

E. LILIENTHAL.
BRIDLE BIT.

No. 178,013.

Patented May 30, 1876.

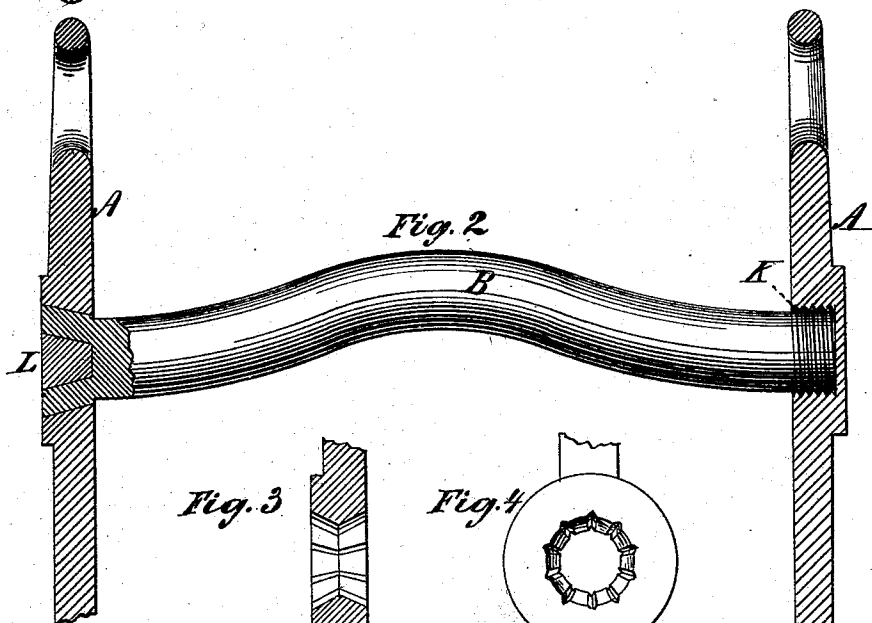
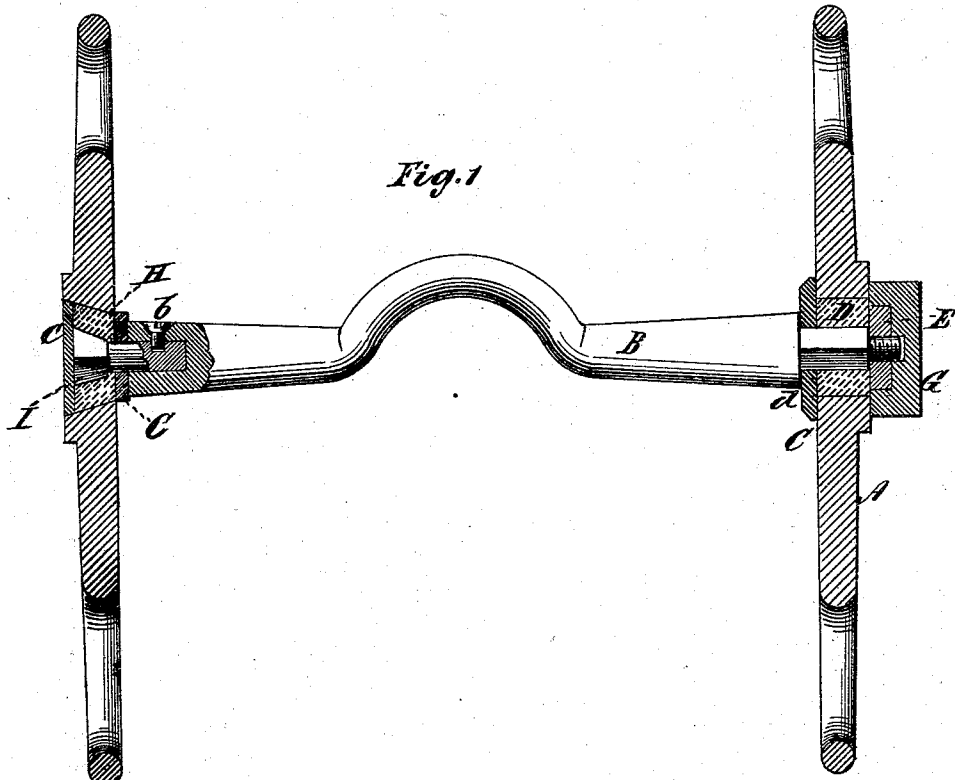


Fig. 3

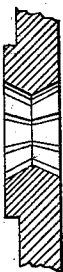
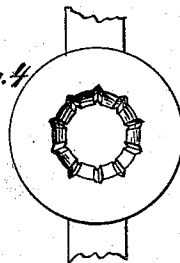


Fig. 4



Witnesses:

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INVENTOR

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UNITED STATES PATENT OFFICE.

