F. CRANE.

BRIDLE-BIT.

No. 174,353. Patented March 7, 1876.

Fig. 1.

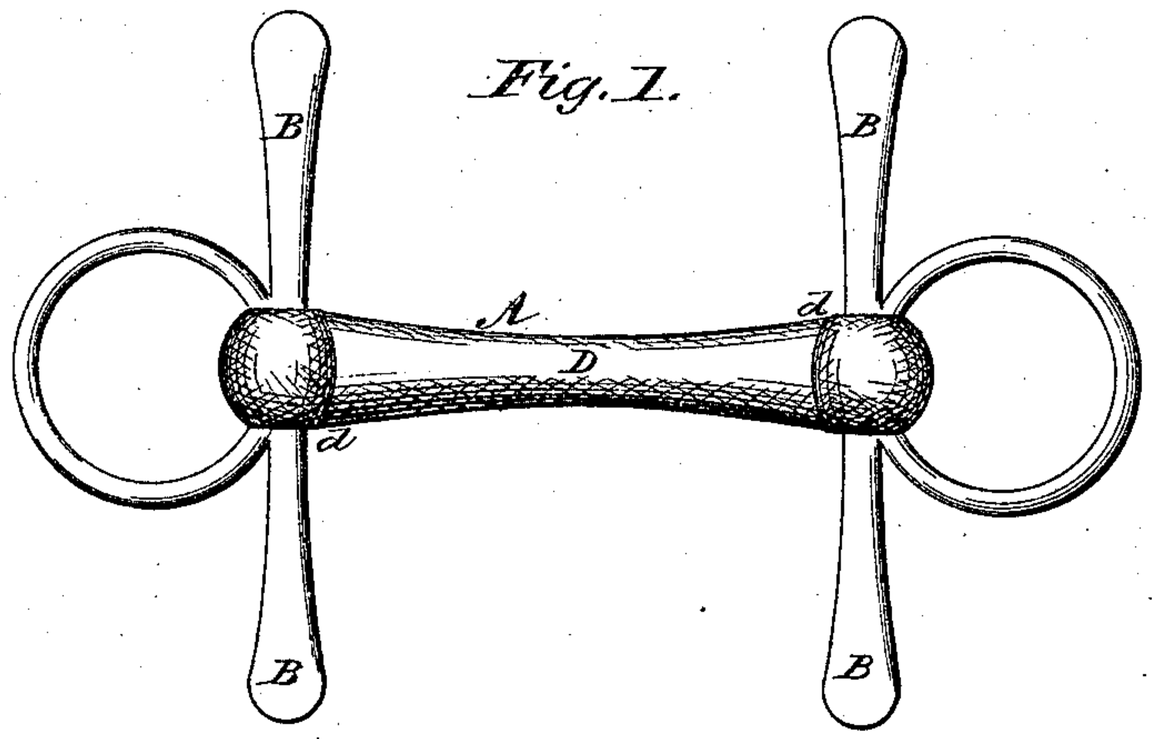


Fig. 2.

