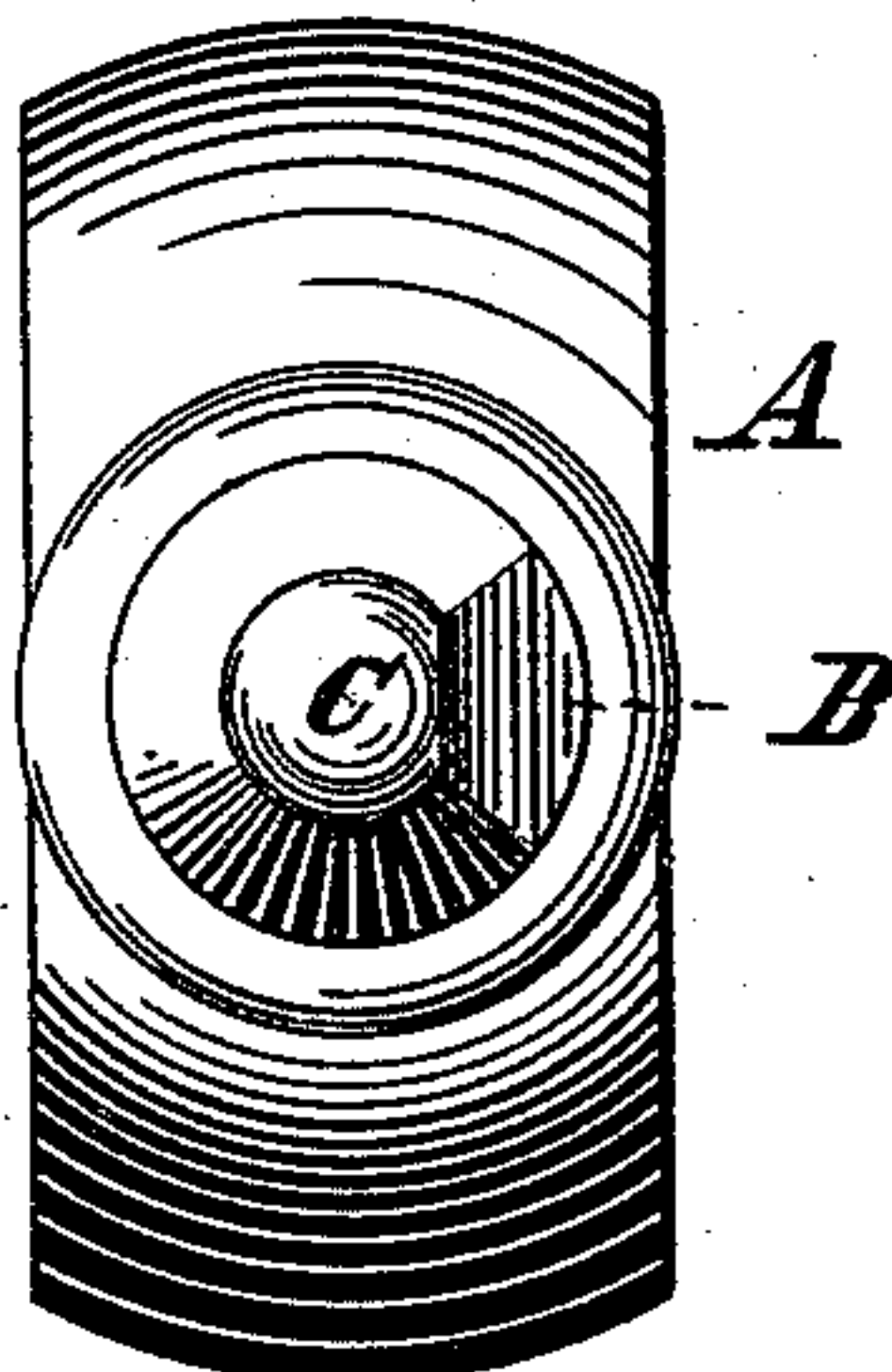


FIG. 2.



Witnesses:

Michael Stark
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Inventors:

William H. Wright,
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UNITED STATES PATENT OFFICE.

WILLIAM H. WRIGHT, OF ROCHESTER, AND GEORGE L. THORNE, OF
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IMPROVEMENT IN BOWS AND ARROWS.

Specification forming part of Letters Patent No. **213,083**, dated March 11, 1879; application filed
November 7, 1878.

