

990,426.

A. DEWES.
CUTTING DIE.
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Patented Apr. 25, 1911.

Fig. 1.

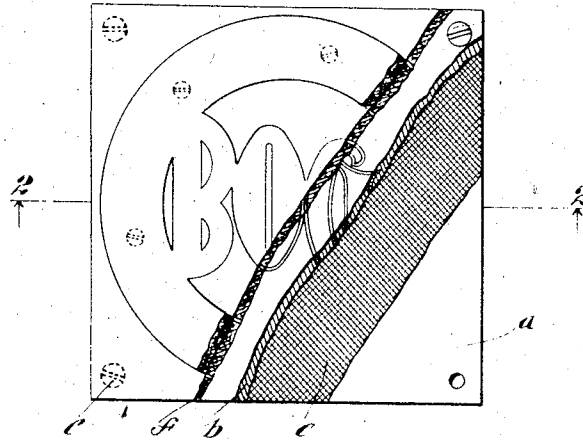


Fig. 2.

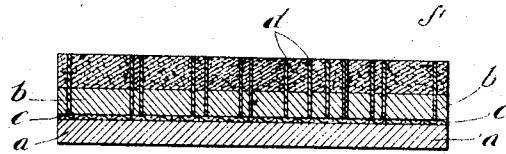


Fig. 3.

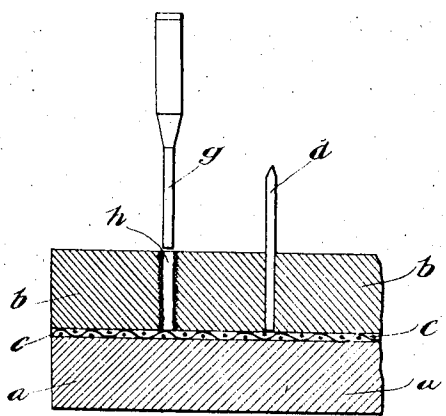
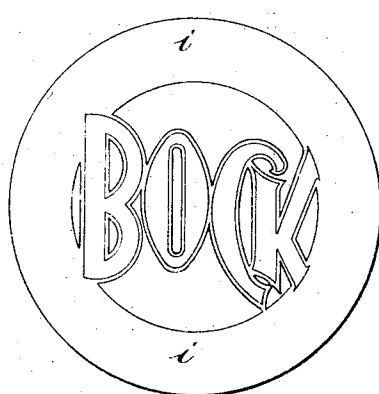


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CUTTING-DIE.

990,426

Specification of Letters Patent. Patented Apr. 25, 1911.

Application filed January 11, 1911. Serial No. 602,131.

To all whom it may concern:

Be it known that I, ABEDNEGO DEWES, a citizen of the United States, and a resident of Brooklyn, county of Kings, State of New York, have invented new and useful Improvements in Cutting-Dies, of which the following is a specification.

This invention relates to that class of cutting dies having cutting edges shaped to conform to the cuts to be made which are driven, chisel fashion, through the material, such as paper, leather, &c.

The invention involves an improvement in the art of making such dies, and consists in securing to a metal plate, constituting a resisting base, a plate of a tenacious tough material, as close grain wood, to constitute a holding bed for the knives or cutters, then forming slits through the cutter holding bed to conform to the design of the cuts to be made by means of thin tools or drifts which are forced through said bed down onto the metal base, then placing in the slit strips of suitable cutting metal of a thickness to snugly fit the slits and of a width to seat on the supporting base and extend outwardly beyond the exposed surface of the cutter holding bed, said outer edges of the strips being beveled or sharpened to constitute the cutting edges of the die. To provide means for discharging from the die all of the parts of the sheet or sheets of paper or other material after being acted upon by the die it is contemplated to fill all of the spaces between and surrounding the parts of the sides of the cutters extending beyond the cutter holding bed with an elastic material, and this is accomplished by placing a sheet of such material, as india rubber, in contact with the cutting edges of the cutters and forcing it down over the cutters to cause them to fully penetrate it, said elastic material being of such a thickness as to extend to or be slightly above the cutting edges and completely fill the spaces between the cutters. To insure that all parts of the cutter holding bed are retained in proper position, particularly parts entirely surrounded by slits, it is proposed to attach, by a suitable cement, to the under side of the bed a sheet of fibrous material, as canvas, which will be in contact with the metal base, but will not necessarily be severed by the slit making tools, which, while of a character to sever the cutter holding bed, are not sharp enough to cut the canvas.

The accompanying drawings to which I will now refer illustrate a cutting die made according to this invention.

Figure 1 is a plan view, sectionally broken away, showing the constituent parts of a cutting die made under this invention and the manner of their assemblage. Fig. 2 is a transverse section of the same, taken on the line 2, 2, Fig. 1. Fig. 3 shows, sectionally, a portion of the cutting die and a tool for making the slits in the cutter holding bed, and Fig. 4 represents an article, as an advertising sign, the product of a cutting process of the die illustrated.

