Sept. 9, 1941. E. W. TAYLOR 2,255,196

CUTTING TOOL

Filed March 22, 1938

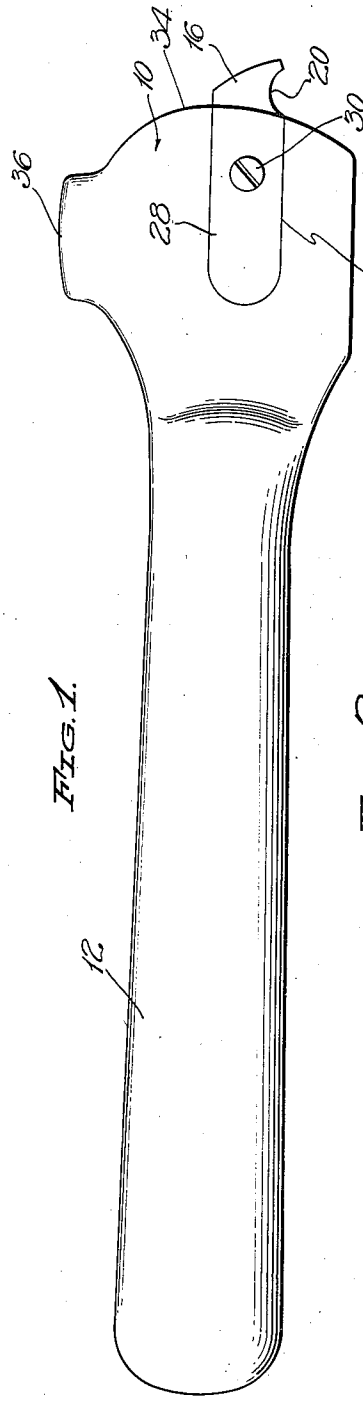

FIG. 1.

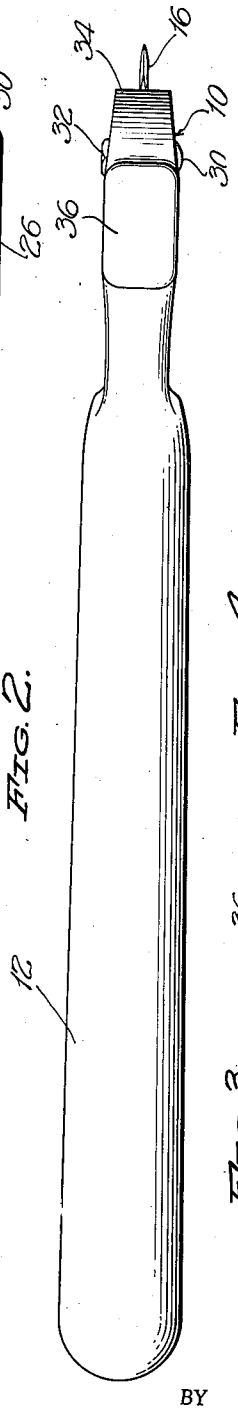

FIG. 2.

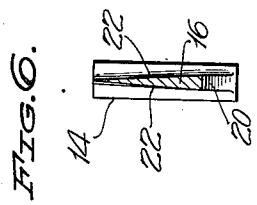

FIG. 6.

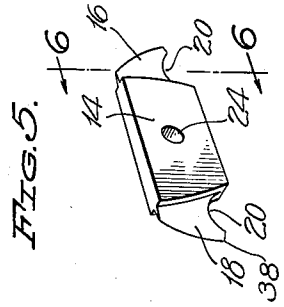

FIG. 5.

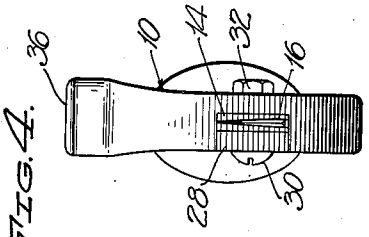

FIG. 4.

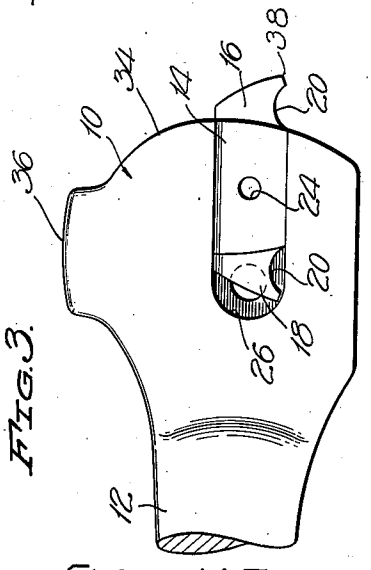

FIG. 3.

EURAL W. TAYLOR.
INVENTOR.

BY

Knight Bros
ATTORNEYS

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CUTTING TOOL

Eural Wade Taylor, Denton, Tex.

Application March 22, 1938, Serial No. 197,344

7 Claims. (Cl. 30—294)

The invention relates to a metal working tool, the principal function of which is cutting sheet metal.

One object of the invention is to make a tool of this kind which is sufficiently rugged to stand up under the stress of the continual hammering to which such tools are subjected, yet which is capable of fine work around sharply curved lines.

Another object is to provide a tool of this kind in which the only breakable part is a small replaceable bit.

Another object is to provide a tool which can be adapted for various widths of cut by simply changing the bit.

Another object is to make a tool of the kind in question which will not transmit shocks to the hand holding it.

Other objects will appear from the following specification, in which I have described one embodiment of the invention, with reference to the accompanying drawing, wherein

Fig. 1 is a side elevation of the tool;

Fig. 2 is a plan view of the tool;

Fig. 3 is a side elevation of the head of the tool, with the cover plate removed;

Fig. 4 is an end elevation of the tool;

Fig. 5 is a detail perspective view of the bit; and

Fig. 6 is a cross section of the bit on the line 6—6 of Fig. 5.

