F. CRANE.

Manufacture of Bridle-Bits.

No. 203,002. Patented April 30, 1878.

Fig. 1.

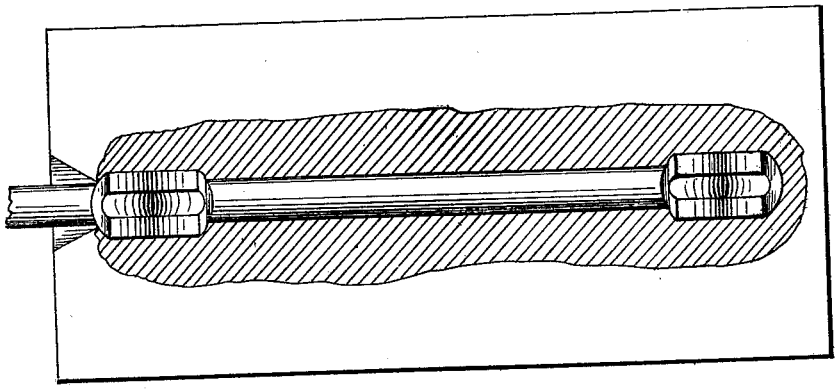


Fig. 2.

Fig. 3.

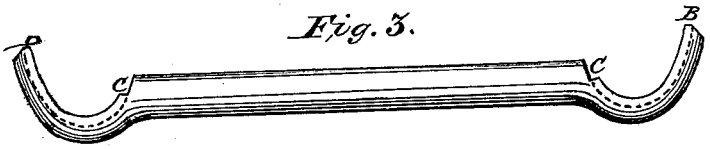


Fig. 4.

Fig. 5.

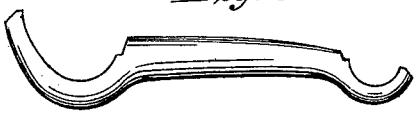
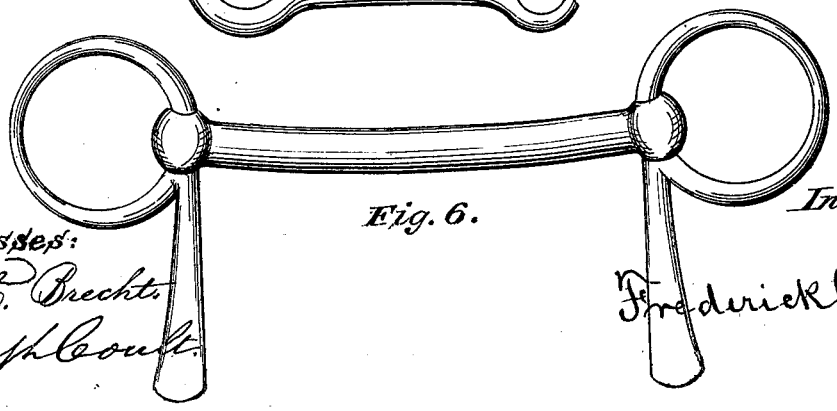


Fig. 6.



Witnesses:

T. C. Brecht.

Joseph Court.

Inventor:

Frederick Crane

UNITED STATES PATENT OFFICE.

FREDERICK CRANE, OF BLOOMFIELD, NEW JERSEY.

IMPROVEMENT IN THE MANUFACTURE OF BRIDLE-BITS.

Specification forming part of Letters Patent No. **203,002**, dated April 30, 1878; application filed December 14, 1877.

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 the Mouth-Pieces of 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 make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 shows a front view of the rough forging as it lies in the lower half of the die; Fig. 2, a front view of the forging, with the burr clipped off; Fig. 3, a side view of the same; Figs. 4 and 5, side views of mouth-pieces of a jointed bit; Fig. 6, one style of a completed bit.

My invention relates to an improved method of producing open-head mouth-pieces for bits, whereby both heads of the mouth-piece blank are formed in line with matched shoulders at a single operation.

Heretofore, in all mouth-pieces made with open heads, to be afterward turned around a cheek-piece, as represented in Fig. 6, the method has been to forge first one end, and afterward the other, resulting in one head usually being out of line with the other, and necessitating a further operation of straightening the mouth-pieces, so as to bring the cheek-pieces in line, besides the greater expense of separate forging. By being in line, I mean that the cheek-pieces shall form the same angle with the mouth-pieces at both ends.

In my invention both of the heads are formed at once, and must of necessity be correct in their relations to each other.

Another advantage of my invention is in the shoulder B, Fig. 3, which fits against the opposite shoulder C when the ends are bent into a circular form in the formation of the head. These match in such a manner that the ends can be turned either hot or cold, and no further operation is necessary.

I do not confine myself to the form of the shoulder C, because it is apparent that it may be of various forms and still afford a bearing for the end B, matching the same.

After clipping with the tools ordinarily used in a power-press, either in consequence of slight imperfections in the tools, or owing to the character of the metal, or from some other cause, a fin or the remains of a fin protrude more or less from the head of the mouth-piece. This fin, when the clipping is by the old method, extends upward into the inner circumference of the heads between B C, Fig. 3, and materially interferes with the mouth-piece clasping the cheek-pieces.

In my method I make use of a cutting-tool, such as is ordinarily used, but altered so that the mouth-piece will rest in it in a position the reverse of that occupied by it in a forging-die. The position in which it rests in the forging-die is shown in Figs. 1 and 3.

The effect of my method is that the roughness or portions of the fin remaining after the clipping operation is turned away from the inner circumference of the heads between B C, and away from the matching shoulders.

The same result may be attained by modifying the forging-dies, so that when they come together the burr will be below the line of the inner circumference of the head, which is turned around the cheeks, so that any roughness left after clipping will not extend up sufficiently far to interfere. Thus all the parts, which must fit close to the other parts in closing the heads, are left smooth, securing a nice fit even when the heads are closed down cold.

Figs. 4 and 5 represent two parts of a jointed mouth-piece, each of which, by the usual process, receives two forgings, but by my process only one.

I do not confine myself to the forms shown in the drawings, but apply my invention to all of the many forms of stiff or jointed open mouth-pieces, in which both ends require forging.

When it seems desirable, I also make the halves of a jointed-bit mouth-piece alike, either by forging both ends with eyes, or by forging both ends with hooks. When both are forged with eyes, one of the eyes is sawed open to make a hook, and twisted so as to lie at a right angle to the eye on the other end.

I do not limit myself to any particular form of matched shoulders, because it is obvious that the changes may be numerous without departing from the spirit of my invention.

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

1. The method, substantially as described, of manufacturing bridle-bits, consisting in striking up the mouth-piece with open heads, having matched shoulders, and ends adapted to embrace the cheek-piece, and bending the same upon the latter, all as described.

2. An open-head mouth-piece blank for bits struck up with matched shoulders, and ends adapted to fit into each other, substantially as set forth.

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

FREDERICK CRANE.

Witnesses:

JOSEPH COULT,

E. P. CLAW, Jr.