

J. SWAN.
Dies for Forming Auger-Bits.

No. 146,212.

Patented Jan. 6, 1874.

fig 1

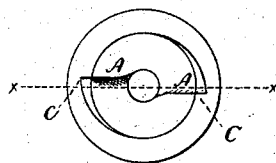


fig 2

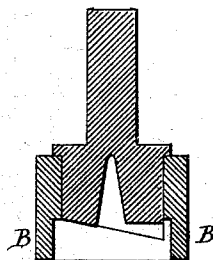


fig 4

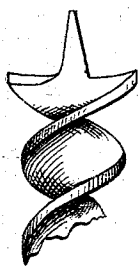
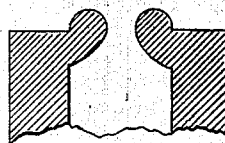


fig 3



fig 5



Witnesses.

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IMPROVEMENT IN DIES FOR FORMING AUGER-BITS.

Specification forming part of Letters Patent No. **146,212**, dated January 6, 1874; application filed December 10, 1873.

To all whom it may concern:

Be it known that I, JAMES SWAN, of Seymour, in the county of New Haven and State of Connecticut, have invented a new Improvement in Dies for Forming Auger-Bits; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an end or face view of the dies; Fig. 2, a longitudinal section; Fig. 3, a bit-head to illustrate the operation of the die; Fig. 4, a bit-blank before heading; Fig. 5, the reverse die.

This invention relates to the construction of a heading-die designed for use in auger-bit-heading machines, such as revolve the heading-die or the bit, the revolution of one or the other being essential to the use of my improved die.

In practice, the dies commonly used for this purpose, in turning the side lip back from the floor-lip, do not properly form or fill this angle a , but leave the corner rounded and dependent upon subsequent finishing operations to perfect the angle.

To overcome this difficulty is the object of my invention; and it consists in forming the inner surface of the projecting edge of the die in eccentric sections, so that in rotating it strikes the metal at the distant point, and by the eccentricity draws the metal inward, which, in combination with the floor-lip forming part

of the die, draws the metal toward and so as to fill the angle.

A A are the working points or edges of the floor-lip die, from which the surface of the die recedes, so as to form a shoulder at each point A. One of these shoulders or working points, A, is all that is essential, but I prefer two. Around the edge of the die a flange, B, projects forward, and at points, C, corresponding to the shoulders A of the floor-lip die a shoulder is formed, as seen in Fig. 1, the inner surface of the flange drawing in from the depth of the shoulder toward the other shoulder, so that the radius at the nearest point is the radius of the head to be formed. The blank or unformed head, Fig. 4, passes into the die at its broadest part, and the rotation of the dies or bit, as the case may be, causes a combined drawing of the metal upon the sides and floor in the same direction, and toward the angle, so that coming from the dies the angle a is formed, as seen in Fig. 3, in the most perfect manner.

It will be understood that a corresponding die for the reverse side of the head is necessary; but this may be any of the known dies heretofore used, a section of one of which is shown in section, Fig. 5.

I claim as my invention—

The die for forming auger-bits having inclines A A for drawing and forming the floor-lip, and a cam-faced ring or head, B, for reducing and forming the auger-lips, as described.

Witnesses:

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