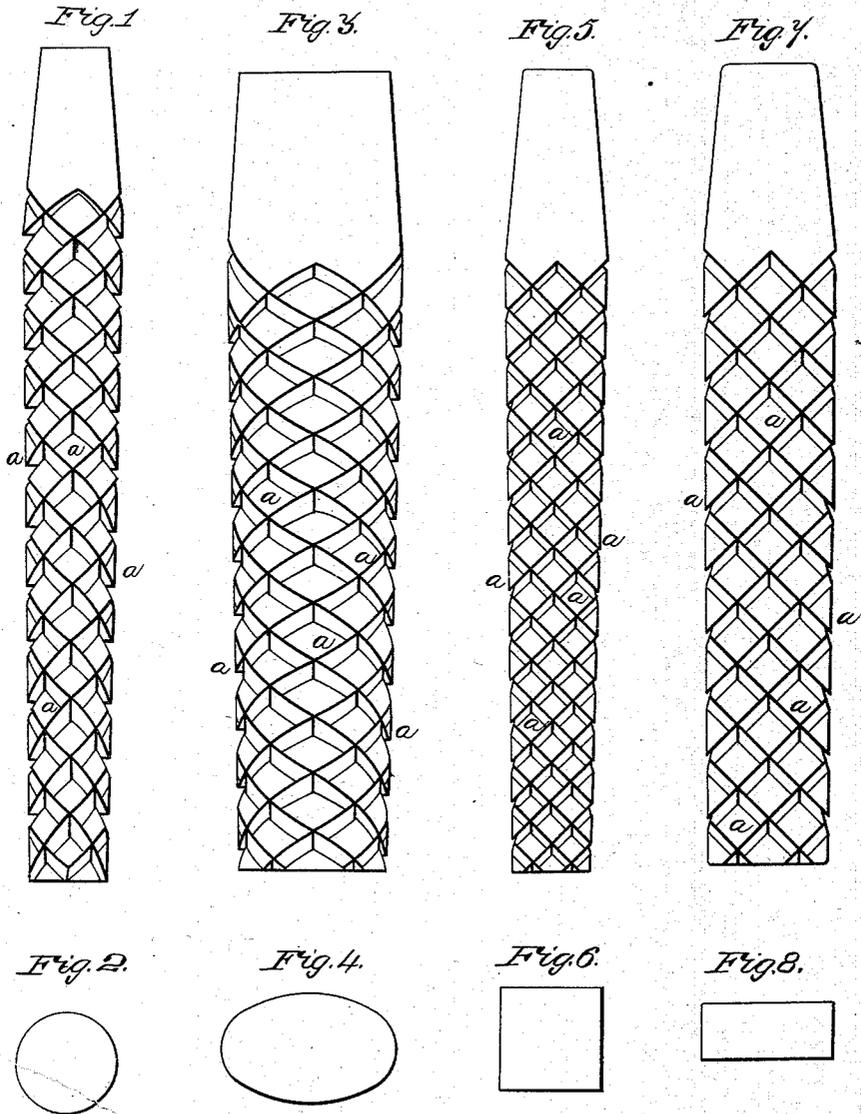


J. Elgin.

Metal Drift.

N^o 62,123.

Patented Feb. 19, 1867.



Witnesses:
Edward Joseph Hughes
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United States Patent Office.

JOHN EGLIN, OF MANCHESTER, ENGLAND, ASSIGNOR TO THOMAS ALDRIDGE WESTON.

Letters Patent No. 62,123, dated February 19, 1867.

IMPROVED DRIFT.

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 EGLIN, of Manchester, England, engineer, have invented certain new and useful "Improvements in Drifts or Tools used for Enlarging Holes;" and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to improved drifts, of round, square, and other forms, such as are used for enlarging holes for bolts, pins, rivets, keys, and the like, in metal plates, bars, shafts, or blocks, the object being generally to render them more efficient, more easily driven, and more capable of leaving the holes in a smooth, finished condition than the drifts hitherto in use; and in order that my said invention, and the manner of performing the same, may be properly understood, I have hereunto appended a sheet of explanatory drawings, to be hereinafter referred to, and representing examples of my improved drifts.

In making a drift according to my said invention, a steel blank is taken, of a round, square, or other required transverse section, and having the usual slight taper longitudinally, and a series of grooves are cut continuously upon it in equally inclined and opposite directions, so as to form a series of diamond-shaped cutters upon the surface.

Figure 1 is an elevation; and

Figure 2, a plan of a round drift formed in this way.

Figure 3, an elevation; and

Figure 4, a plan of an oval drift.

Figures 5 and 6 are similar views of a square drift; and

Figures 7 and 8 are elevation and plan of a flat drift.

A few of the diamond-shaped cutting points, formed by the grooving, are marked with the reference letter *a*. One side of each groove forms an obtuse angle with the surface, whilst the other side forms therewith a rectangular, or nearly rectangular, cutting-edge, it being preferred to make this cutting-edge slightly more acute than a right angle. If the drifts are for round holes, they may be conveniently and expeditiously formed in an ordinary lathe, by taking the blanks prepared as usual of a tapering form, and cutting thereon a series of continuous inclined grooves in one direction; then reversing the ends of the blank, and cutting a second series of like inclinations in the opposite direction, thereby crossing the former series, and producing, by their numerous intersections, series of double-edged diamond-pointed cutters, which cover the whole surface. If of square or oblong form, the grooves are more conveniently formed by planing or filing, but their angle of intersection and their continuity may be the same. This angle may vary with the purposes for which the tool is used, according to the texture and hardness of the metal on which it is employed; but as a general rule the angle of forty-five degrees is found preferable. The advantages of my improvement are, that drifts so formed cut with greater ease than the plain, continuous cutting-edges of ordinary drifts, because the points of the diamond cutters *a*, being the first to enter the metal operated upon, meet with slight resistance because of their small size; and the cutting, once commenced, is continued by their diverging edges with easy gradation, and, cutting equally on both angles, there is no tendency of the drift to twist in the hole, or to deviate from its right direction; and, consequently, the hole is not distorted, but a perfect counterpart of the section of the tool. It is obvious that the total length of the cutting-edges, when formed in this manner, is nearly double that of a drift having a single series of grooves and cutting-edges in one direction only; consequently less force is required, and a smoother and more finished hole is produced. This construction enables the drift to be used as a reamer, by rotation in the hole to be enlarged, as it is obvious that the angular cutting edges will cut equally well in a horizontal as in a vertical direction, and also equally in opposite directions, so that the rotation may be reciprocal or vibrating, by means of a hand-lever or otherwise, with equally good effect.

What I claim as my invention, and desire to secure by Letters Patent, is—

Forming the cutting-edges of drifts of a series of double-edged diamond cutters, by the intersection of two series of spirally-inclined grooves, in opposite directions, substantially as and for the purposes set forth.

Done at Manchester this 22d day of June, 1866.

JOHN EGLIN.

Witnesses:

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