J. Mix's Imp^ts in Manufacture of Gimlets &c.

75182

PATENTED

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Fig. 1.

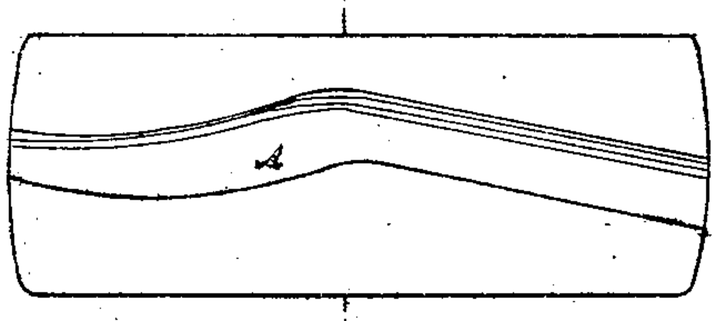

Fig. 3.

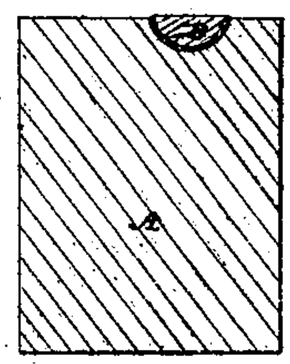

Fig. 2.

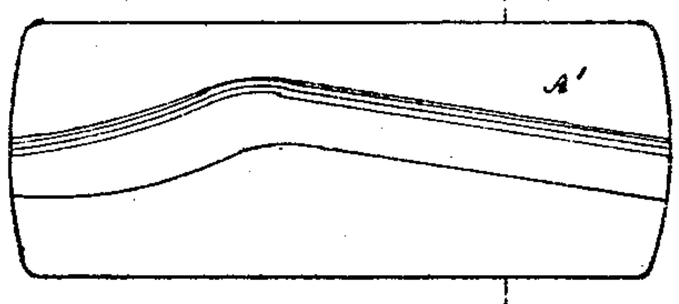

Fig. 4.

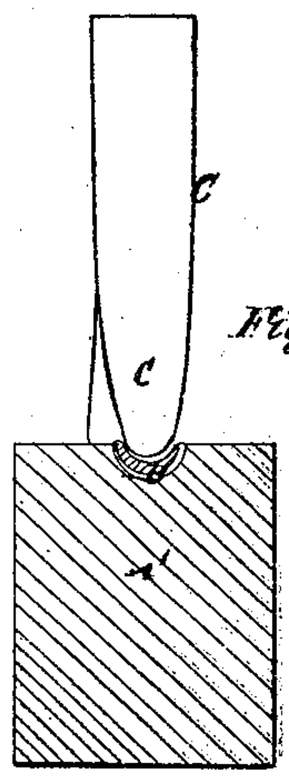

Fig. 5.

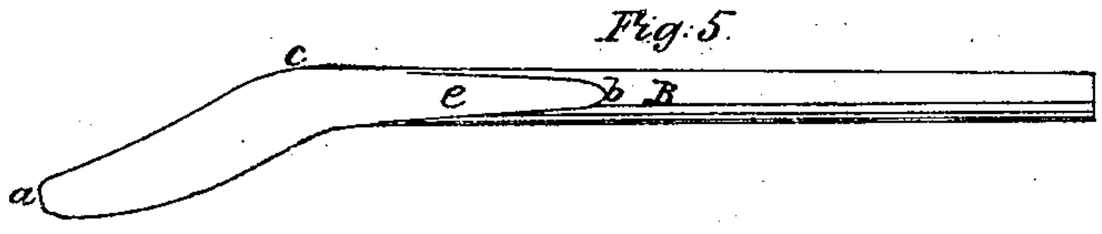

Fig. 6.

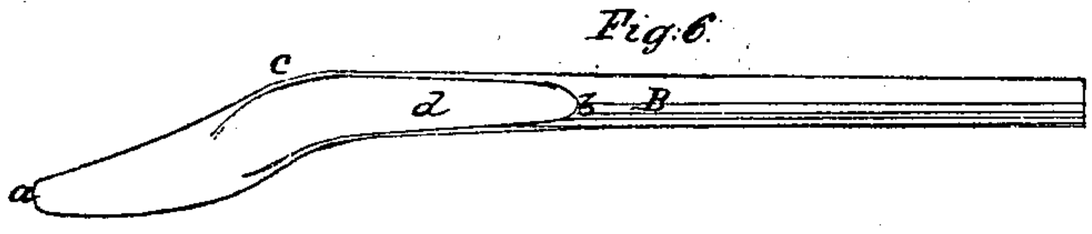

Fig. 7.

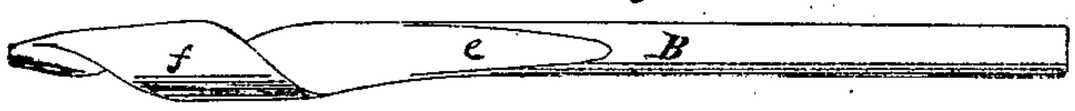

Fig. 8.

