Nov. 20, 1956 R. W. KNAPP 2,771,031

SNAP-ON RADIAL MOUNTED PRINTED DIE

Filed Feb. 25, 1953

Fig. 1.

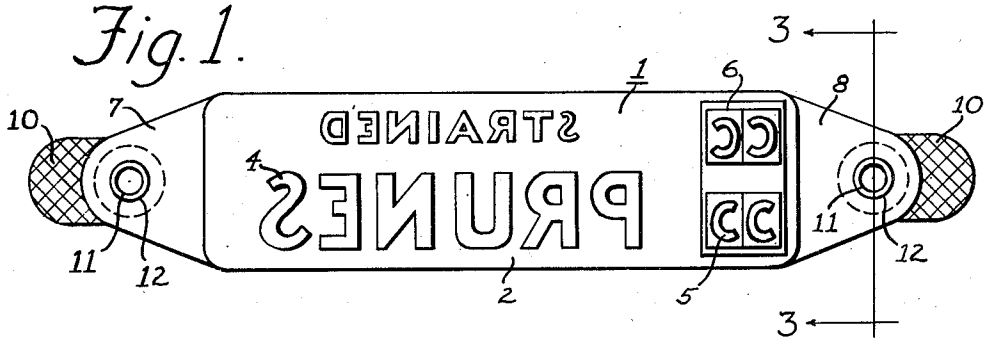


Fig. 2.

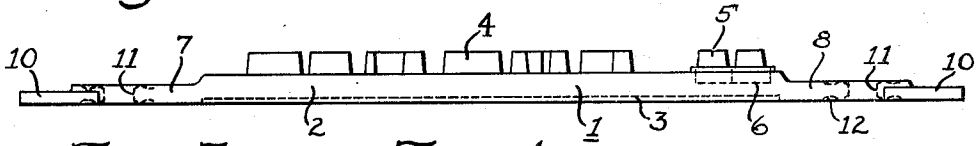


Fig. 3.

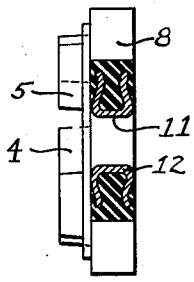


Fig. 4.

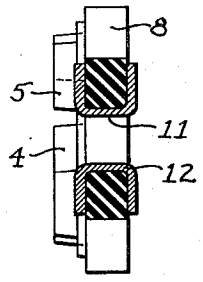


Fig. 5.

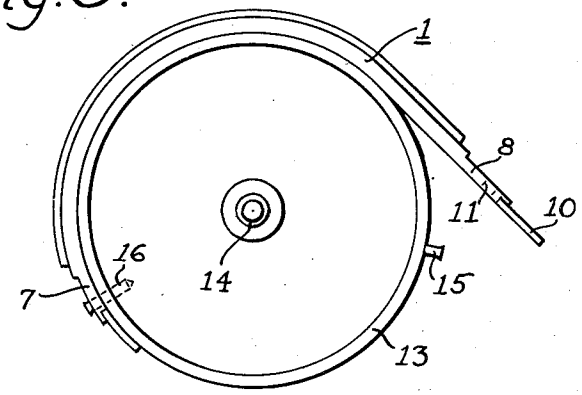
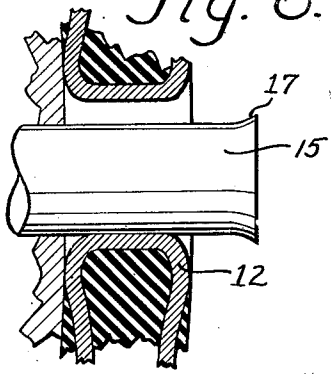


Fig. 6.



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SNAP-ON RADIAL MOUNTED PRINTED DIE

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Application February 25, 1953, Serial No. 338,803

3 Claims. (Cl. 101—415.1)

This invention relates generally to printing dies and more particularly to rubber-printing dies fastened to a printing drum.

Printing dies may be formed of an elastomer such as rubber and are provided with a flexible backing such as a thin strip of brass or other suitable metal. The brass has a hole at each end to admit mounting screws which secure the die to the surface of a drum. Since the rubber die is completely backed with the brass strip, it cannot give or stretch longitudinally and the holes in the metal strip must exactly mate with the holes in the printing drum or the die cannot be properly mounted.

Frequently, the mounting holes in the metal backing strip of a rubber-printing die vary, and it is necessary to thread holes at different lengths in the drum to accommodate these variations. It requires a considerable amount of time to hunt for the proper mounting hole and then one has to have a screw driver and turn or move screws to fasten the printing die to the printing drum. When frequent changes of the die are required, it may take considerable time to handle the screw driver for removing and replacing these rubber dies.

