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DISPENSING CONTAINER FOR NEEDLES, PUNCHES, AND THE LIKE

Filed Nov. 23, 1954

Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5
This invention relates to containers for sharp needle-like objects and more particularly to a multi-pocket container for spinnernet punches.

It has been found that considerable damage to the jet punches used in making spinneters for the spinning of artificial fibers, such as viscose, has occurred because no adequate storage facilities for punches have been provided which individually retain the punches and at the same time prevent damage to the sharp ends thereof.

A primary object of the present invention is to provide an inexpensive multi-pocket container for sharp punches, needles, drills or the like which is provided with separate compartments for individual punches and which has a resilient stop against which one or both ends of the punch rests.

A further object of the invention is to provide a container for pointed punches and needles having a grooved cylindrical barrel in a sleeve and a rubber dam forming at least one end wall of the compartments formed by the grooves.

A further object of the invention is to provide, in a container of the type described, a resilient rubber O-ring which serves to lock the barrel in the sleeve and at the same time provide an end wall for a portion of the grooves.

Further objects will be apparent from the specification and drawings in which

Figure 1 is an exploded view, with parts broken away, showing a preferred embodiment of the invention;

Figure 2 shows the apparatus of Figure 1 when assembled and with the sleeve partly sectioned;

Figure 3 is an enlarged fragmentary section as seen at III—III of Figure 2;

Figure 4 is a front view of a modified form of sleeve and;

Figure 5 is a fragmentary sectional detail on an enlarged scale of a container such as shown in Figures 1—3 with the punches in locked position.

The invention comprises essentially the provision of a spined or grooved barrel axially locked but rotatable in a sleeve which has a single slot dimensioned to selectively expose one of the grooves when the barrel is turned in the sleeve. The barrel is also provided with an annular groove or grooves cut slightly deeper than the axial grooves in which a rubber O-ring is mounted. The bore of the sleeve is internally grooved to receive one of the O-rings in such a manner that when the barrel is assembled in the sleeve, this O-ring expands into the groove in the sleeve, thus locking the assembly together. The O-ring also provides a soft, resilient dam or end wall for all of the axial grooves in the barrel, thus preventing pointed objects stored in the barrel grooves from being damaged upon contact therewith and also preventing them from falling out axially from the container.

In a modified form, one of the O-rings can be dispensed with in the event the grooves are carried only partially along the length of the barrel.

Referring now more particularly to the drawings, a preferred embodiment of the invention comprises a generally cylindrical barrel 5 which is desirably formed of a synthetic plastic material, such as methyl methacrylate, and provided with a plurality of axial grooves 6, 6 extending from one end to the other. The grooves are of sufficient depth to accommodate the particular objects intended to be stored in the grooves such as spinnernet punches 7, 7. At points spaced from each end, annular grooves 8 and 9 are provided, and it is desirable that the slot cut these annular grooves slightly deeper than the axial grooves 6. The barrel 5, when assembled, is freely rotatable in a sleeve 10 which is somewhat shorter than the barrel and is provided with a slot 11, permitting the punches or needles to be readily inserted into the grooves 6, 6 and removed therefrom. Near one end of the sleeve 10, I provide an annular groove 12 which, in the assembled position, registers with groove 8 on the sleeve. A rubber or resilient O-ring 13 of slightly larger relaxed outside diameter than barrel 5 is inserted in groove 8 so that when the barrel is fitted into the sleeve, O-ring 13 expands to seat itself in groove 12, thus locking the barrel in the sleeve. Another O-ring 14 is inserted in groove 9 to provide an end wall for the grooves 6, 6. It is not necessary, however, that there be a registering groove in the sleeve to accommodate ring 14, since one O-ring has proved to be adequate for axial locking of the barrel in the sleeve.

It is important that the cross-sectional diameter of O-ring 13 is sufficient to seal the grooves 6, 6 when the container is assembled. In other words, the inside diameter of O-rings 13 and 14 should be less than the spline root diameter of the barrel 5 as shown clearly in Figure 5.

In this way there is no possibility that the tips 7a of punches 7 can become lodged underneath the rings. As shown clearly in Figure 5, the O-rings seal off a portion of the grooves 6, 6 in the barrel to form individual compartments for the punches which may be selectively aligned with slot 11 by rotating the barrel in the sleeve. Figure 3 shows the sleeve turned to a position in which all the grooves 6, 6 are closed by reason of the O-ring 11 being positioned in alignment with one of the lands 15 on the barrel.

The form shown in Figures 1—3 is primarily adapted to the construction of the barrels by means of an extrusion process. However, where it is desired to disassemble the barrels, it is entirely feasible to use only one groove 8a as shown in the barrel 5a in Figure 4. In this form, there is a completely smooth annular band 16 at one end of the barrel which effectively closes up the grooves 6c, 6a at this point. In the form of Figure 4, it may be important to see that the operators always insert the punches so that their points will contact the rubber O-ring rather than the opposite end of the barrel because even a relatively soft synthetic plastic material can severely damage the punch points with only moderate contact.

The barrel in both forms extends substantially beyond sleeve 10 so that the operator can grasp the end of the barrel and turn it with respect to the sleeve. The grooves in this portion of the barrel materially assist in this operation. Also it may be desirable to bevel the sleeve at 17 to facilitate initial assembly by compressing O-ring 13 into the grooves 8 or 8a as the case may be.

I have thus provided a very simple and fool-proof container for sharp objects such as jet punches, record player needles and the like, which stores the objects securely and especially protects the delicate points. If the sleeve is made of a transparent material, it is easy to determine which compartments are filled or empty and it is also possible to provide either the sleeve or the barrels with different color markings to identify different sizes or types of punches. By providing the single slot in the sleeve, only one punch can be inserted or dispensed at a time so that the punches can never come into contact with.
3. The natural friction of the O-rings 13 and 14 requires moderate force to turn the barrel in the sleeve so that not only is the barrel locked axially but is retained from inadvertent rotation in the sleeve by reason of this feature.

Having thus described my invention, I claim:

1. A container for needles, punches and the like comprising a barrel having a plurality of axially extending grooves along its periphery, an open ended sleeve in which said barrel is rotatably mounted, walls defining a slot in said sleeve dimensioned to register selectively with each of the grooves on the barrel, at least one annular groove on the barrel adjacent one end thereof and intersecting with said axially extending grooves, a cooperating annular groove in the bore of the sleeve in registry with said groove on the barrel, and a resilient O-ring in said grooves providing a resilient end wall for all the axial grooves against which the articles in the container are adapted to rest, the inside diameter of the O-ring being less than the root diameter of the barrel at said axial grooves.

2. A container in accordance with claim 1 having a second annular groove on the barrel adjacent the opposite end thereof, and a second resilient O-ring in said second groove.

3. Apparatus in accordance with claim 1 in which the axial grooves extend completely from one end of the barrel to the other and means providing a second end wall spaced axially from said first-mentioned end wall along said barrel.

4. Apparatus in accordance with claim 1 in which the grooves terminate in spaced relation to one end of the barrel.

5. Apparatus in accordance with claim 1 in which the barrel is substantially longer than the sleeve to provide means for manually grasping the barrel, and rotating it with respect to the sleeve.

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