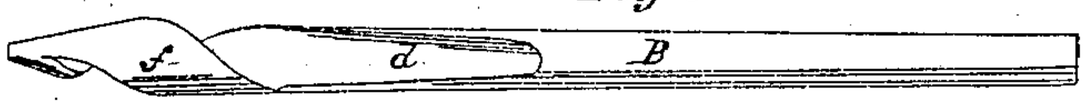

Fig. 9

Witnesses:

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Letters Patent No. 75,182, *dated March* 3, 1868.

IMPROVEMENT IN MANUFACTURING GIMLETS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN MIX, of West Cheshire, in the county of New Haven, and State of Connecticut, have invented a new and useful Improvement in the Manufacture of Gimlets and Gimlet-Bits, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification, and in which—

Figures 1 and 2 represent face views of lower dies used in my improved mode of manufacturing gimlets or gimlet-bits, and

Figures 3 and 4 transverse sections of the same, with work or stock arranged therein; fig. 4 also showing the application of an upper die in connection with the lower one, with the work arranged in between them; fig. 3 being taken as indicated by the line *x x* in fig. 1, and fig. 4 taken as denoted by the line *z z* in fig. 2.

Figures 5, 6, 7, 8, and 9 illustrate longitudinal views of gimlets or gimlet-bits in various stages of their manufacture, and under different forms of construction.

Similar letters of reference indicate corresponding parts.

In the ordinary process of making gimlets or gimlet-bits having more or less twist, it is usual to swage the cutting-portion of the gimlet or bit, including the twist, from a blank having a flattened form on its one side or face, and rounded form on its opposite side, in a straight line or direction with the shank of the gimlet or bit. Under such process or mode, however, of making such articles, the after-operation of wringing the blank to form the twist necessarily involves, from the shape given the blank or stock, a regular tapering character to the latter, from the root of the flattened portion to the point, which is objectionable, as causing the greatest swell too far from the point, and into, for instance, the pod of the gimlet or bit, which after-part should be formed of a taper or diminishing diameter in a backward direction, for the purpose of establishing clearance of the cuttings in contradistinction to cutting. This desideratum my invention accomplishes by giving to the forward part of the flattened portion of the blank or stock of which it is desired to form the twist, a one-sided or bent lateral direction to the axis of the stock, and afterwards rolling over said bent portion to form the cutting-twist, which gives the largest swell at the root of the latter, and establishes a cleaner, and, it may be described as abrupt, finishing-cut at such point, leaving the balance of the flattened portion, whether grooved, twisted, or plain, of a regular diminishing taper from the root of the cutting-twist.

Referring to the accompanying drawing, I take a piece of round-bar steel, of the required length for the gimlet or bit, and slightly bending and pointing it, insert it, while heated, in a lower die, A, fig. 1, and, bringing down a suitable upper die or punch, give to the stock B a flattened form on its one side or face for a portion of its length from the point, as, for instance, represented in fig. 5, where it is shown as flattened from the point *a* as far up as *b*, the same being of a round configuration on its opposite side; and, through the shape of the dies, I further give a lateral direction or bend to the more forward part of such flattened portion, as from *a* to *c*. Where it is desired to form the after-part of the flattened portion, as from *c* to *b*, of a grooved or pod-like form, *d*, figs. 6, 8, and 4, then the upper die or punch, C, and lower die, A′, are constructed to thus form such part, as shown in fig. 4, but the after-part of the flattened portion may, if desired, be left plain or level, as at *e*, in figs. 5 and 7. Whatever the configuration, however, given to the after flattened portion of the stock, the front bent-forward part of the latter, as from *a* to *c*, figs. 5 and 6, is rolled over, by, say, means of tongues, or otherwise, to form a cutting-twist, *f*, figs. 7, 8, and 9, from the part *c* as a base, where the flattened portion is widest. This brings the point *a* of the stock out of its lateral position into the axial line of the latter, and gives the largest swell or biggest diameter at the root of the cutting-twist, with a gradually-diminishing taper backwards from that point for the remainder of the flattened portion, which construction is in no way analogous to wringing the stock with the whole of the flattened portion in the same straight line as the remainder of it, and which ordinary construction gives the biggest swell in the rear of the cutting-twist *f*, that, to establish an easy and clear cut, should have immediate relief, and the after-portion be free to enter the cavity made by the cutting-twist, with roomy escape for the cuttings, but in no other way aiding or forming the cut, or binding on the hole made on the projection or insertion of the cutting-twist through the latter.

Fig. 7 represents a gimlet or gimlet-bit constructed as from the blank shown in fig. 5, with the after flattened portion *c*, from *c* to *b* in fig. 5, left plain or straight; fig. 9, a gimlet or bit constructed from the

same blank, but with the after flattened portion twisted in the ordinary way, by wringing the stock, as at *g*, after the cutting-twist *f* has been formed by rolling over the bent portion of the blank; and fig. 8 shows a gimlet or bit formed from the blank represented in fig. 6, with a pod-like configuration, *d*, given it in rear of the cutting-twist. Thus the gimlet or gimlet-bit, made according to this, my improved mode or process of manufacture, may either be part twist and flat, part twist and pod-form, or wholly twist.

The usual finishing and polishing of the gimlet or bit, and cutting of a screw-thread on its forward end or point, may be subsequently done in the ordinary manner.

What is here claimed, and desired to be secured by Letters Patent, is—

The method herein described of forming blanks for gimlets or gimlet-bits.

JOHN MIX.

Witnesses:

J. W. COOMBS,

A. LE CLERC.