To all whom it may concern:

Be it known that we, WILLIAM H. WRIGHT, of Rochester, and GEO. L. THORNE, of Buffalo, State of New York, have jointly invented certain new and useful Improvements on a Bow and Arrow; and we do hereby declare that the following description of our said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention refers generally to archery; and it consists in the peculiar construction and arrangement of a bow and arrow, as hereinafter first fully set forth and described, and then pointed out in the claims.

In the drawings, already referred to, Figure 1 is an elevation of our improved bow. Fig. 2 is an end view of the same on a larger scale. Figs. 3, 4, and 5 are detail views of the arrow.

Like letters of reference indicate similar and corresponding parts in all the figures.

The object of our present invention is the production of a bow which is capable of being readily bisected for transportation and other purposes, and put together when wanted for use.

Its object is, furthermore, to provide for a convenient guide for the arrow; and, lastly, to improve the construction of said arrow.

To this end we construct our bow of three separate parts—A the metallic center-piece, and C C the wooden bars. This center-piece A is composed of an annular ring, having on diametrically opposite sides hollow projections B, serving as sockets for the ends of said spring-bars C. These sockets are made tapering, for ready withdrawal and insertion of said bars C. Within the annulus of the center-piece A are provided four guide-bars, D, placed into the shape of the letter X, and extending to within suitable distance of the center of said annulus, to provide for a passage of the arrow E. These guide-bars serve to steady the arrow while aiming, and to enable the passage of an arrow having three feathers or wings. They are placed in the manner described, and clearly illustrated in Fig. 1. This center-piece, with its sockets, may be

readily produced in the process of casting in any desired metal possessing sufficient stiffness to withstand the strain put upon it when the bow is tensioned, and the guides D may be directly cast with said center-piece or separately inserted therein. The ends B' of the spring-bars C are tapered, so as to fit the sockets B a nice fit.

It will be readily observed that a bow constructed as described possesses all the flexibility of one made of one piece of wood; but it has the further advantage that, shorter pieces being used for the spring-bars, they can be more readily obtained and are far cheaper than the longer ones, while in case of overstraining and breakage but one piece needs renewing. It is furthermore more easily carried about when taken apart, and thus more readily shipped.

The arrow used with this bow consists of the usual wooden rod E, having its point tipped with a metallic ferrule, and its tail end split for the reception of the feathers or wings H. These wings are usually made of pasteboard or bird's feathers, but, owing to the tenderness of the material employed, are easily spoiled. To avoid this objection, we propose to employ for the wings hair-cloth, which, after being cut so as to have the warp and woof running in the right direction, are glued into the slot cut for its reception, after which the warp is pulled out, so as to present the woof, composed of horse-hair, at right angles to the center of the arrow. Such a wing possesses all the stiffness of a feather wing, but is far superior thereto, because it is stronger and not at all affected by moisture.

Instead of hair-cloth, wire-cloth may be used, and answer the purpose more or less satisfactorily. When more than two wings are desired, we shall groove the periphery of the rod E, as shown in Fig. 5, and glue the wings into these grooves.

In arrows it is desirable to have the point heavier than the tail, and to obtain this result wood of higher specific gravity and density is grafted or spliced onto a piece of lower density, which method, however, is costly and produces an article inferior to one made of one solid piece. To retain the latter quality

and combine therewith the former, we propose to make the front end of the rod E in tubular form, and insert into the core a metallic rod, G, which, in point of length, can be readily adjusted to answer all the requirements.

Having thus fully described our invention, we claim as new, and desire to secure to us by Letters Patent of the United States—

1. The separable bow hereinbefore described, consisting of the metallic center-piece A, having an opening for the passage of the arrow, and the detachable spring-pieces C, as and for the purpose specified.

2. In an archery-bow, the center-piece A, consisting of an annular ring, having the guide-bars D, as and for the object stated.

3. In an archery-bow, a metallic center-piece having the annular ring, provided with the guide-pieces D, arranged in the shape of the letter X, and the sockets B, as stated.

4. In an arrow, wings composed of hair-cloth, applied substantially as and for the purpose specified.

5. In an arrow, the wings H, constructed of hair-cloth, having the warp removed to present the horse-hair at right angles to the center line of said arrow, as and for the object stated.

In testimony that we claim the foregoing as our invention, we have hereto set our hands and affixed our seals in the presence of two subscribing witnesses.

W. H. WRIGHT. [L. S.]
G. L. THORNE. [L. S.]

Attest:

MICHAEL J. STARK,
FRANK HIRSCH.