The principal object of this invention is the provision of a new structure and manner of mounting these dies on a printing drum to avoid all the difficulties connected with a completely metal backed rubber die. These improvements are obtained by providing a metal backing for only that portion of the rubber die that carries the letters or symbols being printed. This insures proper maintenance in the spacing of the characters. The ends of the die are formed of rubber and are permitted to be elastic so that they may stretch. By having a hole in these elastic ends, one may readily snap off or snap on the die without the use of tools such as a screw driver or screws. A set of spaced posts may be set in the printing drum and by merely snapping the die on the posts, one may change the same in less than two or three seconds, where the changing of dies by screws takes a matter of minutes.

Again the rubber dies need not be backed with metal but may have a rubber base that is less resilient with the more resilient characters thereon and the resilient ears at the ends of the strap to snap them on the pins held by the printing drum.

The pins may have a small head something like that of a finishing nail to aid in holding the elastic ears of the rubber die in place. These pins may be slightly tapered so that they will become firmly locked in place, or they may be a threaded bolt adjustably mounted in an annular slot. One pin may be in the form of a hook while the other remains a headed pin.

The elastic ears at the ends of the strap forming this rubber printing die may have metal grommets or eyelets formed within the rubber or put in after the rubber ears have been formed to increase the wear of a die that is expected to have considerable use over an extended period of time. This reinforcing saves the hole from wearing and maintains the die in proper position on the drum.

A portion of the elastic ear at the ends of the rubber die extends beyond the mounting hole and is provided with a ribbed or roughened surface to aid the fingers in grasping and stretching the ears to snap the holes over the mounting pins. This aids in mounting the die and the fact that these elastic ears must be stretched to snap their mounting holes on the pins provides a tension on the strap-shaped rubber-printing die, that keeps it tightly against the surface of the drum. This is not assured when the whole length of the strap is reinforced by a metal plate and the holes do not quite match the mounting holes in the drum and the die will not snugly fit the surface of the drum, which results in bad printing. This new structure avoids all these dffiiculties.

Other objects and advantages appear hereinafter in the following description and accompanying drawing.

The accompanying drawings show for the purpose of exemplification without limiting the invention or claims thereto certain practical embodiments, wherein:

Fig. 1 is a plan view of a rubber printing die comprising this invention.

Fig. 2 is a side elevation of the structure shown in Fig. 1.

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a view showing a different manner of applying the eyelet shown in Fig. 3.

Fig. 5 is a view of reduced scale showing the application of the printing die to a printing drum.

Fig. 6 is an enlarged detailed sectional view illustrating the fastening of the rubber die ear on a mounting pin.

Referring to the drawings, the rubber printing die **1** is provided with a base section **2** backed up with a flexible metal strip **3** such as brass, to which the base is vulcanized. The rubber base actually is vulcanized over the perimetrical edge of the flexible plate **3** and thus practically embeds the same. The top of the base **2** has the characters **4** vulcanized thereon. The numerals **5** may be removably inserted in pockets **6**.

The ends of the rubber die strap are referred to as elastic ears **7** and **8** and are flexible for their full extent as indicated in the drawing as being from the end of the plate **3** to the tip of the ears. Each ear has a finger tab **10**, the top and bottom surfaces of which are ribbed as indicated in the drawing to prevent the finger from slipping and to readily permit the ears to be lengthened. At approximately half of the length of each ear, they are provided with a hole **11** that may be reinforced by the eyelet **12**, which in Figs. 1 to 3 is embedded and vulcanized within the ear, but in Fig. 4 is merely set in the hole **11** after the ears have been formed.

As shown in Fig. 5 the die **1** is shown being mounted on the printing drum **13** that is mounted on the shaft **14**. A fixed or anchor pin **15** is secured to the drum and a second pin **16** is adjustably set on the drum in spaced relation with the pin **15**. Each of these pins is provided with a small head **17** as shown in Fig. 6. This head is upset a little and thus prevents the hole in the die ear from slipping off the pin.

It will be noted in Fig. 5 that the hole **11** in the ear **8** will not quite make the pin **15**, and it is therefore necessary to pull and stretch the ears. When this is done, both ears stretch and the ear **8** is snapped over the head of the pin **15** thus insuring that the back of the die lays tight and snug against the perimetral surface of the drum and remains properly centered or positioned on the drum. This was not always true of the screw mounted dies.

It is understood that the invention disclosed herein is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawing since the invention is capable of other

embodiments and of being practiced or carried out in various ways of having this elastic section to hold the die tight against the drum and make it quickly applied or removed therefrom.

I claim:

1. A flexible printing die comprising a flexible inelastic rubber base, a flexible stiffener member secured to said rubber base, printing characters on said rubber base above said flexible inelastic stiffener member, an elastic ear on at least one end of said flexible rubber base beyond said stiffener member, die attaching means carried by said ear, and a separate ribbed finger tab attached to said ear beyond said die attaching means to stretch said ear for connecting and disconnecting said die attaching means.

2. The structure of claim 1 characterized in that said rubber base has two of said elastic ears, each ear positioned on said flexible rubber base beyond said stiffening member, each ear having a die attaching means, and a

separate ribbed finger tab attached to each ear to stretch both ears for connecting and disconnecting said die attaching means of both ears.

3. The structure of claim 1 characterized in that said die attaching means is means defining a hole in said ear.

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