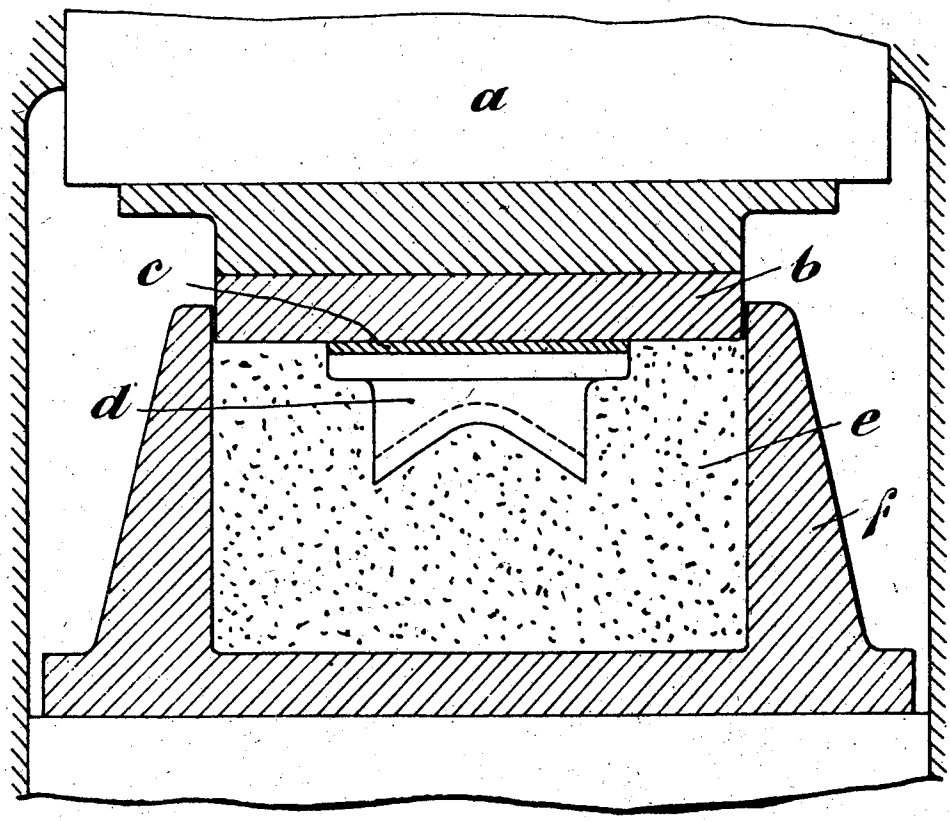
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APPARATUS FOR DIE-SHAPING SHEET-METAL

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APPARATUS FOR DIE-SHAPING SHEET METAL

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2 Claims. (Cl. 113—38)

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This invention has reference to an improved means of forming sheet-metal, and is particularly applicable to the means and the method referred to in my pending applications for U. S. American patents Serial Nos. 533,757 and 533,758, filed May 2, 1944, but the invention has application to other means and methods of forming sheet-metal than those specifically referred to in the aforesaid applications.

The object of the present invention is to provide an electrical control means for readily interconnecting when required the press forming tool with the drop hammer, stamp, or moving head which usually forms or is definitely connected to the top tool of the press in which the pressing or stamping operation is performed, so that at will and as required the press forming tool can be rigidly connected to or disconnected from the drop hammer, stamp or head and as readily interconnected therewith in the operation of the press.

The invention consists of means for forming sheet-metal, characterised by the provision of a magnetic chuck interconnected between the press forming tool and the drop hammer, stamp, or moving head of the press, whereby a ready connection or disconnection may be effected of the tool to or from the hammer, stamp or head for the purposes hereinafter set forth.

One means of carrying the present invention into practice as applied more particularly to the means of shaping sheet-metal as described in the specifications accompanying the pending applications for U. S. American patents Serial Nos. 533,757 and 533,758, filed May 2, 1944, is illustrated by the accompanying diagrammatic drawing which is a sectional elevation through the press forming tools and sand containing chamber.

According to the inventions described in the aforesaid specifications the forming tool is normally adapted to contact with and force the sheet-metal being operated upon into and against the sand medium which constitutes the substitute for a bottom forming tool. In the drawings the drop hammer or top stamp *a* of the press is provided on its undersurface with a magnetic chuck *b* preferably of relatively substantial dimensions and capacity which is adapted to be energised through an electric switch control circuit according to known practice. This magnetic chuck *b* is adapted to have facial contact with a steel or iron plate *c* which plate forms a backing for what may be termed the upper surface of the press forming tool *d*.

It will be appreciated from the foregoing description that when the magnetic chuck is energised and brought into contact with the steel

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or iron plate as seen in the drawing a firm connection is maintained between the drop hammer or top stamp *a* and the press forming tool *d* and that these parts will be capable of reciprocation as one unit when the press is in operation; it will further be appreciated that if the electric circuit through the magnetic chuck is broken and the chuck consequently de-energised then the drop hammer or top stamp *a* is automatically disconnected from the press forming tool *d* and this tool will then be capable of removal from the hammer or stamp for replacement by an alternative tool, or the tool might remain in its setting or location within the sand or other granular medium *e* in its metal forming position within the chamber *f* and the hammer or stamp used in the manner of a drop hammer or stamp to strike a series of repetitive blows upon the tool *d*, so that a sheet-metal pressing operation can be converted into a drop stamping operation on the same piece of work with no other alteration or change than that of switching off the current through the magnetic chuck *b*; and that the press forming tool *d* can be reconnected with the drop hammer or top stamp *a* by the simple operation of re-energising the magnetic chuck.

The invention thus provides the dual facilities of a ready means of connection and disconnection of the press forming tool to and from the drop hammer or top stamp, and a ready conversion of an ordinary pressing operation into a repetitive drop stamping operation.

I claim:

1. An apparatus for forming sheet-metal comprising, in combination, a movable upper platen, a magnetic chuck attached to the lower side of the upper platen, and a forming tool adapted to be held magnetically by the chuck, the chuck having a flat lower face and being of sufficient strength to serve as an impact piece to permit the chuck and upper platen to be operated as a drop hammer when the chuck is deenergized.

2. An apparatus as claimed in claim 1, comprising a forming tool having a backing plate adapted to be held magnetically by the chuck.

JACK RANSOM.

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