EMIL LILIENTHAL, OF NEW YORK, N. Y.

IMPROVEMENT IN BRIDLE-BITS.

Specification forming part of Letters Patent No. **178,013**, dated May 30, 1876; application filed March 13, 1876.

To all whom it may concern:

Be it known that I, EMIL LILIENTHAL, of the city, county, and State of New York, have invented certain new and useful Improvements in Bits; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a part of this specification.

Many efforts have been made to ameliorate the condition of horses, and prevent injury from the harness usually employed upon them.

The object of my invention, which also has these ends in view, is to produce a bit with the cheek-pieces so fastened to the mouth-piece that heat or cold from the latter shall not be transmitted by conduction to the former and cause injury and pain by such transmission, as is now the case; and it consists in the means hereinafter fully described and claimed.

In the drawings, Figure 1 shows a harness-bit containing my invention. Figs. 2, 3, and 4 show modifications of the same.

Between the cheek-piece A and the mouth-piece B I interpose any material which is a non or poor conductor of heat and cold, such as leather, prepared wood, paper, felt, cork, rubber, hard or soft celluloid, &c., the first five materials being preferably made stiff and water-proof in any well-known manner. One mode of interposing such material consists of a washer, C, made from such material of any desired form, placed between a shoulder, *a*, on the end of the mouth-piece and the cheek-piece A, and a polygonal bush, D, also made from such material, fitting snugly in a correspondingly-formed aperture in the cheek-piece A. The polygonal end *e* of the mouth-piece passes through correspondingly-shaped apertures in the washer and bush, and is firmly secured to the cheek-piece by means of a metal nut, F, embedded in a hard-rubber disk, G, the nut being of lesser diameter than the bush, and thus not coming in contact with the cheek-piece, as is shown in Fig. 1.

Another mode consists in securing a piece of non or poor conducting material, H, in the

form of a frustum of a pyramid, in a correspondingly-shaped aperture in the cheek-piece A, and fastening the latter to the mouth-piece B by means of a bolt, I, with a head similarly shaped to the piece H, fitting in a correspondingly-shaped recess in the piece H, and entering a recess in the end of the mouth-piece, a washer of non or poor conducting material being placed between the end of the latter and the piece H, and a screw, *b*, or other means, rigidly securing the bolt, mouth-piece, and cheek-piece together.

A covering, *c*, of cement or other poor or non conducting material, may be placed over the end of the piece H and bolt I, if desired; or the two may be flush with the outer face of the cheek-piece, as is also shown in Fig. 1.

In Fig. 2 I have shown the mouth-piece B made entirely of hard rubber, or other non or poor conducting material or composition, one end being screwed into the cheek-piece at K, and the other caused to enter an aperture corresponding to that in which the piece H fits in Fig. 1, the rubber being then softened by heat, and a wedge, L, driven in to expand it to fill the recess.

In Figs. 3 and 4 I have shown another form of aperture, the cheek-piece being countersunk on both sides, and grooved to permit the end of the hard-rubber mouth-piece to enter when heated, and be prevented from turning when expanded therein.

I do not confine myself to the exact forms of joints just described, as any, whether rigid or adjustable, in which the cheek-piece is separated from the mouth-piece by poor or non conducting material will come within the scope of my invention.

By the means described heat and cold are effectually prevented from being conveyed by conduction to the mouth-piece, and the consequent injury to the horse arising from the old form of bit, wherein this conduction takes place, is prevented.

Having described my invention and the merits it possesses, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the cheek-piece and

mouth-piece with a non or poor conducting material placed between the two, substantially as described.

2. The combination of the mouth-piece, made of hard rubber or other non or poor conducting material or composition where it is joined to the cheek-piece, with the cheek-pieces, constructed substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EMIL LILIENTHAL.

Witnesses:

JOHN C. FOSTER, Jr.,
C. H. RIDENOUR.