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COMBINATION PUNCH AND CUTTER.

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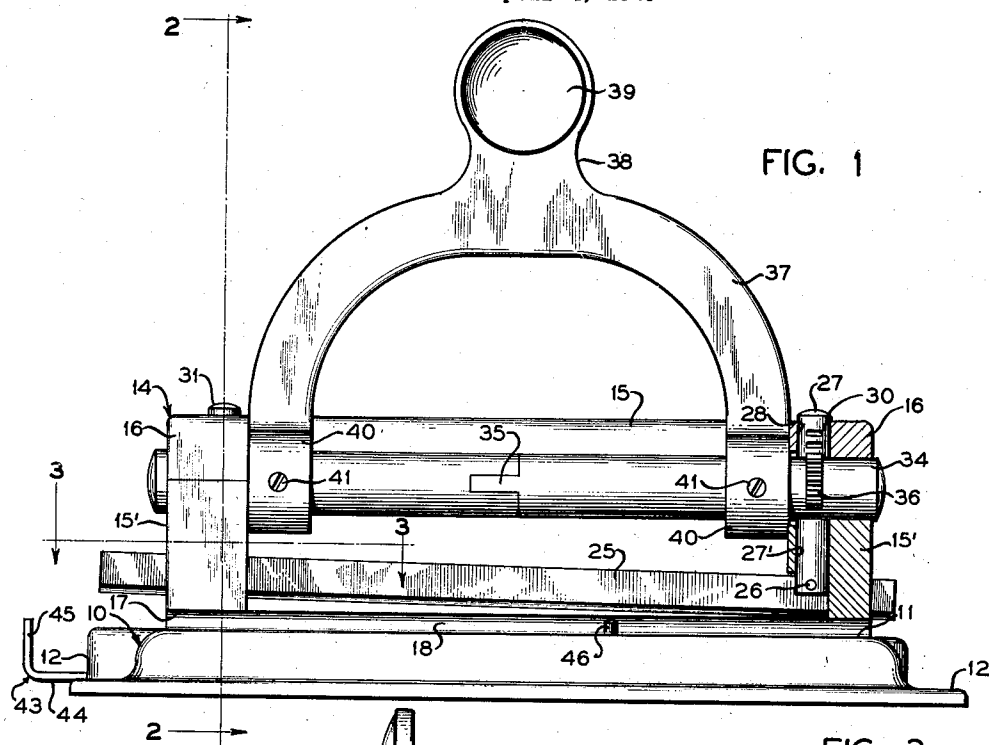


FIG. 1

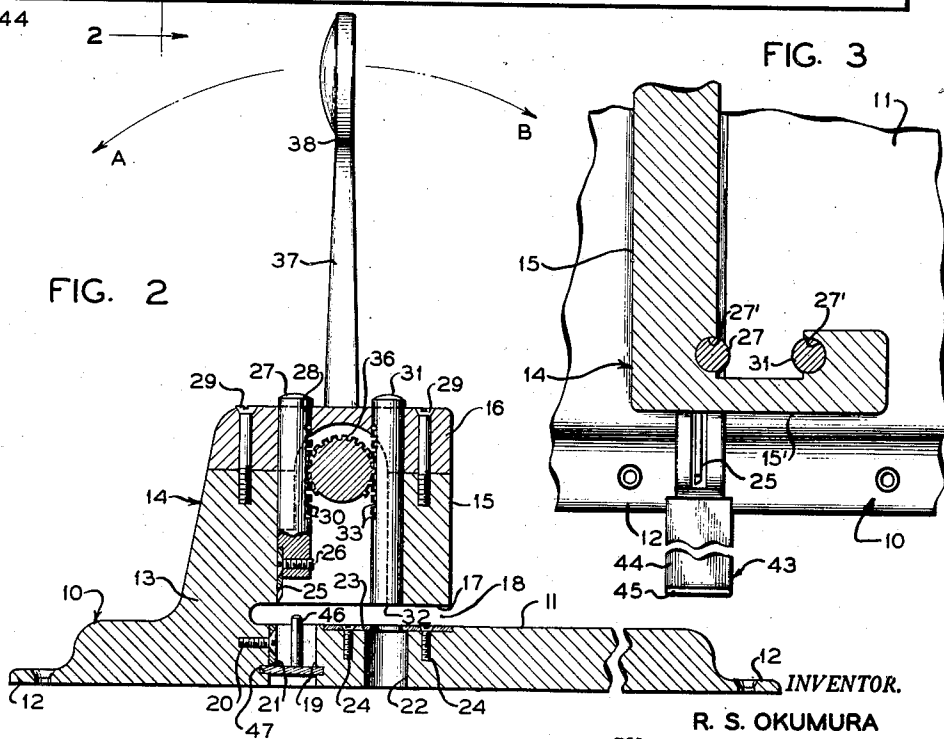


FIG. 2

FIG. 3

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## COMBINATION PUNCH AND CUTTER

