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APPARATUS FOR STAMPING AND MARKING PARTS

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This invention relates to apparatus for forming sheet metal parts while simultaneously marking said parts with a correct part number or character.

An object of this invention is to provide apparatus for marking numbers, or characters, on sheet metal parts while they are being formed to get away from the practice of individually stamping each sheet metal part separately after it has been formed. In the old system wherein the number was stamped on the part separately from the forming of the part its was possible for the operator to err and place the wrong number on the part.

These and other advantages will be apparent when the following specification is taken in connection with the attached drawing which is an exploded isometric view of the die including this invention in place on a press.

As viewed in the drawing, a male die **2** is positioned on the base **4** of a press of any desired design used for press forming sheet metal. Die **2** may be integrally formed with base **4** or made separately and held in position by any suitable means desired or merely laid upon the base. The male die **2** may be formed as either a shaping or cutting die.

The male die **2** works in cooperation with a yieldable material **6** which is carried by a holder **8** on the ram **10** of the press. When the base **4** and holder **8** are moved relatively towards each other, the yieldable material **6** is forced against the die **2** and the upper face of the base **4**. When sufficient pressure is applied, the resilient material conforms itself to the external surfaces of the die **2**. This type of method and apparatus for cutting sheet metal is shown and described in the patent to Guerin, United States Patent No. 2,055,077. The resilient material **6** is contained against lateral expansion when it is under press pressure by the downwardly extending edge **12** of the holder **8**.

When it is desired to make a part from sheet metal, the press is opened, that is, the base **4** and holder **8** are spaced apart, and a sheet metal working piece **14** is placed on the upper surface of the die **2**. This sheet **14** is of such size so as to completely cover the die **2** when the yieldable material **6** forces the sheet metal around said die. The base **4** and holder **8** are then brought together with sufficient force being applied through ram **10** so that a part is formed from the metal sheet **14**.

It has been a practice in the past if such a part were one of many and needed identification, a part number or characteristic would be placed upon the part after it had been formed. As stated hereinbefore, this arrangement was time consuming and permitted an operator to place the wrong number on the part. Further, when individual numbers were placed in a series along a part with each number being set therein by hand die, the numbers had a tendency to deform the sheet metal part while at times leaving an indistinctly defined number. To do away with these disadvantages in marking parts, a recess **16** is placed on the face of each male die **2** to receive a strip, or stamp, **20** having a part number projecting therefrom in reverse. This part **20** may be formed of a spring steel. The cavities behind the numbers on the spring steel member are filled with a suitable backup material, such as solder or plastic, to prevent their collapse. The spring steel member **20** is fixed in recess

16 so that the numbers, or characters, **18** project above the die surface.

When the sheet metal **14** is placed over the male die **2**, a piece of high density material **22** is placed on the other side of the sheet metal directly over the numbers, or characters, **18**. This backing piece **22** is slightly larger in area than the area included by all of the numbers. This piece can be made of various types of steel depending on the sheet metal to be formed and the pressures to be used in forming, the backing piece being rigid comprising a material or substance harder than the piece being worked. The entire assembly is then covered by a rubber throw sheet **24** before the press is actuated. Now, when the base **4** and holder **8** are brought together and form a part from metal sheet **14**, an identifying number is placed on said sheet.

I claim:

1. Means for forming and marking a sheet working piece comprising,
   (*a*) a die having a forming surface and an edge of a predetermined contour,
   (*b*) means for marking a piece,
   (*c*) said means including raised marking means extending from said forming surface of said die,
   (*d*) press means for applying a pressure downwardly towards the forming surface of said die,
   (*e*) said press means including a confined yieldable pad,
   (*f*) said yieldable pad being larger than said forming surface so that it mates with said die, and
   (*g*) backing means having a rigid surface in alignment with said raised marking means,
   (*h*) said rigid surface being only slightly larger than said raised marking means,
   (*i*) said backing means being located between said raised marking means and said press means.

2. Means for forming and marking a sheet working piece comprising,
   (*a*) a die having a forming surface and an edge of a predetermined contour adapted to engage and form a sheet working piece,
   (*b*) means for marking a piece,
   (*c*) said means comprising raised marking means extending from said forming surface of said die adapted to engage and mark a sheet working piece,
   (*d*) press means for applying a pressure downwardly towards the forming surface of said die,
   (*e*) said press means including a confined yieldable pad,
   (*f*) said yieldable pad being larger than said forming surface so that it mates with said die, and
   (*g*) backing means having a rigid surface in alignment with said raised marking means,
   (*h*) said rigid surface being only slightly larger than said raised marking means,
   (*i*) said backing means being located between said raised marking means and said press means so that a sheet working piece can be located between said backing means and said raised marking means.

3. Means for forming and marking a sheet metal working piece comprising,
   (*a*) a die having a forming surface and an edge of a predetermined contour adapted to engage and form a sheet metal working piece,
   (*b*) means for marking a piece,
   (*c*) said means including raised marking means extending from said forming surface of said die adapted to engage and mark a sheet metal working piece,
   (*d*) press means for applying a pressure downwardly towards the forming surface of said die,
   (*e*) said press means including a confined yieldable pad,

(*f*) said yieldable pad being larger than said forming surface so that it mates with said die, and

(*g*) backing means having a rigid surface in alignment with said raised marking means,

(*h*) said rigid surface being only slightly larger than said raised marking means,

(*i*) said rigid surface of said backing means comprising a substance harder than that of a sheet metal working piece,

(*j*) said backing means being located between said raised marking means and said press means so that a sheet metal working piece can be located between said backing means and said raised marking means.

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