Cutting dies made in accordance with this invention are, as will be seen from the drawings, comparatively shallow and cost much less to make than cutting dies of ordinary construction. The base plate *a* consists of a metal sufficiently resistant to support the cutting blades, which seat edgewise thereon, so that their cutting edges will be maintained in a level or proper cutting plane. The cutter bed *b* in which the cutters are held is a plate of uniform thickness of a tenacious tough material adapted to have slots formed through it without fracturing, a close grained wood being found a suitable material. This plate *b* is preferably reinforced by a suitable fabric *c* securely attached, by glue or cement, to its under side; this fabric prevents displacement of parts of the cutter bed *b* while the slits are being made, particularly those parts that are entirely surrounded by slits. In some cases it may of course be unnecessary to use the reinforcing fabric *c*. The bed *b* is securely fastened to the base plate *a* by screws *e* located at suitable points, the reinforcing fabric *c*, when used, being adjacent to the base plate. The bed *b* may be secured to the base plate *a* by cement; in any case some connecting screws *e* may be advantageously employed. The cutters *d* are composed of strips sufficiently wide to extend through the bed *b* and project a short distance above its upper surface, the outer edges of the strips are beveled or sharpened, the strips being composed of a suitable metal to maintain cutting edges, are also freely flexible to be readily bent to fit into irregular shaped and curved slits formed through the bed *b*. On the cutter bed *b* is traced or otherwise marked or indicated the lines of the design to be cut or made in or through the articles

of sheet material, thin tools, such as is shown at *g*, Fig. 3, straight or curved to suit the configuration of the lines of the design are driven down through the bed *b* on to the base plate *a* so as to sever or separate its mass, thus making narrow slits, as shown at *h*, Fig. 3, entirely through the bed in which are placed the cutters *d*, they being in suitable lengths driven into the slits down on to the resisting base *a*, which is sufficiently hard to hold the cutters against any pressure brought to bear against their cutting edges.

To provide means for discharging or stripping the sheet or sheets cut by the cutters *d* from the die a sheet *f* of requisite flexibility is placed on the cutters and forced on to them so as to be fully penetrated by them, said flexible material being seated in contact with the upper face of the bed *b*, and then filling all spaces between and surrounding the sides of the parts of the cutters extending above the bed *b*, the thickness of the material *f* being such as to preferably extend slightly beyond the plane of the cutting edges of the cutters *d*. The sheet of flexible material *f* has preferably applied to its under side, before being placed on the cutters, a suitable cement that will insure all its severed parts adhering to the upper face of the bed, thus guarding against displacement of the parts of the stripper.

I claim—

1. A cutting die comprising a cutter supporting base plate, a cutter holding bed attached to the supporting base and having slits extending through it conforming to the design of the cuts to be made, and cutters consisting of strips of cutting material set in the slits of the holding bed, seated on the base plate and having their exposed cutting edges projecting beyond the outer surface of the holding bed.

2. A cutting die comprising a cutter supporting base plate, a cutter holding bed attached to the supporting base and having slits extending through it conforming to the design of the cuts to be made, a sheet of fabric secured to side of the bed adjacent to the supporting base, and cutters consisting of strips of cutting material set in the slits of the holding bed, seated on the fabric which is in contact with the base plate and having their exposed cutting edges project-

ing beyond the outer surface of the holding bed.

3. A cutting die comprising a cutter supporting base plate, a cutter holding bed attached to the supporting base and having slits extending through it conforming to the design of the cuts to be made, and cutters consisting of strips of cutting material set in the slits of the holding bed seated on the base plate and having their exposed cutting edges projecting beyond the outer surface of the holding bed, and means for discharging the article from the die after its cutters have acted thereon.

4. A cutting die comprising a cutter supporting base plate, a cutter holding bed attached to the supporting base and having slits extending through it conforming to the design of the cuts to be made, and cutters consisting of strips of cutting material set in the slits of the holding bed seated on the base plate and having their exposed cutting edges projecting beyond the outer surface of the holding bed, and a stripper of flexible material fitting all the spaces between and surrounding all parts of the sides of the cutters extending beyond the surface of the cutter holding bed.

5. A cutter die comprising a cutter supporting base plate, a cutter holding bed attached to the supporting base and having slits extending through it conforming to the design of the cuts to be made, a sheet of fabric secured to the side of the bed adjacent to the supporting base, and cutters consisting of strips of cutting material set in the slits of the holding bed, seated on the fabric which is in contact with the base plate and having their exposed cutting edges projecting beyond the outer surface of the holding bed, and a stripper of flexible material fitting all the spaces between and surrounding all parts of the sides of the cutters extending beyond the surface of the cutter holding bed.

In testimony whereof, I have hereunto subscribed my name, this 24th day of December, 1910.

ABEDNEGO DEWES.

Witnesses:

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