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1 Claim. (Cl. 164—15)

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This invention relates to sheet material cutting and punching and more particularly to an implement or machine adapted for performing these operations.

The invention consists of a relatively light weight manually operable tool which includes cutting and punching elements and positioning means for sheet material on which it is desired to perform these operations.

In the past both punches and cutters for sheet material have been in relatively wide use but these have usually been separate machines or implements and have been subject to criticism for various reasons.

Among the shortcomings of implements of this general type heretofore used have been those of lack of flexibility of use, complexity resulting in difficulty or impossibility of repair and relatively large expense, and that of excess size rendering them unsuitable for use in a business office.

Accordingly it is an object of the present invention to provide a combination cutter and punch in which the objections outlined above are overcome.

Another object of the invention is to provide a compact, light weight, and durable combination cutter and punching implement which is only slightly larger than a conventional punching device of similar type.

A further object of the invention is to provide a combination punching and cutting implement which is simple and inexpensive to manufacture, has a minimum number of parts, and in which substantially all of the elements subject to wear are adapted to be quickly and easily removed and replaced.

These and other objects of the invention will become apparent from the following specification taken in conjunction with the accompanying drawing, wherein:

Fig. 1 is an elevation of the device showing a part thereof in section,

Fig. 2, a section on the line 2—2 of Fig. 1; and  
Fig. 3, a fragmentary section on the line 3—3 of Fig. 1.

Referring to the drawings, the combination implement comprises a relatively broad flat base 10 having a relatively flat smooth upper surface 11 on which sheet material is adapted to be placed. Apertured ears 12 are provided for the reception of suitable fasteners when it is desired to secure the device to a support. A relatively narrow neck 13 connects the base 10 to a broad upstanding body portion 14 which includes a lower U-shaped portion 15 and a cap 16. The un-

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der side 17 of the body portion 14 is substantially flat and is spaced from the surface 11 of the base 10 in order to provide a recess 18 for the reception of sheet material.

The base 10 has an elongated slot or recess 19 along the same and substantially adjacent the neck 13. A stationary cutter blade 21 is fastened within the recess 19 by means of a bolt 20.

The recess 18 extends into the neck portion a sufficient amount to provide a relatively small distance between its extremity and the cutter co-operating surface of the stationary cutter blade 21. This distance is just sufficient for receiving the edge of an envelope in order that the same may be clipped therefrom and the letter opened.

A plurality of spaced apertures or bores 22 are provided in the base 10 and are preferably aligned substantially parallel to the recess 19. Each of the apertures is adapted to receive a punch bar later to be described, and for cooperation therewith, a plurality of die members 23 are fastened to the base over the apertures by means of fasteners 24.

For cooperation with the fixed or stationary cutter blade 21, a movable cutter blade 25 is secured by means of a fastener 26 to slidable bar members 27. The bar members are restrained from lateral movement by grooves 27' in the lower body member 15 and by the surfaces defining the apertures 28 in the cap 16. The cap is attached to the lower body member 15 by means of fasteners 29, and the apertures 28 are aligned with the grooves provided in the lower body members 15. In order to afford engaging means for raising and lowering the bars 27, a plurality of notches 30, in the form of a rack, are formed on one face of each of the bars.

Similarly positioned and guided to the bars 27 are a plurality of punch bars 31 having die co-operating end portions 32 at their lower extremities. These bars are adapted to enter the apertured die plates 23 superimposed over the apertures 22 in the base member, and are spaced in accordance with the spacing of the apertures with which they cooperate. It is understood that the invention contemplates the use of one or more spaced punch members and is not limited in the number of arrangement thereof. The punch bar members 31 are provided with racks 33 similar to those on the bar members 27, and it is contemplated that the bar members 27 and 31 will be positioned in spaced pairs and have their rack portions facing each other.