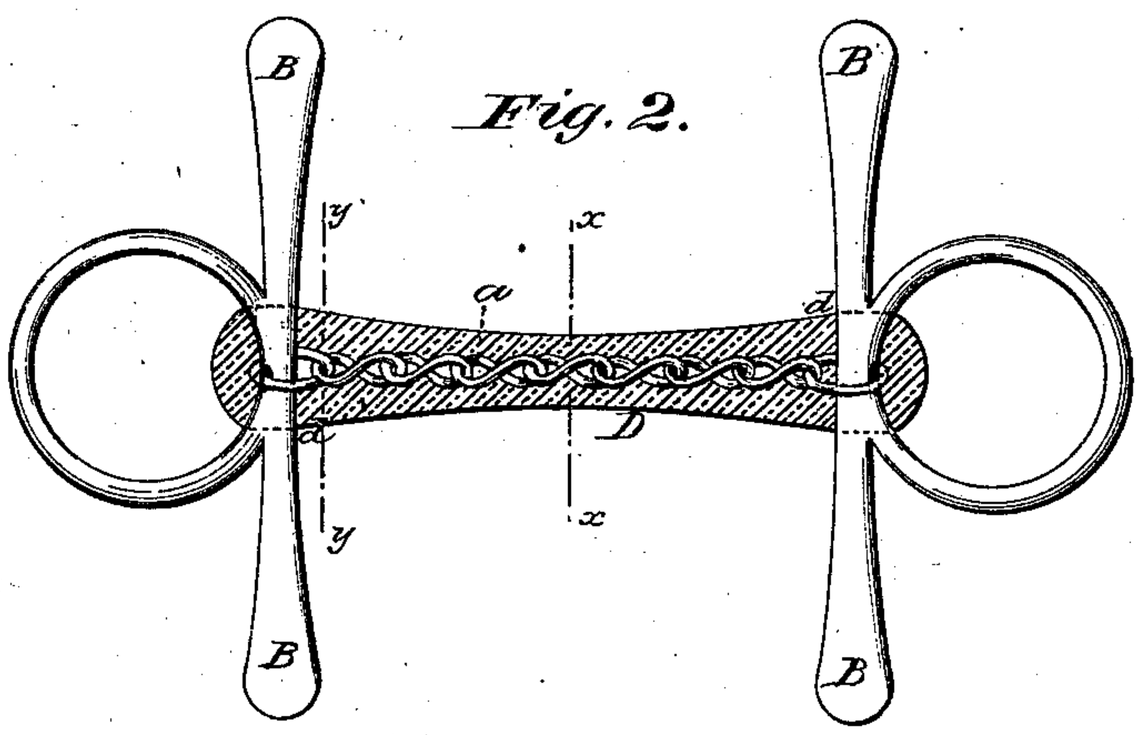


Fig. 3.

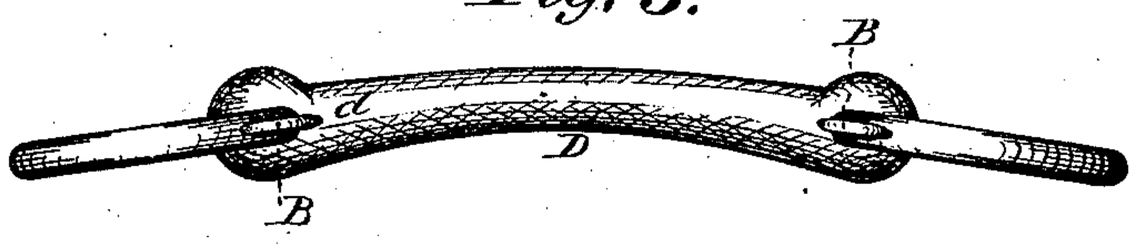
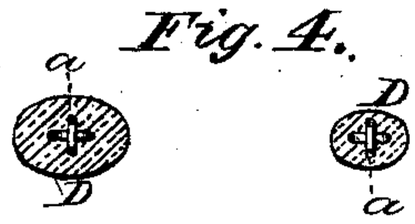


Fig. 4.



Witnesses:
Frank A. MacDonald
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Inventor:
Frederick Crane

UNITED STATES PATENT OFFICE.

FREDERICK CRANE, OF BLOOMFIELD, NEW JERSEY.

IMPROVEMENT IN BRIDLE-BITS.

Specification forming part of Letters Patent No. **174,353,** dated March 7, 1876; application filed August 9, 1875.

To all whom it may concern:

Be it known that I, FREDERICK CRANE, of Bloomfield, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Bridle-Bits; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 shows a plan view in perspective; Fig. 2, a similar view, partly in section; Fig. 3, a side view; and Fig. 4, cross-sections in in the lines *x x* and *y y* of Fig. 2.

The same letters denote like parts in all the figures.

