Nov. 22, 1927. 1,650,314

G. A. ACKERMANN

DIE

Filed Feb. 4, 1927 2 Sheets-Sheet 1

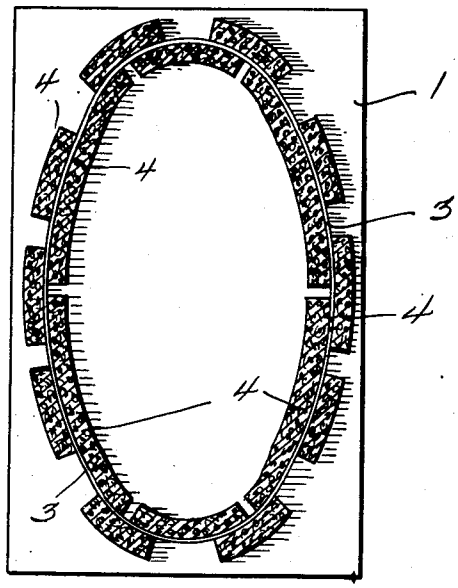


FIG -1-

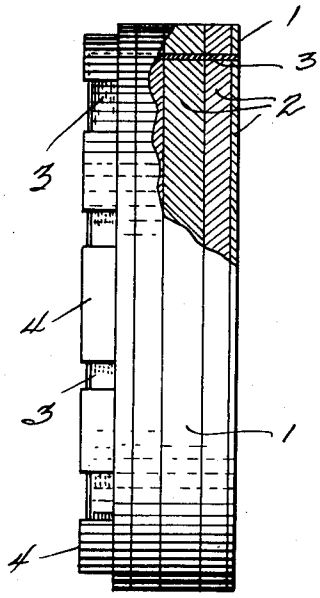


FIG -3-

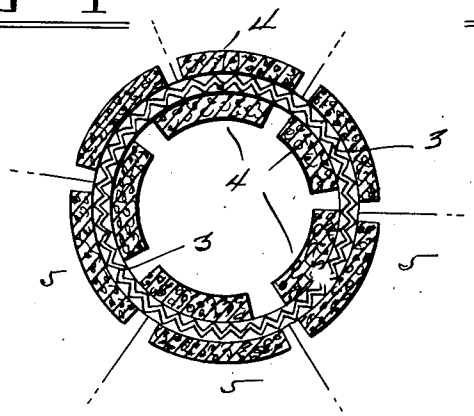


FIG -2-

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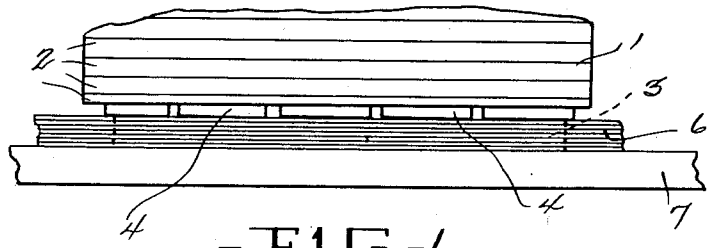


FIG. 4.

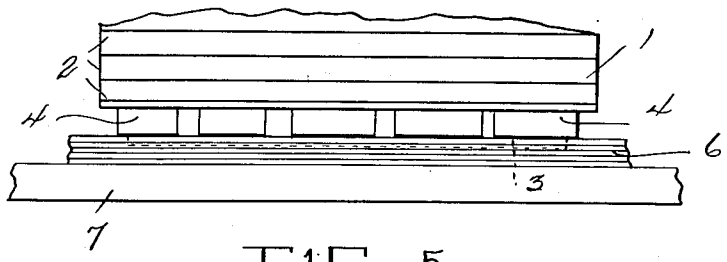


FIG. 5.

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Patented Nov. 22, 1927. 1,650,314

UNITED STATES PATENT OFFICE.

GUSTAVE A. ACKERMANN, OF CHICAGO, ILLINOIS.

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Application filed February 4, 1927. Serial No. 165,843.

My invention, in its broad aspect, relates to improvements in means and methods of cutting paper or other stock to form labels, pasters, prints, and the like, and some of the major advantages of my invention are to increase and facilitate the production of cut paper or other stock, provide for more perfect registration of the outline of cut stock with the designs which such stock may have displayed thereon, attain more perfect release of the dies from the stock after the cutting operation, and to prevent creeping or displacement of stock from a position of exact registry with the cutting dies.

