

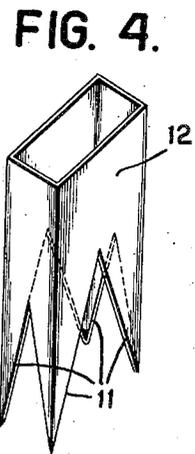
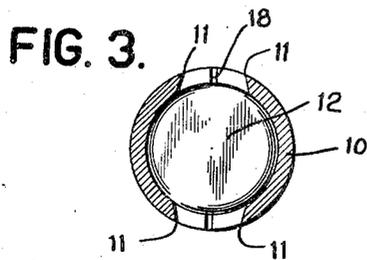
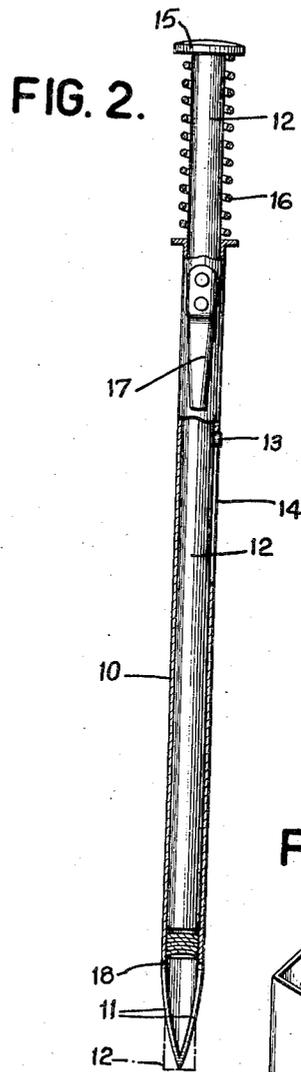
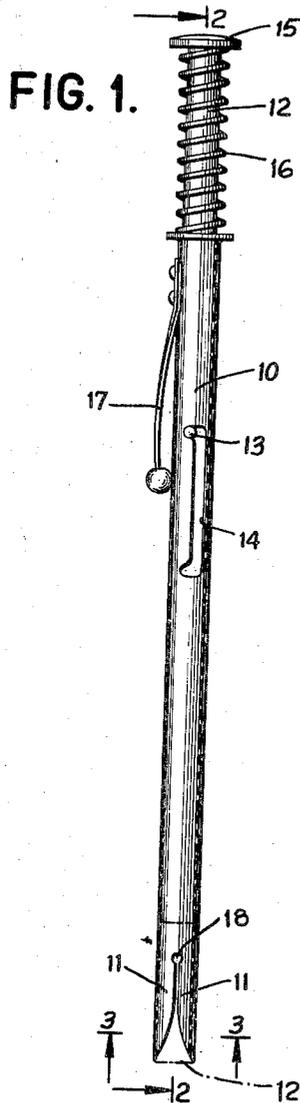
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2,126,640

RECORD PUNCH

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# UNITED STATES PATENT OFFICE

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## RECORD PUNCH

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1 Claim. (Cl. 164—119)

This invention relates to a perforating device for punching holes in statistical record material such as is employed in controlling the operation of accounting or like machines.

A specific object in the invention is to provide a record perforating device which does not require the employment of a die in cooperation with the piercing portion of the punch.

A more specific object is to provide a punching device comprising a pointed or pronged tube which may be pressed against record material to cut an opening having the configuration of the cross section of the tube.

A further object of the invention is to provide a tube which is arranged to cut portions out of a record and retain the cut-out portions within the tube in which a plunger is slidably mounted for ejection of the chips and for protection of the cutting edge when the device is not in use.

Various other objects and advantages of the invention will be obvious from the following particular description of one form of mechanism embodying the invention or from an inspection of the accompanying drawing; and the invention also constitutes certain new and useful features of construction and combination of parts hereinafter set forth and claimed.

In the drawing:

Fig. 1 shows an outside view of the device.

Fig. 2 shows a view looking from one side of Fig. 1 with the tube cut-away to show the interior.

Fig. 3 is a section taken on lines 3—3 of Fig. 1.

Fig. 4 is an isometric view showing a modified form of the invention.

Referring to Fig. 1, the device comprises a tube 10 whose lower extremity is bifurcated to provide cutting edges 11. The edges 11 come to a sharp point at the extremity of the tube and are bevelled as shown in Fig. 3 so that at the outer circumference of the tube the edges 11 are of the required sharpness. Within the tube is a plunger 12 having a pin 13 extending into a bayonet slot 14 in the tube. The plunger 12 has a head 15 between which and the upper extremity of the tube is a spring 16. When the device is not in use, the plunger 12 is depressed in the tube 10 so that the pin 13 is retained in the lower angle of the slot 14. In this position the lower extremity of the plunger extends a slight distance beyond the lower extremity of the tube, in which position it guards the cutting edges against injury and the device may be carried in one's pocket by means of a clip 17, after the fashion of a fountain pen or a pencil.

When the device is to be operated, the plunger is retracted to the position shown in Figs. 1 and 2, tube 10 is grasped in one hand, and the pointed end is placed against the record material in the position in which it is desired to make a perforation, while the material is held in the other hand. As the tube is forced against the record, the pointed ends will pierce the same and shear an opening therein having the configuration of the outer circumference of the tube.

The tube shown in Figs. 1, 2, and 3 is of circular cross section and is adapted for the perforation of circular holes. In Fig. 4 is shown the lower extremity of a tube of rectangular cross section, each of its sides bifurcated to form four piercing points and eight cutting edges which are suitably bevelled to a desired sharpness. Where the hole is to be completely cut, the edges 11 are brought to a point at their upper extremity as shown in Fig. 4 and after the chip is separated from the main body of the record it will remain within the tube 10, as indicated in Fig. 2 where the severed chips may accumulate. When required, they may be ejected by moving the plunger within the tube toward the lower extremity.

In cases where it is not desired to completely cut out a chip, the converging edges 11 may terminate in an opening such as 18 in Fig. 1 so that if the tube is inserted up to this point, the record will have a portion which is incompletely severed therefrom and which may later be completely severed by other means, the severance being completed by breaking of the small adjoining portion which has not been cut by the punch. For certain classes of work where it is not necessary to cut a perfectly clean hole, the tube with the opening 18 may be forced farther through the record so that the tube itself breaks the uncut connecting portion.

The punching device has been found to be extremely useful in making clean-cut perforations in record material where the position to be perforated is located at such a distance from the edge of the record as to render such position incapable of being perforated by the ordinary types of punches employing a plunger and die tied together through a common support.

While there has been shown and described and pointed out the fundamental novel features of the invention as applied to a single modification, it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the

art without departing from the spirit of the invention. It is the intention therefore to be limited only as indicated by the scope of the following claim. What is claimed is as follows:

5 A punching device comprising a tube having a bifurcated end sharpened to provide cutting edges and a plunger arranged within the tube

and movable therein at the extremity of the cutting edges thereof to protect the same against injury, said tube and plunger having cooperating means for retaining the plunger in position to protect the cutting edges, or in retracted 5 position.

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