This invention is an improvement on that for which Letters Patent were issued to B. L. Rowley, April 14, 1868, No. 76,821. This kind of bit, since his invention has come into use, is very much sought after. For certain purposes I have found it improved by the modifications and changes hereinafter specified.

The first part of the improvement consists in making the rubber or other equivalent coating upon the mouth-piece of varying thickness, extending the whole length and over the bulbs, and being swelled out toward the cheek-pieces, and contracting toward the middle, as shown in the drawings. By this plan the shape of the mouth-piece is secured independent of the shape of the iron or metal of the bit, the core being of uniform diameter throughout. This form of bit, known as the "trotting-bit," when made all of metal, is very heavy. By giving the form to the bit by varying the thickness of the coating, as shown, I secure lightness, and the elastic coating, being very thick at the points where the mouth-piece touches the horse's lips, gives softness to the bit just where it is wanted.

The second part of this invention consists in giving a permanent curve to the bit, as shown in Fig. 3. In Rowley's invention, referred to above, the mouth-piece was made straight. In this I give a permanently-curved shape, as shown in Fig. 3.

This invention is applicable to all kinds of bits, whether they have flexible or stiff mouth-pieces, and whether the cheek-pieces are snaffle, ring, or other approved style. The coating I prefer is vulcanized soft rubber, fixed directly upon the mouth-piece, and covering the entire mouth-piece and its ends; but when it is desirable to have the ends of the mouth-piece to receive a plating or metal polish the rubber may be secured just inside the cheek-piece, so as to expose the metal outside the cheek-piece in bits such as the snaffle and ring bit.

The following description will enable others to make and use my invention.

In the drawing, A is the mouth-piece, which may be a chain, as shown in the drawing, a wire, or several wires twisted together, a stiff piece of metal, or any strong material to receive the soft elastic coating. I have named the various mouth-pieces made of metal for the reason that I deem them best suited for the purpose, all things considered; but any material that will answer as a core for the mouth-piece to receive the soft flexible coating of the form shown will answer the purpose. B B are the cheek-pieces, which may be of any of the known forms or styles. A is the core of the mouth-piece, shown as a chain in the drawing; but any other suitable material may be substituted for the chain. As it and the twisted-wire bit are light and easily fastened to the cheek-pieces, and permit the soft rubber to become so thoroughly incorporated with them, they are to be preferred. D is the coating of soft vulcanized rubber or other equivalent material, made in the form shown—that is to say, thin in the middle of the mouth-piece, and swelled out toward the cheek-pieces, as shown at *d d*, and in the cross-sections, Fig. 4.

I do not confine myself to the curve shown in the drawings, nor to the shape of the bit. The bit of any curved form may, by my invention, be made with the core consisting of a chain, a wire, twisted wire, a steel spring, gutta percha, or any other material, rigid, flexible, or jointed. The set is given by the form of the die or mold in which the coating is molded upon the bit. If the core is flexible the bit, as finished, will bend when drawn upon; but, as it rests without being drawn

upon, it will preserve any form or set given to it in the mold. This is what I mean by permanently curved, to distinguish it from the straight bit of Rowley's patent.

I do not claim a bit covered with a soft elastic covering, nor securing the ends of the coating to the cheek-pieces, nor a flexible bit made by covering a chain, wire, or like material with soft rubber or similar soft material, as these are found in Rowley's patent of April 14, 1868; but,

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

1. In a bridle-bit, the mouth-piece, having a chain, wire, or other equivalent core, of uniform diameter throughout, and a coating of vulcanized soft rubber or other similar material, extending the whole length and over the bulbs, and made substantially in the form shown—that is, swelled at the portions next the cheek-pieces and contracted toward the middle—as and for the purpose set forth.

2. In a bridle-bit, an elastic flexible mouth-piece, permanently curved, as specified and shown in Fig. 3.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

FREDERICK CRANE.

Witnesses:
JOSEPH COULT,
EDWARD A. DAY.