The tool consists essentially of a head 10, a handle 12, and a bit 14. The bit is received in a socket 26 of the head and is held therein by a plate 28 secured in place by a screw 30 and a lock nut 32.

The bit is preferably provided with a plurality of cutting points, two points 16 and 18 being shown in the present case. Additional points could be provided in star-shaped arrangement, but the simple two point bit shown is preferable from the standpoint of housing the same within the head with the least weakening of the head. With this shape of bit the recess or socket 26 extends in from the surface 34 of the head substantially coaxial with the handle 12 and thus weakens the head as little as possible. The cutting points of the bit, as shown in the cross section Fig. 6, are approximately triangular in cross section, the lower face 20 being cut off by sides 22 which converge upwardly. This shape of the cutting point enables the tool to be rocked about its longitudinal axis for following sharply curved lines and prevents binding of the cutting point in the kerf which it cuts.

It is desirable to make up the bits 14 with two cutting points of different thickness, since different widths of the kerf are called for in some classes of work, for instance in stencil cutting. Additional bits with cutting points of other thicknesses can easily be substituted.

The tool can be considered as having a main axis defined by the handle 12 and cutting point 24 and the head is provided with a striking face 36 adapted to be struck by a hammer at a pronounced angle, preferably a right angle, to the main axis of the tool. This striking face may have a slight curvature from front to back, but preferably has no transverse curvature because to strike it at a transverse angle endangers the cutting point. The handle 12 is massive for the purpose of reducing the transmission of shocks to the hand of the metal worker.

The curved face 34 of the head of the tool bears against the surface of the metal being cut and guides the tool while cooperating with the cutting point to shear the metal. The proximity of this bearing face to the cutting point enhances their cooperative action. The bottom edge 20 of the cutting point is curved, as shown, preferably merging smoothly into the bearing face 34. The end of cover plate 28 is shaped to form an integral part of the bearing face 34. This cover plate, fitting tightly in its recess 26 and being firmly clamped against the bit 14, takes a part of the stresses of the head and bit. It can be clamped in any desired way, such as by rivet, cap screw, or bolt and lock nut. The sharp point 38 facilitates the initial penetration of the metal.

I claim:

1. A tool of the kind described, comprising a head and a relatively massive handle, said head having a cutting point projecting therefrom on the side opposite said handle and being provided with a surface for striking the same between said handle and said point.

2. A tool of the kind described, comprising a handle, a head, and a bit, said head and said handle being joined together and said head having a recess to receive said bit and a cover plate to fit over said bit, means for detachably securing said cover plate, bit, and head together, said bit and said recess being formed so that the cutting point of said bit projects from said head at the side opposite said handle, the surface of said head from which said cutting point projects being broader than said cutting point so as to provide a bearing face to guide the tool upon the surface of the work, said head being formed with a striking surface between said handle and said cutting point.

3. A tool of the kind described, comprising a head, an elongated handle projecting from one side of said head and a cutting point projecting from the opposite side of said head, said head being formed with a striking surface between said cutting point and said handle, said cutting point being a flat body with one short axis and two longer axes, the two longer axes being in a plane intersecting said striking surface and parallel to the longitudinal axis of said handle, said cutting point being considerably thinner than the side of the head from which it projects and having a narrow concave face bounded by cutting edges on the side remote from said striking surface.

4. A tool of the kind described, comprising a head, an elongated handle projecting from one side of said head and a cutting point projecting from the opposite side of said head, said head being formed with a striking surface between said cutting point and said handle, said cutting point being a flat wedge-shaped body with one short axis and two longer axes, the two longer axes being in a plane intersecting said striking surface and parallel to the longitudinal axis of said handle, said cutting point being considerably thinner than the side of the head from which it projects and having a narrow concave face bounded by cutting edges on the side remote from said striking surface, the thinner part of said cutting point being nearer said striking surface than the thicker part.

5. A tool of the kind described, comprising a head, an elongated handle projecting from one side of said head and a cutting point projecting from the opposite side of said head, said head being formed with a striking surface between said cutting point and said handle, said cutting point being a flat body with one short axis and two longer axes, the two longer axes being in a plane intersecting said striking surface and parallel to the longitudinal axis of said handle, said cutting point being considerably thinner than the side of the head from which it projects and having a narrow concave face bounded by cutting edges on the side remote from said striking surface, said cutting point being separable from said head and having a shank fitting into a socket in said head.

6. A tool of the kind described, comprising a head, a handle projecting from one side of said head, a bit comprising a shank and a plurality of cutting points adapted to be separably secured in a socket in said head so that a selected one of said cutting points projects from the side of said head opposite said handle, said head being formed with a striking surface between said projecting cutting point and said handle, each of said cutting points being a flat body with one short axis and two longer axes, the projecting cutting point being so positioned that its two longer axes are in a plane intersecting said striking surface and parallel to the longitudinal axis of said handle, each cutting point having a narrow curved face bounded by cutting edges on the side which is remote from said striking surface when the cutting point is in projecting position, each of said cutting points being considerably thinner than the side of the head from which it projects.

7. A tool of the kind described, comprising a head, an elongated handle projecting from one side of said head and a cutting point projecting from the opposite side of said head, said head being formed with a striking surface between said cutting point and said handle, said cutting point being a flat body with one short axis and two longer axes, the two longer axes being in a plane intersecting said striking surface and parallel to the longitudinal axis of said handle, said cutting point being considerably thinner than the side of the head from which it projects and having a narrow concave face bounded by cutting edges on the side remote from said striking surface, the juncture of the side faces of said cutting point and the side of said head from which it projects being substantially rectangular.

EURAL WADE TAYLOR.