More particularly it is my purpose to provide among other things, an improved die the base of which is formed of laminated wood, or the like, thereby to absolutely prevent cracking or splitting, and into which is fixed the edged cutter having a design corresponding to the outline of the object to be cut from the stock. Surrounding the edged cutter in closely spaced relationship on both sides thereof and attached to the base are sponge rubber pads (or inherently resilient pads of other material) which extend beyond the edge of the cutter. By these means when the cutter is engaged with the paper or other stock, the stock is prevented from creeping or slipping, and as the pressure is increased to force the cutters through the stock the pads are depressed but continue to press with increasing force against the stock. Upon withdrawal of the cutters the pads resume their normal shape and proportions and thereby prevent lifting or displacement of the layers of stock or the labels so cut by the movement of the cutters therethrough.

In use my dies are assembled upon a form corresponding in make up to the bed of the printing press from which the label stock, or the like, is produced. In practice many different designs of labels may be printed on the same stock body so that the designs of the several cutters in the form may vary. The die form having been made up to correspond with the subject matter printed on the stock, and the stock having been properly registered with the dies on the platform of the press, a single operation completes the cut.

Other and equally important objects and advantages will become apparent as the description of my invention proceeds, but while I have in the present instance defined for the sake of illustration an article of a certain specific form, it will be understood that I do not desire to limit myself except as may be indicated by the scope of the claims appended hereto and forming a part of this specification.

In the drawings wherein is illustrated an embodiment of my invention:—

Figure 1 is a front view of a die made up in accordance with my invention to cut an oval label,

Figure 2 is a front view of a die made up to cut a circular sticker,

Figure 3 is an edge view, partly broken away, of the form shown in Figure 1,

Figure 4 is a detail view of a die at the termination of its cutting operation through multiple thicknesses of stock, and

Figure 5 is a detail view of a die partly withdrawn from the stock after the cutting operation.

In the drawings wherein like characters of reference are used to designate like or similar parts throughout the several views:—

The numeral (1) designates the base of my die which is laminated, or formed of successive glued together layers (2) of wood or the like to prevent cracking, chipping or splitting of the same. Retained within the base (1) is an edged cutter (3) which extends a considerable distance out from the face thereof. The cutter (3) may extend through or partly through the base, and is shaped to conform to the design to be cut. Surrounding the edged cutter (3) and closely hugging the same on both sides thereof are a plurality of sponge rubber pads (4). While sponge rubber is here specified other inherently resilient materials may well be used, but I have found sponge rubber the most practical. The pads extend beyond the cutting edge of the cutter.

In Figure 2 is shown another design of my die wherein the base (2) is circular; the edged cutter (3) in this form being blocked in about the base as at (5). My die may be made up in any number of designs, depending of course, on the design of the label, or the like, to be cut, but the essential characteristics in each instance are the laminated base (1), edged cutter (3), which may be inset in the base as in the present form, or simply attached thereto by cleats or the like (not shown), and the pads (4).

In Figures 4 and 5 are shown two different stages in the operation of cutting out labels or the like. The several sheets of labels comprising the stock (6) is delivered to and adjusted upon the bed of the press (7); the die is then moved down to force the edged cutter (3) therethrough to cut the label. The pads (4) since they extend past the cutter, first engage the stock to hold it in place and are pressed back as the cutter is forced through, as illustrated in Figure 4. The increase of pressure exerted by the pads upon the stock during the cutting operation is directly proportionate to the distance the knife is forced through the stock. The cutting operation having been completed the die is withdrawn as illustrated in Figure 5, the pads (4) resuming their normal shape and proportions to prevent lifting or lagging of the labels or clippings upon the cutting die. From the foregoing it is believed that the construction and operation of my invention is apparent, but special attention is again invited to the double function of the pads, i. e., to prevent slipping and lifting of the stock, and to hold it firmly in place and in registry with the cutter.

While in the foregoing there has been illustrated in the drawings and described in the specification such combination and arrangement of elements as constitute the preferred embodiments of my invention, it is nevertheless desired to emphasize the fact that interpretation of the invention should only be conclusive when made in the light of the subjoined claims.

I claim:—

1. A die for cutting paper and other stock comprising a base, an edged cutter carried by and extending out from the base, and a plurality of relatively spaced apart, inherently resilient pads carried by the base about and on both sides of the cutter and normally extending past the cutting edge thereof.

2. A die for cutting paper and other stock comprising a base, an edged cutter carried by and extending out from the base, and a plurality of sponge rubber pads carried by the base on all sides of the cutter, said pads being relatively spaced from each other and normally extending past the cutting edge of the cutter.

3. A die for cutting paper and other stock comprising a laminated wooden base, an edged cutter seated in the material of the base and extending outwardly therefrom, and a plurality of independent sponge rubber pads carried by the base on all sides of the cutter, said pads being relatively spaced from each other and normally extending past the cutting edge of the cutter, and certain of said pads being staggered with respect to others on the opposite side of the cutter for the purpose defined.

In testimony whereof, I affix my signature hereunto.

G. A. ACKERMANN.