Supported in the end portions 15' of the body portion 15 is a relatively long rod or bar 34 which

may be conveniently divided into two or more parts by a tongue and groove connection 35. The rod is journaled for rotation in the body member 15 and has attached thereto gear or pinion members 36 one for each pair of bar members 27 and 31 and positioned between each of the said members with its teeth in engagement with the racks of the facing bar members.

A yoke shaped handle or actuating member 37 having an extension 38 with a finger receiving depression 39 has bored or apertured extremities 40 for the reception of the rod 34. Suitable fasteners or set screws 41 are provided to lock the handle to the rod.

In order that an envelope may be clipped a sufficient distance from the edge to remove the contents but not completely sever the strip, a gauge 43 is provided. The gauge includes a flat member 44 having a flange or upturned portion 45 at one end and an upstanding post 46 which projects slightly beyond the recess 19 to serve as a stop or guide for the envelope. The member is positioned transversely of the recess 19 and is adapted to reciprocate in grooves 47 in the face of the sides defining the recess. The post 46 may be moved to a position corresponding to that at which the edge of the envelope should be to make a cut of the desired length along the edge of the envelope. The post is also useful as a guide for positioning the paper to be punched.

In the operation of the device, before sheet material is inserted in the recess 18, the handle 37 is positioned as shown in the drawing in order that the recess will be clear of the cutting bar 25 and the punching bars 31. If it is desired to open an envelope it is tapped edgewise on a surface in order to position the matter contained therein in one portion thereof, and the other edge is then placed within the recess 18 to the full depth thereof following which the handle 37 is moved to the left or in the A direction shown on the drawing. This rotates the pinion 36 in a counter-clockwise direction and as it meshes with the racks 30 of the bars 27 the cutter blade 25 moves downwardly past the stationary cutter blade 21 and severs the edge of the envelope.

When it is desired to punch holes in one or more sheets of material such as paper and the like the sheet material is positioned within the recess 18 to its full depth and the handle 37 is then moved to the right or in the B direction to turn the pinions 36 clockwise, thus lowering the bars 31 and punching apertures in the material. The spacing of the bars 31 and the apertures 22 from the apex of the recess 18 may correspond to the spacing of the conventional apertures in note paper and the like from the edge of the sheet.

It is apparent that the working parts of the device such as the cutting blades and the die plate are easily replaceable. Similarly the other portions of the implement may be quickly dismantled for repairs and replacement of parts.

It is apparent that the invention includes a simple, easy to manufacture, and sturdy implement for opening letters and the like or for cutting a portion from sheet material as well as for punching spaced apertures therein. Its operation is simple, requiring only a change in the direction of movement of the handle for operation of the cutting or the punching elements.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope

thereof and therefore the invention is not limited by that which is shown in the drawings and described in the specification but only as indicated in the appended claim.

What is claimed is:

A cutting and punching device comprising a base having a flat upper surface, a body extending upwardly at one end of said base and substantially from one side to the other side of said base, said body having sides of substantial length, said body being undercut from the end opposite said one end providing a recess open at the other end and both sides whereby marginal portions of sheet material may be inserted to be cut and punched, a pair of upstanding upwardly extending guideways in said body at each side of said body, at least a portion of each guideway of each pair opening toward and facing the other guideway of said pair, plungers mounted in said guideways and having gear means on the portion of said plungers facing the opposite guideway the top of said upstanding sides being formed with aligned bearing recesses between said guideways, a shaft extending substantially parallel to said sheet receiving recess and thereabove rotatably mounted in said bearing recesses in said sides of said body between the guideways, gear means integral with said shaft inwardly of said bearing recesses in mesh with the gear means of said plungers, a bearing cap having bearing recesses and plunger receiving openings removably mounted on said body for receiving and securing said shaft and plungers in assembled relation, said plungers being arranged so as to be normally maintained out of the sheet material receiving portion of said recess, an elongated cutter bar mounted on one plunger of each pair and extending across said base and movable in both directions across the work receiving portion of said recess, said recess including a cutter receiving portion opening into said work receiving portion of said recess and normally receiving the cutter bar in retracted position out of said work receiving portion of said recess, a cutter groove in said base opening into said work receiving portion of said recess and cooperating with said cutter bar for severing the end of work within said recess, said base having openings in alignment with said other plungers whereby said other plungers may punch holes in the work, a lever mounted on said shaft between the sides of said body for rotating said shaft in both directions for selectively operating said cutter bar or punch plungers across the recess and into the groove and openings respectively in the base.

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