A. W. GIFFORD.

DARTS FOR AIR-GUNS.

No. 177,932. Patented May 30, 1876.

Fig. 1.

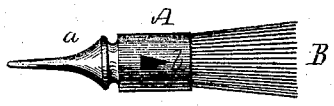


Fig. 2.

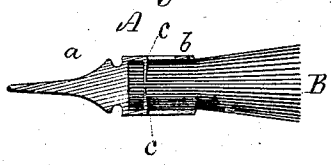
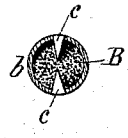


Fig. 3.



Witnesses.
W. C. Boardman
Geo. Clark.

Inventor.
A. W. Gifford.
F. Curtis. Atty.

UNITED STATES PATENT OFFICE.

ALBERT W. GIFFORD, OF WORCESTER, ASSIGNOR TO ALBERT A. POPE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN DARTS FOR AIR-GUNS.

Specification forming part of Letters Patent No. **177,932**, dated May 30, 1876; application filed March 24, 1876.

To all whom it may concern:

Be it known that I, ALBERT W. GIFFORD, of Worcester, Worcester county, Massachusetts, have invented certain Improvements in Darts for Air Pistols or Guns, of which the following is a specification:

The purpose of this invention is to provide a method of securing the tuft of a dart to the pointed body thereof, whereby I am enabled to prevent the pulling out of such tuft, and also to increase its bulk and efficiency.

The drawings accompanying this specification represent, in Figure 1, a side view, in Fig. 2 a longitudinal section, and in Fig. 3 a cross-section, of a dart embodying my improvements.

In the said drawings, A denotes the cylindrical body of the dart, which is usually made of steel, the forward part *a* of such body being pointed, to enhance accuracy of flight, while the rear portion *b* is tubular, to receive the base of the tuft. The tuft of the dart is shown at B as composed of mohair or other proper fibrous material, one end of which is inserted in the tubular body *b*, while its greater portion remains outside of the latter, to steady the dart when in motion, and maintain its horizontal position in flight as long as possible.

My present invention, as before stated, relates to means for rendering the escape of the tuft impossible with fair usage, and to increase the size or bulk of such tuft.

To carry out the object I have in view, I provide a sufficient quantity of camel's hair, mohair, or other suitable fibrous material embodying the requisite lightness and longitudinal stiffness; and I insert one end of this fibrous tuft in the tube *b*, and secure it therein in such manner as to effectually prevent its escape. To accomplish this latter object I employ a punch or pointed instrument, and drive inward from the body *b* one or more triangular or other shaped spurs *c c*, &c., such spurs extending laterally into the interior of the tube and into the tuft, and by this means effectually securing the latter to or within such tube.

The end of the tuft, before insertion within the tube, may, if desired, be wound with wire, cord, or other proper material, and the strands of fiber may be doubled and the fold inserted in the tube *b*, as I do not confine myself to the precise means herein shown. Nor do I confine myself to the precise means for confining the tuft within the tube *b*, as shown, in the spurs or teats *c*, as these may be varied to a considerable extent. For instance, I propose, as a modification of the above method, to create in the edge or mouth of tube *b* one or more notches, and in so doing turn inward a series of spurs, which enter the tuft and secure it in place. Or, again, the rear part of the tube *b* may be originally of greater diameter than the remainder, and after the tuft is inserted the larger part is compressed until a uniform diameter is the result, the compression serving to securely hold the tuft in place; or the mouth of the tube *b* may be upset, or a continuous lip or burr turned inward about the tuft, with good results.

Heretofore, in the manufacture of the best quality of darts, it has been customary to confine the tuft within the tube by driving into the latter a plug, which, by crowding the fibrous material against the walls of such tube, or by its own contact with the latter, serves to prevent escape of such tuft. The space occupied by the plug is comparatively considerable, and reduces the body or bulk of the tuft to a corresponding degree.

By my method, in which the tuft monopolizes practically the entire interior of the tube, I am enabled to employ a larger quantity of fiber and produce a fuller and more efficient tuft.

I claim—

The dart shown and described, consisting of the body A, the tubular portion C, with internal spur or spurs *c*, and the tuft B, substantially as described.

ALBERT W. GIFFORD.

Witnesses:

W. E. BOARDMAN,
C. L. THIERY,
F. CURTIS.